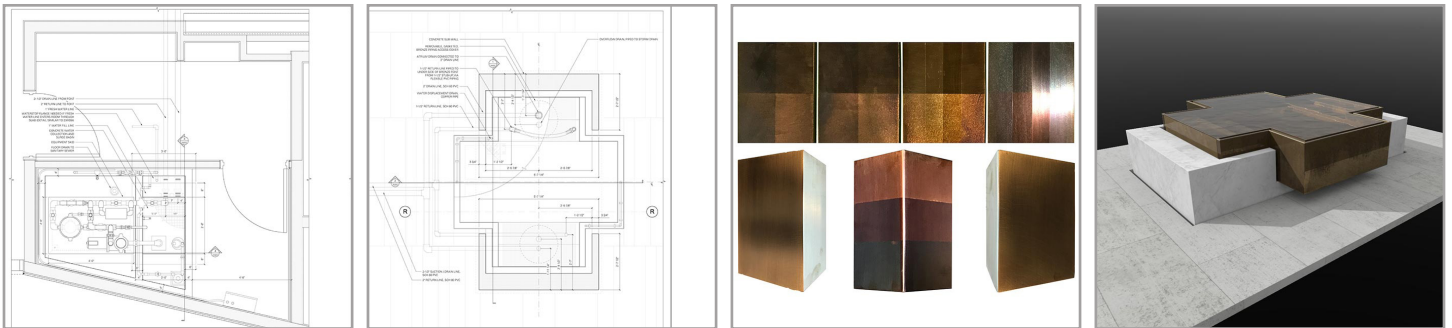


Case Study: St John Vianney Catholic Church Baptismal Font

Background

Seven years after the tragic destruction of St. John Vianney Catholic Church in Hacienda Heights, CA, the doors of the sacred building have reopened. Raising over \$5.3 million dollars to rebuild after it was destroyed by arson, a brand-new community structure seating 750 people, arose from the ashes.

While reconstructing the church, Water Studio was contacted to consult on the design and engineering of the new baptismal font. The church's designers, Renzo Zecchetto Architects, envisioned and designed a large, walk-in, bronze cruciform font. Unfortunately, the structural design of the slab-on-grade building did not allow for the water circulation system to be ideally located below the font. The need for near silent operation prohibited the use of mechanical equipment at the font location. Instead Water Studio was commissioned to help design an alternative hydraulic system that operated the font within the unique limitations.



Design

The relatively new practice of using large immersion fonts in the liturgical process brings new challenges. The font will be used for baptismal ceremonies, as well as the only source of holy water. This additional programmatic requirement demanded reconsideration of some of the font's detailing to better accommodate a successful maintenance regimen. No chemical treatment for the holy water was permitted, and any water being disposed of needed a special easement by the city planning office to be drained to the storm drain rather than the sanitary sewer line.

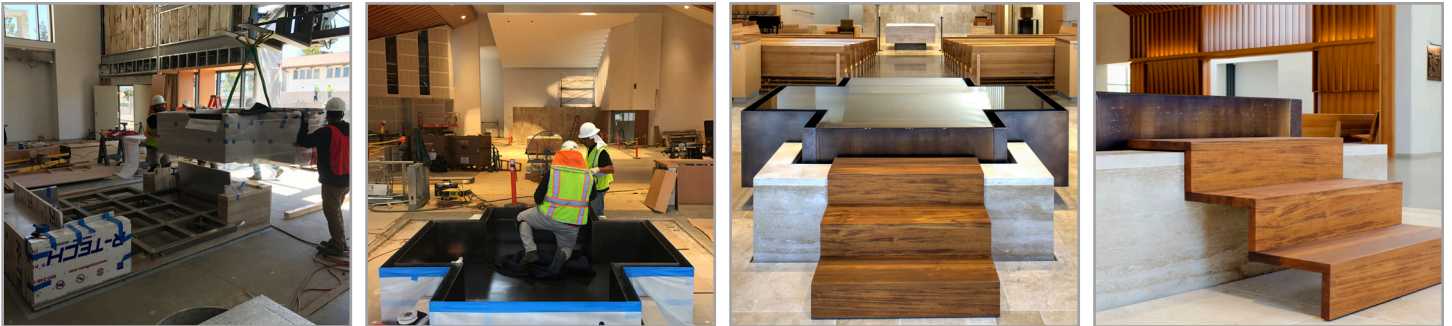
The mechanical equipment including pump, heater, filtration, and other non-chemical water treatment were to be located approximately sixty feet away from, and at the same elevation as the font. Over the course of a month or so, Water Studio worked closely with the architects to develop a unique aesthetic and mechanical design solution that would address all the challenges encountered and round out their construction drawing package. Desired finish samples and detailing were also discussed and mocked-up at during the design phase.



Fabrication

Being a design-build office offering not only professional design services, but also skilled metal fabricators and installers, Water Studio placed a bid to complete the job. Our proven knowledge and skill demonstrated in our previously completed projects, as well as the relationship developed with the architects and Diocese' construction management firm during the design process, led to Water Studio being awarded the job of fabricating and installing the font. The first step in the fabrication process was to source a bronze alloy that would facilitate all the requirements. The crisp solid geometry of the font did not lend itself to forming and bending so the material needed to be TIG welding friendly. High silicon bronze was chosen for its weldability, machinability, and resistance to corrosion and provided to us by Atlas Metal Sales in Denver.

The final assembly needed to be water tight, with all welded corner conditions designed and assembled in sequence to avoid any exposed welds that could not be finished smooth. The stainless-steel structural support and anchoring frame was the first piece of the font to be fabricated. The sides and floor of the font were all precisely water-jet cut from full bronze sheets. The main bronze body of the font was then fitted and fabricated using the stainless frame as a support and guide. The sixteenth-of-an-inch-deep skin of water overflowing the weir edges at the entrance and exit of the font demanded extreme precision during the fabrication process to perform properly. Once the main body of the font was welded, all water tight welded joints were tested for leaks using a dye and developer system. All welds were then inspected and repaired if needed. Once water tight, the font was ready



Installation

The installation process began about a year prior to the font arriving on site, when Water Studio was requested to help advise on the placement of the font piping that would be located below the building slab. Once fabricated, the font was assembled in a temporary pool, the leveling system incorporated into the stainless-steel frame was tested, and water performance observed and tuned. The entire bronze surface was then sanded and prepared for patination. Water Studio's installation crew then transported the nearly completed font to the church. Using a reach lift, the font was delicately lowered into its final position just inside the church entrance and the support structure for the custom punched perforated bronze stairs was then site welded into the interior of the font to ensure an accurate fit. Water Studio, fabricated and installed the removable teak stairs used for entering and exiting the font during baptismal ceremonies, completing the installation process.