

Do Your Windows Need Attention? Do You Know What To Look For?

One of the primary goals at Stained Glass Resources is education. A basic understanding of stained glass design and fabrication is essential to determine the proper treatment for your windows. In order to accomplish this, we provide you with information about the materials, methods and artistry involved in the craft of stained glass. When you understand these, the correct decision for insuring the continued life of your windows becomes clear. We hope these descriptions and photos of a few common conditions that occur in older stained glass windows will help you recognize the early warning signs of deterioration, before irreparable damage is done. We believe that knowing *when* to call is almost as important as knowing *whom* to call.

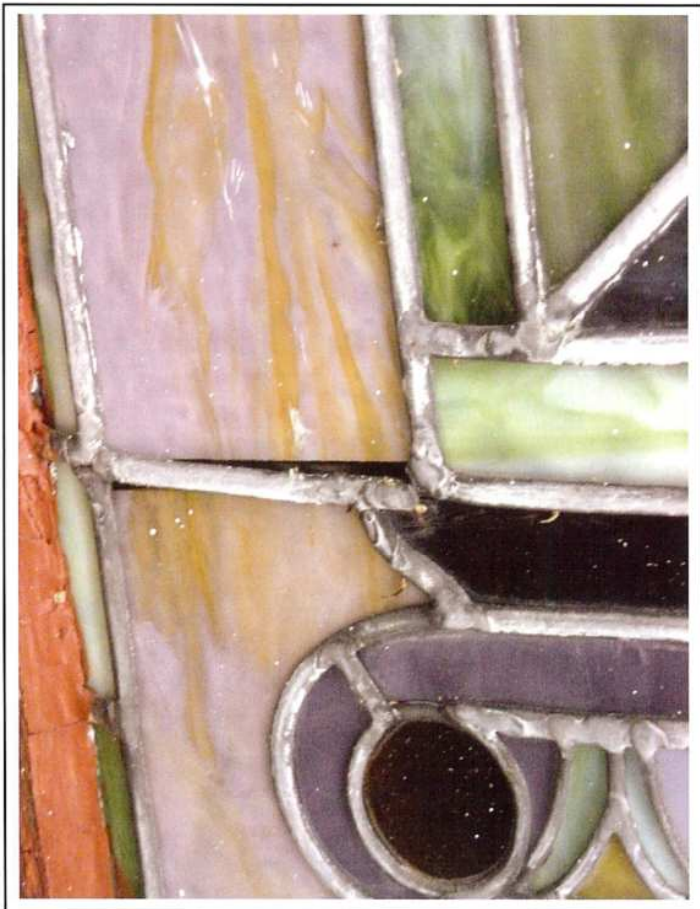
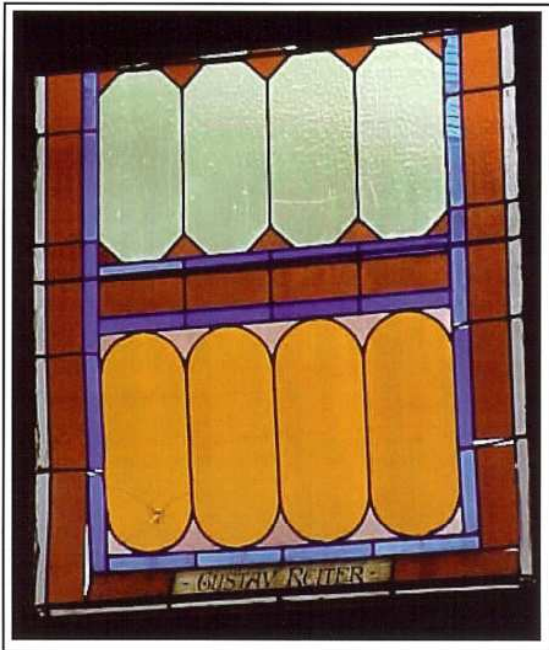
The Three B's

Are your windows bowing, buckling or bulging? This is known as planar deflection and is an indication that the lead channel, which is the primary structural support system of the window, is deteriorating. Depending upon its alloy composition, lead has a service life of 75 to 100 years. If your windows are nearing this age, it is time to call and request a window survey and condition report. If the deflection is allowed to progress, the window will migrate downward, tear away from the support bars and, eventually glass will break as a result of this stress. All three of these photographs show windows that have been allowed to deteriorate to the point of structural failure. Responsible maintenance calls for intervention before this level of deterioration occurs. The panel in the upper right photo is just starting to deflect from its original vertical plane. The stained glass window in the lower left corner has severe deflection to the point of structural failure of the lead. The panel in the lower right corner has a severe buckle, and has completely detached from one of its horizontal steel support bars. All of these panels are in need of restoration.



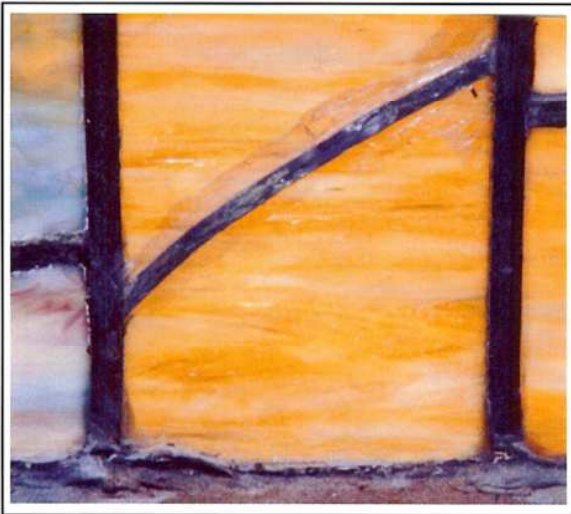
Daylight Leaks

An easy condition to spot is the appearance of light leaks between the glass and the lead. This is an indication that the lead has aged and stretched over time and is allowing the glass to displace from the lead channel. This condition can quickly result in the loss of the most important part of the window – the stained glass. It can also endanger people walking or sitting near the window. The window on the upper left has relatively small, but clearly visible light leaks. A good rule of thumb is that if the edge of the glass is visible (as in the lower left photo), the window needs attention immediately. The window below on the right has suffered complete structural failure. The top-most section (peak) has torn loose from its steel reinforcing bars and the entire top panel has fallen down between the stained glass and the exterior protective overglaze. The inset photo is a view of the same window from the interior. The overglaze actually saved this panel from being completely destroyed.



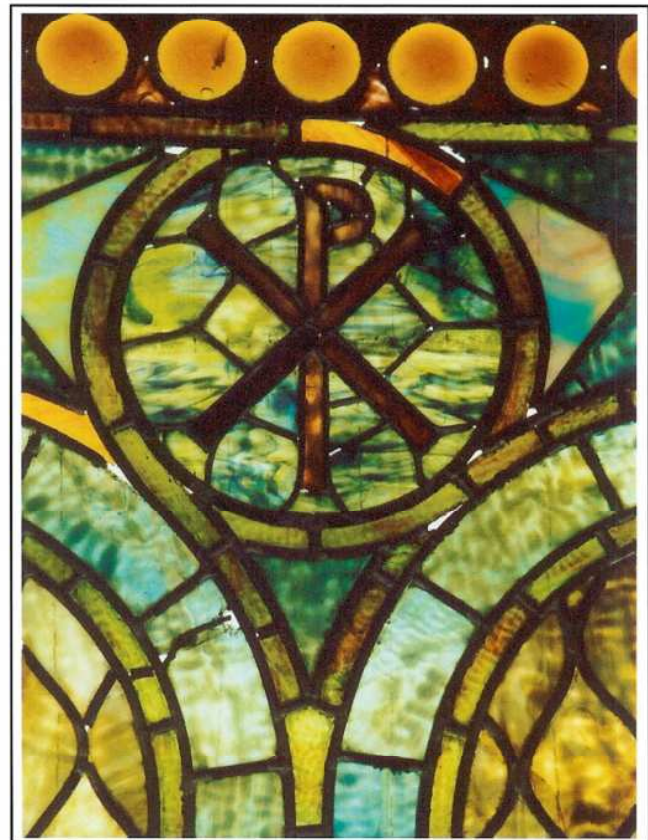
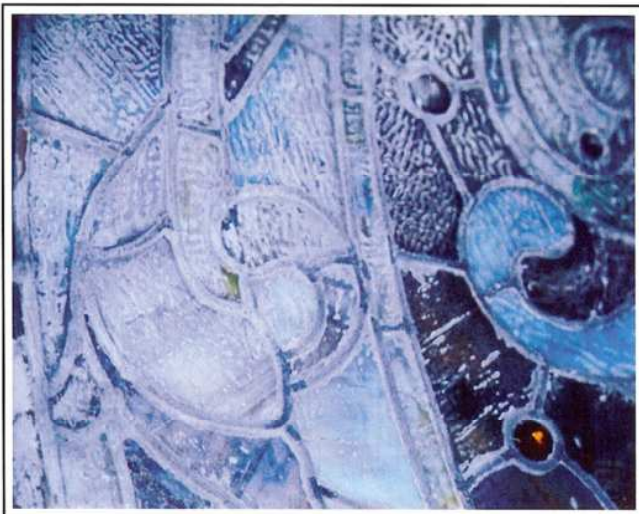
Improper Treatments and Unqualified Practitioners

When a stained glass window is between 75 and 100 years old, it is at the point of requiring restoration by complete releading. Because releading is an expensive proposition, many studios offer "alternative" treatments such as recementing or cleaning in place, flattening or reducing bulges, adding support bars, installing exterior protective glazing, applying fake leads over cracks, and other so-called repair or stabilization programs. These treatments will only serve to damage your windows, cosmetically or structurally. In a very short time, you will then be faced with spending additional money on a proper restoration. Honest and qualified craftsmen do not propose such short-term, wasteful remedies. None of these short-term cosmetics deals with the inevitable fact that, after 75 to 100 years, the lead requires replacement. Complete lead replacement is the only method by which you can successfully resolve all of the aging problems and conditions that occur in a stained glass window. It is the only responsible remedy when treating anything other than vandalism repair or spot damage from storms, etc. When the time comes to consider restoration of your stained glass windows, be diligent in choosing a qualified and responsible restoration studio in order to be assured of the highest quality craftsmanship. This effort will result in another 75 to 100 years of maintenance-free service life for your stained glass windows.



Left: Broken glass has been smeared with silicone caulk and a fake lead laid on top of the glass break.

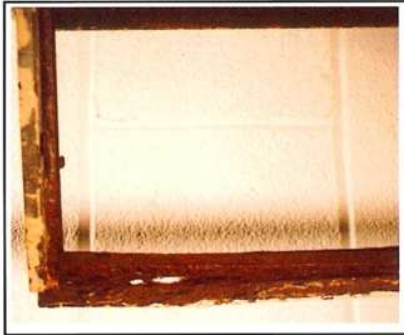
Below: This window was cemented in place and could not be properly cleaned or inspected. In some areas the glass is entirely obscured by the gray cement compound.



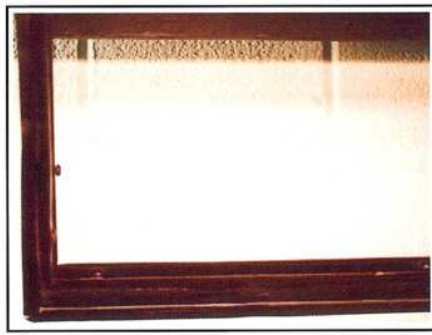
Above: Although complete lead replacement was properly prescribed for this window, the restoration studio was not closely examined. The poor quality of this work is hard to believe. Lead miters are non-existent, the soldering is not completed, holes from broken glass are left gaping, and it appears that no glass was cleaned. This window was severely damaged by a misguided, unskilled craftsman. Again, knowing **when** to call and knowing **whom** to call will both dramatically affect the life of your windows.

Inoperable Ventilators

The ventilator is both a structural and mechanical part of a window, and should not be overlooked in a thorough stained glass analysis. There are several common causes for poorly operating vents: build up of many layers of paint, water intrusion around the frame itself, swelling of the wood frame which forces the perimeter vent rail out of square, and sagging of the top outer vent frame from the weight of the window above, thus pinching the inner vent frame, rendering it inoperable.



Deteriorated ventilator



Newly restored ventilator

A project that does not include proper ventilator restoration is not complete, and will lead to additional expenditures in the near future when poorly operating ventilators cause damage to the recently restored stained glass.

Deteriorating Frames

A contributor to stress on stained glass windows is an aging and deteriorating frame. Wood frames are particularly susceptible to a variety of pressures: extreme changes in temperature, moisture intrusion, delamination, infrequent maintenance and poor original construction. The photo on the right shows a 100 year old frame that is failing. Weather and age are causing wood members to separate. This structural failure effectively removes the support for the stained glass, allowing the glass to bow and bulge. If the deterioration goes unchecked, lead and solder joints will crack, glass will break, and with increased pressure from the sagging frame, the stained glass panel will dislodge from its location.



**If you need expert help evaluating your stained glass windows, please call us.
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