Adventures in Stained Glass

I first became interested in stained glass when I purchased a house in Maryland in 1997 that had a large sidelight and transom around the front door. The sidelight and transom were just begging to be filled with stained glass so I decided to learn how to make stained glass because how hard could it be? Needless to say, stained glass is complicated!

I began by taking a beginner's stained glass class through an adult education program in Columbia, Maryland. This first class focused on the basics of cutting and shaping glass and then using the copper foil method to make a small panel. Panel #1 is shown below:

Panel #1

Copper Foil versus Leaded Glass

There are two main techniques to connect together glass pieces to make stained glass. The copper foil method wraps the edges of each glass piece in thin strips of copper. These copper edges are then soldered together to make either a flat or 3-dimensional glass object. The leaded glass method places "H" shaped strips of lead between each glass piece with the glass fitting into the channels in the lead. The lead strips are then soldered together at the joints and the remaining space in the channels is filled with putty to securely hold the glass in the channels. The leaded glass method makes flat panels and this is the main method used to make stained glass windows in buildings.

The next class involved making a leaded glass panel. My Maryland house had an interior bathroom with a small window going into another bathroom with an exterior window. I decided to replace the frosted glass in this window with a stained glass panel. Panel #2 is shown below:

Glass cutting techniques

The most common glass cutting method is to score the glass along the cut line and then use pliers to slightly bend the glass so it cracks along the score line. When cutting curves or irregular shapes, this method can result in significant waste of glass as small pieces are removed to gradually achieve the desired shape. When preservation of a pattern in the glass is desired, then a glass saw with a ring of diamond coated wire for a blade can be used to cut the shape while maintaining the pattern. In Panel #2, a ring saw was used to maintain the streaks of darker glass in the background water.

Panel #2

After learning these basic techniques and researching stained glass techniques, I realized that to make the sidelight and transom I had in mind, I needed to learn how to paint on glass so finer details could be incorporated into the panel. I decided to pursue learning about traditional techniques of glass painting instead of focusing on the modern techniques and materials. Fortunately, there are still a few artists using the traditional techniques and they have videos of their instructions. I also wanted to learn how to convert a picture into a stained glass panel. I decided to use a friend's photo of a butterfly to test both approaches. Picture #1 shows the original butterfly photo.

Picture #1

The result was Panel #3 shown below.

Traditional glass painting techniques

Traditional glass painting techniques go back to the beginnings of stained glass. Originally, glass makers could only make glass in a limited number of solid colors. The exquisite details seen in many of the stained glass windows in cathedrals and churches was done by painting these details on the glass. The paints are made by combining metals like cadmium and lead with ground glass and a binder. The mixture was painted on the glass and either left in place to obscure the glass or scraped away to expose glass. Varying the thickness of the paint created different shades of the glass. The finished painted glass is then fired in a kiln to melt the paint into the surface of the glass and make the paint permanent. In Panel #3, the antenna and legs are lines painted on the glass while the wings were done by scraping away the paint to expose the glass.

Panel #3

Designing stained glass panels

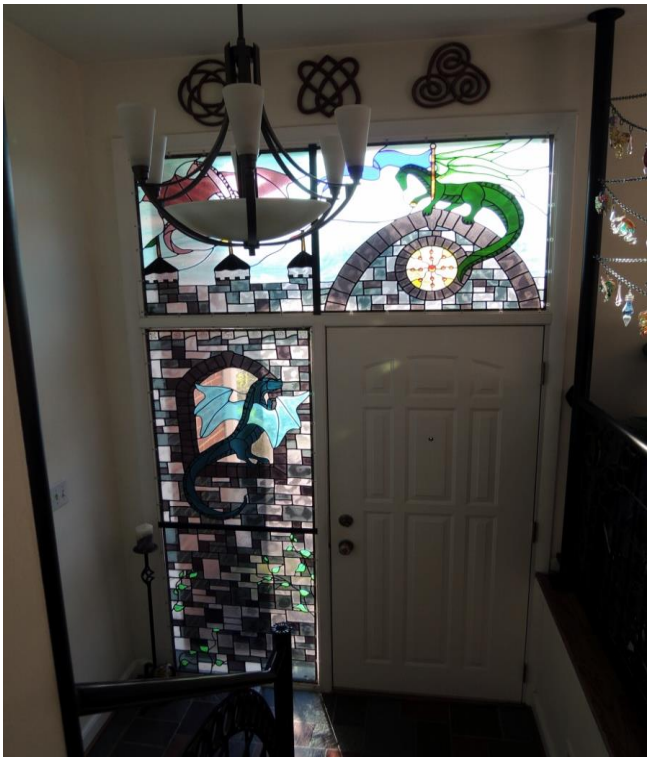
Glass is not stable if it has sharp inside curves or angles and cracks will form in those weak points over time. When designing a stained glass item, the glass shapes and lead lines need to be arranged so as to avoid these weak points. In Panel #3, the background was modified around the butterfly to avoid those weak points. The majority of the modifications were done by changing the leaves so the resulting glass shapes eliminated weak points. Additional lead lines were added at the points of the wings and flower petals to eliminate the remaining weak points.

As another test of design and painting, Panel #4 was made for a friend based on a photoshopped image.

Panel #4

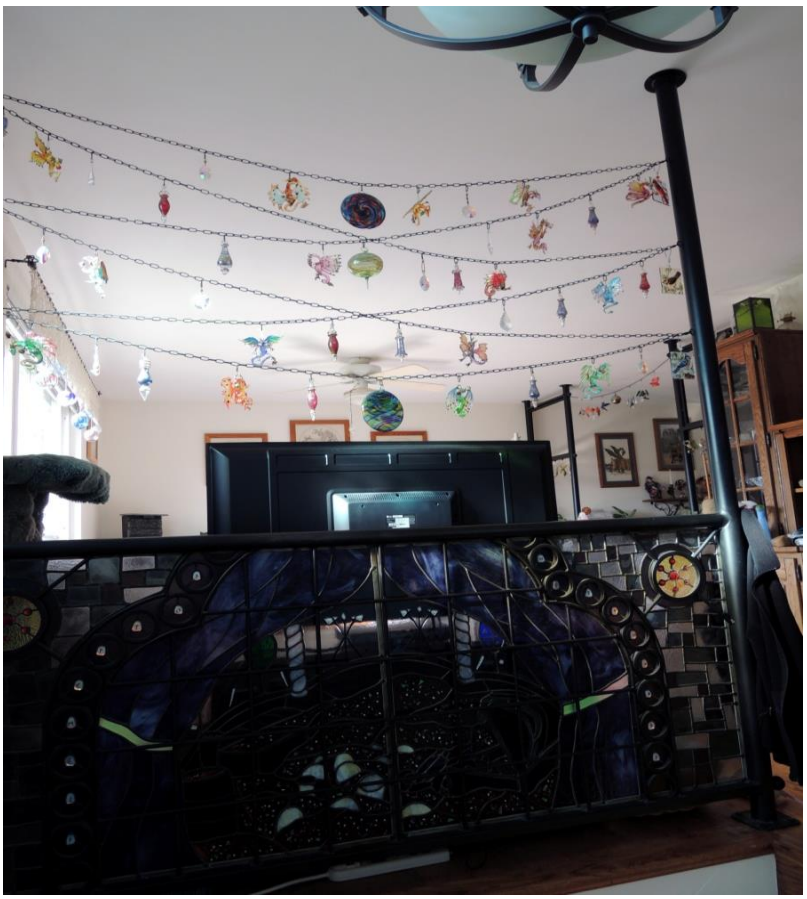
The Sidelight and Transom

Given the size of this project, I worked with an experienced stained glass artist to design the patterns for the sidelight and transom. The sidelight and transom were each divided into two panels to keep the panel size manageable and structurally stable. A blacksmith made custom support brackets to go between the panels. Each of the 4 panels took about 6 months to make. Picture #2 shows the sidelight and transom in the Maryland house.



Picture #2

After the sidelight and transom were done, I decided to make two additional panels to go in a railing that separated the living room from the entry way. The original railing was replaced by a custom made metal railing to match the design of the stained glass. Picture #3 shows the railing with its two panels.



Picture #3

Matching a metal railing to stained glass panels

The design in Picture #3 required an exact match between elements of the railing and elements of the stained glass. To get this exact match, first the stained glass panels were designed. Then the blacksmith used that design as a template for making the railing. Then the stained glass pattern was adjusted to exactly match the resulting railing.

Once the railing panels were completed, I stopped doing stained glass to focus on making fused glass with recycled bottles for my growing business.

Moving to West Virginia

In 2018, I began designing a new house to be built in West Virginia to be my future home. The sidelight, transom, railing glass and the railing were key design elements in the new house and the house plans were modified to accommodate the railing and stained glass. Pictures #4 and #5 show the stained glass and railing in the new house.

Picture #4

Picture #5

New Adventures in Stained Glass

After moving to West Virginia in 2019, I began making stained glass panels again. The first panel to test the techniques and tools after the long hiatus was focused on my brother's dog, Khaleesi. Picture #6 shows Khaleesi after she took my dinner off the table and Panel #5 shows Khaleesi on her rightful throne.

Picture #6

Panel #5

The Cabin Glass series

I've started making stained glass panels for commercial sale and the first series is the Cabin Glass collection. This collection is called "Cabin Glass" because each panel incorporates recycled window glass found in an old cabin that was being torn down. Newspapers found with the glass sheets were from 1950 and the crate containing the glass indicated the glass sheets had been obtained to replace and reglaze the windows in the cabin. This did not appear to have been done as the glass sheets were still wrapped in their protective newspapers. Each leaded glass panel in the Cabin Glass series has been designed under a different style, e.g., Victorian, contemporary, etc. and some of the panels incorporate stone or beveled glass accents.

Cabin Glass #1

Cabin Glass #2

Cabin Glass #3

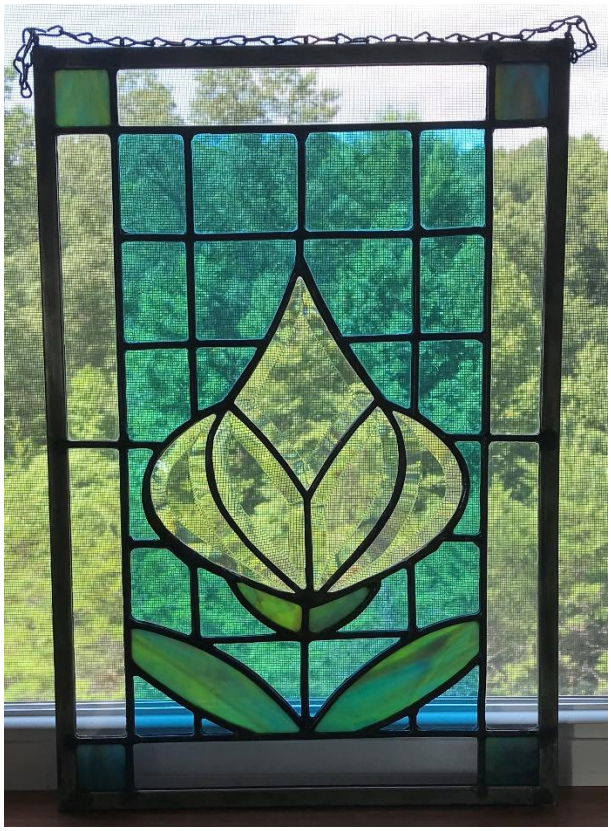
Cabin Glass #4

Cabin Glass #5

Cabin Glass #6

Cabin Glass #7

Cabin Glass #8



Cabin Glass #9