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A Stained Glass Artist's Adventure into Sculpture

Adding a New Dimension to My Work

Robert Oddy

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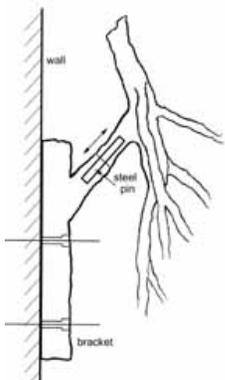
Stained glass art does not have to be flat, and it does not have to be backlit. These facts became important to me while I pondered the challenge set forth by a commission that I recently completed. My clients had been searching for a piece of art to mount on a tall expanse of nearly white wall above the living-room fireplace. They were, perhaps unexpectedly, as they did not wish to install additional lighting, considering stained glass. This story is a chronicle of the adventure behind this commission.

My response to this need was, naturally, a development of my existing way of thinking about stained glass. In my work I try to capture the depth and subtlety of natural subjects without entirely losing the recognizable traits of traditional stained glass. In my windows, I always strive for spacial depth – but of course it is an illusion because, structurally, window panels are usually flat. Sometimes I have inched towards sculpture by multiple-layering and incorporating wood, carved into bas-relief, into a window. This time, however, I went the whole way and made a 3-dimensional sculpture!

The subject is a cluster of Magnolia branches in bloom. The features of the piece are lifted out of the two dimensional plane to form an open structure which can take advantage of the relatively low level of light reflected off the wall behind it. The Uroboros drapery glass used for the blossoms is as beautiful in reflected light as in transmitted light. (This use of drapery glass is, of course, inspired by the famous magnolia windows of the Tiffany studios.) The highlights in the bronze branches bring them to life, though they were cast from once living branches! This is quite different from the lead lines that usually represent branches in stained glass compositions, and which can appear only as silhouettes.

Once the idea and a design for the work was approved by the client, I had to find someone to help with the bronze work, since I had no prior experience of sculpting in metals. I was very lucky to find in Syracuse, NY, a gifted and imaginative young sculptor named David Block. His own work is quite a different style than mine, but he collaborated very enthusiastically on this project, and I am indebted to him. This is a magazine about glass, so I won't dwell too long on the bronze work, although the potentials of mixing media were one of the most interesting aspects of this project.

Overview of Project



The initial design was a two-dimensional drawing of an arrangement of Saucer Magnolia in springtime, when the tree is full of blossoms, but almost entirely without foliage. To translate this into a plan for a sculpture, I divided the drawing into four layers. The blossoms were then removed from the drawings to provide a guide for the bronze work. I found a large number of promising twigs and branches, with features similar to those in the drawings, and handed them over to David, who assembled them for casting.

The castings were done in several pieces, which were welded together. We also cast unobtrusive wall brackets from pieces of natural wood (see figure 1). I adapted the original design to

Fig 1. Diagram of wall mounting bracket correspond with the actual cast bronze branch structure, made flowers in drapery glass, and attached them to the bronze twigs. I found computer imaging software to be a useful tool in this project, beginning with the creation of layered drawings from the original sketch. I also found it useful in communicating the design to the client – pasting in images of drapery glass, and superimposing the design on a photograph of the room where the piece would be installed. The original design is shown in figure 2. During fabrication, I was able to print templates for cutting the glass, and finally I used the computer to document the positions of blossoms on the final bronze structure.



Fig 2. The original design

Bronze work



Fig 3. A positive model for casting

In the ancient bronze casting technique called “lost wax,” a model, made in wax, is immersed in plaster or ceramic (called an “investment”). When this is fired, the wax melts out, and bronze is poured into the cavity so formed. In our project, the original positive models were assembled from natural wooden twigs and branches linked together by wax rods which would become a continuous network of channels and vents for the bronze to flow through (expelling the air) within the investment (see figure 3). It was necessary for the wood to burn out completely when the mold was fired, so we used long-dead, very dry wood. Of course, these were also very brittle, so the modeling had to be done with care and patience. We made most of the required branch structure in three large sections, to keep the molds to manageable sizes. When the plaster investment was broken up, and the casting revealed, we were delighted with the detail that had been successfully picked up from the texture of the original wood (figure 4). The next step was cleaning by sandblasting, and chasing, in other words, removal of casting imperfections and bronze impressions of the channels and vents.

With the original design of the branch structure laid out beside us, we assembled the cast sections and welded them. Smaller pieces of bronze twigs were attached in various places to add structural stability. Of course, when you use naturally occurring wood for your model, it is not feasible to follow the design exactly. In addition, the process up to this point was not without risk, and in fact not all of our castings were usable. But we had plenty to work with, and I felt that the branch structure was almost complete. We determined that another small casting would be needed for a few extra twigs, and for the wall brackets (now that we knew where they could be attached). However, we would have to wait for another two weeks for the next bronze-pouring due to the foundry's schedule.



Fig 4. Details on bronze twigs

Glass work

In the meantime, I continued making magnolia blossoms. I had chosen a pink and white drapery glass, manufactured by Uroboros Glass Studios. The method of assembling the glass is with copper foil. Drapery glass is heavily corrugated and even folded in places – much more so than ripple



Fig 5. Blossom detail

glasses – and its thickness can vary enormously. This leads to some special problems which don't arise when working with other types of glass. Firstly, cutting is difficult. I use a ring saw extensively with this glass. Secondly, copper foil does not easily conform to the edge of this glass: it tends to split as you bend it around the curves. I had to overlap several short pieces of foil to cover the edge without too much splitting or creasing, and then trim the foil line on each surface of the glass. Finally, soldering the parts of a blossom together is less straightforward than usual. Because the pieces are far from flat, there are often large gaps, which the solder will not readily bridge. Having tacked the pieces where they do meet snugly, I fill the gaps with copper foil to support the solder. Figure 5 shows a side view of a completed blossom in which you can see the undulations in the glass.

Another technical consideration specific to this project is the reinforcement of the blossoms. In a conventional window, a feature like a blossom would be surrounded by other pieces of glass, which would prevent the blossom from falling apart. In this work, the blossoms will remain isolated, and copper foil joints are not always strong enough to hold the pieces together. Concealed thin copper wire runs around the back edges of the blossoms supporting them wherever they are likely to be weak.

I took digital photos of the bare branches and all the blossoms as I made them. Using the computer imaging software, I superimposed the blossoms on the branches, and moved them around, deciding where to attach them. My initial reason for doing this was so I would not have to attach the glass blossoms to the bronze branches at that time. There was still more high temperature work to be done on the branches, including welding the second batch of castings. However, this fancy technological solution turned out to have another benefit: it is much easier to edit an image than to repeatedly attach and detach the material blossoms! The final image files also served as a record of the design decisions on the positions and orientation of the blossoms – there are 55 in all and about a dozen leaves in this composition.

When the final bronze components, including the wall brackets had been attached, we made a steel open-structured working stand, so that I could easily reach every part of the sculpture to attach the flowers.

The blossoms stand more or less vertically, often attached only at their lowest point, and to the very end of a twig. Simply soldering them in place would certainly not be strong enough. So I made a clasp in stiff brass wire for each blossom. The clasp grips the flower, front and back, runs up a soldered line on the back of the blossom, and an inch or so along the back of the branch (see Figure 6.) Bronze takes 60/40 solder very well if it is thoroughly cleaned (with steel wool, for instance). I planned the order in which the flowers were attached quite carefully, so that the position of every new addition was accessible. I began with the innermost flowers and worked out towards the periphery in all directions.



Fig 6. Blossom-to-branch attachment.

Brass wire clasp is highlighted



The final task was to apply patina to the bronze. This was a trial-and-error process, which resulted, after several hours, in a beautiful reddish-brown finish with hints of green. The bronze was then waxed for protection. Many people who have examined it quite closely have at first mistaken the bronze for real wood!

Fig 7. Magnolia, 2000. Sculpture in stained glass and bronze, 40"x28"x9"

This process, taken in its entirety, was truly an adventure for me. It not only expanded my artwork into a new dimension, but has opened (bloomed, one might say) the possibilities for future work... and like the tree it represents, it marks a personal artistic growth, with a beauty all its own.

David Block and I received expert advise and encouragement in most generous measure from Mary Giehl and Ron Derutte of the Studio Arts Dept at Syracuse University