

Cincinnati's Iconic Music Hall Receives a Laser-Scan Close-Up

FARO® Laser Scanners Come to the Rescue of the Fabled Cincinnati Music Hall



The FARO Focus⁵ 350 Laser Scanner captured Cincinnati Music Hall's exterior in detail to facilitate reproduction of missing architectural decorative elements.

Challenge

Cincinnati Music Hall has stood as the center of cultural life for this southwestern Ohio region for nearly 140 years and was recognized as a National Historic Landmark in 1975. Built between 1877-1879, the 256,500 square foot Music Hall is the home to the Cincinnati Symphony Orchestra, Cincinnati Pops Orchestra, Cincinnati Opera, Cincinnati Ballet, and May Festival Chorus.

It was also in dire need of renovations and modern updates. Several years ago city leaders and citizens rallied to renovate the aging High Victorian Gothic masterpiece and beloved community structure. The Society for the Preservation of Music Hall (SPMH), a longtime volunteer board of stewards for the Hall, whose mission is to preserve, improve, and provide education about the building, played an important role during this current revitalization in funding 5 million toward major restoration projects. By the fall of 2017 most of the \$143 million renovation was declared complete, with multiple improvements and significant functional upgrades bringing the Hall into the 21st century.

However, one area was "put to the side because that was out of [the project's] scope," according to Ed Rider, Vice President of the SPMH.

"One of the things we were interested in doing was bringing back the historical details on the outside front, back, and top of the building that had been lost or damaged by weather over the years," Rider explains. Among those exterior building details were the decorative sandstone finials and metal

cresting. Unfortunately, original architectural drawings were not complete or detailed enough to guide restoration experts. How could skilled artisans confidently proceed without highly-accurate measurements of exterior details?

Solution

One of the interior design companies was aware of the exterior impasse. They informed Rider of a company called FARO. "They told us FARO has some interesting three dimensional technology that scans buildings. Why don't you contact them?" Rider recalls.

Rider reached out to FARO®. "The next thing I know I'm learning all about this incredible FARO technology," Rider says.

Brett Justice, FARO Regional Manager, remembers the request. "Ed asked how can we get these historic details restored using precise measurements and would FARO be interested?" Justice says. "I replied, 'Absolutely. We would love to help support the Cincinnati community's interest in preserving this landmark.'"

Justice arranged for FARO professionals to not only scan the decorative elements, but also the entire structure. The incredibly precise scan—accurate to within one millimeter—would serve as an essential as-built digitized document for any future design need.

The FARO team used a FARO Focus⁵ 350 Laser Scanner, one of the company's latest models. Among its capabilities is the power to perform

in rainy conditions, which happened to be the weather on the day of the scan. The scanner also delivers real time, on-site registration, seamlessly stitching-together the 20 to 25 scans required to digitally capture all exterior detail. On-site registration is a huge time saver, according to Justice.

"We loaded the all-new SCENE 7.0 Software into a Wi-Fi-enabled tablet computer," explains Justice. "While the scanner scans and digitizes, it broadcasts the data to the tablet. SCENE 7.0 Software takes over and automatically meshes all the scans together. Before the Focus⁵ 350 Laser Scanner, we would have to transport all the scanned data on a little SD card, put it into the computer, and then download and process. It took a lot of time."

Results

The documentation of as-built conditions by FARO "just blew us all away. It was incredible," Rider reports.

"The scan data will be given to our designers. They will do the final drawings and dimensions for all the missing architectural decorative elements. All of this will be turned over to stone carvers or other artisans who can fabricate the missing pieces," he says.

Thea Tjepkema, a SPMH Board Member and historic preservationist, is just as enthused and thankful for this new precise technology and FARO's contribution. "SPMH is so excited that FARO is here," she says. "This is going to help us figure out the exact scale of our missing sandstone bouquet finials. It's great to restore these missing essential historic details and when they return on the gables of Music Hall, people will exclaim 'Wow, this is what it looked like when it opened in 1878.'"

For More Information

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