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Historic Wood Windows

When replacing historic wood windows, manufacturers seek to reach a compromise, providing a visually similar version that offers energy efficiency and less maintenance.

PHOTOS COURTESY OF MARVIN

It is a well-known fact, certainly among preservationists, that every effort should be made to preserve historic wood windows when rehabilitating and/or renovating historic buildings, rather than replace them. While that is simply stated, it is not so simply done. Historic buildings come in all sizes and shapes in all types of climates, and so do their wood windows. Some are obviously repairable, others are more questionable.

Wood window companies such as Marvin Windows and Doors of Warroad, MN, a family-owned and operated company that's been making windows for more than 100 years, are always quick to follow the Secretary of the Interior's Standards for Rehabilitation and accompanying guidelines. These call for respecting the significance of the original materials and features and repairing and retaining the historic windows whenever possible. When that isn't possible, the choice is to replace them in kind. Following these standards not only results in a better quality historic window, but it also allows the design team to get historic tax credits, a very important factor when renovating and rehabilitating a building.

The two most important standards when considering windows are Number 6 and Number 9. Six states that repair rather replacement is the primary goal, while number 9 deals with compatibility when replacement becomes necessary.

Specifically, Standard 6 of the Secretary of the Interior's standards for rehabilitation states: *"Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence."*

And, Standard 9 reads as follows: *"New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment."*

While Standard 9 has created quite





a bit of controversy among preservationists – particularly about how ‘differentiated’ should be interpreted – it is generally agreed that the new additions, in this case windows, “shall be compatible....”

Various factors, including age and weather, contribute to window deterioration. While poor design, moisture, vandalism, insect attack, and lack of maintenance can contribute to window deterioration, moisture is the primary contributing factor in wood window decay.

Many windows can be saved, repaired and made more energy efficient with weather stripping to reduce air infiltration. The addition of storm windows – either interior or exterior – also improves the thermal performance of historic wood windows. Storm windows are cost effective, reversible and thermally efficient. And, most important, they allow the owners to retain the original windows.

Quite often, historic windows have been replaced by inferior models over the years, and in that case, it is always a good idea to replace these windows with new historically styled windows that fit the style and needs of that particular home or building. This is a big part of the window replacement market.

THE DECISION TO REPLACE

The more difficult decision, however, is whether or not to replace original historic windows. If the deterioration is so severe that the windows must be replaced, there are many considerations.

While every effort is made to duplicate the historic window, the new windows will never be exact copies of the originals. In fact, no new manufactured window is going to exactly replicate an original historic window. The ideal situation is for the manufacturer and preservationist and/or owner to work together to design a new historically styled window that meets today’s standards. The new window will replicate the original as much as possible but it will be more energy efficient and will require less maintenance. It always a bit of a compromise.

Marvin, for example, seeks to fill the openings correctly, to get the glass tint correct, to get the meeting rails correct and to follow the original proportions. They make sure that the mullions and muntins are correct and they also follow the original brick mold – the distance between the edge of the masonry and the glass, and how those come together.

The window manufacturer also often consults with John Sandor of the National Park Service, an architectural historian and

an expert on historic preservation and historic windows, for direction and advice when making replacement historic windows.

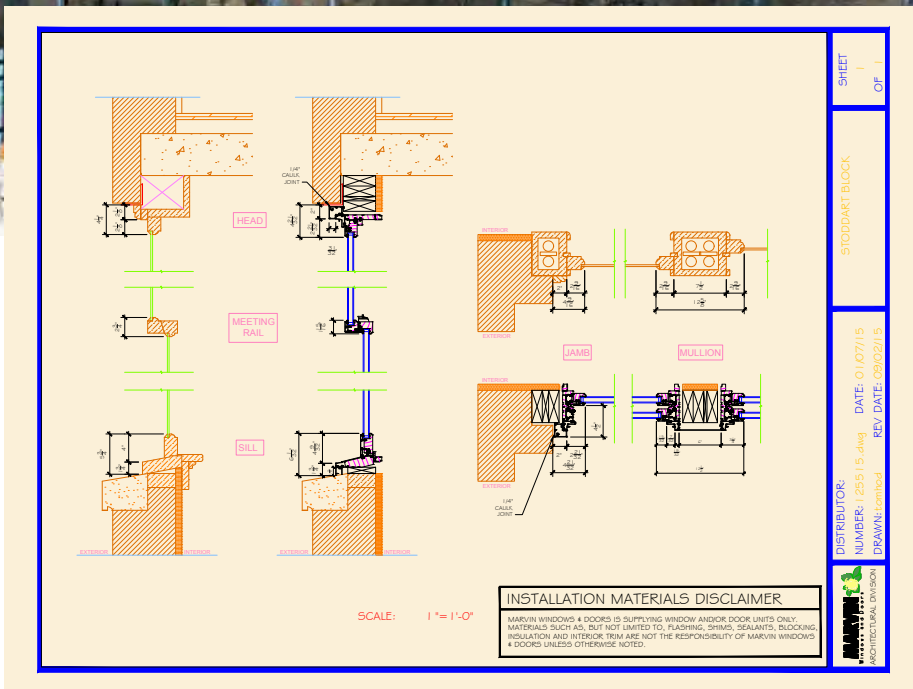
LEARNING ABOUT HISTORIC WINDOWS

Proportionality and the general shape of brick mold casings and sills for historic windows, particularly replacement windows, are key to making the difference on a project. Heightened awareness of proportionality should be considered through planning and conversations.

One way to learn about proportionality is to go to a big box store and take a new window and put it next to 100-year old window and look at the parts. It is important to note the glass striations - does it reflect? In addition, the paint on the old window will be dull while the new one has a sheen. The new window will have an aluminum piece that holds the screen in place, a feature not found on 100-year-old windows.

Continuing the comparison, the new window is a square box with no details, while the old 100-year-old window has moldings and a casing. Windows from 1875 to 1940 all had a similar profile; new windows don’t have that. The designers at

RIGHT: Macalester College's Old Main;
BELOW: Color-coded AutoCAD drawing



ties. They put a drawing of an old 1870s window, showing the frame, sash, everything, next to a new window solution. This comparative detail presentation allows the designer and the manufacturer to dissect each detail, and to make appropriate compromises. The result is a close replication. When designers and architects see the details, they understand the differences and are able to make compromises when necessary.

Funding is often an important consideration. The owner, architect and window supplier often have different goals. For example, the standards and historic tax credits are a voluntary program. If a tax credit is desired, certain rules have to be followed. An owner has goals, the design team has goals, the historic review board has goals and window manufacturers have to find the compromise where everybody is happy.

Marvin stresses that it's important to know the various goals early in the project. That way, they can help everyone achieve their goals and find the appropriate solution.

Marvin find a way to as closely as possible replicate those details, while also providing a window that requires less maintenance and is more energy efficient. The main goal, however, is to provide a window that is compatible with the historic building or home, one that closely aligns in appearance and performance to the original historic window.

Standards number 6 and 9 from the National Park Service are critical. Number 9 says that the new addition has to be compatible and doesn't change the character of

the property. Beautiful old buildings often feature ornate brick moldings and windows, and those should always be repaired and sometimes replicated.

Another consideration is shadow lines. When the opening is 12-in. deep, for example, it's important to place the window correctly. To maintain the shadow lines, the new window should be positioned in the same place as the old one.

Marvin uses color-coded autocad drawings to show designers the various possibili-

SOME SPECIFICS

The windows can also be clad, if that is desired. The advantage of wood clad windows is less maintenance is required. They don't need to be painted for several decades, the advantage of non-clad wood windows is that it is easier to create custom replication profiles for casings, stiles and rails and so forth. And, it is also easier to change the building's exterior color scheme, if that should become a goal.

The average time for a historic window project is two years, longer if the client is looking to get a tax credit. It is always a good idea to get the window manufacturer or consultant involved as early as possible, especially with historic windows. They can provide valuable advice and guidelines.

Marvin focuses a great deal of attention on historic windows. It is a passion for the company, and an area of vast experience.

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Savannah Law School
in Savannah, GA



RECENT PROJECTS

A typical recent project that involved replicating historic windows was the Savannah Law School in Savannah, GA. The adaptive reuse project converted the 1819 Old Candler Hospital Complex, an abandoned building in a state of disrepair, into the Savannah Law School, a branch of Atlanta's John Marshall Law School.

The three-year project included restoration of the interior and exterior and the demolition of a wing that had been added in 1968, revealing the original façade. The project also involved the replacement of the entry porch, the cornice and a cupola.

Working with Lynch Associates Architects of Savannah, Marvin replaced all

exterior windows, lintels and sills. Each of the approximately 100 windows was individually measured and custom made to fit the masonry openings and each incorporates single-pane glass and true divided lites to replicate the original windows. Sills and subsills are made of mahogany to withstand the heat and humidity of the Savannah climate.

The new windows were Marvin's Wood Ultimate Double-Hung Magnum, Wood Ultimate Double Hung, single glaze with authentic divided lites and 7/8-in. muntins.

On the ground floor arcade under the front porch, the openings were re-established and recessed windows with frosted

glass were installed. All work, including repair and replacement of historic features, complied the Secretary of the Interior's Standards for Rehabilitation.

Another typical historic window replication project was the Crane Building in St. Paul, MN, where the State Historical Preservation Office (SHPO) required that the lower level windows be repaired while allowing new clad windows in the upper floors. These new windows were to match the originals.

Another St. Paul historic preservation project involving replicated windows was Macalester College's Old Main. The program called for clad windows replacing wood units (Photos on pg 3).



OUR HISTORY MAKES US UNIQUELY QUALIFIED TO HANDLE YOUR PIECE OF HISTORY.

MARVIN HISTORIC

What's the Marvin difference? It's a passion for the smallest detail. Accuracy of historical replications. Local experts, providing unparalleled architectural support. The ability to produce rapid prototypes. Creating concept to completion one-of-a-kind solutions. And Decades of historical project experience. All of this makes Marvin Historic the name to trust for your next historic renovation project. **Start your project by visiting [MarvinWindows.Com/Historic](https://www.marvin.com/historic).**

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