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by Andy McDonough

Established to serve the spiritual needs of both the English- and Spanish-speaking communities that neighbor Dallas-Fort Worth, Life Church/Mundo de Fe quickly established itself as the area's "one church with two languages and three services." However, providing the powerful worship experience envisioned by Pastor Tim Holland and his team for their growing congregation of 2,000 members presented challenges all-too-familiar to new churches. How to get top-quality audio needed for a contemporary service? How to create an intimate worship experience in a large architectural space not designed as a church? How to accomplish it all on a limited budget?

When the newly formed church opened the doors in July of 2010, staff members found themselves in a cavernous and unadorned 26,000-square-foot building originally designed as a gymnastic training facility. "It was just a big rectangle, a large open box," says Holland. He and his team faced the challenge of converting the space in a way that would provide both good sight lines and an intimate feeling. Holland had seen churches designed in a wide format (with a stage oriented against the long wall) and recognized that, while worshippers might be physically closer, achieving good sight lines was more difficult. He also felt that the wide format caused the congregation to be more spread out and made for more difficult projector/screen placements. The decision was made to "go long," but with a clever twist: Holland's team decided to locate the platform three quarters of the way into the room with curtains forming the back wall. Reminiscent of classical sanctuary designs, this provides ample room behind the platform area and, in this case, a buffer space separating the worship space from the area currently used to house children's ministry.

With a practical floor plan, a sound system was next, but budgetary considerations prohibited the young church from installing a permanent sound system all at once, and they made do at first with portable PA components. Recently, they engaged Church Audio-Video, a division of ProAudio.com of Grand Prairie, Texas, to help with the design and install a new audio system. Life Church/Mundo de Fe had been customers of ProAudio.com since the beginning and looked for the company's help to orchestrate an upgrade in phases that would integrate well with the current equipment, as well as fit the budget.

DECISIONS AND ACTIONS

One of the first choices was to upgrade the church's 24-channel analog mixing console with what would be a key component of the new system, a Yamaha M7CL digital mixing console. The M7CL's Centralogic control interface provides a "visually familiar" control environment, which made for an easy transition from the original analog console. This was key since 95% of the staff is made up of volunteers. In addition to its straightforward operation, the M7CL also provides more channels; more versatile inputs and outputs; and more features usually provided by outboard gear. Also, in the first phase of the upgrade, the church added an Aviom personal monitor mixing system to replace stage monitors and Sennheiser Evolution series wireless microphones to enhance the sound quality of performance and the spoken word. Evolution Series has become the church's preference for its sound quality and rock-solid RF performance. The availability of field support from Sennheiser was also an important consideration in a difficult RF environment, such as Dallas-Fort Worth.

Jeff McLeod, managing director of Church Audio-Video, was engaged to design and install the second phase of the church's audio upgrade to integrate with the existing components. The budget for this phase was \$40,000. To meet the budget and provide the high-quality sound the room demanded, he specified QSC's KLA Series Fixed Arcuate Active Line Array System loudspeakers and matching subwoofers. "We had used other QSC speakers before and were very impressed," says Holland. "So of course we were anxious to hear their line array speakers."

The KLA Series KLA12s that McLeod selected for the application are 12-inch, two-way loudspeakers that feature a built-in, 500-watt by 500-watt power module. These loudspeakers incorporate features that provide extended bass, as well as response circuitry protection to prevent the amplifier module from clipping. The matching low-end component, the KLA181 (an 18-inch subwoofer), offers the same highly efficient power amp module only in a 1,000-watt configuration. In fact, the efficient design of the KLA series power modules enables up to five KLA models (any combination of KLA12 and KLA181) to be driven off a single 15-amp, 120-volt electrical circuit.

At Life Church/Mundo de Fe, eight KLA12s are rigged above the platform with four devoted to each side. Three additional K12s were also added and configured on a delay to be used as fills for the remote parts of the room. Six KLA181s subwoofers hold down the bottom end. Between the mixing console and speaker system is a dbx DriveRack 4800 loudspeaker management system that features full band-pass filter, crossover and routing configurations with Bessel, Butterworth, and Linkwitz-Riley filters, as well as 31-band graphic and nine-band parametric equalization. There is also a six-band parametric EQ on every output. In addition to the compression, limiting and feedback suppression you might expect from this type of unit, the 4800 also provides the audio designer with loudspeaker cluster and driver alignment delays useful in a long room.

To bring the worship experience alive for everyone in the room, McLeod installed a second Christie LX605 Projector with 6,000 lumens for high brightness and XGA resolution with scaling up to 1080p for compatibility with most computers and video sources. The LX605 boasts an autofilter cartridge that is good for up to 13,000 hours. The projectors are trained on 16-foot x 9-foot matte white, fixed-frame screens manufactured by Draper. Draper's Cineperm screens are permanently tensioned projection screens that snap on to an aluminum frame, giving contemporary, theater-like appearance with high image clarity necessary for large projections.

In addition to clear projections, volunteers at the church capture all the nuance of the service and musical performances using two tripod-mounted Panasonic AG-HMC40PJ, 10.6-megapixel HD video cameras with 12x zoom. Video is routed via a Panasonic AV-HS400AN HD Multistandard Video Switcher with four SDI inputs and an installed Panasonic AVHS04M3 DVI input card to support common XGA, SXGA and WXGA (60 Hz) signals. An Intelix VGA-DA2 1X2 VGA Distribution Amplifier then seamlessly delivers the processed signal to two outputs, and Black Magic SDI Converters are used to match up cameras, switcher and projectors.

Also installed as part of the upgrade were a SurgeX PF420 80 Amp (4x20) NEMA Power Conditioner/Surge Protector to protect the new equipment and a Clearsonic A5-7, a seven-panel drum set shield and extenders to improve the sound on stage and separation in the audio mix.

RELATIONSHIPS DRIVE DESIGN EFFICIENCY

It's important to recognize two key factors in the design of the church's successful phased approach: Their strong relationship with ProAudio.com's inside sales consultant, Scott Price, and designer/installer Jeff McLeod; and the audio experience of Life Church/Mundo de Fe's pastor. As a first-call, contemporary Christian singer and keyboardist, Holland knew what he wanted to hear from a sound system. In addition to his experience on stage, he had also gained experience with leading audio and media technology as a worship arts and media pastor.

Holland is pleased with the result of the phased upgrades and says, "Our new audio configuration provides the clarity we need and [a] system we can drive hard." His sentiments are echoed by visiting artists and their engineers who agree that the system is both straightforward to use and provides superior sound quality throughout the room. The pastor is also pleased that the improved sound and HD video upgrades necessary to deliver his contemporary message could be accomplished on budget and without overwhelming his staff. "Moving first to the Yamaha digital mixing console was like heaven," says Fernel González, Life Church/Mundo de Fe's director of music and media, "and the QSC speakers give us the added power and clarity that really helps us get our message across."

So where does the church go from here? They have made modest upgrades to their lighting with the recent addition of ETC Source Four PAR fixtures, Elation Power Spot 575 moving lights and a Hog2 500 lighting control system from Flying Pig Systems, but more and better lighting could be in the next phase of improvements. Holland and his team also have plans to expand the worship area and establish a more permanent stage further back in the room, but even as their ministry grows, their formula for success will likely remain the same: careful planning, quality components and integration in phases.

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