

JULIE L. SLOAN: REFLECTIONS OF A STAINED GLASS CONSERVATOR



The Battle Window, John La Farge, Memorial Hall, Harvard University, 1878-1882. Courtesy of Julie Sloan

One of the persistent challenges of historic preservation is that works which are most in need of restoration arose from a centuries old craft tradition where the tools, technology, and the trade culture that produced the work is either rapidly in decline or simply no longer exists. How does one reconstruct the relationship between master and apprentice that disseminated secret knowledge across generations, once the chain has been broken? There is perhaps no more poignant example of this problem than the great stained glass architectural walls that adorn universities, cathedrals, and great homes throughout the country.

When Julie Sloan began her studies in historic preservation at Columbia University in 1980 there was no systematic method for dealing with the restoration of stained glass.

Sloan had grown up in a family that was involved in the construction business. Through the course of her academic work she became keenly interested in the construction of gothic cathedrals and was attentive to the details of engineering and craftsmanship in the medieval building enterprise, thoughtfully comparing the methods and techniques of ancient builders to our own modern methods.

During a class in conservation where she learned how to make stained glass, she asked her instructor how stained glass could be restored and preserved. The instructor confessed that he didn't know, and Sloan's master's thesis was born.

She surveyed the state of stained glass conservation throughout the world and produced one of the first systematic methods for preserving stained glass, which led to the publication of her award-winning book, *Conservation of Stained Glass in America*, now considered the definitive text on the subject.

Sloan has since published on the works of John La Farge and has completed a book about the stained glass of Frank Lloyd Wright titled, *Light Screens: The Complete Leaded-Glass Windows of Frank Lloyd Wright*.

After receiving her master's degree in 1982, Sloan apprenticed at a glass studio. The practical work she did as an apprentice gave her a wide breadth of experience in dealing with stained glass where she learned the fundamentals of site work, cleaning, edge gluing, and installation. She even glazed windows for the National Cathedral during this period, while developing working relationships with architectural conservators and glaziers throughout the country. From 1985 until 1998, she taught a full-semester course at Columbia University.

STAINED GLASS CONSERVATION



Julie L. Sloan is a pioneer in the conservation of stained glass windows. As a teacher, author, and consultant, she has devoted the better part of 28 years to restoring some of the nation's most cherished works of art, ensuring that future generations can appreciate the glaziers craft.

Sloan says that architects are not typically trained in how to take care of stained glass. "Stained glass is misunderstood and mysterious," says Sloan. She urges that stained glass owners need a representative to liaison with the glass studios and recommends hiring a consultant to perform the condition study. She argues it should be a consultant instead of a glass studio because the studio will always recommend restoration, whereas she makes a condition study based on need.

Sloan estimates that the cost of restoration for a high-end Tiffany window is approximately \$2,000-2,500 per square foot. At that price, a condition study with a timetable for future restoration is a necessity. Sloan specifies which windows need work and which ones don't and provides a timeline for fur-

ther restoration, for example, what needs to be done at two years, five years, or ten years out and she recommends that stained glass windows should not be removed until they need to be re-leaded, which is every 100 years on average.

In 1984 Sloan was contacted by Harvard University for the restoration of Memorial Hall, which contains stained glass by John La Farge, Louis Comfort Tiffany, and Sarah Wyman Whitman. There are over one hundred windows at Memorial Hall and the windows by La Farge and Tiffany included major compositional figures with an enormous breadth of craftsmanship and artistry.

Sloan performed the initial condition study and supervised the restoration project, which lasted five years from 1985 to 1991. Sloan says the project taught her how to do construction management. She says that stained glass is more often treated as a construction material than a fine art. "It's more efficient to work in the construction manner," she says. Sloan worked closely with Peter Reily who was the construction contract coordinator for Harvard. Sloan says that she already knew about the methodology



William Robert Ware and Henry Van Brunt's masterpiece, Memorial Hall at Harvard University, contains one of the most important collections of stained glass from the 19th century, including major works of the great European glass makers as well as some of the most revolutionary stained glass pieces that were created in America at that time.

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of stained glass, but what she didn't know was the construction background and fundraising side of the business, which she quickly learned.

During a major renovation project like the one at Memorial Hall, Sloan explains that the windows are removed from the building, crated, and transported to a stained glass studio where they are photographed using both reflected and transmitted light. Then the windows are covered with a sheet of paper and a hard wax rubbing is made of the design, forming a template of the lead line for later reconstruction of the window. When possible, the windows are disassembled under water to reduce the amount of lead dust, and the pieces are individually cleaned. Broken pieces are reassembled using silicon or epoxy glue. Then they rebuild the window on the rubbing. They use a new lead came that has about 3% copper, tin, and antimony to make it stronger. Pure lead fatigues much faster. Once the glass and lead is back together the window is soldered with a 60% lead to 40% tin solder, and waterproofed using putty composed of linseed oil, powdered whiting, and lamp black. The window is cleaned again and ready for reinstallation.

One of Sloan's favorite projects was H.H. Richardson's Trinity Church in Boston. The church is an icon of American Romanesque architecture and includes stained glass from the English firms of Clayton & Bell, Burlison & Grylls, Daniel Cottier & Co., Henry Holiday, and William Morris & Co. However, it is La Farge's contribution on the west end of the church that tends to draw the most attention. After perfecting his technique of using layers of opalescent glass on Harvard's Memorial Hall he produced *Christ in Majesty*, *The New Jerusalem*, *The Resurrection*, and *The Presentation of the Virgin* for the Trinitarians, which are considered some of the finest examples of American stained glass produced in the 19th century.

Another significant project that Sloan spearheaded was the restoration of St. Thomas Church in New York designed by Ralph Adams Cram. The church has 9,000 square feet of stained glass consisting of



380,000 individual pieces of glass, the work of James Powell & Sons, London, who created a sequence of eighteen stained glass windows that are 32 feet tall, as well as numerous smaller windows. For the first half of the project, completed at the end of 2009, Sloan had to coordinate with ten glass studios from around the country that were working on the project simultaneously. The cost of the project was \$22 million, about half of which was the cost of scaffolding.

Not of all of Sloan's work comes from religious institutions however. Sloan does much of her consulting work for educational institutions and government buildings. She explains that by the end of the 19th century stained glass was being used in residences, tenement buildings, row houses, retail stores, and even steam ships, and as these windows come of age she is seeing more demand for her restoration services.

"There is more work than the people who can do it," says Sloan, who explains that the glaziers union used to actively recruit new apprentices into the field. "But no more," she says. Sloan suggests that preservationists who want to get involved in this work must be willing to move to where the good glass studios are. "That doesn't necessarily mean the big studios either," she quips. "Some of the best are one-man operations." There are a lot of craftspeople, but it is only a small percentage of what it was 100 years ago.

In addition to her consulting, Sloan now teaches a mini-seminar on stained glass restoration at Columbia University. Her passion is doing research and unearthing some of America's great forgotten artists and conveying her discoveries to her students.

Julie L. Sloan is the owner of Julie L. Sloan, LLC, Consultants in Stained Glass and can be contacted at JLSloan@JLSloan.com

Joy, James Powell & Sons of Whitefriars Glass, Saint Thomas Episcopal Church, New York, 1937. Courtesy of Julie L. Sloan.