

**Restoration | Energy Efficiency | Functionality | Historical Preservation | Reproduction**



**PRESERVING WINDOWS & DOORS**





Since 1998

OUR MISSION

*Our mission is to provide quality services and products that accommodate our customers' specific needs. We aim to preserve and provide quality materials, builds, and restoration methods that enhance a building's unique character.*



CHOSEN  
WOOD WINDOW  
MAINTENANCE, INC.

Chosen Wood Window Maintenance

COMMERCIAL AND RESIDENTIAL RESTORATION

Chosen Wood Window Maintenance is a premier full-service window restoration contractor providing restoration services for wood and steel windows, as well as doors. For a fraction of the cost of window replacement, we can repair and update your windows. We offer a variety of services, such as glass replacement, wood damage repair, dry rot repair, inoperable sash repair, glazing, energy solutions, reproductions, historical preservation and more for your residential and commercial projects.

At Chosen Wood Window Maintenance, we emphasize quality craftsmanship above all. Our diverse project history includes both commerical and residential restoration and repair projects and has equipped us with the knowledge and skills to work in a number of different job environments. Share your project goals with us, and we will offer our expertise, cost-effective options, and alternatives, complete with an ROM for your project. We are proven experts in our field with a goal to provide the best value for your money.







## A COMMITMENT TO SUSTAINABILITY

Chosen Wood Window Maintenance is a green company. More often than not, replacing windows is a poor economic and environmental decision. Conserving original materials is an important consideration for building restoration. Reusing, refurbishing and restoring original materials helps to conserve natural resources.

- Keeping existing windows saves the energy and resources needed to create new windows.
- Like any product, the production of replacement windows requires materials, and these materials generate CO2 and other environmental hazards from the extraction, manufacture, transport and disposal processes.
- While repairing and / or retrofitting windows requires materials, it is typically less material-intensive, resulting in lower impacts on the environment than an entire window replacement.

We understand the unique qualities of original wood windows and are committed to protecting and maintaining the valuable properties they deliver to the architecture of homes and historic buildings. Restored wood windows can last an additional 50 to 100 years, when properly maintained.

## LEED

For Leadership in Energy and Environmental Design (LEED) project qualification, we can tailor our methods and products to meet specific LEED criteria. We are knowledgeable in selecting, procuring, and utilizing products that can meet strict V.O.C. requirements, as well as products harvested or manufactured within the geographic boundaries established for LEED.

# Table of Contents

OUR CAPABILITIES	4
REPAIR vs RESTORATION, WINDOW MAINTENANCE AND REPAIR	5
BENEFITS OF RESTORATION	7
RESTORATION OPTIONS	8
STEEL WINDOWS	10
DOORS	11
THE CHOSEN RESTORATION PROCESS	12
STEPS OF WINDOW RESTORATION	14
ON-SITE RESTORATION PROCESS	17
REPLICATES, REPRODUCTION	18
REPAIRING AND REPLACING STAINED GLASS AND LEADED GLASS	19
WINDOW UPGRADES	20
CONVERSIONS	21
SLIP™ — A REVOLUTION IN STORM-TYPE INSULATION	22
VALUE ENGINEERING	25
OUR PROJECTS	26
CASE STUDY	28
SAFETY AND COMPLIANCE	30





## OUR CAPABILITIES

For both commercial and residential projects, our approach to window restoration and repair is simple: reuse what we can, consolidate, repair and strengthen. Window repair and restoration is not only about what your windows look like on the surface, but also what is under the surface and how the windows function and perform. At Chosen Wood Windows, we apply a consistent system to the way we repair and restore windows that ensures an efficient process and reliable results.

Our capabilities include:

- Repair/maintenance, including dry rot, wood damage, broken glass, glazing and operational repair
- Restoration for both commercial and residential buildings in compliance with Historic restoration according to the standards set forth by the Secretary of the Interior's Standards for the Treatment of Historic Properties
- Improving energy efficiency, including broken seal repair and upgrades to insulating glass
- Replicates to provide matches to existing windows crafted from high-quality, vertical grain fir

## REPAIR vs RESTORATION

### What is the difference?

**Repairing Wood Windows:** Window repair addresses specific issues or damage but does not necessarily aim to return it to its original condition. Repair and maintenance involves fixing or replacing individual components or parts that may be broken, rotted or damaged.

**Restoring a Wood Window:** Restoration is a more comprehensive approach that seeks to bring a wood window back to its original or historically accurate condition. The goal of restoration is not only functional but also aesthetic, aiming to preserve the window's historical or architectural significance.

## WINDOW MAINTENANCE AND REPAIR

As windows age, the sash can deteriorate, which can affect both the aesthetics and proper function of a window. Wood windows should be repaired and maintained on a regular basis to ensure the best performance and operation. Replacement window companies often compare their products to old and neglected wood windows, highlighting their supposed maintenance-free nature. However, "maintenance-free" often means they can't be maintained, leading to landfill waste within 20 years. In contrast, maintaining and restoring wood windows is a relatively straightforward process. There are many maintenance and repair methods that help extend the life of wood windows and doors. Parts, like rails or muntins, can be easily duplicated and integrated into the original window. Broken glass and crumbling glazing can be replaced. Even rotted wood can be rejuvenated with the right skills and materials. Properly maintained, these windows can endure for centuries.







## BENEFITS OF RESTORATION

Conserving original materials is an important consideration for building restoration. Reusing, refurbishing and restoring original materials helps to conserve natural resources. Plus, vintage wood windows frequently have features and characteristics that can't be found in more modern windows.

Benefits of restoring original windows include:

- Older windows are built with higher quality materials and craftsmanship that may be cost-prohibitive if used to produce windows today.
- Windows produced prior to the 1940s are likely to be made from old-growth wood (predominantly hardwood), which is stable, dense wood.
- Old-growth wood mills and sands well, holds paint and stain well, and can be refinished to restore the original appearance.
- Original, old-growth wood windows are more insect-resistant than wood windows manufactured today.
- Denser, older wood windows have natural rot resistance.
- Original wood windows were likely produced locally, with locally harvested wood, making the wood better suited for local climate conditions.
- Keeping existing windows saves the energy and resources needed to create new windows.
- Like any product, the production of replacement windows requires materials, and these materials generate CO2 and other environmental hazards from the extraction, manufacture, transport and disposal processes.
- While repairing and / or retrofitting windows requires materials, it is typically less material-intensive, resulting in lower environmental impacts than an entire window replacement.
- Maintain the original design, personality and features of a building can be essential to maintaining the architectural integrity and property value of your home or building.

Restoration of original wood or steel windows can result in a window that can outperform many of today's replacement windows, offering a long-term, cost-effective solution for historic and other highly valued older buildings and homes.





## RESTORATION OPTIONS

Chosen Wood Windows offers a full range of restoration options. The choice of restoration level depends on many factors, including the historical significance of the building, the governing historical board, the condition of the existing windows, budget, energy requirements for the building, and timing of the restoration project. We work with preservationists and restoration experts to carefully assess these factors to determine the most appropriate level of restoration that balances preservation goals with practical considerations. The ultimate goal is to ensure historical integrity of valuable architectural elements in historic buildings. We'll work with you to tailor a restoration plan that meets your needs.

### Secretary of the Interior's Standards for the Treatment of Historic Properties

Historic windows and their functional and decorative features are an intrinsic element of defining a building's overall historic character. Chosen Wood Windows provides full service project management to achieve your historical restoration project goals within the standards set forth by the Secretary of the Interior's Standards for the Treatment of Historic Properties. Our goal is to protect and maintain original fabric and features of the overall window and building. We can conduct an in-depth survey of the existing windows and give all the options available.

We have completed more than 40 historical preservation projects to date, including the Oregon Supreme Court House Building, University of Oregon Gerlinger Hall, Portland Center Stage and many more.

Items that we can provide prior to 100% drawings:

- ROM for preliminary project costs
- Window surveys
- Assistance with specs for uncharted areas
- Value solutions for insulation, operation and more







## STEEL WINDOWS

Steel windows make up a large percentage of vintage windows and are frequently found in historic structures, especially in industrial commercial buildings. Structures that have steel windows are very distinct, with bold character and a unique style. Replacing, rather than restoring these windows can often impair the original architectural integrity of the building by introducing design elements that are not of a similar era or style. Keeping and restoring your steel windows can be a practical option for your building and your budget.



## Benefits of Steel Windows

Steel windows are strong! These windows are very durable, and when properly maintained and kept in good repair, can stand the test of time. While strong in structure and material; steel windows, just like wood windows, can succumb to the elements and show signs of deterioration.

Fortunately, this deterioration can be remedied. Small deterioration, such as surface rust, can be ground and refinished. More extensive damage can be removed and spliced with compatible products to restore the original structural integrity.

Windows built with strong, rolled steel can provide additional security for building owners, as both a sturdy, long-lasting, component of the building and also as a deterrent that keeps unwanted intruders out!

Steel windows can be efficient. These windows won't easily sag or droop like some other building materials. The components holding the windows in place may need occasional maintenance but the steel material won't sag. This means that steel windows will stay square as long as the windows were originally fitted correctly. As a result, the windows are less likely to create drafts over time and experience changes in the fit of the sash in the frame. The insulation of the window also can be improved with upgrades to double- or tripe-paned glass configurations.

## DOORS

Our restoration services also extend to doors, whether solid wood, wood and glass, or a combination of wood, glass and steel, we can provide repair, maintenance or full restoration to suit your specific needs. We offer services such as weatherstripping, glass replacement, wood repair, dry rot repair, door adjustment, and insulating glass upgrades.







## THE CHOSEN RESTORATION PROCESS

Our process begins with planning. We catalog all windows in every the building to ensure sash are returned to their original place and also regain authentic seamless operation. Our services are all-inclusive, from pulling sash to finish paint and reinstallation.

Restoration at our shop starts with dipping and stripping decades of paint off the window sash and doors to give the sash a fresh start and identify past repairs. Much of the time the glass is removed and re-set. You'll always be provided a beautiful and historically accurate end product.

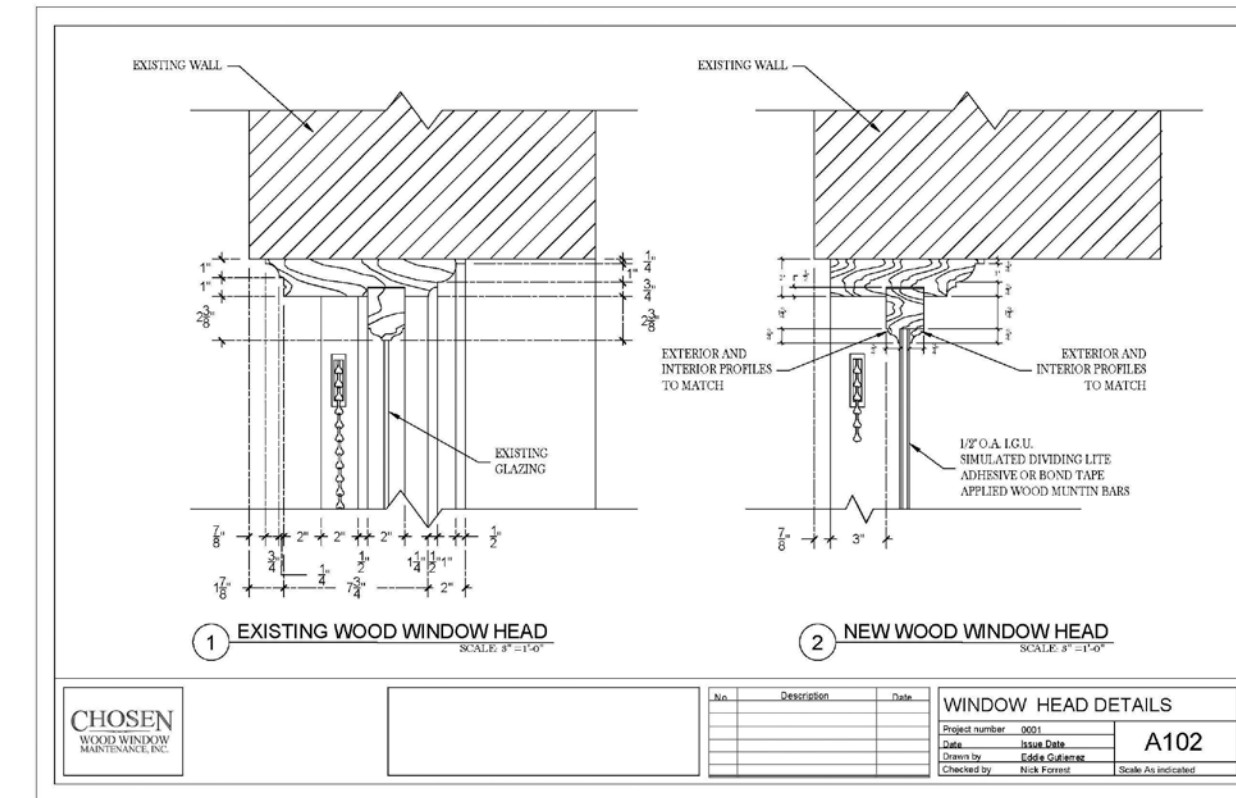


We provide complete project services, start to finish, such as:

- Catalog window sash in opening and catalog repair
- Pull, infill and transport for shop restoration
- Dip and strip to remove paint
- Repairs, reproductions, restoration
- Options for energy efficiency and operation
- On site installation
- Project scope complete to punch list

## Providing On-site and In-shop Restoration

Chosen Wood Windows offers both on-site and in-shop restoration, and we serve beyond our local area. Our goal is to provide the individualized service that works within your schedule to produce the best possible outcome for restoration, renovation or replacement. We can tailor our on-site and in-shop scope to best suit your project.





## STEPS OF WINDOW RESTORATION

1. Pull sash for restoration at either the Chosen Wood Window shop or designated on-site restoration area.
2. Catalog and stamp sash. Window sash are cataloged and stamped in a discreet location to ensure sash are returned to the original opening after restoration. This ensures historical accuracy as well as the best fit for the frame.
3. Board up openings for weather protection until restored windows are replaced.
4. Hardware is removed and evaluated for function and reuse. Original hardware is restored and reinstalled whenever possible.
5. Sash and millwork are stripped of paint, putty and glass. If possible, the existing glass is salvaged and re-used. For re-use, glass is marked so that it can be returned to it's original position, and cleaned.

6. Sash components are repaired, restored, and reproduced as needed, through Dutchman, abatron (epoxy) or wood hardener. If sash or millwork cannot be salvaged, custom components are crafted as replacements (VG fir material is used if component replacement is needed).

7. Sand surfaces and profiles smooth.

8. Kerf operable sash for perimeter weatherstripping.

9. Prep and prime sash.

10. Glaze with salvaged glass. If desired, or needed to meet current energy code, glass can be replaced with updated, double-pane insulating glass.







11. Mask sash for finish paint of customer choice.
12. Frame components (jamb, sill, parting bead, weight pocket, sash stops, brickmoulds) are secured and established. Frame components are repaired, restored and reproduced as needed through Dutchman, abatron (epoxy), wood hardener, or component replacement (VG fir material if component replacement is needed).
13. Scrape frames and millwork down to the first solid paint layer. Prep and paint frames.
14. Reinstall sash into original, restored frames. Sash hardware is cleaned and re-used whenever possible. (Matching hardware can be provided if the hardware cannot be salvaged.)
15. Perimeter sealant to frames exterior.

## ON-SITE RESTORATION PROCESS

1. Pull sash, catalog and board openings.
2. Repair frame and / or install new millwork if required.
3. Prime, mask and paint frame and millwork.
4. On-site glazing and sash repair is followed by the installation of the repaired sash.
5. Finish paint and perimeter sealant is applied.





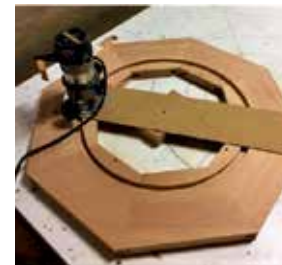
## REPLICATES

When original windows are damaged beyond repair, we can provide exact replicates of the originals. This allows home owners, architects, contractors and renovators to restore those windows that can be restored and maintain uniform, historically accurate appearance with replicates to replace severely damaged windows. Replicates are custom-made to exact specifications using vertical grain fir to blend flawlessly with existing windows.

Our replicate sash provide traditional design aesthetics, with options available to enhance energy efficiency. It's the most efficient, cost-effective way to restore beauty and function to buildings and homes with severely damaged vintage windows.

## REPRODUCTION

Whether you need architectural accents, jambs or mill work, Chosen can reproduce exact dimensions and profiles to match any existing window or door. We are "old school" when it comes to technique and skills for reproduction and re-glazing. We rely on the work of our skilled craftsman to produce reproductions to exact specifications while quality is never being overlooked. What makes our reproductions so valued is our attention to detail and end results that are crafted to stand the test of time.

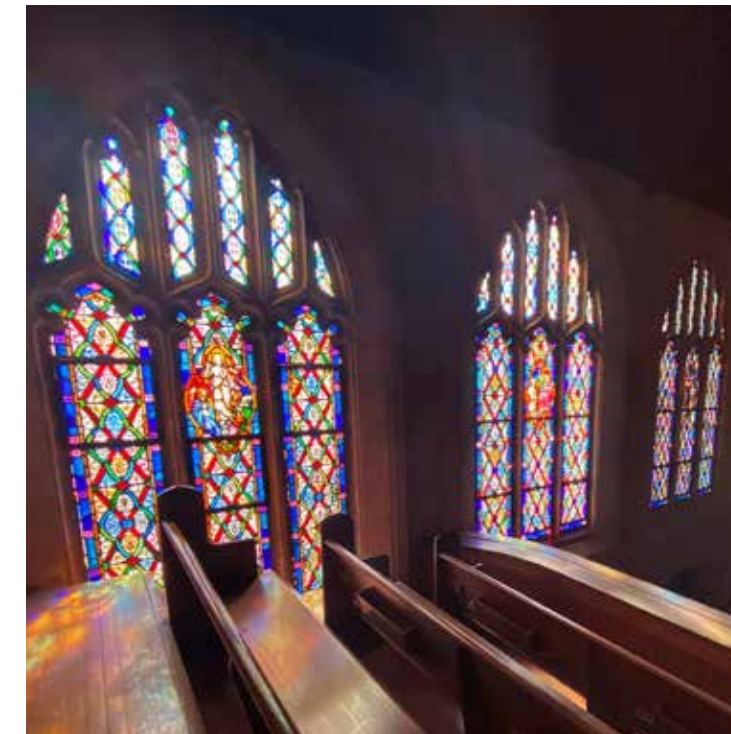
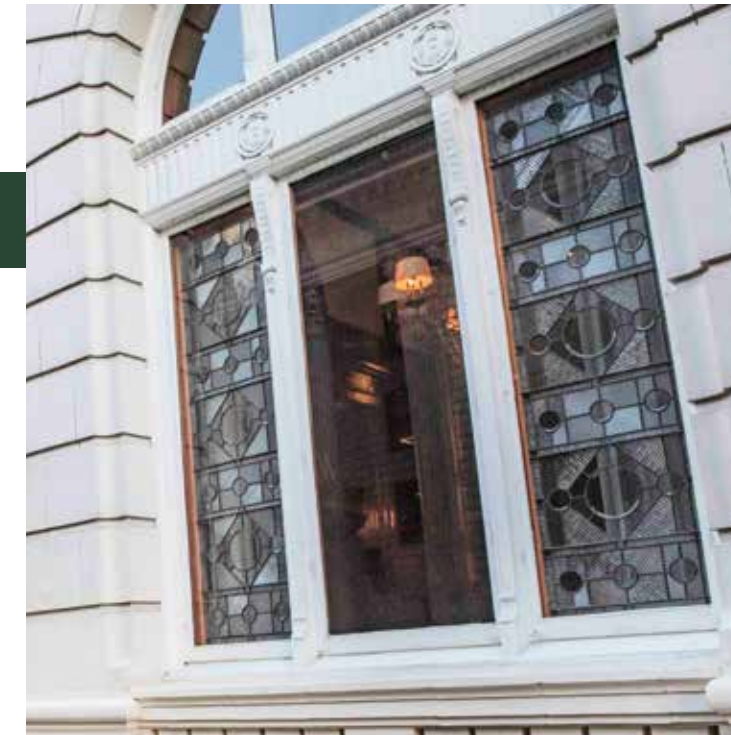


## REPAIRING AND REPLACING STAINED GLASS AND LEADED GLASS

With more than 20 years of experience, Chosen Wood Windows has the skills and expertise to restore your treasured stained glass and leaded glass windows to their former beauty. Our full-service repair and restoration includes basic frame repair, replacing leading and soldering, and glass matching. Our glass restoration services are available for homes, churches, municipal and commercial buildings. We also have methods to insulate stained and leaded glass windows to make them more energy efficient.

Our window and door repair and restoration process extends beyond sash, panels and mouldings. We are committed to restoring and preserving original glass whenever possible, including glass with lead or zinc caming and beautiful, colorful stained glass. Whether we replace the full leaded glass configuration or just a section of your stained glass, our experts will carefully remove the damaged areas and reassemble a stronger window with all of its original characteristics and beauty.

Even the finest stained and leaded glass windows deteriorate over time. We can replace the caming and missing glass, or replace only those areas with cracked or broken glass, while carefully matching replacement glass to the color and texture of the original. If necessary, we can completely reassemble the window to restore the original appearance. Your windows are then meticulously soldered and caulked for added strength.







## WINDOW UPGRADES

We recognize that, if given the option, building owners would rather keep their vintage windows than replace them. Vintage windows are made of long-lasting, quality materials that — with some TLC — add value and charm to the structure. Vintage windows were made with excellent old-growth fir or cedar that is no longer available for window production. These windows have weathered over a hundred years with very little dry rot. There is great value in keeping them. Most owners also love the wavy glass of vintage windows.

However, vintage windows do pose certain challenges:

- Loss of heat and cold drafts through leaky windows
- Single-pane windows that sweat and have little insulation power
- Water damage that leaks around and through glazing putty
- Loose, rattling windows that don't operate properly, or at all
- Noise intrusion from poorly weatherstripped or insulated sash

In the last decade, we have developed solutions to resolve the issues that hinder the performance of vintage windows. We are experts at applying these techniques to improve the energy performance of your windows.

### Increasing Energy Efficiency

The average building can lose as much as 30% of its heat or air conditioning energy through the windows. We understand how important it is not only to maintain your wood or vintage windows, but also to be as energy efficient as possible. We offer two great solutions to improve the energy efficiency of your windows: SLIP's and conversions. We also offer weatherstripping services!

### Weatherstripping

Weatherstripping is one of the most cost-effective ways to insulate. Weatherstripping reduces outside noise and tightens up loose window sash, which in turn keeps the cold air out in the winter and cool air inside during warm months. This helps maximize the energy use of air conditioning units.

## CONVERSIONS

Conversions are also an excellent option for those looking to get more insulating power from existing windows while maintaining the original millwork. This process involves the removal of the existing pane of glass and routing out the sash to accommodate a thicker, insulating glass configuration, with options for double- or triple-pane glass. The conversion process offers the advantage of insulating glass without changing the appearance or architectural personality of the original window, including the option of Low-E alternatives.







## SLIP™ — A REVOLUTION IN STORM-TYPE INSULATION

Now there's an energy-efficient alternative to replacing older windows. Adding SLIPs (Slim Line Insulating Panes) to your vintage wood windows improves energy efficiency, resulting in reduced energy use to heat or cool your home. SLIPs are designed to maintain the beauty of your original windows, while updating single-pane wood windows to modern standards. We developed an innovative and cost-effective way to add an additional pane to each sash, without removing or altering the original windows.

In terms of insulating power, SLIPs are similar to insulating glass conversions. With SLIPs, full functionality is maintained without having to alter your vintage glass. SLIPs ensure your window sash remain fully operable, without the need to open two sets of windows, as required with storm windows. SLIPs are highly effective, well designed and well-priced, offering superior value when compared to alternatives.

Based on the energy modeling that we did for the building, including live mockups, the study showed that the SLIPs were very close to the energy performance of the IGU option, and given the lower cost, the decision was made to go with the SLIP system. We are now three years into occupancy and have had no issues with the windows. The SLIPs are unobtrusive, allowing us to save hundreds of historic windows and still meet our stringent standards of energy performance that exceed Oregon State Code.

*George Bleekman, Owner's Representative, University of Oregon*

Storm windows can be a big, bulky hassle. SLIPs have a sleek look and feel, with a low profile that blend into the sash; you'll hardly know they are there (see before/after photo).

### SLIP Benefits

- Increased energy efficiency
- Reduced noise intrusion
- Far lower costs than window replacement
- Maintains original beauty and charm of existing windows
- Windows stay historically accurate while maintaining functional
- Solid, well-designed construction and material
- Tested and proven product

### SLIP Testing

With SLIPs, energy performance is improved without the time-intensive and expensive replacement process. In testing at the University of Oregon, adding a SLIP to an existing window was found to be essentially equivalent to replacing glazing with double-paned insulating glass:

- Double-pane replacement glazing, 28% reduction in U-Value
- SLIPs installed with existing windows, 26% reduction in U-Value



BEFORE



AFTER







## VALUE ENGINEERING

We work with project managers, renovators, builders and contractors whenever possible to offer solutions that both preserve original windows and offer value over more expensive window replacement. Value engineering can offer cost-effective options for projects while preserving historical integrity.

By analyzing the existing windows and identifying specific issues, value engineering allows for targeted repairs that can extend window lifespan at a fraction of the cost of full replacement. This approach respects the architectural heritage, maintaining the original character and materials, which is essential for historic preservation and compliance with preservation regulations. Ultimately, value engineering strikes a balance between functionality and heritage, making it a more sustainable and cost-effective option for preserving the aesthetic and historical value of these windows.

We have successfully offered value engineering options to original specification for several projects with outstanding results that have helped project managers stay on budget while maintaining the architectural integrity and functionality of the original windows.





## OUR PROJECTS



REDMOND CITY HALL



PORTLAND CITY HALL



JUSTICE BUILDING



ROOSEVELT HIGH SCHOOL



HOTEL VINTAGE



PINE STREET MARKET



THE BENSON



THE LODGE AT ST. EDWARD PARK





## CASE STUDY

### North Junior High School, Boise, Idaho Restoring a Valued Member of the Community

North Junior High School has been an important part of the Boise community since the first building was constructed in 1925. Over the decades, the school has been expanded numerous times. The original structure was built with steel windows.

The historic school was showing the characteristic signs of wear and tear that are expected as buildings age. And the original windows, as was typical in the early part of the twentieth century, did not provide the type of energy efficiency required to meet current codes.

The original plan called for complete replacement of the steel windows. When Chosen Wood Windows became aware of the project, they contacted the project managers with a plan to restore the windows on site. The on-site restoration proposal allowed for the building to stay in service while the work was completed.

The first phase of the restoration began in the summer of 2023. Chosen restored the frames, removed the existing glass, installed temporary glass, and painted the restored frames. New state-of-the-art, energy-efficient glass was ordered to complete the project and upgrade the performance of the windows. Chosen sourced a technologically advanced glass, Pilkington Spacia™ vacuum-insulated glazing, designed to yield a U-value that exceeds 0.30, and contributes to improved energy efficiency for the entire school.

## Advantages of Restoration over Replacement

Restoring original metal windows, like those at North Junior High School, offered several significant benefits compared to purchasing replacement windows.

**Preservation of Historic Character:** Restoration of the original metal windows allowed for the preservation of the building's historic character and architectural integrity. The windows are an integral part of its historical charm.

**Architectural Features:** Original metal windows in historic buildings often feature unique designs, profiles, and decorative elements that may be challenging to replicate with modern replacement windows. Restoring the existing windows allows these distinctive architectural features to be retained.

**Cost-Effectiveness:** Window restoration can be as much as 10 to 20 percent more cost-effective option than complete window replacement.

**Environmental Considerations:** Restoration reduces waste by preserving existing materials, preventing old windows from ending up in landfills. Additionally, manufacturing new windows consumes energy and resources, making restoration the sustainable choice

**Longevity:** Restored metal windows, when properly maintained, can have a lifespan comparable to or even longer than that of replacement windows. High-quality restoration work addresses corrosion, repairs damaged parts, and ensures window performance for decades to come.

Restoration of Steel Windows



## Restoration of Steel Windows

All work completed on site by Chosen Wood Windows Maintenance

Multi-Year Project

Date of Original Structure: 1925

Total Number of Restored Windows:  
296 windows, 517 sash

Energy Upgrade: State-of-the-art, energy efficient glass that fits into the existing window and meets local code requirements with 0.30 U-value





## SAFETY AND COMPLIANCE

In order to properly train and protect our workers, contracted employees, and the public from a health and safety standpoint, our restoration and repair program is focused on the EPA's Lead Renovation, Repair and Painting Program (40 CFR Part 745, Subpart E) and OSHA's 29 CFR 1926.62. Our program includes employing staff experienced at carpentry, painting, glazing, performing maintenance repairs and restoration.

Chosen Wood Window Maintenance is not a lead abatement contractor. However, we are capable of encapsulating lead paint and properly dispose of asbestos-containing glazing. Our lead management disposal plans comply with EPA and OSHA standards for all window restoration tasks both on-site and in-shop. Our team is trained to act according to EPA and OSHA guidelines.

As outlined in the OSHA 'Lead in Construction' document and the standard, areas of significance that our program includes are notes below:

1. Hazard determination, including exposure assessment
2. Medical surveillance and provision for medical removal
3. Job-specific compliance programs
4. Engineering and work practice controls
5. Respiratory protection
6. Protective clothing and equipment
7. Housekeeping
8. Hygiene facilities and practices
9. Signage
10. Employee information and training
11. Recordkeeping

We satisfy the OSHA regulations by providing training, PPE, and medical surveillance. With our program, we include exposure monitoring, blood lead testing, recordkeeping, and respiratory protection. The RRP checklist is utilized for pre-renovation and project set-up, and post-renovation cleaning, as appropriate for work practices and methods. Our Lead Management/Compliance Plan is detailed, comprehensive, and covers our work at Chosen Wood Window Maintenance.

Our compliance information can be reviewed in our Lead Management/Compliance Plan. The plan is designed for how we manage lead renovation and restoration projects, manage lead paint and debris, and manage our work practices, etc., whether the projects are limited in scope or more detailed. Compliance, safety, and customer satisfaction are our top priorities at Chosen Wood Window Maintenance.







## WHY CHOOSE CHOSEN WINDOWS

Chosen Wood Window Maintenance offers comprehensive historic window and door restoration services, including wood window restoration, steel window restoration, lead paint abatement, window installation, window finishing, hardware restoration and insulated glass conversion. Preserving and repairing your existing windows offers many benefits over replacement while maintaining the architectural integrity of your home or building in a cost-effective manner. Replacing original windows is often a poor economic and environmental decision. Many wood windows can be restored and upgraded to match the performance of standard replacement windows at a fraction of the expense of replacement. Chosen Wood Window Maintenance effectively addresses issues such as broken glass, sash malfunctions, wood deterioration, weathered sashes and sills, and paint accumulation, ensuring the transformation of your vintage window into a reliable, functional and energy-efficient asset. Let us take a look at your next project for a comprehensive evaluation.



# CHOSEN

WOOD WINDOW  
MAINTENANCE, INC.



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