



SOUND COMMUNICATIONS

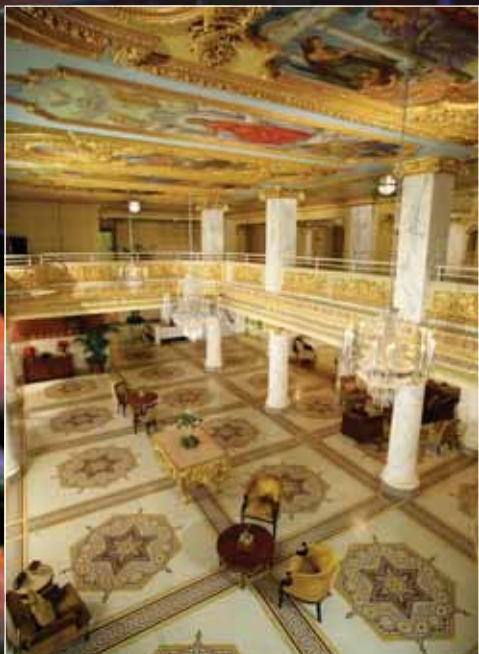
NSCA ISSUE

AV FOR SYSTEMS INTEGRATORS, CONTRACTORS AND CONSULTANTS

ULTIMATE IN ENTERTAINMENT

AV-EQUIPPED FUNCITY LIVES UP TO ITS NAME.

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MORE THAN JUST A NAME
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10TH ANNUAL WORSHIP CENTER SURVEY

World-Class Worship

Grace Evangelical Free Church erects a superior sanctuary.

By Dan Ferrisi

Grace Evangelical Free Church, Stewartville MN, realized that, in today's MTV-generation worship environment, quality audiovisual equipment is needed to impart the pastor's message. Bearing that in mind, Grace underwent a major construction project to create a new sanctuary, boasting a full technology complement: acoustical treatment, video projection, video cameras, an audio system, a control system and theatrical lighting. Sim Sound & Video, Inc., Winona MN, handled the audiovisual elements. According to Dean Sim, system designer/CEO/owner, "Previously, they had the typical 'sanct-atorium.' It was a multi-purpose room that's basically a gymnasium with horrible acoustics." Although the project presented some challenges, the results are nothing short of excellent.

There were several key players on the church's end. The integrator worked closely with Gary Platz, chairman of the technology committee, on audio issues. There also were committee members who focused on theatrical lighting and video.

Pastor Andy [Wallman] was instrumental in defining the vision of what the whole system should be able to do. Additionally, he's one of the main leaders of the contempo-



The church's altar, with projection screens on each side, and subs below them in bunkers.

rary worship group. The building chair is Steve Jobs.

Sim Sound & Video's involvement with the project commenced in September 2005. Commented Sim, "We got involved with the project before the actual bids were let for it. It was a negotiated project, so we also helped with the acoustical design of the room. We were onboard before the rest of the construction contracts were let." Sim stressed that, from the church's point of view, audio was essential. Terri Sim, who also works with the company, mentioned that Grace tends to be more of a contemporary type of worship. As such, the sanctuary had to accommodate drums, acoustic piano, electric keyboards, bass, and electric and acoustic guitars. Explained Pastor

John Grams, "We have a lot of great musicians in the church, and we try to take advantage of their talents."

Room audio was designed around the Community iBox. The main speaker system comprised four of the IPH1599 15-inch two-way speakers. Explained Dean, "We wanted to give them the ability to have some stereo imaging. So, we used the 1599s, which were really wide. Because we were able to have control over the acoustical environment, every other speaker is set up left, right, left, right, so you have a good stereo image for most seats in the house. And we needed that wide dispersion." When it was drawn out in EASE, Community delivered.

The Sims worked with David Howden, one of Community's chief engineers, to come up with a good

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way to incorporate SBS25 subs unobtrusively into the project. Commented Dean, "So, the room opens up kind of like a fan, and we have two large rear-screen projectors on these slanted walls going up to the platform area. We cut two bunkers into that wall that go into the room behind. They were made out of concrete blocks and then we filled them with sand." They put the cabinets in there, so they aren't taking up any space in the room and they're not visible. The subs are just

below the screens. "So," he continued, "we got a lot of acoustical advantage from building those bunkers and it really worked well."

A variety of other audio gear also contributes to the successful results. The room includes Polar Focus adjustable tilt kits, TOA five-inch ceiling speakers, a pair of QSC CX404 four-channel amps and a CX168 eight-channel amp, and a variety of Lowell equipment. In addition, Biamp provides a pair of Nexia SP programmable digital

processors and a Nexia CS digital signal processor. "They're using eight Sennheiser wireless systems, a combination of handhelds and bodypacks," said Dean, who also mentioned Countryman earsets. Added Terri, "We pretty much don't use lapel mics in church environments anymore, because the Countryman mic offers so much more as far as quality and gain before feedback."

According to Dean, "We also have a Crestron system that's controlling all the video and audio, so, even though [the church] has an Allen & Heath GL2800-840 40-channel mixer in the system, we have some presets along with the Biamp pieces." Basically, an operator can hit one button for, as an example, a Wednesday night Bible study. Grace is able to use the projection equipment and put the audio system in an automatic mode, so nobody has to be in the booth all the time to operate the system for simple services.

Dean mentioned that he enjoys working with Crestron products because they allow his company to make many types of systems easy for the customer to use. "We've talked to a lot of prospective customers who have had the pastor giving a sermon, trying to use some kind of technology, and it wouldn't work. That'll probably be the last time he'll use that. So, it's really one of the things that we've enjoyed working with because, for almost anything you or your customer can imagine, just about in every case you can do it."

Resolving potentially problematic acoustics was a crucial element. Sim Sound spent a lot of time working with Acoustics First, coming up with a way to make the room work. The facility had padded chairs, carpeting and a suspended acoustic drop-tile ceiling. So, there was a lot of absorption, especially in the mids and the high frequencies. In addition, the bass was a little heavy.

Dean commented, "So, we primarily used their double-duty diffusers, which we put across the back wall to eliminate the slap. Also, they do a



Acoustic panels helped create a more uniform sound.



On the non-public side of the stage, the concrete block bunkers housing the sub-cabinets are filled with sand.

good job of absorbing a little bit more of the low frequencies, so we had a more uniform room, without doing more absorption of the mid and high frequencies,” where a lot of it already was happening.

Some corner bass traps were placed in the booth area, to reduce the amount of bass loading. And, some Model C diffusers were used on one of the side walls, to break it up to avoid getting strong reflections off that area. “That helped,” Dean said. “It wasn’t perfect, but it certainly helped as compared to not treating those walls.”

Grace Church also had substantial visual needs. It wanted to be able to project the words to songs onto the screens. And, Pastor Grams wanted the ability to use sermon notes to highlight his message. “Visual cues help people think through what’s being said,” he explained. The church also sought to augment worship services with video. They used two Da-Lite Da-Glas 90" x 120" rear-projection screens and Eiki LC-XB28 3000 lumen projectors.

Dean added, “We’re using a Crestron control system with its QuickMedia equipment, so we can do the video control over Cat5.” There’s a location at the main booth in the back where all the video can be inputted. There’s also a second location, on the platform, so if a guest speaker or the pastor wants to use a [personal] laptop, he can plug in and control it right from the

stage. Or, if there’s no booth operator, control can be done right from the platform.

According to Terri, Grace Church’s video systems were put to use immediately. “We always make a habit of attending the first service for a new system, no matter what size we put in,” she said. “The first service they had was before Christmas, right around the time *The Nativity Story* [a film] had come out.”

The church wanted to play the video trailer during the service. “So,” continued Terri, “through the video system, they were able to download that into a computer and project it onto the screens for everybody to see. It was very easy for them to do, too.”

To wrap up this overview of the project’s visual elements, Sim Sound & Video gave the church recording capabilities with a Toshiba RD-XS34 DVD recorder. An RDL TX-AVX automatic video switcher and PS-24 power supply are employed. Finally, the church was equipped with a Vaddio Wallview PTZ camera system with hard-drive. Cat5 cables were used for sending both video and control to the camera.

Lest one get the impression that lighting wasn’t essential to the project, Dean and Terri recounted the gear Grace uses. Dean explained, “We used a Leviton-NSI Topaz 24-channel dimmer system. We also have an RS232 interface

from the Crestron system directly to the dimmers. So, we can recall certain presets, again for when they’re doing Wednesday night Bible study, a funeral, etc.” In a situation where there isn’t an operator, someone can hit a preset and it’ll deliver lighting for whatever the event might be. “We’re also able to tie that into macros,” added Dean, “so when they’re using a video projection screen, we’re able to turn off some of the theatrical lighting automatically, as well.”

Terri mentioned the congregation’s positive reaction to the new technology. One man told her that his wife needed to use hearing assistance in the old sanctuary, but she doesn’t require it in the new space. This speaks volumes about the level of intelligibility. The other comment she heard was from Pastor Andy’s wife, who is also a musician. That Sunday, she wasn’t performing with the praise band, but was in the congregation. She said the system sounded great. “We know she has a very discriminating ear,” Terri said, “so it really was great to get a compliment from her!”

Dean summed things up, saying, “It was a fun project to work on. We feel that we worked with them, understood what they were going for and gave them everything they wanted—and then some.” Concluded Pastor Grams, “Everybody is absolutely thrilled.” ■