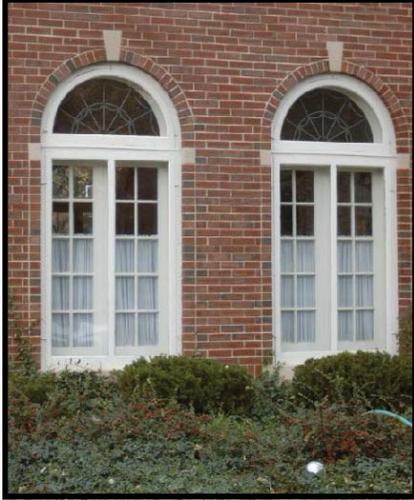


2.8 Windows:

Windows, Awnings, Shutters and Other Window Components



Original windows contribute to the defining architectural character of a structure. With proper maintenance the original windows will last indefinitely. Original windows can be economically retrofitted for greater energy efficiency.

The St. Charles Historic Preservation Commission recommends the retention and repair of original windows wherever possible. It is the opinion of the Commission that repair and weatherization of existing windows is more practical than most people, including contractors, realize; and that many windows are unnecessarily replaced. This is primarily due to the lack of awareness of the techniques for evaluation, repair, and weatherization. Windows which are repaired and properly maintained will have greatly extended serviceability, while continuing to contribute to the historic character of the building. Thus, an important element of a building's significance will have been preserved for the future.

Assessing Architectural or Historical Significance of Windows

The first step in planning for any window project is to determine how a window contribute to the architectural significance of a structure. There are four important basic window functions to be considered:

Windows:

- ◆ Admit light
- ◆ Provide ventilation
- ◆ Create a visual link to the outside world
- ◆ Enhance the appearance of a building

Windows are significant to a building if they:

- ◆ Are original to the building
- ◆ Reflect period or regional styles or construction practices
- ◆ Reflect the original design intent for the building
- ◆ Reflect changes to the building resulting from major periods or events
- ◆ Are examples of exceptional craftsmanship or design

Recommended

- ✓ Retain the number, location, size or glazing pattern of the windows, by abstaining from cutting new openings, blocking-in windows, or installing a replacement sash which does not fit the historic window opening.
- ✓ Maintain the historic material of the window such as wood, iron, cast iron, and bronze.

Not Recommended

- ❑ Changing the historic appearance of windows through the use of inappropriate designs, materials, finishes, or colors which radically change the sash, depth of reveal, muntin configuration, reflectivity/color of the glazing, or the appearance of the frame.
- ❑ Obscuring historic window trim with metal or other substitute material.

Energy Efficiency in Windows

Many older buildings have inherent energy saving qualities and were designed and built with a well developed sense of physical comfort. Their design maximized the natural sources of heating, lighting and ventilation.

Energy efficiency and longevity are both factors to be considered when window repair or replacement is contemplated. Destruction of historic windows in the name of energy efficiency could result in the irreplaceable loss of significant architectural elements. An original wood window with proper maintenance and a high quality storm added can thermally out perform a new double glazed metal window, while maintaining architectural integrity. Historic windows have lasted for perhaps 100 years or more and with proper maintenance can last indefinitely. New windows typically have a 10-20 year warranty and would not necessarily be a long-lasting alternative.

Recommended

- ✓ Use contemporary weather-stripping as an integral part of the repair process for windows.
- ✓ The use of sash locks to maintain a weather-tight seal.
- ✓ Use interior shutters, interior blinds, curtains and drapes, or exterior awnings to minimize the heat gain or loss from windows.
- ✓ Use exterior storm windows because they are thermally efficient, cost-effective, reversible, and allow the retention of original windows.
- ✓ Use wood storm window frames to maintain architectural integrity. Other material such as colored aluminum and vinyl may be considered acceptable alternatives.

Not Recommended

- ❑ Replacing windows rather than maintaining the original.
- ❑ Installing exterior roll-down shutters.
- ❑ Installing a fastened sheet of plastic as an alternative to a storm window.

Points to Consider

Use caution when utilizing an interior storm window system, which is an attractive option for achieving double glazing with minimal visual impact. Moisture becomes trapped between the layers of glazing and can condense on the colder, older prime window, potentially leading to deterioration. If utilized, create a seal on the interior storm while allowing some ventilation around the prime window.

Note:

Energy Conservation for the entire building is discussed further in Section 3.3 of the Design Guidelines.

Window Repair and Maintenance

Generally, actions necessary to return a window to "like new" condition will fall into 3 broad categories.

- ◆ Routine maintenance procedures
- ◆ Structural stabilization
- ◆ Parts replacement

Before undertaking any repairs, all sources of moisture penetration must be identified and eliminated. All existing decay and fungi needs to be eliminated by the use of available commercial fungicides and wood preservatives.

Routine maintenance and weatherization measures are generally do-it-yourself tasks. Further repairs often require a professional contractor. Replacement of windows should be considered only as a last resort.

Routine maintenance usually will include:

- ◆ Some degree of interior or exterior paint removal
- ◆ Removal and repair of sash (including re-glazing when necessary)
- ◆ Repairs to the frame
- ◆ Weather-stripping and reinstalling of the sash
- ◆ Repainting

Stabilization: Partially decayed wood can be waterproofed, patched, built-up, or consolidated and then painted to achieve a sound condition, good appearance, and greatly extended life. Wood may also be strengthened using semi-rigid epoxies.

- ◆ Dry the wood
- ◆ Treat decayed areas with a fungicide
- ◆ Apply appropriate wood preservative - *Wood Preservative Recipe : 1 part boiled linseed oil to 1 part mineral spirits. Apply 2 or 3 applications to damaged, weathered wood. Wait 24 hours between applications.*
- ◆ Fill cracks and holes with putty
- ◆ After a "skin" forms on putty, prime and paint the surface

Parts Replacement: When parts of the frame or sash are so badly deteriorated that they cannot be stabilized, there are methods which permit the retention of some of the existing or original fabric. These methods may involve replacing deteriorated parts with matching pieces or splicing new wood into existing members. If extensive replacement of parts is necessary and the job becomes technically prohibitive, it may be more practical to purchase new sashes which can be installed into the existing frames.

The decision process for selecting replacement windows should not begin with a survey of contemporary window products which are available as replacements, but should begin with a look at the windows being replaced. Utilize the following characteristics:

- ◆ The pattern of the openings and their size
- ◆ Proportions of the frame and sash
- ◆ Configuration of window panes
- ◆ Muntin profiles
- ◆ Type of wood
- ◆ Paint color
- ◆ Characteristics of the glass
- ◆ Associated details such as arched tops, hoods, or other decorative elements

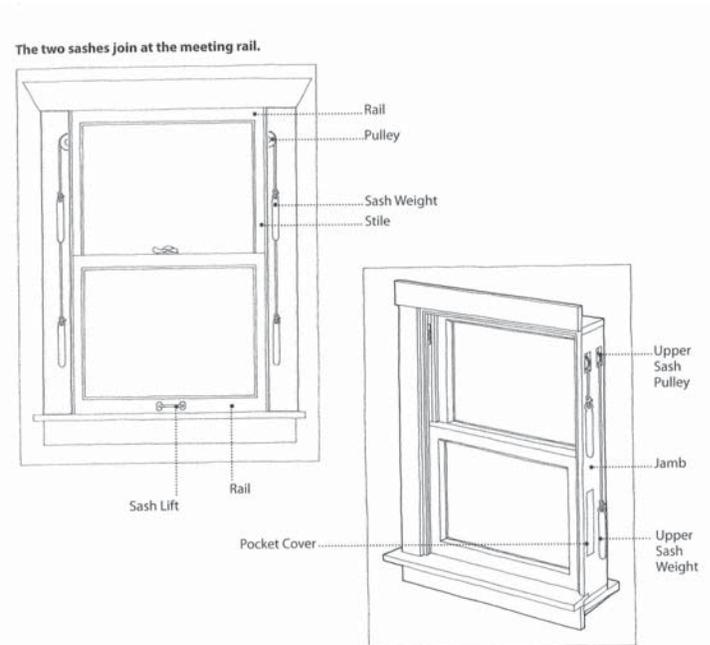
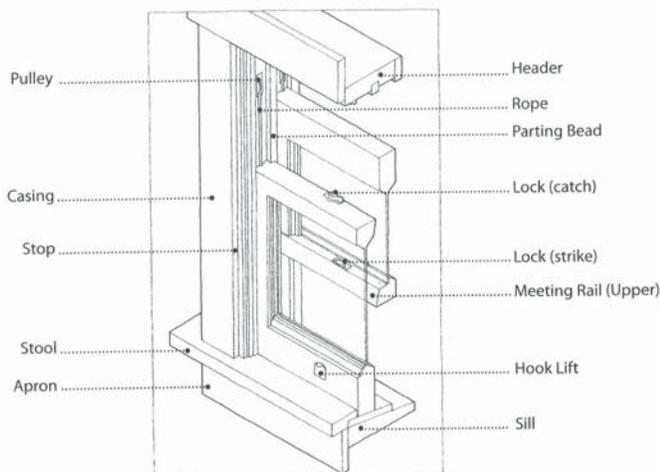
Recommended

- ✓ Protecting and maintaining the wood and architectural metal which comprise the window frame, sash, muntins, and surrounds through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.
- ✓ Repairing window frames and sash by patching, splicing, consolidating or otherwise reinforcing. Such repair may also include replacement in kind of those parts that are either extensively deteriorated or are missing when there are surviving prototypes such as architraves, hoodmolds, sash, sills, and interior or exterior shutters and blinds.
- ✓ Replacing in kind an entire window that is too deteriorated to repair- if the overall form and detailing are still evident- using the physical evidence to guide the new work. If using the same kind of material is not technically feasible, then a compatible substitute material may be considered.

Not Recommended

- ❑ Replacing an entire window when repair of materials and limited replacement of deteriorated or missing parts are appropriate.
- ❑ Failing to reuse serviceable window hardware such as brass lifts and sash locks.

Components of a Double-Hung Window



Double-Hung Windows and Divided-Light Configurations



6-over-6 lights with stone lintel and sill



Rounded arch top
1-over-1 lights



2 over 2 lights
in a shed dormer



8-over-8 lights
with shutters



Double 6-over-1 lights



4-over-1 lights
flanked by 3-over-1

Casement Windows



Window Shutters

Before it was common (in the 1850's) to install storm windows and screens, window shutters were often used to provide interior shading in the summer and to protect windows during storms.

With the advent of air conditioning, window shutters are more ornamental in design than practical. Over the years many original window shutters have been removed. Original shutters should be preserved and maintained. The addition of new shutters should only be of wood, of louvered or paneled design, and with dimensions which match the window opening.



Appropriate historic shutters. Each shutter is 1/2 of the window opening and the original hardware is attached to the window frame.

Recommended

- ✓ Shutters which are original to the dwelling should be preserved and maintained.
- ✓ Construction of louvered or wood panels shutters should fit the window openings so that if they closed they would cover the window opening.
- ✓ Shutters should be attached to or overlap the window casing and should not be attached only to the wall adjacent to the casing.

Not Recommended

- ❑ Adding shutters unless there is physical or photographic evidence that the dwelling originally had them.
- ❑ Constructing shutters from vinyl or aluminum are not appropriate. These shutters generally have dimensions or textures which are not compatible with historic dwellings.
- ❑ Adding shutters of the wrong size or proportion, or adding shutters to a multiple-window unit.

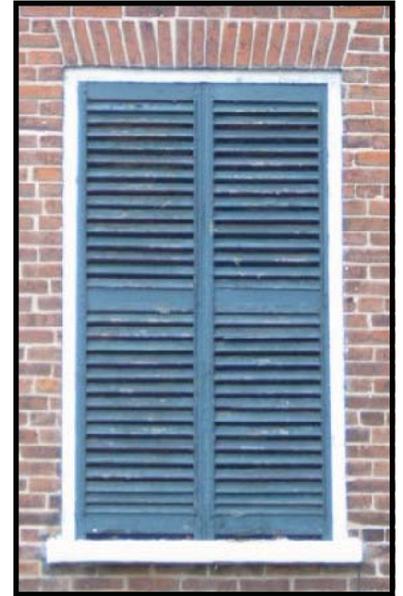
Other Window Shutter Options



Cut-out designs within the shutter can be original, but it is important to stay consistent if replacements are needed.



Three-panel shutters matched to the window configuration and attached over the casing.



Shutters used when a window is removed or to add a false window for symmetry.

Common mistakes with Window Shutters



Shutters used with multiple window units are out of proportion. For aesthetic appeal, appropriate sized casing can be used around the windows.



Shutters that are too tall, or alternately, too short, for the window opening.



Shutters were not typically installed on fixed picture windows. If installed, each shutter should be 1/2 of the window opening size.

Storm Windows and Screens

Storm windows are acceptable for historic dwellings and can assist in lowering energy costs.

Recommended

- ✓ Retain and preserve original wood or metal storm windows.
- ✓ Storms and screens should be sized correctly to fit the window opening, including round arched windows.
- ✓ Storm windows should be full-view style, or have the central meeting rail location match that of the window behind it.
- ✓ Storm windows with built-in lower screens are acceptable.
- ✓ Dark anodized aluminum or baked enamel are preferred over raw aluminum. Raw aluminum is acceptable if painted to match the window sash.

Not Recommended

- ❑ Fitting a squared-top storm window on an arched-top window.
- ❑ Screens that overlap the frames.
- ❑ Window security bars, if necessary, which are readily visible from the street.
- ❑ Shiny, raw aluminum material for storm windows or screen frames



Wood storm window with a central meeting rail matching the window.



Arched-top storm window matched to the window.



Appropriate wood storm on a casement window.

Decorative Glass

St. Charles' dwellings display a variety of decorative historic windows including materials such as art glass, beveled glass, leaded glass, and etched glass. These windows should be retained and repaired to match the original design. Decorative windows should not be removed or concealed.

Recommended

- ✓ Windows which are original should be preserved in their original location, size, and design and with their original materials and glass pattern.
- ✓ Should be repaired rather than replaced. Consultation with a glass specialist is recommended when extensive repairs are needed.
- ✓ Decorative glass windows which are not original should not be added to primary or secondary facades where readily visible from public right of way.
- ✓ Hang or secure decorative glass frames on interior side of original existing windows
- ✓ Use a custom fitted wood storm window on the exterior to protect the window.



Decorative glass windows are commonly found in transoms above entry doors or in a transom panel above a picture window.

It is not unusual for a house to have more than one decorative window. Each may have its own unique design or pattern.

Awnings

Canvas awnings were often applied to windows, doors, and porches to provide shade during the summer. Awnings fell out of favor following the introduction of air-conditioning. However, in recent years the popularity of awnings has increased due to their attractiveness and energy savings. The application of canvas awnings is appropriate for St. Charles' historic dwellings.

Awnings may not be appropriate for all window locations, such as a shaded north side. If you are considering adding awnings to your older house, avoid using modern, metal awnings, since they bear little resemblance to historic canvas awnings. Select an awning style that is appropriate for your older house.

Recommended

- ✓ Install in traditional locations such as over windows and doors or attached to porches.
- ✓ Utilize canvas, or similar woven material to fit the opening to which they are applied. Rectangular window and door openings should have straight across shed type awnings. Arched windows should have curved forms.

Not Recommended

- ❑ Installing awnings which cover or conceal significant architectural details such as window hood molding.
- ❑ Installing awnings improperly which causes damage to original details and materials.



If using awnings, be sure to use a material made of woven fabric like canvas. The use of vinyl, aluminum or metal awnings on a older residential building is not appropriate. Be sure to not to cover up any decorative windows or other significant decorative features when using awnings.

