WINDOWS

Windows are an important character-defining feature of a building. The size, style, placement and architectural detailing of and around windows all affect a building's character. Windows, like doors, are typically subjected to weathering and require regular maintenance. Windows are comprised of many parts such as frames, sash, muntins, sills, heads, moldings and shutters.

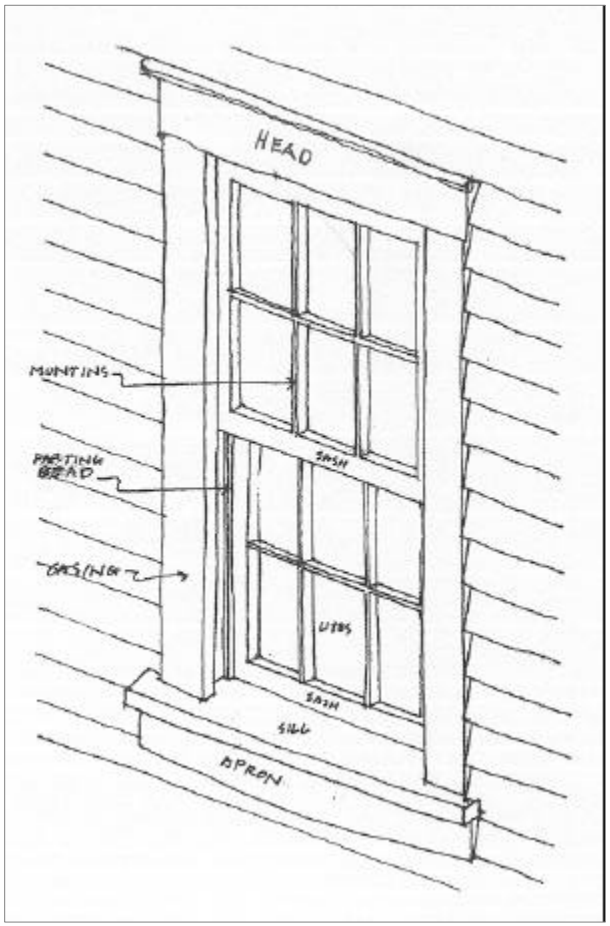
The first step in any window repair project is to conduct a survey of the existing windows. Systematically look at each window and determine the condition of each part. Things to look for include:

- Peeling paint.
- Rotten wood.
- Broken glass.
- Glazing (putty) intact.
- Broken or missing hardware.
- Deteriorated or missing molding.
- Smoothness of window operation.

Survey results may indicate that the windows are in better condition than initially thought and may require only minor repairs and painting as opposed to wholesale replacement. For example, the operation of a window may dramatically improve by simply replacing the worn sash rope with new rope. Unless a house was severely neglected it would be unusual to find that all of the windows are beyond repair. Sometimes the windows on one side have suffered more than others. Attic windows sometimes hold clues about a property's historic window design, as these windows are often not renovated. Understanding the condition of all the windows, and using a comprehensive approach to window repair will allow one to price out different repair options and find the best long-term solution.

Value of Original Materials

Older wood windows are often a better grade material and construction than what is available economically today. Mid 19th century or early 20th century windows have survived over 100 years, a life expectancy that cannot be matched with modern windows. With proper maintenance and repair, older wood windows may last another 100 years. In addition, the mechanisms and hardware in older windows are often mechanically simpler and repairable, as opposed to the type of balances in new windows.



Above: The parts of a double-hung window.

Repair and Rehabilitation

The standard argument for replacement windows is that "the old windows are drafty," yet the heat loss attributed to old windows occurs more often through parts that have loosened over time rather than through the glass itself. Windows are typically responsible for only 15 to 35 percent of a building's total heat loss in winter.

Left: The exterior aluminum storm on this window is barely discernable and does not detract from the two-over-two window configuration. Character-defining features like the lintel above the window are important to repair and retain.

Left: Maintaining or replicating the original exterior wooden storms is an appropriate design solution for older windows. Storms should match the configuration of the windows as in the case of the window pictured to the left.

Generally, windows can be restored to good working condition and improved energy efficiency by making the following repairs:

- Replace and/or install weather-stripping.
- Replace deteriorated glazing compound or putty that seals the joint between the glass and the muntin.
- Apply caulking (sealant) to fill cracks around exterior window opening and the casing, head and sill.

Another possible solution for addressing heat loss is the use of storm windows. Storm windows may be used on the exterior or the interior of a property. Although exterior storms may compromise the visual appearance of a building's exterior, storm windows are a suitable option because they are not permanent and may be removed without permanently altering the historic building.

Newer versions of storm windows are available in anodized aluminum colors and in a narrower profile (as opposed to the old triple track storms). Storm windows can also be painted the same color as the sash to minimize their visual impact on historic features.

Window Replacement

One rule of thumb for evaluating window conditions is that when a window sash has more than two broken parts, such as a broken tongue and groove corner joint and broken muntins, it is time to consider replacement. Otherwise, any good woodworker can repair a sash with minor breaks. Old counterbalanced sash are very simple in their design. Window sash are made to be taken apart for repair, as well as to glide easily when maintained.

In most cases when a window is in poor condition, only the sash needs replacement and the frames, sills and trim can be simply repaired using common methods. Sash replacement is often the most cost-effective solution compared to complete window replacement and is recommended because it can be accomplished without adversely changing the building's appearance. The original exterior trim or surround (often a character-defining feature), original sightlines, and original building material can all be maintained.

Above: Decorative trim (surrounds) around the window is an important character-defining feature to maintain whether or not the sash needs to be replaced.

For replacement windows, the first and best option to maintain historic character is to look for a replacement in kind – a window that matches the size, material, muntin configuration, and detail of the existing window. One option is to look to local salvage yards for old sash that match the existing windows. These often will have the old wavy glass, known as cylinder glass, and will most closely replicate the original window sash in detail and species. They can be rehabilitated to make a fine replacement window. Depending on the age of the window, more likely than not the New England sash would have been made out of eastern white pine. These windows have milled joinery and are made of solid stock, a far superior product and technique than commonly available today in even the best commercial wood windows.

The other option is to work with a millwork shop to create a new in-kind wood window sash. If it is necessary to replace multiple windows, the set-up cost for the muntin and sash profile knives (cutters) is offset when buying larger quantities. You can also explore options of double glazing each pane. Some glass manufacturers make restoration glass, which is similar to the cylinder glass. In a few cases, contractors and local glass companies will go so far as to stockpile old sash in order to salvage the old glass for reuse. This could be reused in other old sash or in new sash if the choice is made to stay with single glazing.

In some cases, commercial window manufacturers are able to take almost any of their standard products and customize them as replacement sash. They can route a pocket in the sash edge for the counterbalance sash line to fit. In some cases a double-insulated sash from one of these manufacturers can be installed in the original opening. This is ideal in that it doesn't require a carpenter to tear out the frame or do any special refurbishing of the frame (short of attaching new sash line to old counterbalances and then to the new sash). A successful replacement sash should not reduce or expand the original opening size. Complete replacement might be either an entire new window unit (frames, sash and trim), or a new window unit (frames and sash but no trim) set within the existing frames and trim (known as "frame-in-frame").

The predominant window form in Brunswick is wood, double-hung with multi-lights in both sash. The term six-over-six or two-over-two is used in reference to double-hung sash to describe the number of panes of glass in each sash. Decorative windows like three-part windows and fanlights are also common.

GUIDELINES:

1. Every reasonable effort should be made to maintain and preserve a property's historic windows.

2. Every reasonable effort shall be made to repair the existing windows. Repairs should be made with as little change as possible by patching, piecing-in, splicing, consolidating or otherwise reinforcing the deteriorating material using the same material as the existing window.

3. If it is necessary to replace any section of a window, the replacement should be made from the same material as the original and should match the original in size, scale, shape, and detail. Any details, such as glazing pattern, and window surround molding should be duplicated in the replacement.

4. As a last resort, alternate materials, such as aluminum or vinyl clad wood windows, or vinyl windows may be acceptable for replacement sash (not frame in frame), as long as they match the historic window configuration. Removal of original windows and sash is not reversible.

5. Original window openings should not be altered to accommodate stock sizes. Snap-in muntins should not be used as a substitute for true or simulated divided light windows.

6. Existing windows should not be blocked-in.

7. Storm windows should be attached so that existing windows and frames are not damaged. If possible, exterior storms should be painted to match the color of the existing windows. Interior storms are another option.

8. Original shutters should be repaired and maintained.

9. If it is necessary to replace any section of a shutter, the replacement should be made from the same material as the original and should match the original in size, scale, shape and detail.

10. Shutters should not be introduced where there is no evidence that they ever existed.

Right: Double-hung, wood windows are common throughout the district. Typical glazing configurations are: six-over-six (as pictured here); four-over-four and two-over-two.