

Lakewood Church: From Stadium to Sanctuary

By Kevin Rogers Cobus

A study of how teamwork between church staff and the collaboration of over 50 contractors helped make an acoustically sound, professional facility out of a blaring basketball arena.

In July of 2005, the famed Lakewood Church held it's successful grand opening, proving that with the right people, a vacant 16,000 seat sports arena, and a budget of over \$95 million, if you build it, they will most certainly come.

Technical installations are happening in churches all over North America almost every week, and they are all worth mentioning, but there is a much bigger story here. This is a church that rented Minute Maid Park because they needed a spot for their Easter Services. The scale of this facility is overwhelming. Such a project could not have been achieved if not for the vision and the leadership of Lakewood's people, and in turn all of the players involved in the installation.

Acoustical Nightmare

What began as a cavernous, acoustical nightmare known as the former Compaq Center, Lakewood has evolved into a state of the art worship space. Lakewood wanted every member of the congregation to be able to intimately experience Pastor Joel Osteen's message. The question was- how could you make a thunderous basketball arena into an intimate place to worship the Lord?

"You're talking about hockey and basketball." said Russ Berger of Russ Berger Design Group- (RBDG) the acoustician for the Lakewood installation. "It's all about the hubbub and the crowd noise. Articulation, loss of consonance, things like that are just not that mission critical."

Russ Berger and his coworker Richard Schrag coordinated the acoustic recommendations for Lakewood- a project that took 19 months to complete.

"This was a big vision." says Berger "There were people that doubted that this could work, or would work. Many of us on the team were very concerned that we would not be able to meet the expectations they had."

Lakewood certainly did have a big vision. The prior facility's interior is hardly recognizable due to all of the renovation that had to be done. When asked if he had a chance to use anything from the existing facility, Berger said: "There wasn't a great deal that wasn't going to be redone anyway as part of the aesthetic upgrade to the space. They refurbished the seats, put in all new flooring materials and replaced all of the ceilings. By the time we were done, the surfaces that were immediately available or that had been providing absorption in the space were replaced."

Intimate and Interactive

Lakewood gave close attention to aesthetics and intimacy to make everyone's experience as personal as possible.

"The intimacy of the facility is marvelous." says Lorrie Foreman, Vice President of Operations for Irvine Team, the design and construction strategy company involved in the Lakewood project. Together with the Lakewood crew, Irvine Team coordinated the selection process for all of the players involved in this incredible project. From start to finish, it would seem that the only part of the facility that was retained was the outer shell- almost everything else was revamped and re-installed. Considering the main sanctuary, no corners could even be cut on where the stage area would be located.

Lakewood had planned to have the stage area in the round, but decided to change their minds once the construction started. Instead of using the space which at one time had been the playing court, Lakewood decided to move the pulpit area to be at the back of the hall.

"They took out the end and built the stage in one end of the arena. " says Foreman. "That was one of the decisions made up front. Originally they wanted to see if they could use the facility "as-is". They had envisioned a worship platform in the round, and it turned out that the sightlines were much better when the stage was placed at the end. We actually came mid-court and raised the floor area for sightline purposes, sound, and a number of other reasons. We raked the old floor back and created a new floor which blends into the existing seating."

In order to accommodate all of the flown gear over the stage, a unique catwalk structure was built from scratch.

"Structurally it was a huge challenge." Foreman continues. "The building was already at it's maximum capability, and we needed to install a three-storey catwalk assembly over the stage for the broadcast lighting. We had cranes where the stage is supposed to be right up to five months before we opened. We reinforced all of those huge roof trusses that span the open ceiling distance. We re-plated, re-welded and reworked those so that they could carry the weight of the catwalks."

Even for it's unprecedented size, the catwalk system is nearly invisible when looking at the completed stage area. Lakewood augmented the intimacy of the worship experience with an unprecedented inclusion of a waterfall right by the choir area.

"You absolutely, positively should never put waterfalls in a building." Foreman comments. "And you absolutely positively should NEVER put waterfalls right next to your stage. It's bad for the mics, it affects the sound, it introduces moisture and chemicals into the environment, there's a chance that it will leak, or that it won't work, it's disruptive, but-- dang, they look really good!"

As it turns out, the waterfall has been designed in such a way that none of these factors have become an issue. The nature of the design is such that the water pressure can be dialed up and down based on the progression of the service. As people enter the building, the water is rushing as a soothing welcome to the congregation, and as the sermon begins, it can be brought all the way back so that it doesn't interfere with the Message. The waterfall represents another way in which the Lakewood team overcame major challenges by having the vision and the ingenuity to make it happen.

Tackling the Audio Oddities

After the selection of the audio technology contractor, Lakewood conducted shootouts in the facility for several different systems to get a feel for what would work and what wouldn't.

According to Albert Leccese of Audio Analysts, the audio technology installation company that worked on Lakewood, "The first issue was whether this was going to be a distributed system or a point source system. We settled on a line arrays

because given the size and height it was the perfect solution. Line arrays don't work for all solutions but in this particular case, as far as weight, size, the fact that we could put them out of sightlines and they disappeared... if you look up in the ceiling, you don't see them. When the house lights go down, there's a blackout line, and the PA is basically heard, not seen."

Low frequency was another big challenge in this space, as Russ Berger describes: "One of the biggest problems was controlling low frequency energy in the space. Beneath the bowl there were teaching spaces, children's spaces, nursery spaces, all of which we had to provide noise control for- not only from the worship service disturbing them, but from them disturbing the worship service. In this arena, there were slots underneath all the seats that were open to the outside area. That's one of the reasons why there was so much noise and so many problematic issues in this space. To meet fire code, to help noise control and to control low frequency, we actually created plenums for the return air on the air conditioning system that were lined and tuned to provide low frequency absorption. So in essence we had slot absorbers→ tuned absorbers throughout the space to control low frequency energy to provide noise control, and get us through fire code. It's all part of finding creative solutions to solve a problem."

The team also handled the taming of low frequencies by installing bass traps under every third seat in the space. The end result is a very tight acoustical space which delivers music and spoken word accordingly.

Child's Play

As everyone knows, the children are the future. The importance of keeping young people interested from the time they start formulating ideas and concepts about God cannot be stressed enough.

Recognizing this, Lakewood uses technology in very creative ways to draw in younger crowds and nurture them. With the Message of Jesus being the basis for all the creativity, the facility was developed with a very unique approach to reaching the youth of all ages. They did this by providing gaming areas, concert rooms and... slimer machines.

"If you've ever seen Nickelodeon- they use slime that looks like oatmeal dyed green." Lorrie Foreman describes. "There are two slime machines that are big enough for a person to stand under the shower apparatus and they get slimed. The kids just love it. We can build the greatest broadcast facility ever, but the kids just want to use those slime machines."

The youth common areas capable of holding live concerts.

"They have stages throughout the children's area. The senior-high area has the largest stage, but throughout the entire five-story Sunday School building, they've got stages which all have performance systems- the lighting, the sound boards- they have really done it right." Foreman comments.

In addition, a library with extensive learning resources, gaming areas complete with X-Box kiosks displaying wholesome and educational games, sporting areas and more, make Lakewood extremely appealing to the younger generation. It reaches out and establishes a relationship with the youth, giving them an opportunity to grow in their spiritual walk as they get older and develop into active servants.

Technical background of the Lakewood team

A huge positive factor in this installation was the technical knowledge and background of the church staff. Because Lakewood's team was working from a background of experience, they were able to contribute several key ideas and help move the contractor and equipment selection processes forward considerably. In addition to the advantage of having a highly educated technical team behind the project, Lakewood's pastor is also technically savvy.

"Joel Osteen himself is an A/V Guy. He knew the importance of integration of audio and video for a comprehensive system, and that you have to get as many people in to the decision making process as possible who can give valid input." says Albert Leccese.

Working with Lakewood was a real joy because they understand the importance of planning." adds Russ Berger. "I think that's one of the reasons why the result turned out so well→ so predictably."

Reinforcing technical knowledge in staff members and volunteers is important in churches of any size. Of course, communication between the technical team and the pastor is essential so that there is an understanding for what is required to pull off consistently successful services. Lakewood has evidently set these concepts in place throughout the course of their history and will continue to do so while conducting services from their new facility.

Working as a team

Even with all of the challenges involving this project, fundamental teamwork ended up being the necessary ingredient to getting the job done in time.

"There were a lot of different consultants and different design entities who had to all be pulling the same direction." said Richard Schrag of RBDG. "From sound system design, lighting, structure, mechanical, electrical, all the TV related aspects of the sanctuary, as well as the architecture and acoustics→ all had to be working together to make this happen.

"The key is really to plan ahead. The reason that Lakewood was successful in making this transition from arena into a worship space was that they had a vision, they brought together people that were experts in their individual fields, they put us in an environment of collaboration where everybody could be looking at the end goal and having the time and the wherewithal to actually develop the solutions that were necessary to get us there."

"The main thing was the teamwork between the architect and the HVAC people, audio video lighting, electrical." says Lecesse of Audio Analysts. "Everyone had to check their egos at the door because we were trying to do what was best for the church, we're not building a monument to any one individual or company."

Just the beginning

The Lakewood project may seem out of the reach of many growing churches and ministries across America. However, it serves as an excellent example for how teamwork, experience, ingenuity and prayer can accomplish even the most incredible tasks. Lakewood is a monument→ it is said to be the largest church facility in North America. As churches across the nation strive to reach more people, Lakewood can be used as a benchmark by which to set seemingly insurmountable goals.

We will continue to study different aspects of this incredible story in future issues of TFWM. If you have any questions or if you wish to contact any of the contractors listed in this installment, please email krc@tfwm.com