

Guidelines

THE STAINED GLASS WINDOWS OF CAPITOL HILL

The great popularity of residential stained glass in the last two decades of the 19th century coincided with Capitol Hill's period of major development resulting in many Capitol Hill houses being decorated with stained glass. While the glass is valued today, some has been lost through misguided efforts to "modernize," mishaps of fire or accident, and disintegration. That so much stained glass has survived is testimony to its considerable durability even when neglected.

Capitol Hill's stained glass was sold through catalogs to builders of homes for the expanding middle class, rather than custom designed for the wealthy. As such, it provides an insight into middle-class tastes and reflects the prosperity of the late 19th century. It is important that our remaining stained glass, treasured as a unique art form, be protected, repaired when necessary, and replaced by glass of suitable design where lost.

THE ENGLISH TRADITION

The stained glass art form apparently originated in the Christian churches of Europe. The oldest windows extant, dated to the 11th century, are those of the five prophets in Augsburg Cathedral in Germany (Fig. 1). Since the windows are technically sophisticated, they are evidence that the art form was already well established. Stained glass windows are referred to as early as the 7th century, but the windows have not survived and their design and construction are unknown.

English stained glass traditions were important in the development of this art form in America. Stained glass in England, as elsewhere in Europe, was at first confined to churches and was devoted solely to religious subjects. Secular subjects slowly made their way into church windows and by the 12th century, for example, windows frequently included figures of the donors. Later, domestic scenes and contemporary events were included. This gradual evolution of stained glass was disrupted by the Reformation. Many English church windows were destroyed in campaigns against what were regarded as idolatrous representations, particularly of the Virgin Mary. The Reformation was also a time of great social change, with some families attaining great wealth.

BY LYLE SCHAUER



1. THE DANIEL WINDOW (UPPER PORTION ONLY SHOWN) IS ONE OF THE FIVE PROPHET WINDOWS IN AUGSBURG CATHEDRAL. THEY ARE THE OLDEST WINDOWS KNOWN (11TH CENTURY), BUT THEIR TECHNICAL AND ARTISTIC SOPHISTICATION SHOW THAT STAINED GLASS WAS ALREADY WELL DEVELOPED.

Stained glass artists, no longer able to find employment in the churches, began executing secular windows for the grand houses of the new rich. Much of the work, however, was of poor quality and not until the 19th century when artists returned to medieval and renaissance art for inspiration did English stained glass revive as an art form. By then a much expanded middle class, made prosperous by the industrial revolution, was eager to acquire luxuries formerly available only to the rich. Their homes frequently incorporated stained glass whose simple designs were inspired by the secular glass of the grand houses.

AMERICAN STAINED GLASS

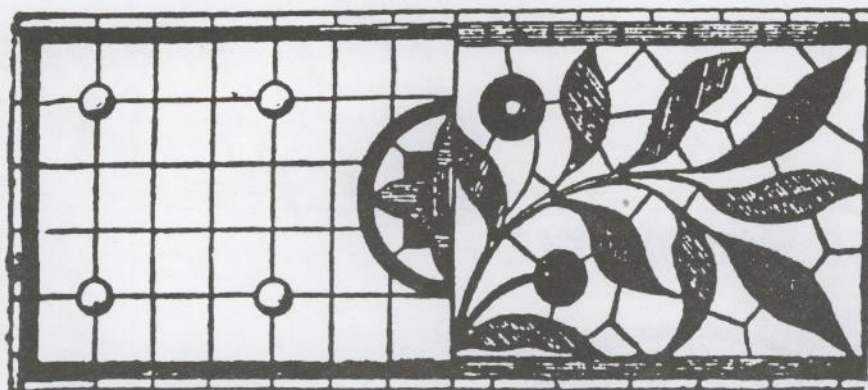
Dislike of decoration in churches by English Protestants strongly influenced the English colonies in North America and, as a result, there was little stained glass in Colonial and early 19th century churches. The great expense of importing stained glass from England also discouraged its use.

The Industrial Revolution contributed in two ways to the spread of stained glass use. First, locally manufactured glass and other necessary materials could be obtained at reasonable prices and, second, an expanding middle class began to demand such luxuries. Nevertheless, residential stained glass did not become widely popular until the 1870s as more ornate architectural styles came into vogue. Stained glass complemented exterior pressed brick and terra cotta ornamentation as well as elaborate interior woodwork. Simple geometric designs, heavily influenced by styles popular in England and frequently decorated with stenciled patterns, were common in stained glass windows in the early 1870s.

The Philadelphia Centennial Exhibition of 1876 strongly influenced the development of American glass. The exhibition was held when the North had nearly recovered from the Civil War and prosperity had returned. Americans were receptive to products, designs, and styles from Europe and the Orient displayed at the exhibition. Styles of home decoration became more elaborate and eclectic. Stained glass styles also became more elaborate. Curvilinear designs, frequently decorated with jewels (the term "jewel" describes small round or square, sometimes faceted bits of glass) and other ornamentation, became popular, although geometric patterns continued to be produced (Fig. 2).

Once stained glass became popular in homes in the 1870s, churches followed suit. Because there were no traditional subjects for religious glass in America, the stained glass installed in churches used many of the same patterns found in homes. The splendid windows of Capitol Hill Presbyterian Church at Fourth Street and Independence Avenue, SE, and of the Ebenezer United Methodist Church at Fourth and D Streets, SE, are excellent examples.

The 1890s marked the height of stained glass popularity. At the end of that decade, after only



2. THIS DRAWING FROM AN ENGLISH 19TH CENTURY ADVERTISEMENT COMBINES BOTH MAJOR CLASSES OF STAINED GLASS DESIGNS: ON THE LEFT, GEOMETRIC; ON THE RIGHT, CURVILINEAR.

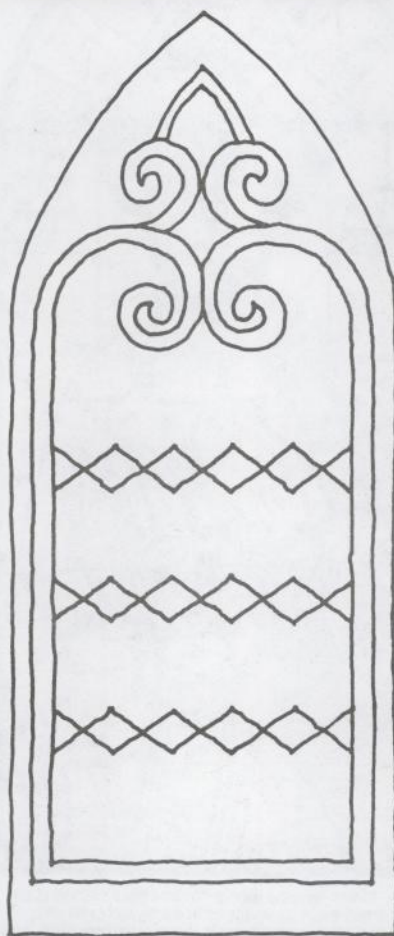
about 25 years of popularity, the use of stained glass in domestic building fell victim to the late 19th century reaction against excesses of decoration and ornamentation and the return to simpler styles. Although a few houses as late as the 1920s had stained glass windows of simplified design, the era of stained glass essentially closed with the 19th century.

STAINED GLASS TECHNIQUES

Stained glass windows are made of pieces of colored glass cut according to a pattern. The surface texture of the glass often contributes to the appearance of the window. The glass pieces are held together by grooved strips of lead, known as "came," which are soldered at every intersection. To prevent the glass from rattling and to weatherproof the window, a thinned putty is brushed over the surface and worked under the leads before the excess is wiped away. The resulting window is surprisingly strong, but larger windows will sag in time unless supported by brace bars.

Although we refer to all forms of colored glass as "stained," that is not strictly correct. In fact, nearly all "stained" glass would be more appropriately called "colored" glass. This glass is colored during manufacture by adding metallic salts to the molten glass. True "stained" glass is produced by painting the glass with a silver nitrate solution, then heating it in an oven. The silver penetrates the glass and stains it anywhere from pale yellow to orange, depending on how much silver was used. The stain imparts a glowing antique look to the glass. Stained glass in this technical sense is not often used in domestic glass; no examples are known in Capitol Hill homes.

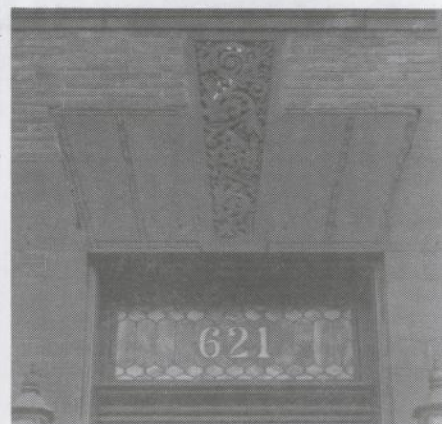
Painting on stained glass involves the application of finely ground iron oxide. Fired in a kiln, the oxide is fused onto the glass, ranging in color from black to rusty brown. The method is not only used to add line drawings to glass, but also to control light to give a more pleasing appearance. Control of light by means of judicious application of stippled paint is important for large expanses of glass that admit so much light the effect of the design is lost. The use of



3. THIS DESIGN, WORKED IN OPALESCENT GLASS, STANDS OUT PROMINENTLY DURING THE DAY IN WINDOWS AT CAPITOL HILL PRESBYTERIAN CHURCH. OPALESCENT GLASS ADDS INTEREST TO WINDOWS WHEN SEEN FROM THE LIGHTED SIDE, WHETHER FOR PASSERSBY DURING THE DAY OR FOR RESIDENTS FROM THE INSIDE AT NIGHT.

painting both to add detail and to control light can be seen at close range in the windows of the outer aisle of the nave at Washington Cathedral.

Enameling is similar to painting, except that ground colored glass is used instead of iron oxide. The technique has fallen into disfavor because the colored glass, unlike iron oxide, does not bond permanently to the glass and tends to crack and peel.

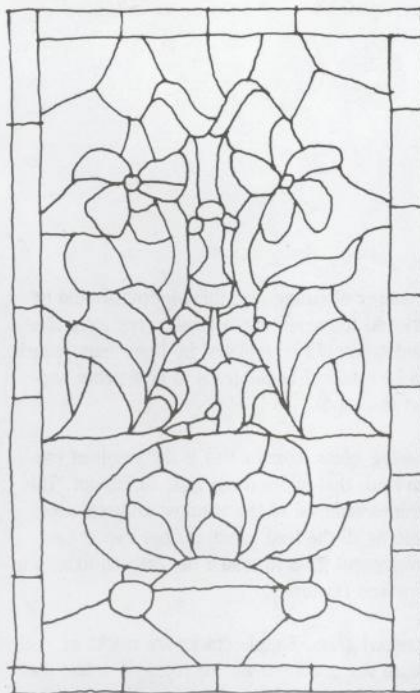


4. PRESSED BRICK BAY FRONTS USUALLY HAVE STAINED GLASS TRANSOMS OVER THE FRONT DOOR LIKE THIS ONE AT 621 EAST CAPITOL STREET AND OFTEN HAVE STAINED GLASS TRANSOMS OVER THE FRONT AND SIDE WINDOWS IN THE BAY AS THIS AT 1109 INDEPENDENCE AVENUE, SE.

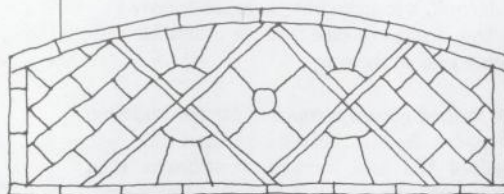
Opalescent glass is a milky, semitranslucent glass that reflects some of the light falling on it. Both church and home windows sometimes have a part of the design worked in opalescent glass to add visual interest. Without that addition, windows that gleam with multicolored splendor inside as light streams through them, appear dark and uninteresting from the other side. The addition of opalescent glass adds interest to windows when viewed from the street during the day or when viewed from inside at night. An excellent example of the use of opalescent glass is found in the windows of the accessory building on the south side of Capitol Hill Presbyterian Church (Fig. 3).



5. THE ROW OF COLORED GLASS SQUARED AROUND A PANEL OF CLEAR GLASS IN THE UPPER SASH OF THIS WINDOW AT 1107 INDEPENDENCE AVENUE, SE, IS A DECORATIVE ELEMENT PARTICULARLY ASSOCIATED WITH THE QUEEN ANNE STYLE.



7. VASE WITH FLOWERS AT 329 EAST CAPITOL STREET, SE, IS AN EXAMPLE OF A FINE CURVILINEAR PATTERN. THIS PANEL OCCUPIES ITS OWN WINDOW, UNUSUAL ON CAPITOL HILL WHERE MOST STAINED GLASS IS IN TRANSOMS.



6. TRANSOM OF RECTILINEAR DESIGN AT 9 FOURTH STREET, SE, HAS SUNBURSTS, A COMMON DESIGN ELEMENT.

STAINED GLASS ON CAPITOL HILL

Stained glass windows are associated largely with the square bay front houses of Capitol Hill, and are usually installed in transoms above the front and side windows in the bay and over the front door (Fig. 4). The stained glass in the side window transoms is a simplified version of the pattern used for the front transom. The pattern of the stained glass panel over the front door may repeat the patterns of the bay windows, but with the house number added. However, there are many exceptions: a common variation is door transoms made up of borders surrounding three or four squares of beveled glass with the house number added in gold leaf.

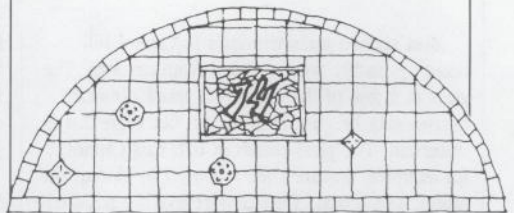
It should be noted, however, the majority of bay front houses do not have transoms and never had stained glass. Numerous houses have transoms in which stained glass was never installed. It is common to have a vestibule into which the front door opens with another tran-



8. CURVILINEAR PATTERNS USUALLY CONSIST OF A CENTRAL DESIGN, SUCH AS A FLOWER, FAN, LOZENGE, OR CROWN SURROUNDED BY TWINING FOLIAGE RIBBONS, LIKE THIS ONE AT 512 EAST CAPITOL STREET.

som over the inner door of this vestibule, often with a stained glass panel similar to that over the front door but without the house number. Some more elaborate houses have stained glass transoms at the second and third floors. In less elaborate houses the upper sash of the second story windows often has a row of colored glass squares set around a panel of clear glass, a decorative element particularly associated with the Queen Anne style. (Fig. 5).

Both geometric and curvilinear patterns were



9. MOSAIC GLASS TRANSOM AT 14 FOURTH STREET, SE. THE USE OF RECTANGULAR PIECES OF GLASS IS UNUSUAL. MOST MOSAIC GLASS PANELS ARE MADE OF SMALL PIECES OF GLASS TO RESEMBLE A MOSAIC BUT IN THIS PANEL THE TYPICAL CONSTRUCTION IS CONFINED TO THE SMALL INSERT FOR THE HOUSE NUMBER.

used throughout the period of stained glass popularity. The geometric sunburst pattern is very common on Capitol Hill and some windows were designed to incorporate as many sunbursts as possible (Fig. 6). Curvilinear patterns usually consist of a central design, such as a flower, fan, lozenge, or crown surrounded by twining foliage or ribbons (Fig. 7&8). No windows of geometric design decorated with stenciled patterns are known in Capitol Hill homes, but this is not surprising since nearly all of the Hill glass postdates the 1870s, when these designs were common. Examples of line drawing and enameling also are unknown in Capitol Hill homes, but since these are expensive techniques they are uncommon anywhere in homes. Several of the churches on Capitol Hill, however, have enameled glass. The windows of St. Peter's Church (Second and C Streets, SE) contain a great deal of enameled glass. Although the patterns used are typical of the 1870s, the church is dated 1889. The original windows were destroyed by fire and the present windows presumably are reproductions.

Capitol Hill has examples of mosaic glass, an American oddity, at 12-14 Fourth Street, SE (Fig. 9). Mosaic glass panels were fabricated without lead channels to hold the glass. Instead, what appears to be a lead amalgam (a mixture of lead and mercury, similar to the amalgam used in dentistry, but compounded with lead rather than silver) holds the glass. The amalgam presumably was mixed and quickly packed between the pieces of glass before it hardened. Mosaic windows were produced by the Belcher Mosaic Glass Company for a brief period in the late 1880s. (The Belcher Company allegedly went out of business because the materials used poisoned the workmen.) Capitol Hill's examples are simple geometric patterns of squares interspersed with glass "jewels" rather than patterns built from tiny fragments of glass.

Most stained glass windows in Capitol Hill homes probably were ordered from catalogs. The glass in a few of the larger and more elaborate houses may be custom designed, but even that is uncertain. The glass panels at 616 East Capitol, for example, feature cherry boughs in bloom, the moon, and a bird. They may reflect the popularization of oriental themes by the Philadelphia Exposition of 1876, but even these unusual patterns were probably ordered from a catalog.

There are no known original examples of stained or leaded glass panels in doors. The few instances of such doors on Capitol Hill appear to be recent additions. Many Capitol Hill doors do, however, have a large rectangle of beveled glass. These doors generally post date 1890. Beveled glass is heavy plate glass whose borders are ground and polished to pick up and refract the light.

MAINTENANCE, REPAIR AND PROTECTION OF STAINED GLASS

Routine maintenance of stained glass windows is minimal. Clean them as you would any other window to remove the grime that will otherwise dim their colors. Routine cleaning is a good time to inspect the window for other problems.

In evaluating your windows, consider the following symptoms:

Rattling glass. If glass in the window rattles when the wind blows, check for broken leads or breaks at the solder joints. If the leading is intact, the cause is missing putty, which can be replaced by pressing glazing compound between the lead and the glass on both sides of the window. Be sure to wipe off the residue with a soft cloth.

Broken leads. If some of the glass is so loosened that it is in danger of falling out, the window should be removed for repair. Otherwise, it would probably be sufficient to protect the window with a plastic cover (see below under "Protection").

Buckling windows. This is common in old windows and even adds interest to them. However, if the buckling is so severe that the glass is

in danger of falling out, the window should be removed for repair. Rods used to reinforce the window should be replaced by brace bars, which can be soldered to the leads to give better support than rods.

Missing glass. Usually this is the result of broken leads that allowed the glass to fall out. This requires removal of the window and replacing some or all the lead came. Do not expect the replacement glass to match the original exactly in color and texture.

Cracked glass. Simple cracks are marks of honest age and need not be repaired unless the glass is shattered. Even then, experiment with securing the glass with a clear epoxy glue. Try to save the old glass whenever possible because it is difficult to match exactly.

If a window is in poor condition, but the glass is still intact and not falling out, it may be sufficient to protect it with a plastic cover. However, if glass is missing, badly broken, or falling out, the window requires the attention of a craftsman. Costs can be greatly reduced if you remove the window yourself and take it to a glass workshop. Most windows in Capitol Hill homes are small and can be removed from inside the house by taking out the strips that hold them in place. The opening can be fitted with plywood while the window is in the shop.

PROTECTION

Windows deteriorate slowly due to weathering and the effects of heat or cold. They are also subject to vandalism, usually in the form of errant stones. The best thing you can do for your windows is to fit them with an outer cover of clear unbreakable plastic. Often repair of a window that is in poor condition can be postponed indefinitely if it is protected from wind and rain. Use one-quarter inch clear polycarbonate plastic that will not discolor with age (Lexan and Tuffak are well-known trade names for this product). Generally the plastic can be cut

and fitted to the outside opening of the window, leaving an air space between the plastic and the window. The covers can be held in place with inconspicuous screws, allowing them to be removed for cleaning.

WHEN IS NEW GLASS APPROPRIATE?

Now that stained glass is once more fashionable and readily available, many home owners are interested in installing panels in their homes. The following issues should be considered before installing a stained glass panel:

Do other windows in the house have stained glass?

If the house has lost some of its windows, it is appropriate to install replacement panels, copying designs of the remaining windows.

Do other buildings in the row or similar buildings elsewhere have stained glass windows?

If other buildings in the row have stained glass windows, it is appropriate to install windows whose design is copied from, or compatible with, other glass in the row.

Is stained glass appropriate for the building?

Very few flat front houses were fitted with stained glass. Also, many bay front houses, even those with transom windows in the bay, were not fitted with stained glass. The front door of these houses typically was fitted with a plain glass transom bearing the house number in gold leaf. The original gold leaf has disappeared from many of the windows but is relatively inexpensive to restore. The results are highly attractive, useful, and appropriate to the house.

Since door panels of stained glass or beveled glass apparently never were used on Capitol Hill, doors so equipped are inappropriate.

One good compromise for stained glass lovers who live in houses where stained glass is inappropriate is to hang framed stained glass panels on the inside of their windows. ♦

FURTHER READING

Lawrence Lee, George Seddon, and Francis Stephens, *Stained Glass*. New York: Crown Publishers, Inc., 1976.

Wilson, H. Weber, *Great Glass in American Architecture*. New York: E. P. Dutton, 1986.

ACKNOWLEDGEMENTS

This publication has been prepared by the Capitol Hill Restoration Society, a private, non-profit community organization.

The content of this document has been reviewed by the staff of the D.C.

Historic Preservation Office, technical advisers, and various interested members of the community including residents, architects, contractors, and ANC representatives. The content of this document is consistent with review practices of the D.C. Historic Preservation Review Office and with the Standards of the Secretary of the Department of the Interior.

The following individuals are thanked in particular for their contribution to this manuscript: for editing, Jean Anne Barnes and Helen Loerke; for review and comments, Judith Capen, Joey Lampl, Nancy Metzger, and Ruth Ann Overbeck; and for continuing support and encouragement, Patricia Schauer. We also thank all the other residents and professionals of Capitol Hill who reviewed this text.

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