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# Crossroads of Ideas

By: David Barbour

## Seattle's Town Hall has been optimized for spoken word and musical presentations

If every city gets the live venue it deserves, Seattle must be an exceptionally lively place, at least if Town Hall is any indication. Designed as kind of crossroads of ideas and music, it provides an important place for citizens to come together, learn, discuss, and listen. Even now, constrained by the pandemic, it has continued to maintain a stimulating (if livestreamed) series of events, including Representative Pramila Jayapal, discussing her new book, *Using the Power You Have*; Nikole Hannah-Jones, creator of *The New York Times'* 1619 Project; *Washington Post* satirist Alexandra Petri; former Secretary of Defense Robert M. Gates; Jim Obergfell, the plaintiff in the Supreme Court's landmark marriage equality case; and many performances by the group Earshot Jazz.

Indeed, Town Hall is founded on three principles: "We believe that everyone deserves access to fresh ideas and artistic expression. We believe in an equitable Town Hall that belongs to all of us. We believe that, together, we can model the kind of society we want to share."

Founded in 1998, Town Hall occupies a former Fourth Church of Christ, Scientist, which was built in two stages, between 1916 and 1922. According to the venue's publicity materials, architect George Foote Dunham "designed the space employing the distinctive Roman Revival style (popular among many Christian Science churches at the time) that lends Town Hall its characteristic high front portico with six 2-story pillars and the high arched ceiling of the Great Hall.

"Like most Christian Science churches, this one is built to resemble a public building with no religious symbolism inside or out. The building sports a unique central dome complete with a decorative oculus to match the large art-glass windows in the Great Hall. These windows have been restored by Seattle Stained Glass as part of the building's renovation—along with the four terra-cotta-clad exterior walls that give the building its characteristic gleam." Built during the heyday of the Christian Science movement, it remained in the church's possession until 1998.

The Seattle-based architectural firm BuildingWork was in charge of the renovation, which included a seismic retrofit; a new HVAC system; a new, non-gendered restroom; green rooms; and a lower-level venue with a new entrance. The building was also brought into compliance with current codes regarding structure, accessibility, and energy.

According to a statement from BuildingWork, Town Hall "is a Seattle landmark, is listed on the National Register of

Historic Places, and is beloved by patrons and the larger community. Therefore, the design was carefully considered and obsessively detailed to have minimal impact on the historic architecture. This required intensive coordination and extremely tight construction tolerances. The historic preservation work included restoration of the terra cotta façade, rehabilitation of monumental stained-glass windows, and repair and reconstruction of interior architectural finishes."

It's safe to say that a similar eye for detail informed the work of the project's theatre consultants and acousticians. "The prime mission of Town Hall is to deliver lectures and concerts at very accessible ticket prices," says Adam Shalleck, of the theatre consultancy The Shalleck Collaborative. "What goes along with that is simplicity of operation. What goes along with *that* is a system that is fiscally responsible, yet flexible enough to have choices on a per-show basis using more or less a house plot."

### New theatre systems

Shalleck describes the building before renovation as "occupiable but well-worn." He adds, "There were ADA issues. The restrooms needed to be dramatically expanded for current audience expectations. They were using the downstairs space as a basic multipurpose room that you find in churches. Aesthetically and architectural-lighting-wise, it was endearingly dingy." He adds that many of the changes made by the architects will have impactful effects: "Something as simple as adding air-conditioning allows them to expand their calendars and operate in the warmer months."

Shalleck adds that working inside the existing church building posed many challenges. Speaking about the main room, the Great Hall, he says, "There's an unbelievably dense space above the plaster where the lighting, access, and mechanical systems had to come together. It took some gymnastics to make it happen." The effort included making accommodations for "HVAC, a giant leap forward in their performance lighting, and acoustic improvements for both music and the spoken word." (Music presented in the Great Hall ranges from chamber groups to concerts with amplified instruments.) Similarly, Shalleck worked with Russell Cooper, of the acoustician firm Jaffe Holden, to incorporate lighting gear into the over-stage canopy, which was installed for acoustical reasons.

Shalleck says that the Great Hall "definitely lacked the

positions that we wanted for live performances, especially for a place that is about discourse, dialogue, and academic scholarship.” Because many presentations are recorded and put online, it was especially important to find positions for video-friendly lighting, he adds. “The canopy was a big opportunity; but, while perfectly fine for a church, the room was lacking in terms of performance angles; we gave them a full set of positions to cover a stage of this type.”

The idea of putting production lighting positions built into the dome in the Great Hall was controversial at first: “It is such an important design element that the team didn’t want to disturb its iconic look. They considered hanging a rig from points in the ceiling to avoid changing it at all—but realized that the rig would block the view of the very thing they were trying to protect.”

Shalleck adds, laughing, “I suggested subtracting some plaster to make position openings in the dome—which made the architects take a very deep breath! But it had to happen. The geometries of the space necessitated it. We did surgery to the dome in discreet ways and saved the cost of having moving elements in addition to the time and cost of multiple technicians needing to come in with ladders and lifts for every focus.” With these units installed in the attic just above the ceiling, he adds, “Because the geometry of the plaster at the high sides would allow the catwalks no closer than 4’ from the slots, I used City Theatrical Beam Bender accessories so the fixtures remain in the attic, where they are reachable and out of view and only the mirrors hang into the space.”

In addition, Shalleck says, “We put in more positions

down low, in and around the colonnades at left and right. Since the stage is an 180° thrust, we have audience and cameras potentially in an 180° arc. You have to assume that the cameras might go anywhere, so we put in a number of low angles and high side positions, so everyone can get decent lighting.”

In a sign of the times, Shalleck adds, “This was a cross-roads project; at the time it was undergoing planning and design, we weren’t yet specifying 100% LED-based systems. When I gave them the loads of an incandescent system, they saw it would require an expensive upgrade in electrical service and put that much more dimension in the ducts in that tight attic, so we decided it was time to go 100% LED.” The ETC lighting system in the Grand Hall includes 34 Source Four LED Series 2 and 22 Desire D40 Studio LED units, along with an Element 2 console. Also included are an ETCpad handheld tablet for remote focus, Echo relay panel feed-through, a Sensor IQ panel, an Emergency Bypass Detection Kit, and a DMX Emergency Bypass Controller.

The relay panels are useful because they require less space than traditional dimmer enclosures, and one can do more with fewer fixtures thanks to their color-changing capabilities. This was important because lighting equipment had to squeezed around the new HVAC system in the attic, was constrained to limited openings, and needed enough room for people to access the positions. “They also asked us to make the room ready for broadcast, so there’s a non-live layer of lighting that is appropriate for video,” Shalleck says. “Here, too, it was important to preserve the austere



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The Forum.

design intent of the historic Great Hall.”

A Unison Paradigm system controls the house lighting, designed by Lucrecia Blanco, of Blanca Designs, who says she worked to preserve the original feel of the space while combining it with modern-day controls. The house lighting for the Great Hall uses the historic fixtures with new LED lamps. “It has a historic flavor and now it looks stunning,” she notes. “I wanted to have a large number of zones, so the users could reconfigure things if they needed to. I also wanted to make sure it was easy to train the users on the system. I wanted all the bells and whistles of a good architectural controls system. With ETC, I got everything I was looking for.”

Also specified by Shalleck was a set of roll-down backdrop panels behind the projection screen that serve a purely decorative purpose. “The wonderful executive director, Wier Harman, is a little bit lukewarm about the grille in the upstage wall,” he says. “For modern presentations, he wanted to make the filigree go away.” They disappear courtesy of a series of DMX-controlled banners made by Rose Brand and supplied by PNTA. The fabric is neutral, a light gray, in 8’ widths with gaps. The stage also has platforms from StageRight, supplied by Stagecraft Industries.

Speaking of the downstairs area known as The Forum, Shalleck says, “It’s very large, with three basic areas that can be conjoined; they use drapes to break up the rooms. It also has a very low ceiling with coffers. We didn’t want to pile on with a huge array of lighting distribution and fixtures. Each area between the coffers has a little bit of Unistrut and

wireways that we organized with the architect, so that they can move a lot of loose cable around from place to place without looking like a spaghetti farm. It’s a neat way of distributing a system to small area.”

Shalleck adds that The Forum is fitted out with a video projector and screen, along with portable platforms for relocating the stage. “It has an intimate, living-room feeling,” he says. Noting that he worked to keep the project within the venue’s somewhat limited budget, he adds, “It’s an exceptional, flexible, multiveneue facility, a giant leap forward in sophistication.” The building’s essence has been preserved: “It was important to them to keep the original church pews, which had become part of their identity.” Indeed, he notes, they make a nice metaphor for the venue’s goal of bringing people together in a sense of community.

### Acoustics

Russell Cooper, of Jaffe Holden, notes that although Town Hall has been in operation for 22 years, it retains many aspects of its legacy as a church. In addition, the previously mentioned pews, he says, “They kept the stained-glass windows and the domes. The interior has a cruciform setup; the room is wide but not very deep. As you can imagine, in a really wide room with a focusing ceiling, it wasn’t the greatest-sounding environment. When it was used for amplified performance, there wasn’t a stitch of absorption in there. It was a big, reverberant, focusing box.”

Also, Cooper notes, “The stained-glass windows were very thin, so you could hear every car and bus that passed

by the building. There was no air-conditioning, so they didn't do programming in the summer. And there was a lot of sound bleed because the rooms were heated with communal ducts that ran up from the boiler through the Forum and into the Great Hall. It was like a vessel where you could hear everything. Other than that, it was a beautiful space."

The renovation included seismic work, which included reinforcing the building's four corners with concrete and removing asbestos from the dome. The stained-glass windows were reinforced with laminated panes, which also created a vapor barrier for the new air-conditioning system. "We made sure it was a robust material that would also stop the traffic noise," Cooper says.

"The room's acoustics were extremely boomy," he continues. "I don't know for sure if this was because of the room's curves or its geometry, but the reverb time was over three seconds at 125Hz. At 250Hz, it was two seconds, then it leveled off at 1.5 seconds. Under these conditions, if any kind of band came in, the sound operator had a hard time controlling it. We really needed to reduce the low end."

First off, Cooper says, "There was an organ, with a decorative grille, behind the stage; it was non-functional. It was removed, and we created a big bass trap back there." He adds, "This, by itself, was not enough. There's a low ceiling in the back quadrant of the room that had to be removed for

ductwork and where we added in a Helmholtz resonator." This, according to Wikipedia, "consists of a rigid container of a known volume, nearly spherical in shape, with a small neck and hole in one end and a larger hole in the other end to emit the sound." Invented by the 19th-century physicist Hermann von Helmholtz, it is used to "identify the various frequencies or pitches of the pure sine wave components of complex sounds containing multiple tones."

Helmholtz resonators were used in churches to absorb low-frequency sound. "We came up with a design using a series of small holes set into the ceiling that captured the air space behind it based off of Helmholtz's equations," Cooper says. "In the cavity behind it, we put an absorptive material to further absorb the lower frequencies." With these improvements, he adds, "the reverb time dropped from three to two seconds and from two to 1.5, giving us a much nicer curve."

In many ways, the most important addition was the over-stage canopy. "The intent was to break up the focus of the dome," Cooper says. "The canopy interrupts the focusing reflections and spreads it out more evenly."

Also, electrical infrastructure was installed for a scheme of adjustable acoustical banners designed to cover the stained-glass windows, which is due to be installed at a later date. To provide additional acoustical isolation, a stair-



The Great Hall.

well that originally led from the lobby below into the middle of the audience chamber was sealed off; soundproof doors were added as well. The air-conditioning system that runs through the attic is also acoustically treated. (Aside from sound isolation, Cooper says very little acoustical work was done on the Forum downstairs.) So successful were these efforts that, Cooper says, “When I was at Town Hall in March, the building next door was under construction. Inside the Great Hall, I couldn’t hear any noise; the extra laminated glass really did the trick.”

### AV systems

Garth Hemphill, an associate principal at Jaffe Holden and the man behind the venue’s new AV systems says, “We’ve given them what they need for what they typically do, and we’ve also given them systems that can grow. We always design that way, starting with infrastructure.” Just as Cooper discusses the addition of electrical infrastructure for a banner system that can be installed down the road, Hemphill says, “We never want to be in a situation where someone has to tear open walls to add more stuff later on. For example, there’s empty conduit [throughout the building], so that someday, in the future, when somebody comes up with a new type of wiring, they have space for it.

“The [pre-existing] wiring in the building was crazy,” Hemphill continues. “There was conduit in all sorts of different directions; the contractors had their work cut out for them. We specified new cabling in properly separated conduit to keep everything clean and noise-free; we did this everywhere we possibly could. The system is very quiet now, even with some compromises to the design due to site conditions.”

The oVcanopy has hanging points for the sound system, which includes d&b audiotechnik T-Series line arrays, with side fill provided by the company’s Y-Series; E12 loudspeakers supply side fill on the upstage side of the curved audience seating, with E5s for front fill and B4 cardioid subwoofers. An Allen & Heath dLive Series console controls the sound. Also installed in the canopy is a Digital Projection HIGHlite Laser II projector; the associated screen is a Da-Lite model.

Because the Forum Space is so movable, Hemphill says the idea was to supply “a tool kit” of gear that could be deployed as needed. The lineup includes d&b E10s speakers and an Allen & Heath SQ console. “They also have a broadcast control room with Blackmagic Design switchers, and good infrastructure; most of the gear for this will be added later.”

“The challenge was trying to get everything they needed for functionality crammed into this building and within budget,” Hemphill says. “Everybody had their work cut out for them.” Indeed, every major city should have a venue like it. 