

CASE STUDIES

# Houses of Worship



**Unite Your Audience**  
The Martin Audio Experience





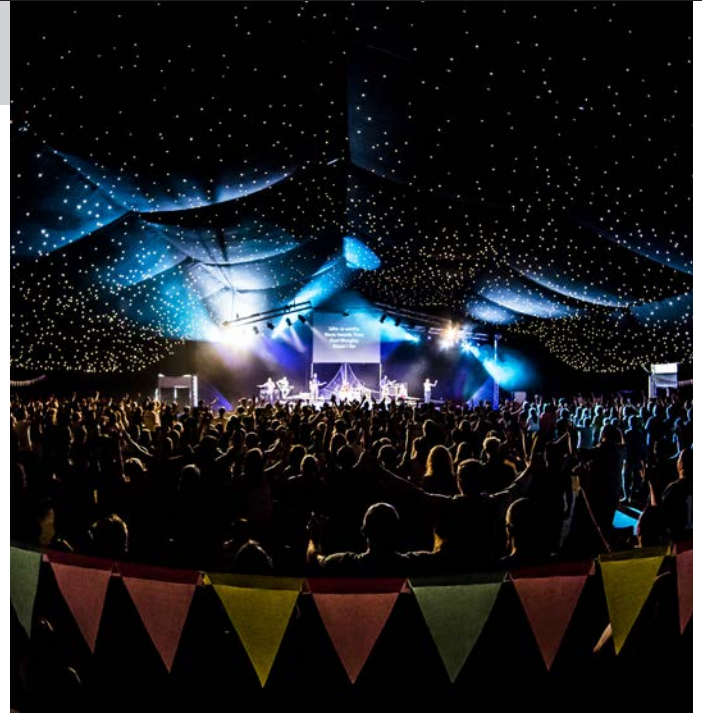


## Martin Audio

At Martin Audio we believe that uniting audiences with exciting sound creates shared memories that sear into the consciousness delivering more successful tours, events and repeatedly packed venues.

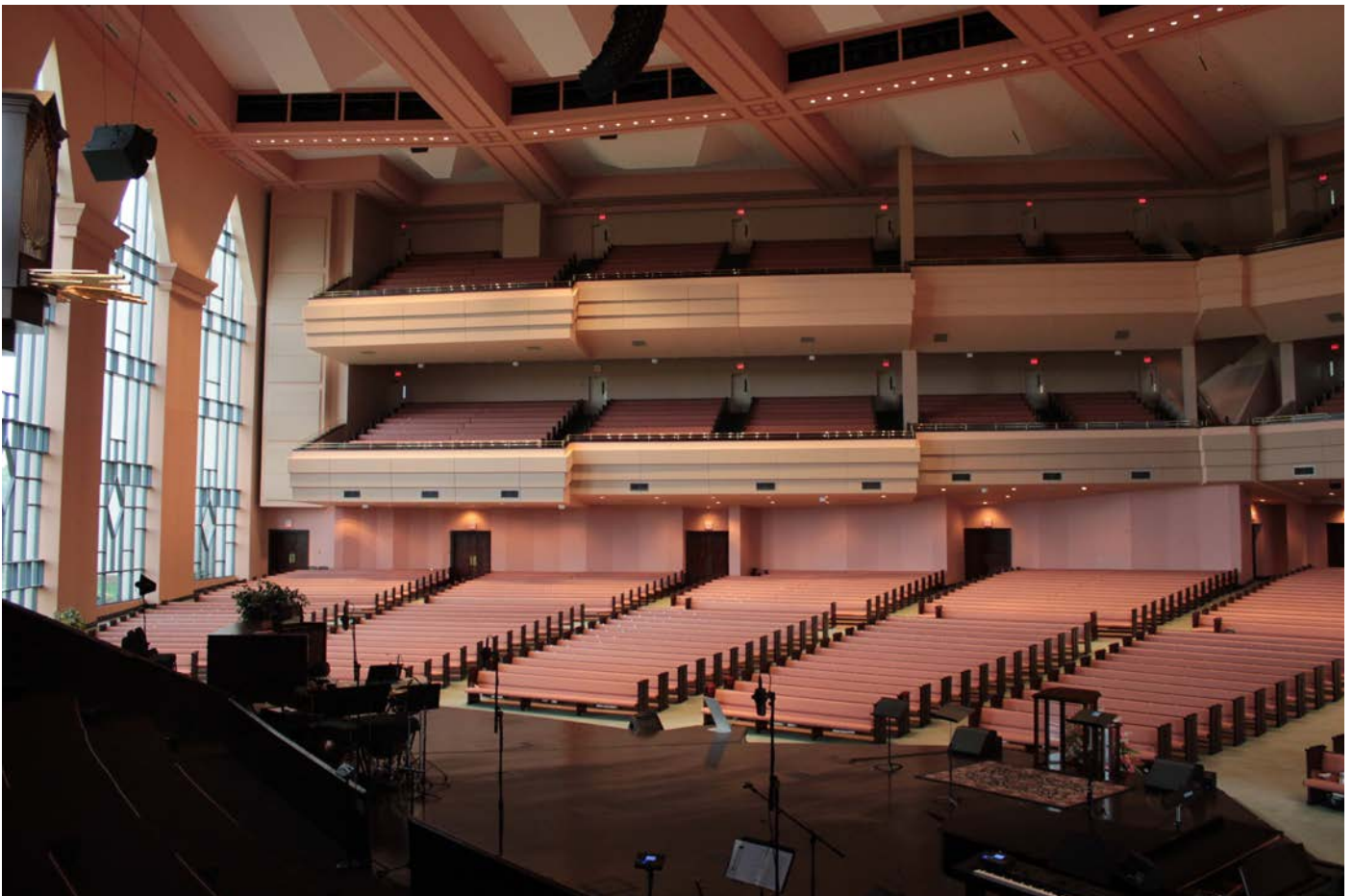
We achieve this by an obsessive attention to detail on the professional sound system's acoustic performance, frequently challenging convention and involving a sophisticated mix of design, research, mathematical modelling and software engineering, to deliver dynamic, full-frequency sound right across the audience.

With over forty years of live sound and installation expertise to our name, Martin Audio offers a wide range of premium professional loudspeakers so customers can be assured of selecting the right system for their chosen application, whether it's a small scale installation or a festival for over 150,000 people.



## Houses of Worship – Uniting the Congregation

At Martin Audio we recognise the importance of intelligible speech and music that envelops the audience, front to back, regardless of the challenges of highly reverberant spaces that many houses of worship tend to occupy. Equally, with everything from traditional services to Gospel to full on rock performances, we offer a range of solutions to meet the diverse needs of this sector.





## MLA System Solves Problems at Calvary Church



“THE MAIN THING FOR ME ABOUT MLA IS WE COULD TAKE CARE OF PEOPLE ON STAGE AND THOSE IN THE AUDIENCE.”

Calvary Church, Charlotte, USA

Clark, a full service design, engineering and integration firm specializing in Houses of Worship, recently deployed a Martin Audio sound system based on MLA arrays as part of an audio upgrade to solve late reflection problems on stage and ensure consistent coverage in the huge 5,000-seat sanctuary of the Calvary Church in Charlotte, North Carolina.

Calvary Church is known for having one of the largest pipe organs in the world valued at approximately \$3.7 million with 205 ranks and 11,499 pipes, which presented a significant challenge for the integrators in terms of providing reinforced sound that wouldn't have a negative impact on the organ and the room's natural acoustics.

Houston Clark, principal and co-founder, describes the problem his team had to solve: “It's a newer building that embraces both traditional and blended worship—regularly using its massive pipe organ. So the challenge was very unique in two ways: the church wanted reinforced sound in the room for speech, a choir, orchestral and modern instrumental music without negatively impacting the acoustics for the pipe organ.

“We needed to calm the room down acoustically when we energized it with reinforced sound without treating it acoustically,” Clark continues. “We also needed to eliminate reflections off the back wall that were causing intelligibility problems for the Pastor and choir, so we

came up with a unique solution using the Martin Audio MLA system that would solve those problems and ensure consistent coverage for every seat in the congregation.”

The system Clark devised for Calvary starts with three hangs from the center of the ceiling with 16 MLA enclosures on the left and right side and 6 MLX subwoofers in the center. An array of 8 MLA Mini facing the choir and orchestra pit is hung behind the subwoofers to provide effective monitoring for the stage.

Additionally, two flown Martin Audio H3H+ speakers per side are used for outfills and 2 XD12 speakers in the greenery at the edges of the stage are used as planter fills for the outermost sections of the seating. Under balcony fills to cover a small section of the congregation at the back of the hall are provided by 6 Martin Audio DD6s and upper balcony fills by 4 XD15 speakers.

“What's unusual about Calvary is the fact that they blend traditional choir, organ and orchestral music with a modern electric band in one service,” adds Houston. “So we had to make sure the PA was effectively reproducing all of those elements without over-energizing the hall. MLA allows us to do that and control the slap-back echo off the back wall of the room that was negatively affecting the Pastor's sermons. With the previous system, he had to meter the tempo of his sermon because his voice was





coming back at him and creating intelligibility problems. With the MLA, we could use the hard avoid feature and eliminate those reflections for the Pastor and the choir.

“The other thing that really works now is going from the main floor, to the second and third floor balconies, the sound experience is consistent at every floor,” Houston concludes. “You have a dream when putting together this type of PA that every seat will have the same audio experience and it was truly amazing to walk all of those

floors and not perceive a difference in the sound.”

Calvary’s Technical Director Dan Smith is also impressed with the MLA system: “It’s been working great, we’re really pleased. We don’t have to worry about all the reflections and mix around them anymore, we can get a fuller, truer mix out there. A typical Sunday service includes the choir, full bands with drums, keyboards, electric bass, and a brass orchestra with percussion. I usually run between 60 and 65 inputs, so it’s a pretty big production. I can get all the elements to come out where it was really difficult before.

“The best part of using MLA is that we can do all of this without affecting the organ and the room. That’s one of the main things we looked at from the get-go when we were looking at different speaker systems because we didn’t want to pad or treat the room because it’s such a great sounding room. And the control is amazing now. I was sitting on stage last night and you can’t even detect the slap-back of a snare off the back wall. It’s like being in a big room with no back wall.”

Discussing the system’s ability to eliminate typical problems, installation team leader George Clark adds, “Normally in a lot of these larger spaces, you spend just as much time evaluating the impact of the PA in terms of what’s happening on stage as the auditorium. That’s 50% of the battle, you may have covered the room well but if you’ve destroyed intelligibility on stage, what have you gained? The main thing for me about MLA is we could take care of people on stage and those in the audience.”

## Gwinnett Church Enhances Worship with MLA Compact

One of six North Point Ministries churches in the Atlanta area, Gwinnett Church recently completed construction and outfitting for a new worship center on its campus.

The center’s main sanctuary, named the Theater, is a rectangular 1300-seat auditorium that features the latest audio, video and lighting technology to provide a completely absorbing worship experience. Installed by Clark of Atlanta, Dallas, Austin and Los Angeles, a key component of this technology is a Martin Audio MLA Compact loudspeaker system that provides uniform coverage for every member of the congregation inside while controlling noise overspill outside the building, which is located a few hundred feet from a residential neighborhood.

Asked to describe a typical Sunday service, Gwinnett Technical Director Adrian Varner says, “We usually start with an announcement video about the service and upcoming events, not all communications from the stage are verbal. Sometimes we’ll have a music video as a fun attention grabber, before moving into one of three songs and a transition before the sermon.





**“ I ABSOLUTELY LOVE THE  
MLA COMPACT SYSTEM.**

**Gwinnett Church, Los Angeles, USA**

“Because we are a North Point Ministries Church, we’ll have lead pastor Andy Stanley speak to us on video via fiber. He generally speaks 40 to 42 Sundays a year with Gwinnett pastor Jeff Henderson speaking to the audience live on other Sundays.”

A five piece electric band (two guitars, bass, keyboards, drums) with two to four worship leaders who also handle vocals provides “rock and roll style” music for the contemporary praise worship services. The audio, video and lighting systems are intended “to break down the wall between the stage and audience and bring that stage experience directly out into the audience,” according to Varner.

“With the style of worship that we’re doing, I’m trying to have an experience that really surrounds you. It doesn’t just feel like it’s coming at you from the stage, but you feel really absorbed in it as it happens all around you.”

A big part of this experience depends on the sound, which explains the choice of a Martin Audio MLA Compact system with eight enclosures a side, four DD12 for outfills and eight DD6s for front fill.

“We have a DD12 outside of each hang for front of congregation and one DD12 a side for the back of the hall,” Adrian adds. “The eight DD6s are mounted on the subs under the stage.

“Our room is 150 ft. wide by 75 ft. deep and, as a rectangle, it can be hard to provide uniform coverage to the far extremes. We’ve been able to achieve that coverage

extremely well. The system has exceptional clarity for speech and we needed a system for music reproduction that could comfortably hit 100dB (A-weighted) or greater with enough headroom, which MLA does easily.

“We also wanted to provide smooth, even coverage from front to back, not just in terms of volume, but consistent tone for every seat in the room. I don’t want anyone to feel it’s too bright where they’re sitting, because it’s not fair to have people seek out certain seats in the audience so they can have a consistent tone experience. We don’t have that problem with MLA.

“Also, the volume is loud enough where people can sing comfortably and not be afraid that the person in front, behind or alongside will hear them, so they can be more engaged in the singing without worrying that they don’t have pitch-perfect voices.

“I absolutely love the MLA Compact system, Adrian enthuses. “I mix Front of House and have found it to be the most enjoyable system I’ve ever mixed on. One of the things I continue to hear from people who come up to us, both professionals and audience members, is how smooth and clear the system is. How clear the top end is but it doesn’t hurt, there’s no harshness to it, which for me is a big selling point for this system.”

The audio system also includes DiGiCo SD10 consoles for FOH and Monitors, a Neve 5045 Portico Source Enhancer and a selection of Shure, Sennheiser, Royer and Radial wireless and wired microphones.





Gwinnett's sophisticated video system is based on Digital Projection Titan projectors for side and center, with Panasonic AK-HC931 and HPX-10 cameras; a Ross Carbonite 2ME production switcher; Harris 96x96 router; Clear-Com Matrix for communications; Harmonic message playback, and a Renewed Vision Pro Video Server and Pro Presenter.

The lighting system includes a Jands Vista L5 console; Arkoas MediaMaster media server; ETC Source Four (zoom, ellipsoidal, and parnells) and ETC Sensor 3 for key lighting; Martin MAC Aura and MAC Viper lights; Chauvet Tri Tour and Epix Strip 2.0 LED lights; a Pathport Octo for distribution, and a ChromaQ Inspire 2 for house lighting.

In addition to providing consistent coverage for every congregant, the MLA system also solves a critical noise overspill problem for the church. There is a residential subdivision located a mere 300 feet behind the back wall of the auditorium and building.

Knowing this would present a problem given the high decibel audio for early morning sound checks and services, the church specified walls with three inches of concrete, two inches of Styrofoam, and three inches of concrete, with four inches of lightweight poured concrete on the roof. Although this "does a good job of keeping the sound inside, some still leaks out a bit, especially during soundcheck at 6am on Sunday when it's pretty quiet outside," according to Adrian.

"Because of MLA's amazing control, we're not only covering the seated section very well, but also actively

keeping sound off of the roof and the back wall. And with a situation like ours where we don't have 18 boxes a side, it's tough to get that control over those low mid frequencies, but MLA has really been a huge help. Ever since we've been up and running, we haven't gotten any noise complaints from the neighbors. And with all of those electric instruments and vocals, things have been pretty lively on stage, so the kind of control we get from MLA has been a big help."

Houston Clark, company co-founder and principal of the installation company that recommended MLA, echoes those sentiments when discussing the project: "Clark has partnered with North Point Community Church for over 15 years. During that time, we've built a significant amount of trust. We were asked to help them solve a unique problem with their new Gwinnett campus. We had to develop an audio solution that met their very high sonic requirements that would also minimize sound 'bleed' into a nearby housing subdivision. After researching the design parameters, we knew Martin Audio could give us the results we were looking for. The MLA speaker line was a perfect fit. We could literally steer the sound away from the areas we wanted to avoid without in any way degrading the sonic experience."

Summing up the Church's reaction to the MLA Compact system, Adrian concludes, "Everyone that's heard MLA has been incredibly pleased with it. Our music director brings in music directors from other campuses, and he'll always ask me to turn on the sound system and show them what it can do."



Gwinnett Church, Los Angeles

## Hope Community Church Upgrades with Martin Audio



“**NOTHING BUT ‘WOWS’ OF AMAZEMENT IN TERMS OF THE CLARITY AND HOW GOOD THE SYSTEM SOUNDS.**”

The Hope Community Church Raleigh campus recently underwent a significant sound system upgrade with a Martin Audio MLA Compact system by DP Design of Milwaukee, WI.

As DP Design founder and owner David Price explains, ‘We were called in to design a new audio system for the church because the original one was at the end of its life so they decided on a complete upgrade instead of replacing it.

‘The worship space seats 2,000 in a room with a unique design that curves out in a fan shape. There’s a large catwalk that drops down over the audience that can block audio going to the small balcony over the main entrance door, which was one of the challenging structural elements we had to work around.

‘In addition, there is raised stadium-style seating that slopes up and gets steeper towards the sides. It’s a very wide room and the Martin Audio MLA system is one of the few that has a coverage pattern wider than 120 degrees which came in handy considering the room’s design.

Typically, Hope Church has a modern type worship service with electric bands so the system had to reproduce music at higher levels as well as providing spoken word clarity for the sermons. For that, David designed a setup with eight MLA Compact per side and eight MLA Mini enclosures flown over the center of the stage in LCR configuration. This allows the church to run the pastor’s sermon through the center array for a more authentic ‘church-like’ sound while simultaneously achieving concert quality stereo sound for the music.

A solid concrete platform stage eliminated the option of digging out cavities for the subs and there was no place to put them on or alongside the stage, so two MLX subs were flown behind the MLA Compacts on each side.

As David points out, ‘The Church wanted the speaker system to be very streamlined and unobtrusive despite the large catwalk and projectors, and we accomplished that. I am very happy the speakers are totally out of sight and can produce the sound levels as needed but are not a feature of the stage, just invisibly hung where they need to be.’

‘MLA was the obvious choice given the need for concert-quality sound which Martin Audio is known for. Plus, the control MLA delivers helped us overcome unique acoustical problems such as the 24’ I-beam under the catwalk that causes slapback and other noise issues.

‘Now the church has a system that provides smooth, even coverage with exceptional rear cancellation that eliminates the unusual amount of reverberation on stage. Plus, MLA’s software is a completely different way of doing DSP where you can control what the decibel and EQ response is from front to back, which makes it very flexible and powerful. It also helped us eliminate a bass buildup problem under the balcony by the entrance doors and catwalk issues with the Hard Avoid feature.

Summing up, David adds, ‘It’s a uniquely challenging room with a staff that can be very picky about audio quality. I’ve been the AV provider over a year now, and for them not to have a single complaint and nothing but ‘wows’ of amazement in terms of the clarity and how good the system sounds is virtually unheard of.’



## Redemption Church, Arizona USA



**“ THE MLA SYSTEM HAS  
OUTPERFORMED MY EXPECTATIONS.**

**Redemption Church, Arizona USA**

When Redemption Church recently committed to an expansion and retrofit of their multipurpose conference and worship center, they wanted an audio, video and lighting system that would provide a truly meaningful experience for each one of their members.

The first challenge was the center itself, formed from an irregularly shaped room caused by a large extension designed to redefine the space without negatively impacting the original. Measuring about 180 feet wide by 60 feet deep, it was hardly ideal for reproducing sound, representing a very real challenge for any audio system.

Fortunately, church member Jim Jorgensen was an experienced audio engineer who had a close relationship with Redemption Lead Pastor Tim Maughan. Because Jorgensen had worked for leading audio providers and Martin Audio as a product support specialist, he was a logical choice as a consultant for this project.

When Maughan set out to find the ideal system for the new center, “Jim was the first person I called because he’d done the previous install in our chapel using Martin Audio W8LM line arrays. I didn’t want to do anything without knowing what he was thinking, because churches invariably have rooms with certain acoustic problems and typically there’s not a lot of work done to make them sound better.

“I wanted the new worship center to sound as good as it could be,” Tim continues. “Jim’s first recommendation was the new Martin Audio MLA Compact system which he thought would be ideal for us because of its coverage and control. So we began to talk about it to confirm what I needed from the system. It had to do both music reproduction really well and the spoken word with absolute clarity. Most of the church systems do one or the other, but rarely do both.

“Once I realized what it could do—and I trust Jim—I went to the team I work with and told them the investment in MLA Compact was worth it because we had to replace the sound equipment in every church building we’ve ever been a part of at least two or three times, so it’s more than worth bumping up the budget to get the system that we needed and would last for a long time.”

After a yearlong fundraising effort, Redemption purchased the MLA Compact system from On Stage Audio, a certified MLA installation partner. The actual audio setup consists of 12 MLA Compact enclosures hung in left, center, right hangs of four boxes each with two MLX subwoofers mounted under the platform stage at the outer corners. The system is completed by Martin Audio Merlin Controllers for loudspeaker and network management and also includes a Yamaha M7CL 48 channel mixer and a custom Whirlwind 64 channel splitter. Technical Director Tim Smith and



rigger Mike “Milk” Arnold did the in-house installation.

The multi-purpose center holds up to 1000 members at each of the three services held on Sunday. Designed by debartolo architects for optimum sound, the space has walls with 4” of acoustic material covered by 1” slats of Cedar for the first eight feet. According to Jorgensen, “the room sounds drastically different above 10 feet in the air. The control and phase coherence of the MLA Compact system and predictability of the software enables them to make it sound great where the people are and decrease the energy where people aren’t.”

Much of the wall space is devoted to video with two 16-foot sections on the sides and a 28 ft. wide and 16 ft. tall screen behind the stage. The rest of the white walls are used for colored LED projections, all of which determined that the speakers had to be hung out of sight high up in the ceiling from flying frames attached to an angle iron hanging from trussing. Martin Audio Display™ prediction software was used to determine the optimum curvature of the arrays.

“The system location actually grew out of a ‘wrestling match’ with video because everyone wanted the same space,” says Maughan, “so the challenge was finding the right location for the speakers. We’ve been fans of Martin Audio with the W8LMs and the F2s we use for a mobile outdoor system because they deliver exactly what we expect. This was a test of asking the MLA Compact system to do something for us, so putting it up in the ceiling and changing the points where it hits the audience and dialing

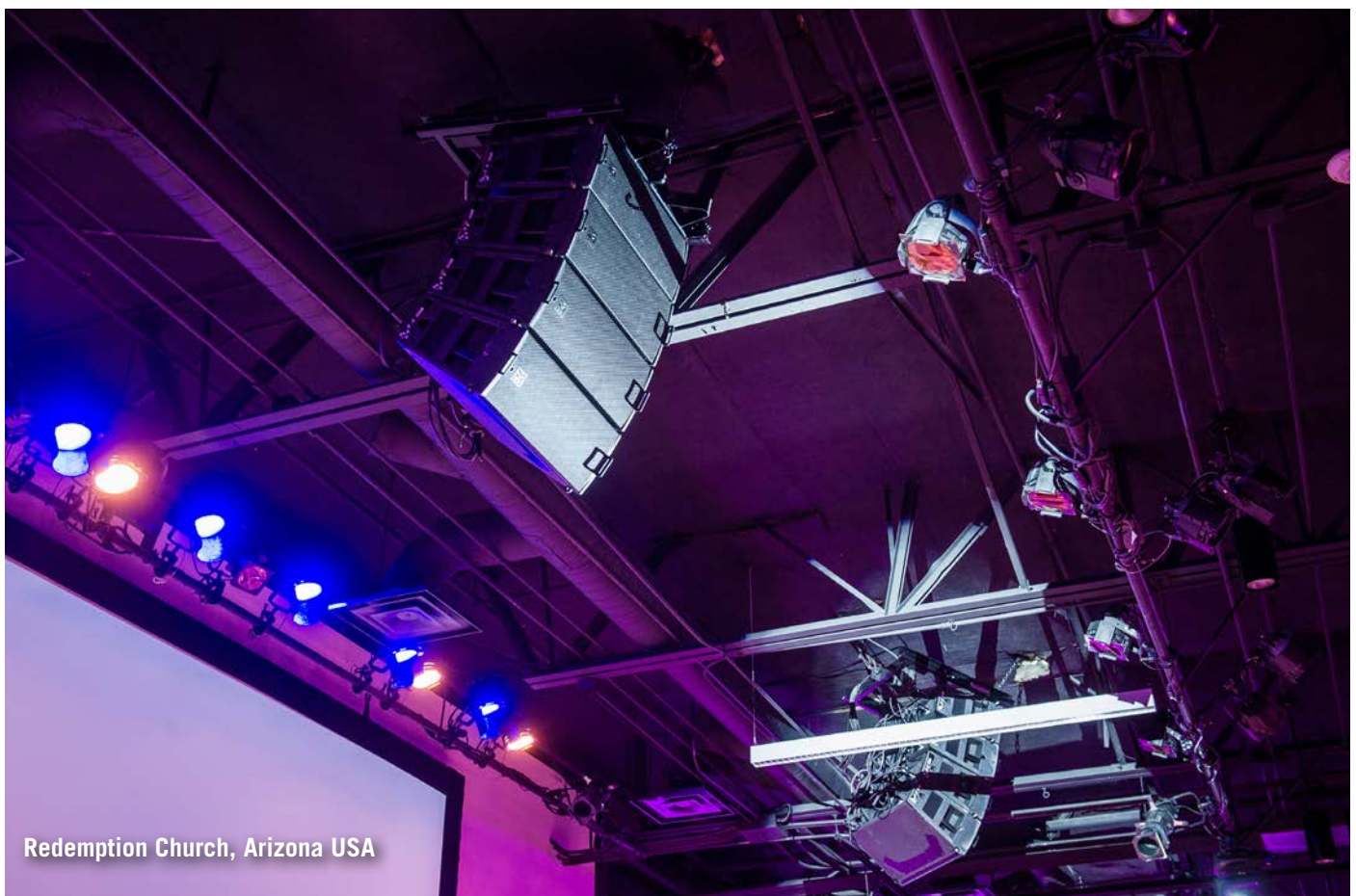
that in worked perfectly. The sound is exactly where we need it to be, which wouldn’t happen with another cabinet.

“I have huge expectations for audio,” Tim emphasizes. “Not just to reinforce sound, but to really make it musical. In most churches that I’ve been, none of the audio they’re running does that. It’s just sound reinforcement and often sounds really harsh without much quality. The MLA system has outperformed my expectations, which is rare.

“We have bands with electric instruments, amplifiers, and live drums that run the gamut from bluegrass to rock music. I was concerned that the subs would overpower everything with that ‘wall of speaker’ type of bass sound, but we put just two MLX under the stage platform and they’re the best sounding subs I’ve ever heard in my life.”

Maughan feels audio, video and lighting is a very subjective area in any church, especially Redemption, which is moving towards a more contemporary style of worship. Pleasing every member of the congregation, from the youngest to the oldest can be a delicate balance.

As it happens, the congregation has not only accepted the upgrade, it’s united them as well: “Sound is always very challenging,” Tim concludes. “If it’s too loud or too harsh, we get a lot of comments. We have hundreds of older people in the congregation, and this is the first time we’ve done a technical upgrade where we haven’t heard one complaint about the audio. It has worked for everyone across the board and helped them experience the service in a much more meaningful and profound way.”



Redemption Church, Arizona USA

## Sun Valley Church, USA



**“ I WAS REALLY IMPRESSED WITH WHAT I HEARD.**

**Sun Valley Church, USA**

The Tempe campus of Sun Valley Community Church recently installed a Martin Audio MLA Compact loudspeaker system as a key component in a significant upgrade of its technical capabilities.

According to Eric Johnson, Technical Director for Sun Valley, “Sun Valley Tempe merged with Bethany Church two and a half years ago and we inherited a large campus and an auditorium with technical capabilities that were deficient by today’s standards. The audio system was old and primarily designed for natural speech, orchestra and choir reinforcement in an acoustic setting. That, plus the building is a complex geometrical design, basically a five-sided pentagon with a seven-sided auditorium that’s about 160 degrees wide, has a raked floor, many complex angles and no parallel surfaces. Needless to say, this presented a real challenge when it came to choosing a new loudspeaker system.

“The original system had worked for many years,” Johnson continues, “but changing times, culture and styles made us realize that it no longer served our purposes for electric rock and roll style music. We decided on a major renovation that involved changing the seating from traditional pews

to modern theatre style seats and going from a totally carpeted floor to carpeting only in the aisles. We also reduced the size of the stage, pulling back the downstage edge by about twelve feet in addition to upgrading the lighting and audio system.

“And there was a real concern as to whether or not we could put in a system that would adequately reinforce rock and roll without overwhelming the live-sounding room. So we discussed acoustically treating the room, which would have cost hundreds of thousands of dollars, or completely tearing down the ceiling and remodeling the room from the inside which wasn’t feasible either.”

Fortunately, Johnson was aware of the Martin Audio MLA system having first heard it several years ago during a demo at Comerica Theater in downtown Phoenix. “I had an idea of what the technology was about,” he points out, “but I was really impressed with what I heard. The possibility of MLA and the MLA Compact system specifically, led us to realize that the technology would allow us to precisely control the audio output and put the energy onto the seats while keeping it off the ceilings and walls. So that’s the direction we decided to pursue.”



The installed system for the 1300-seat auditorium consists of nine MLA Compact enclosures per side in left-right hangs with seven Martin Audio DSX subs in bunkers arranged in arc formation along the downstage edge. Two WT3 speakers for extreme left and right outfill and six DD6 speakers for front fill complete the system with Martin Audio MA3.0 and MA2.8Q amplifiers and a Merlin Processor that manages the outfills and front fills, as well as communications between the speakers. The rest of the setup currently includes a Soundcraft MH2 40-channel Desk at FOH Sennheiser Evolution Series wireless and DPA microphones.

Johnson adds that the installation team, which included Ed Crippen from Clark, the system integration company, Jon Hunsacker and Kevin Hull from SVCC and Sean Stinson's team of riggers from Clearwing, had to bring in a considerable amount of additional power to accommodate the new lights and audio system since the building was already over capacity for electrical service.

Completed in the first week of April, the system debuted on Palm Sunday and according to Eric, "it was an overwhelming success. Ed Crippen was there for the whole weekend, which included rehearsals and the first service. He was taking measurements for the service and one of the things we discovered during the sermon was that real-time intelligibility readings were off the charts. He had never seen intelligibility readings that high. The first time our pastor Chad Moore who uses hearing aids, stepped on the stage and spoke through the microphone he said, 'I can finally hear myself.'

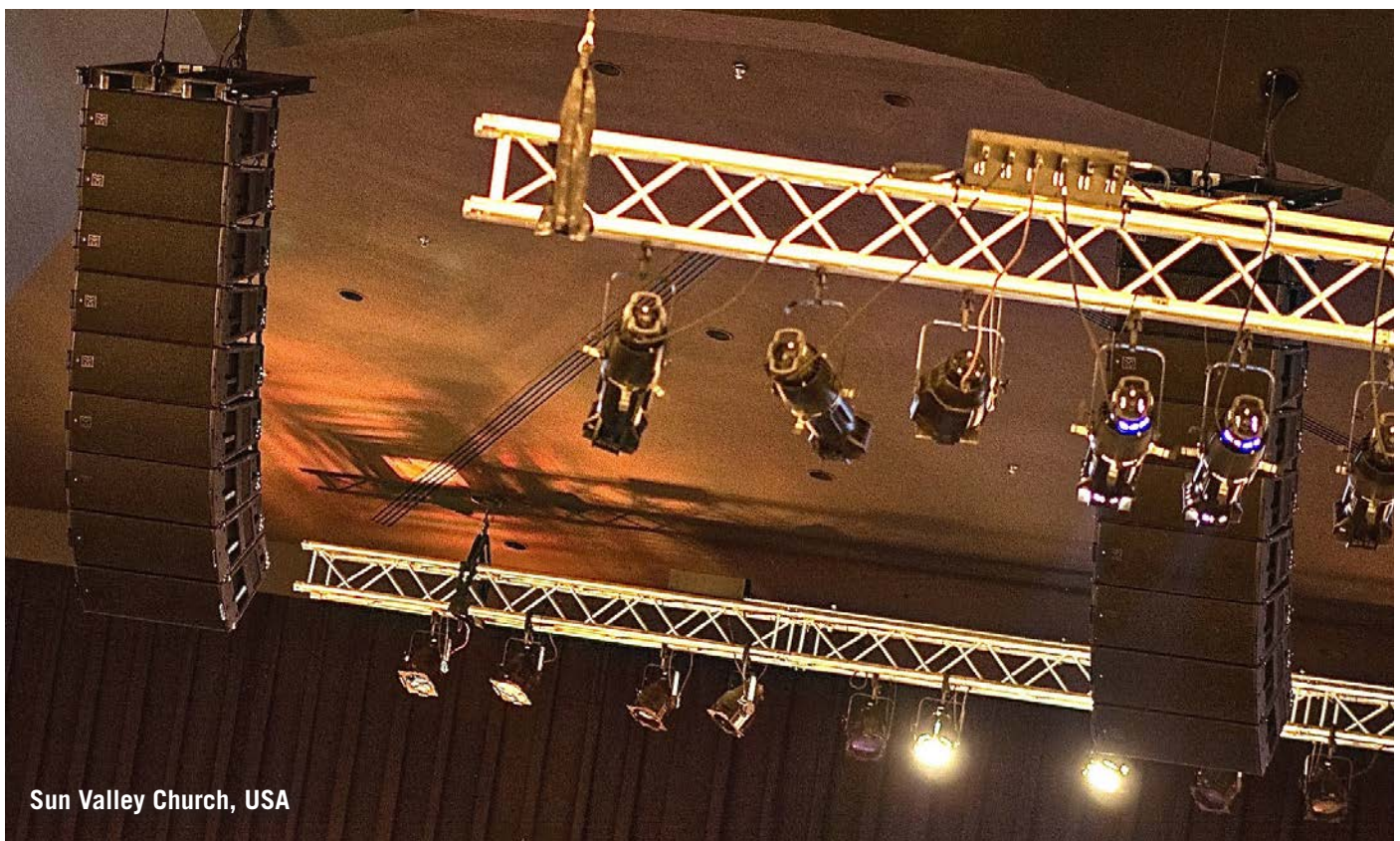
"There was a band playing that averaged between 95dB and 104dB with subs which was clear and not too loud.

With the MLA Compact, the musicians can now focus on the nuances and subtleties of their music that can finally be heard without overwhelming the space. I even had to adjust the drummer's toms because we could hear them rattling against the support post.

"When we went to the portion with just the pastor speaking downstage, we averaged 72dB over a ten minute window," Eric confirms. "Not only was it loud enough, it was incredibly clear and you felt as if he was talking right in front of you at 72dB. It's unheard of to put a message out at that volume and not suffer any fatigue because it's not loud enough. We're still talking about that one!"

Johnson notes that the overall process of assembling the system took the better portion of a year and required that he put the installer and speaker company together because "Clark was not a Martin Audio dealer and I wanted MLA Compact in the building. Ed and I attended an MLA training class in Las Vegas and that's when he really lit up and got what the system was all about. It turned out to be a full-fledged collaboration between Sun Valley, Clark and Martin Audio."

Summing up about the impact of MLA Compact on Sun Valley, Johnson concludes, "One notable thing that happened on the first Sunday we used system is that the doors from the worship center out to the lobby are usually opened up when it's time to come in the room, but it was a nice day so the exterior doors from the lobby out to the patio were also open. One person commented that the reason he came in was that when the music started, he could hear our worship leader as clear as a bell all the way out onto the patio, which we could never do before the MLA Compact."



Sun Valley Church, USA



## Roswell Church Retains Natural Acoustics with MLA



Roswell United Methodist Church, USA

Roswell, GA—The Roswell United Methodist Church recently upgraded their sound capabilities with a Martin Audio MLA Mini system that provides precise sonic control while embracing the worship sanctuary’s natural acoustic properties.

Houston Clark, principal and co-founder of Clark, the design and integration firm responsible for the installation, describes Roswell as “a very traditional church with a uniquely shaped worship space that has a high domed ceiling with exposed beams and excellent natural acoustics.

“That said,” Houston continues, “it was challenging to get a positive PA experience in such a beautiful room because we didn’t want to use a lot of acoustical treatment which would have adversely affected its visual aesthetics and natural acoustic properties.

“We were able to work closely with the church and demo the Martin Audio MLA Mini to show them the system’s unique properties and how it could solve their problems. As it turned out, they were comfortable going forward with us knowing it wouldn’t be a traditional approach to solving that room’s PA and acoustical issues.”

The system Clark came up with consists of three hangs of 8 MLA Mini enclosures with 3 MLX subs flown from the ceiling in a cardioid pattern. A MLA Mini enclosure array with four enclosures is deployed for choir monitoring. Two Yamaha CL5 consoles are used for FOH and web broadcasts.

“We wanted a PA that would make the room sound good without relying on electronics,” Houston adds. “When you use a Martin Audio speaker system, it represents a higher order of PAs among the best in the world. It’s not just that the sound is controllable—you can direct it away from certain surfaces and put it where you want it—the PA just sounds great.

“Churches like Roswell that want to embrace natural acoustics when it’s appropriate for their worship style and programming, don’t have to make the kind of trade-offs they’re used to with other systems, when deploying MLA. This is one of those instances where you come really close to having your cake and eating it too. It offers dual functionality as an amplified PA with natural sound in the same room, something that hasn’t been available until recently.

“Over the years, we’ve developed a reputation for fantastic sounding PAs,” Houston continues, “and even though Roswell UMC isn’t a rock and roll worship service type venue, the quality of the sonic signature had to be on par with all of the systems we provide. The church has a choir and a band and orchestra for traditional and more contemporary services. MLA takes advantage of both reinforced sound when you need it and natural acoustics when that’s required. This is our fourth church install with MLA and it’s proved to be a truly amazing product for very different types of sanctuaries.





The MLA system has exceptional intelligibility. Our older congregation has been able to hear the sermon for the first time in 25 years, which might sound like an exaggeration, but is actually pretty accurate.

“We have two services, one more contemporary with electric guitar, bass and V-drums and MLA sounds great for that. For the second service, which is more traditional, the system’s allowed us to get more of the choir out of the speakers where it doesn’t sound reproduced electronically, but naturally amplified the way it’s supposed to be.

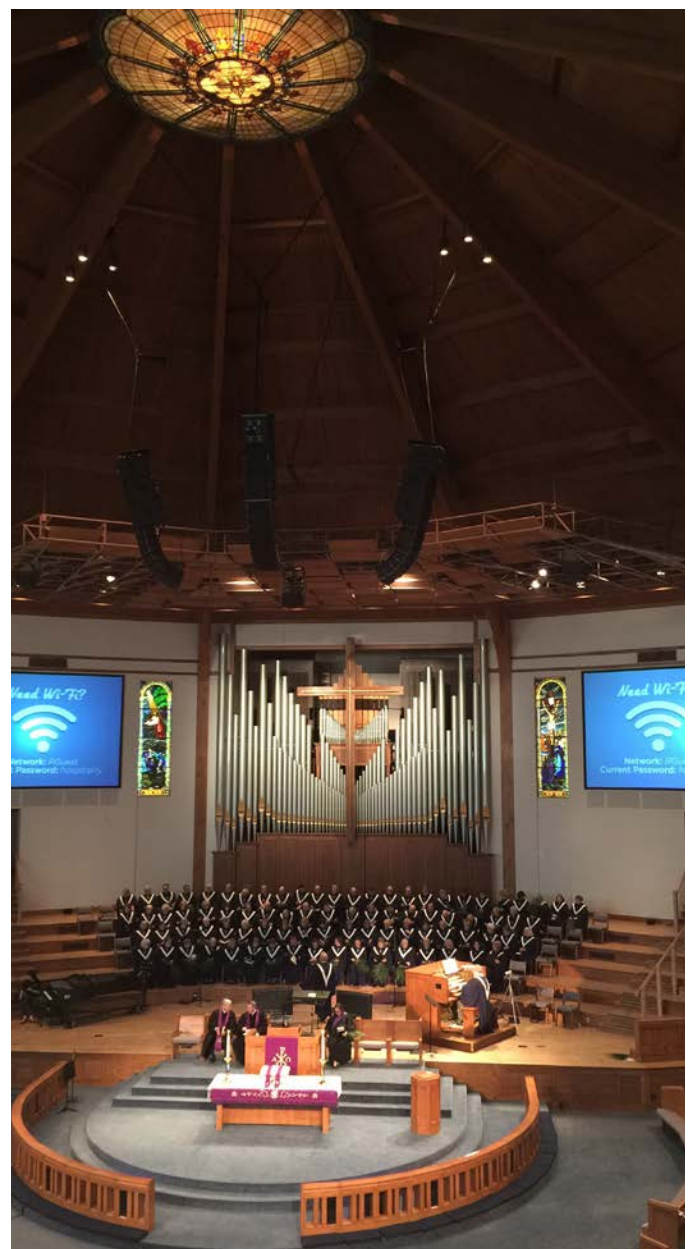
“And the control is remarkable,” Aaron sums up. “For example, you can hardly hear the Mini 4-speaker array aimed at the choir loft in the rest of the house because there are no reflections off the organ wall coming back out to the crowd.

Overall, there has been nothing but positive comments about the system. The mantra for this new installation was, ‘it has to be right.’ And Clark and MLA have done just that.”

“Calvary Church (Charlotte, NC) is a 5,000 seat room with two balconies and MLA has proved to be just as applicable in a large space like that. Or there’s a large asymmetrical room in the Sun Valley Community Church (Gilbert, AZ) that’s almost exclusively for rock and roll-based contemporary services, and a very modern space from the ground up at North Point Ministries’ Gwinnett Church (Atlanta, GA) where you’re trying to get consistent coverage from front to back and also avoid leakage to the neighborhood. Like all of those churches, Roswell is absolutely happy with the Martin Audio MLA solution for their worship sanctuary.”

Aaron Freeman, AV Assistant at Roswell, echoes Houston’s feelings about MLA. “The worship space seats around 2,000 and it can be challenging to get the coverage you need with the high domed ceiling and stained glass windows at the top.

“The new MLA system sounds fantastic, worlds apart from”, Aaron points out. “One of the biggest ‘wins’ is that our congregants aren’t using as many hearing-assist systems.



## Broadmoor Baptist Church Solves Problems with MLA Mini



**Broadmoor Baptist Church, Los Angeles, USA**

Shreveport, LA—The largest and fastest growing of seven venues on the Broadmoor Baptist Church campus, the new center for contemporary worship services is equipped with sophisticated audio and video capabilities that include a Martin Audio MLA Mini loudspeaker system.

According to Allen Hendrix, Minister of Communications, the basic reason for choosing Martin Audio was the ability to control the audio output in what is a “super reverberant space.”

“Because the venue for contemporary worship services has grown so quickly,” Allen continues, “we went from a 200-seat chapel to a modified gym that sat about 600, to this new building with double the capacity in a short time. Broadmoor is a debt-free church and we don’t build anything until the money is in the bank, so the only way we could build a venue with 1200 seats and audio and video the way we wanted on a tight budget was to opt for a metal building format. Unlike a more typical cinder block wall commercial building, this is basically an aircraft hanger.

“As such, our greatest challenge was how to work a concert level PA system—which we need because our contemporary service is band not choir-driven—inside of a super reverberant space. Because we didn’t have a whole lot to spend on acoustic treatments and it has a flat concrete floor with an exposed metal girded A-frame ceiling and gypsum board sheetrock walls. So one of the reasons we went with the Martin Audio MLA Mini from the very beginning was its ability to put sound where we want it and not on the walls, ceiling or back wall. That was our number one goal in picking a PA.”

Hendrix and fellow technical staff members from Broadmoor began their search for the ideal loudspeaker system at last year’s InfoComm, attending “every demo shootout from every manufacturer at the show. After all those demos, we decided to pursue the MLA Mini system. We had already picked our contractor, All Pro Sound of Pensacola, FL, and we worked out the details of how to make the MLA Mini system work within our budget with them.”

According to John Fuqua of All Pro Sound, the actual system for Broadmoor’s contemporary worship venue consists of “2 main MLA Mini arrays consisting of 8 Mini array modules and 2 subwoofers each. This setup is augmented by 4 front stage lip fill speakers and a pair of 18” subwoofers on the floor at the front of the stage for near-field coverage and low end extension respectively.

“This space required a system that could deliver high quality sound from a relatively small package and provide concert level coverage for all types of events,” adds John. “The room is not extremely large but the demands of contemporary worship music required a system that can hold up.”

Other key components of the audio system include Audio-Technica 5000 series wireless units, BSS London processing and a Yamaha CL-3 console with RIO3224 and RIO1608 stage boxes.

“The system was chosen for its small footprint with high quality sound and coverage,” John explains. “The MLA Mini is delivering exactly what was required for this application and the reactions have been great so far and will continue





to grow as they get more adjusted to the newness of the room.”

Adding to John’s insights, Allen points out “our worship style is very rock and roll. Although it’s Christian music, it’s pretty intense and very dynamic, which explains why the MLA system has been so successful for us.



**“ WE’RE REALLY HAPPY WITH THE CONTROL AND COVERAGE MLA GIVES US IN ALL KINDS OF SITUATIONS WITH DIFFERENT SIZED AUDIENCES.**

“Another advantage was being able to set up the PA so easily and effectively. Using Display, we simply entered the room measurements into the software, followed by the desired outputs for audience coverage and SPL levels and the software gave us an accurate prediction for the array output which we could then deploy.

“After that, we were able to listen to the space from onstage and all over the room—and the seating is movable so we can flex the room down to 800 seats depending on the expected crowd—and we were able to come up with presets to provide a better, more predictable coverage pattern for smaller groups, and for when the room is full up and we’re crammed all the way to the walls. The flexibility to electronically change the coverage pattern, without the need to re-rig, essentially to match the crowd in one click, not the venue, is extremely important to us.

“The MLA system also works very well for the spoken word,” Allen concludes. “The intelligibility is very good and we can easily maintain that balance between great presence in the music portion of our service and also make sure that we have complete dynamic range and ability for the pastor to be expressive on stage. Our Lead Pastor needs to get feedback from the crowd and not hear himself coming off the back wall in a delay, which can happen in our space because it has a big flat back wall.

“Not only is he very pleased with how comfortable the room feels when he’s onstage, we’re really happy with the control and coverage MLA gives us in all kinds of situations with different sized audiences.”

## Clark Outfits Woodstock City Church with Martin Audio



**Woodstock City Church, Marietta**

Clark has installed a full complement of Martin Audio including MLA Compact and MLA Mini systems along with CDD and H3H+ Blackline Series loudspeakers in Woodstock City Church.

Part of the growing North Point Ministries, the Church campus is a new-build facility within an existing brick building that serves the city of Woodstock near Marietta, GA.

The substantial structure is built in four quadrants that include the Auditorium, which is the main room; the Attic for high school and middle school worship; Upstreet, K-5th grade, and Waumba Land for young children.

Known for leading house of worship installations around the country, Clark was responsible for providing audio design and implementation for the high school space and main room along with full A/V lighting design and distributed audio for the whole building.

According to Clark Project Manager Brandon Byrd, 'For the main room which seats around 2500, we have a Martin Audio MLA Compact system with nine cabinets a side and nine DSX dual 18' subs ground-stacked in a horizontal broadside array under the stage. Because the Church has very contemporary worship rock and roll style services in the North Point tradition, they wanted a PA with a lot of headroom that could provide exceptional clarity and intelligibility for the spoken word, something Martin Audio does very well.'

**“ THE DIRECTION OF LOUDSPEAKER MANUFACTURERS IS GOING TO MORE CONTROLLED ARRAYS AND WE THINK MARTIN AUDIO MLA IS DEFINITELY AT THE LEADING EDGE OF THIS PROCESS.**

Clark's Senior Commissioning Engineer Ed Crippen specifies, 'The main room measures 160 ft. wide by 90 ft. deep—actually 75 ft. deep from the edge of the stage—so it's a rectangle with the stage facing the wide side of the room.'

'The main challenge is a balcony but with nine Compacts we have plenty of vertical so the system covers the top part of that balcony beautifully. There's a facing on the leading edge of the balcony that we minimized by opening up the MLA somewhat and making that area a 'non audience area.'

'To compensate for the super wide floor plan of the room, we have two H3H+ Blackline Series for outside side fills to make sure the front rows are covered and two CDD15's in the back corners of the room.'

Asked about the MLA's performance in the Sanctuary, Ed responds, 'The first thing that comes to mind is MLA's very uniform coverage in terms of frequency response and SPL from front to the back and being able to contour what sounds good inside the room. We could cover the first row





with no problem and keep the sound off stage. It's nice and quiet behind the PA mains and wherever you go on the floor or in the balcony, the sound is right there in your face.'

Company principal George Clark adds, 'The Church is very happy with the system. Their FOH Engineer Brandon Thompson, who has many years of recording studio experience, compares mixing on MLA to mixing on a pair of studio monitors, what he calls 'a nearfield experience.' He really enjoyed transitioning into the MLA system because it's non-fatiguing and a joy to work on.'

The smaller Attic space for youth ministry events has a portable stage with a powerful system comprised of two flown MSX subs, each with hangs of eight MLA Mini cabinets and five DSX subs under the stage.

Describing the setup, Ed explains, 'We wanted something that would get loud, have plenty of headroom in the low end and be matched sonically to what's in the main room.'

It's relatively clean with the ability to focus the polar pattern of the system on the floor. The music is rock and roll and then some-anything from a DJ, Hip-Hop and all kinds of other music. It varies hugely in terms of content.'

'This installation with MLA was fantastic,' George concludes. 'The direction of loudspeaker manufacturers is going to more controlled arrays and we think Martin Audio MLA is definitely at the leading edge of this process. They deliver a very linear, consistent product so the people in the front of the room have the same experience as those in the back of the room.'

'And that's important to us because our job as system engineers is to make it sound consistent around the room and once that's done, the artistic process kicks in and the person in the mix position can make fine tuning adjustments to get the sound they want. Our job is not to create the sound, but stay out of its way and let the audio engineer do their job. It's a fantastic system, we love it.'



## Edenton Street UMC Upgrades with CDD And MLA



High Kirk Ballymena, Ireland

Raleigh, NC—The recent renovation and upgrade of the Edenton Street United Methodist Church included the installation of Martin Audio CDD, MLA Mini and Ceiling Series speakers in the chapel, Youth Center and Church on Morgan satellite facility. The technical supervisor for the church, David Clemmer, worked in collaboration with RMB Audio in the planning and installation of the Martin Audio speakers.

The Edenton Street Church has a small 150-year old chapel at one end of church site that extends for a full city block. With no existing audio system in the 60-seat, octagonal-shaped space, Clemmer was called upon for recommendations. Cooper Cannady of RMB Audio was hired as a design consultant and worked with Clemmer on a design solution for the space.

The design proposal specified Martin Audio's compact C4.8T Ceiling Series speakers. Five pairs of C4.8T's were installed in three separate zones, all within 80 feet of each other to cover the chapel and two adjoining meeting rooms. Two pairs were installed in the narrow valances of the chapel ceiling to provide a direct downward sound path to the congregants with no impedance from adjacent reflective surfaces.

According to Clemmer, "coverage in the three zones is exceptional, allowing the effective use of lavalier and handheld wireless throughout the chapel with superlative sound quality in the adjoining spaces. Overall, the congregants love the clarity and fidelity. We'll also be providing additional C4.8T's

**“ THE CDD'S VOICE REALLY WELL AND PROVIDE GREAT COVERAGE, EASILY COVERING THE PERFORMANCE SPACE WITH CONSISTENT SOUND WHEREVER YOU'RE SITTING.**

for a fourth zone in the closed breezeway connecting the chapel to the main site.”

Located in an adjacent two-story office building built in the 1960s, the Youth Center was completely gutted, renovated and updated two years ago for young attendees and now offers recreation rooms with a basketball court and a performance stage/worship area.

Describing the performance space, Clemmer points out, “It's a very clean, modern looking auditorium about 60 ft. wide and 60 ft. deep with a small concert stage 20 ft. wide by 10 ft. deep. We worked with the architect to design a fun, youth type atmosphere with the latest in audio and LED lighting technology for speech and music reinforcement.

“A Martin Audio MLA Mini center cluster consisting of four enclosures with an MLX sub behind them is flown from the open ceiling rafter space. The sub is time-aligned with the Mini cabinets via SMAART to provide consistent coverage from front to back and eliminate reflections off the back wall that create slapback echo that can hinder performers and speakers on stage.



“They use the space for youth concerts with 80 to 100 teenagers every Sunday night,” David adds. “The church has many talented young musicians who perform and they will occasionally bring in a national Christian act to appear as well. The MLA’s control allows the young ministers with Countryman or DPA headsets to stand right in front of the cluster without feedback after only minimal EQ-ing of the room. Coverage works very well for the music, left and right, front and back with a splay of about 70°.”

Two blocks from the main Edenton St. site, the Church on Morgan for young metropolitan congregants is in a recently renovated and upgraded building on Morgan and Blount streets in downtown Raleigh. The new main sanctuary and performance space has retained the older building’s original truss roof supports and wooden rafters within a totally modern open ceiling concept and floor plan.

The sound system for the small auditorium and performance space consists of two Martin Audio CDD12 installation speakers with white cabinets mounted on offstage beams five feet away from the first seats and 45 feet away from the rear wall.

Commenting on the speaker positioning, David explains, “It was important to have a speaker capable of starting coverage at a steep downward angle for the first seat with a close up wide horizontal pattern and a reduced horizontal pattern towards the far end of the audience area. We are also adding a white CSX212 sub flown in the middle of the splay center stage.

“The CDD12 speakers are very impressive. They provide warm and balanced full frequency sound with absolute fidelity for speech and a five-piece band consisting of acoustic guitars,

piano, drums and electric bass in what can be a challenging environment with reflective brick walls and a concrete floor,” he adds.

“We also installed a pair of CDD5’s in the lobby area entrance and a pair of C115CT speakers in the outside patio area. The CDD5’s are small and efficient, with impressive reproduction and even though they’re mounted high up in the wooden beams over the lobby area, which also has a concrete floor, they cover the area very effectively with clear, articulate sound.

“My company, Dave Clemmer Productions, is known for having clients who are very particular about audio quality. In this case, the young minister who started the church, actually named Justin Morgan, is very happy with the sound and fidelity. He feels we took excellent care of all the church’s needs with CDD. That plus working with RMB Audio and Martin Audio was a real pleasure because they are impressive people and the speakers are so good.”

RMB’s Cooper Cannady, a longtime supporter of Martin Audio who’s been working with the brand since its inception, feels CDD is “a serious improvement over the AQ Series and we’ve successfully installed a lot of those.

“The CDD12’s voicing is really good for the room based on the fact that it’s a coaxial type system,” Cooper concludes. “It’s more coherent without the overtones we normally have to deal with. The CDD’s voice really well and provide great coverage, easily covering the performance space with consistent sound wherever you’re sitting. Articulation is ideal and there are no feedback issues, even people with mics standing under the speakers. It’s such a well-controlled force, it just worked out great.”



## Martin Audio MLA Mini Lifts Spirits at IDC Church

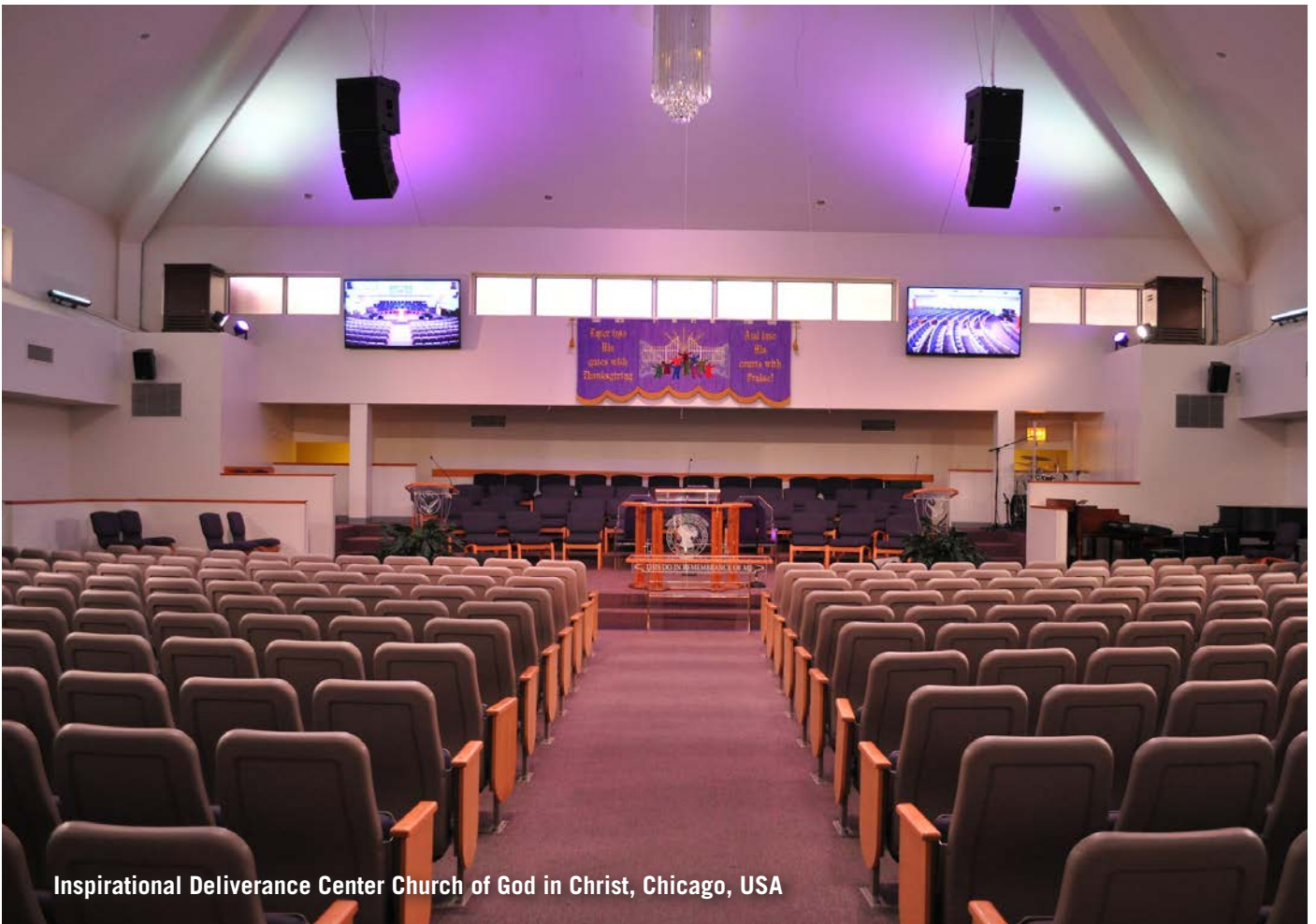


Chicago, IL—Encompass AV recently installed a Martin Audio MLA Mini loudspeaker system at the Inspirational Deliverance Center Church of God in Christ as part of a major technical upgrade for its 500-seat worship center.

Tim Pickett, President of Encompass AV, explains that his company was chosen because “the church liked the fact that we could deliver a turnkey system with sound, lighting and a video network, the whole package.

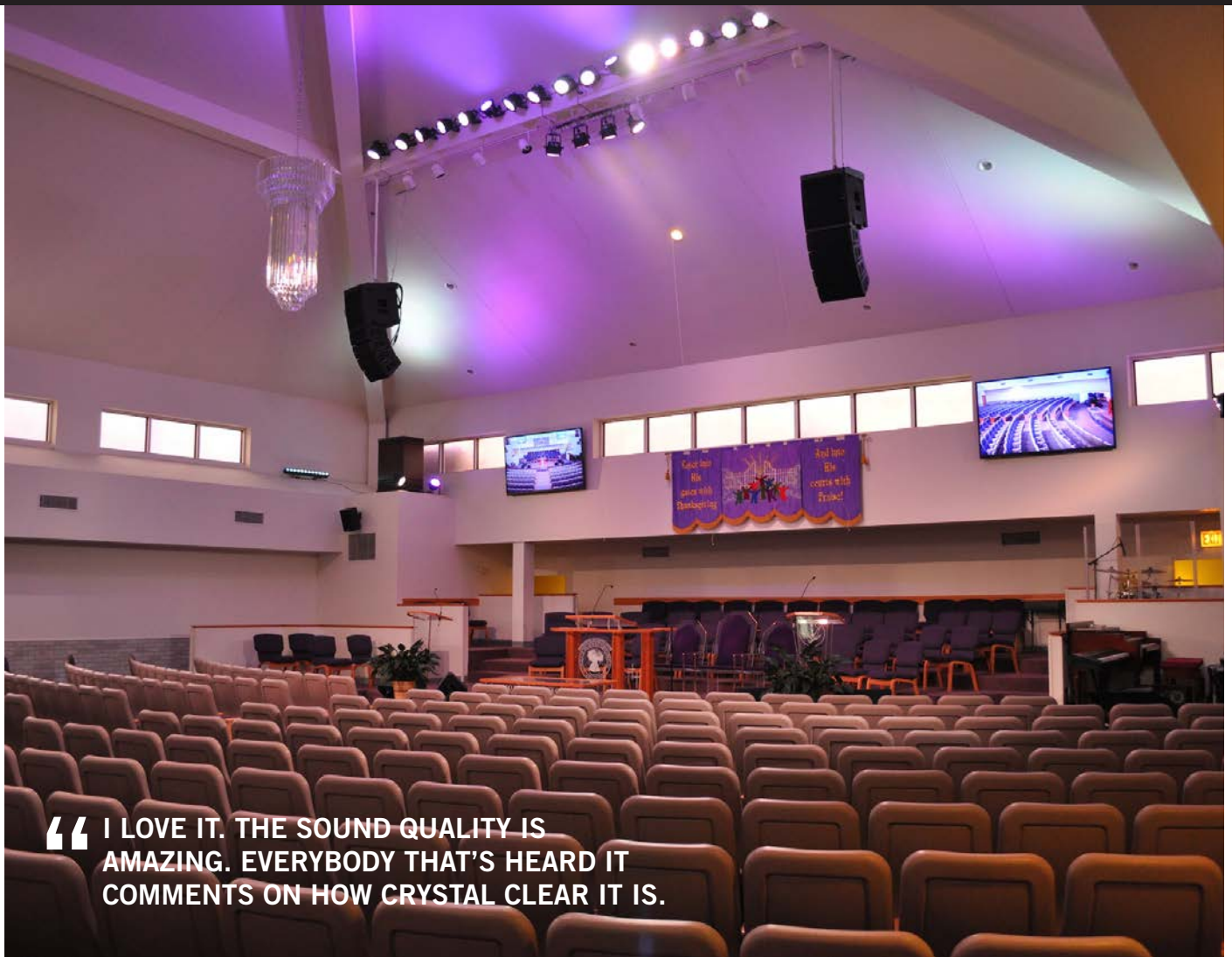
“And they insisted on really good sound,” Tim adds. “The church has a very energetic Gospel choir and two Leslie cabinets hooked up to the Hammond organ that really push the audio system to the limits. Plus the worship center has highly reflective surfaces so they needed a system with exceptional output control.

“We specified several systems for them and they chose the Martin Audio MLA Mini because of the system’s state of the art technology and phenomenal sound quality. Also, the coverage had a nice tight pattern to it, and that was a huge selling point for MLA. In fact, we set up a demo and they liked it so much, they bought the demo units!”



Inspirational Deliverance Center Church of God in Christ, Chicago, USA





“ I LOVE IT. THE SOUND QUALITY IS AMAZING. EVERYBODY THAT’S HEARD IT COMMENTS ON HOW CRYSTAL CLEAR IT IS.”

The installed audio system includes two four-block MLA Mini arrays driven by MSX mini sub power plants. Two Martin Audio AQ8s provide additional fill with four C6.8T ceiling speakers installed in the low ceiling above the choir as monitors. Two Behringer S16 digital snakes supplement a Behringer X32 digital console with programmable MIDAS preamps.

There are three video displays in the sanctuary, two 80” Sharp LEDs left and right and a 70” Sharp LED facing the choir, with two Sony 1080P PTZ HD cameras driving the video network system. Lighting is provided by 60 Elation LED PAR-style lighting systems with six Elation LED architectural floods.

Asked about the MLA Mini’s performance, Tim enthuses, “I love it. The sound quality is amazing. Everybody that’s heard it comments on how crystal clear it is and the Church is ecstatic about the system.”

Rob Hofkamp, Martin Audio Director of North American Operations adds, “The MLA Compact has already made significant inroads in Church installations and the MLA Mini should also enjoy considerable success in the House of Worship market given its compact size, control and exceptional performance.”





## World's First Installation of Wavefront Precision at First Pentecostal



First Pentecostal Church, USA

The recent audio upgrade by Clark at the First Pentecostal Church in North Little Rock, Arkansas featured the world's first installation of both Martin Audio's new Wavefront Precision Compact and Mini optimized arrays with iKON® amps along with CSX218 subs and the new LE100 monitors.

As described by Clark Project Manager Brandon Byrd, 'the Church had to replace an old, worn-out PA that didn't cover the room or provide the audio quality and clarity they needed. Martin Audio had just come out with the new WPC system and it was a perfect choice for this installation because it offered great Martin Audio sonic performance and optimized coverage and control for the price.'

'The actual system includes 16 WPC a side for the main array with a side fill array of six WPM a side covering the extreme outside corners because they can really pack people into this place, especially for special events. The stage was modified to accommodate the five CSX218 subs per side that are recessed into the front with everything powered by the iKON amps. All the hangs are covered with white acoustical fabric to be more visually integrated.'

First Pentecostal's sanctuary is an acoustically challenging space with large domed ceilings, a balcony, stained glass windows and hard marble surfaces. 'They didn't want to add acoustical treatments,' says Brandon, 'but with the WPC system you can get additional resolution and coverage

### “ THE OVERALL REACTION TO THE SYSTEM HAS BEEN OVERWHELMINGLY POSITIVE.

by adding more boxes with a channel dedicated to a single amp. We went for the highest resolution which allowed the system to create interference that significantly reduces the audio level hitting the hard surfaces we wanted to avoid. That, plus the coverage is consistent throughout the space.'

Asked about the system, First Pentecostal Technical Manager Nick McKinnon explains, 'We were looking for speech intelligibility first and foremost. Conveying the message whether it was song or speech is our absolute priority. Keeping the vocals over the music and the preacher's sermon clear and present in what is a very reverberant space is critically important for us.'

'So, the optimization capability of Martin Audio WPC was very attractive on paper and if it did what it said it was going to do that was the choice we had to make. Getting the sound off where it didn't need to be and focused on the audience where it belonged was crucial for us, and it did exactly that.'

'I can tell you how we know it works. At our 35th annual Camp Meeting there were 4500 people in our 2800-seat



sanctuary and a lot of crowd volume. In our balcony, the Hard Avoid area starts at the top of the mezzanine and there's a walkway before the coverage starts at the seating area about six feet above the actual balcony rail. An usher who was in the walkway commented that it just didn't sound that clear where he was standing. So, I asked him to walk up into the seating area of the balcony and he came back a few minutes to tell us the sound was perfect up there.'

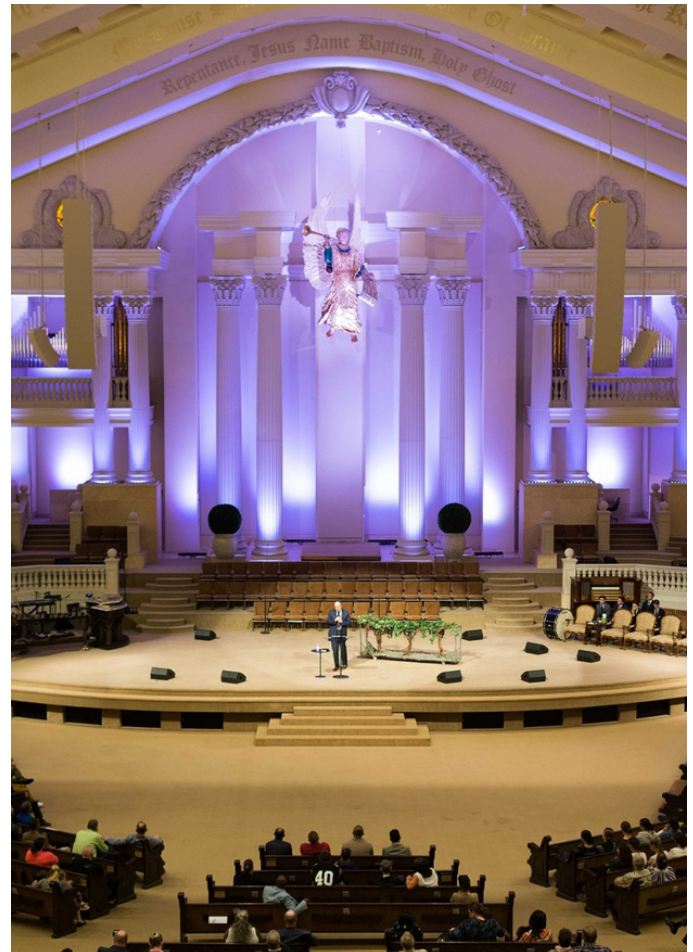
According to Nick, 'the Church has two services on Sunday and one on Tuesday night with electric bands--we pretty much go full out for all three services. There's a smaller chorale on Sunday mornings and a 100-voice choir on Sunday nights with more of a gospel feel.'

'When it comes to music reproduction, WPC is like sitting in front of a great set of studio monitors. We have a Midas Pro X console and we've gone from making 9dB changes in the EQ to 2 and 3 dB changes and really noticing the difference. The changes are very audible--we're even hearing the compressors now if there's too much reduction.'

'The coverage is truly exceptional. We have seating in alcoves and they were just getting reflected sound before. Now with the WPMs on the side, every seat in the house has even coverage, top to bottom, side to side.'

'We've also solved problems onstage with the new LE100 monitors. They combine compact, low-profile enclosures that give us expanded individual coverage for performers and speakers and they sound really good.'

'In terms of the subs, we brought the Pastor in to hear some symphonic music and he mentioned that when you close your eyes, it's more of an experience than just listening when



you can hear the full spectrum of sound. And the overall reaction to the system has been overwhelmingly positive. The only thing the staff asked is why we didn't do it sooner.'



## Martin Audio Specified for Upgrade at Oak Pointe Church



Oak Pointe Church

Novi, MI—Advanced Audio & Lighting Systems was initially called in by Oak Pointe Church to evaluate the space and provide acoustic analysis and treatment that would eliminate room anomalies, a process which would eventually lead them to supplying a new audio design based on a Martin Audio Wavefront Precision Compact line array solution.

Trent Keeling, Senior Design Consultant for Advanced Audio, explains that the sanctuary “had significant acoustic issues and the PA system was lacking intelligibility, pattern control and musicality.

“Part of the upgrade was to architecturally emulate a high school auditorium, what we affectionately call a ‘praise-a-nasium’. The original stage was low with poor sightlines. The church wanted to bring the stage experience closer to the audience, so they built a 30 x 40-foot circular thrust that comes out into the congregation with 130-degree seating around the stage.

Speaking with Charlie Koopman and Anthony Progar, the Church’s Worship Leader and Technical Director, Trent discovered “they needed a multifaceted space because the Church is very involved with the local community—they might put on off-Broadway plays, a dinner theater for 1500 one night and contemporary praise and worship the next. Typical attendance is between 1200 and 1500 per service with the room capacity around 2,000.”

**“ IT’S AN IMPRESSIVE SOUNDING SYSTEM BY ANY STANDARD. EVERYONE IS OVER THE MOON AND WE’RE VERY PROUD OF IT.**

To accommodate this challenging situation and provide uniform coverage, Advanced designed a main stereo-configured left and right line array system from Martin Audio, “that would cover from the downstage lip forward but avoid the near seats and also include everything 180-degree diagonal to the stage, which are treated separately. The stage is actually mobile—it comes out so when they strike it, they seat that area.”

The system consists of six WPC enclosures a side flown just ahead of the thrust lined up with the downstage lip to avoid impacting sightlines for center, left and right video screens and stay out of the way during play productions. Power is provided by five Martin Audio iK42 amplifiers. Trent says, “we used 2-box resolution [2 WPC enclosures per channel], with an eye to expanding to single box resolution with the spare iK42 that we have but it sounds so nice we haven’t made any changes.

“All of which is why we greatly appreciate the small





footprint of the Martin Audio WPC array. Also, the very flexible rigging that allowed us to easily optimize the system to the room without compromising performance.

“There are two hangs of three SX218 subs flown in a center cluster with a cardioid subwoofer pattern for directionality towed out at 45-degree to one another so we can avoid overlap. The PA also includes eight Martin Audio Blackline X8’s for nearfield custom cut in and wired into recessed areas of the rolling stage. There are three XD12’s for outfills and center fills covering the oblique seating at 180-degree for house left and house right behind the line array that also cover the close seating from the front lip when the circular stage is struck. The nearfield, outfills and center fills are powered by a Martin Audio iK81.”

Asked why they chose Martin Audio WPC line arrays, Trent responds, “one of the main criteria for the church was fidelity. We didn’t want a traditional crossover point in the high frequencies or a typical compression driver at 1.2 kHz because of the way it sounds to the audience. The church does marathon events and they wanted a system the operators and audience could listen to for two or three hours at a time without ear fatigue.

“We needed control and directivity to avoid coverage where we didn’t need it, which we get from the system’s Hard Avoid™ capability. The surfaces are brick and steel with a huge reflective wall at the back of the room and the PA system drops coverage a few feet beyond the operator at the back of the house while staying off the ceiling as well.”

Concluding, he sums up, “With Martin Audio, the intelligibility is so much more impressive than the previous PA. It’s an impressive sounding system by any standard. Everyone is over the moon and we’re very proud of it.”



## Wavefront Precision Installed at Hope Community Church



Apex, NC—When the Hope Community Church decided to replace their recently installed sound system because of severe reverberation issues, David Price of DP Design in Milwaukee, WI proposed a Martin Audio Wavefront Precision system based on its control and coverage capability.

Hope Community is housed in what was a large warehouse and distribution facility that was completely renovated to convert the building into a church. According to David, “they ripped out everything except the concrete pad and the ceiling.

“The main worship area is a multi-purpose space with a recessed gym floor the size of two basketball courts laid side to side surrounded by seating and a raised six-foot wide track area that runs around the room. The proscenium stage is off center and the recessed floor creates a nice little bass trap that can be an issue for a PA.

“That said, the main problem with the original system—which was only a year and a half old—was the fact the space is so mammoth and echo-ey,” David explains. “They did treat the walls well acoustically but nothing was applied to the ceiling where there was a ridiculously long five second reverb time that muddied everything up. The original PA didn’t have the directivity control to avoid the ceiling and was too small and underpowered for that big a room. There were constant sound issues, coverage was poor and too many people were

**“ THE WAVEFRONT PRECISION SYSTEM SOUNDS PHENOMENAL—IT’S A NIGHT AND DAY DIFFERENCE FROM THE OLDER ONE AND IT BLEW EVERYONE AWAY.**

complaining about not being able to hear anything.”

To cover the worship area that seats approximately 1500, David recommended a Martin Audio Wavefront Precision Compact system “as the optimum solution because it didn’t require additional ceiling treatment based on its exceptional control capability, which made it much more cost-effective from the start. It also offered even coverage throughout the space and the exceptional clarity and audio quality required for both speech and the electric music in the contemporary worship service the church likes to run loud.”

The system consists of nine flown WPC enclosures a side as the main array with four WPM in the center for some additional fill and two flown DSX subs a side between the side and center arrays to avoid the recessed ground area in front of the stage. All cabinets are powered by iKON amplifiers on one box resolution (one amplifier channel per enclosure) providing the ultimate in control capabilities for the system. As David adds, “the boxes are bi-amplified with the iK42 powering two enclosures so we could ensure





maximize avoidance of the ceiling. It works incredibly well and it's truly remarkable how low the reverb time is now."

"We needed some additional side fills so we flew two Martin Audio CDD15's on the left and right for that far outside area where they do some table seating on the upper raised area which runs almost 170 degrees horizontal in front of the stage. There are also eight CDD5's as lip fills mounted to the front of the stage."

Asked about reactions to the system, David enthuses, "Everybody who walked in immediately noticed how much better the new system sounds, even if they weren't a tech person. It was fun to watch people's amazement when they walked the room. They couldn't find a place that wasn't covered with sound or a bad seat in the house. They loved it. The Wavefront Precision system sounds phenomenal—it's a night and day difference from the older one and it blew everyone away."





## Martin Audio O-Line Receives The Royal Treatment



St Andrew's Cathedral, Sydney



Wizard Projects, supported by the engineering team from Technical Audio Group (TAG) have installed a large 140-element Martin Audio O-Line system into St Andrew's Cathedral, Sydney. The system needed to be commissioned in time for the visit by the Duke and Duchess of Cambridge, as part of their Australia and New Zealand tour.

St. Andrew's is the oldest cathedral in Australia — and one of the city's finest cathedral examples of Gothic Revival architecture — however such beautiful architecture comes at an acoustic cost with challenging reverberation times making clarity and evenness of coverage across the congregation a constant issue.

Having struggled with a sound system that failed to deliver clear speech intelligibility and live music reproduction, with the Royal appointment imminent, the church's decision to install a new system reached emergency status.

Ross Cobb, Director of Music at St Andrew's, and Canon Chris Allan were given the job of raising tenders for design, installation and commissioning of a state of the art system with absolutely no compromise in sound quality — to be fulfilled in just two weeks.

The task was awarded to Wizard Projects, led by senior engineer Michael Sheldrick with an electro acoustic design team of Glenn Leembruggen and David Gilfillan; the final piece in the jigsaw was the proven Martin Audio O-Line micro line array, supplied by the manufacturer's Australian distributor, Technical Audio Group (TAG).



Having heard O-Line in similar church installations Ross was impressed not only with the amazing consistent coverage and fidelity but also the aesthetic aspect.

The team identified a number of key design hurdles: the church's long RT time, sub bass placement and beam steering. The unusual logistics of church services involves a 360 degree presentation from the pulpit, a centre transept area where choirs and clergy require sound reinforcement and a church where the congregation could sit anywhere at any service and expect perfect sound. On top of that, priests would move through the nave on headset radio mics with open mics for question and answer sessions.

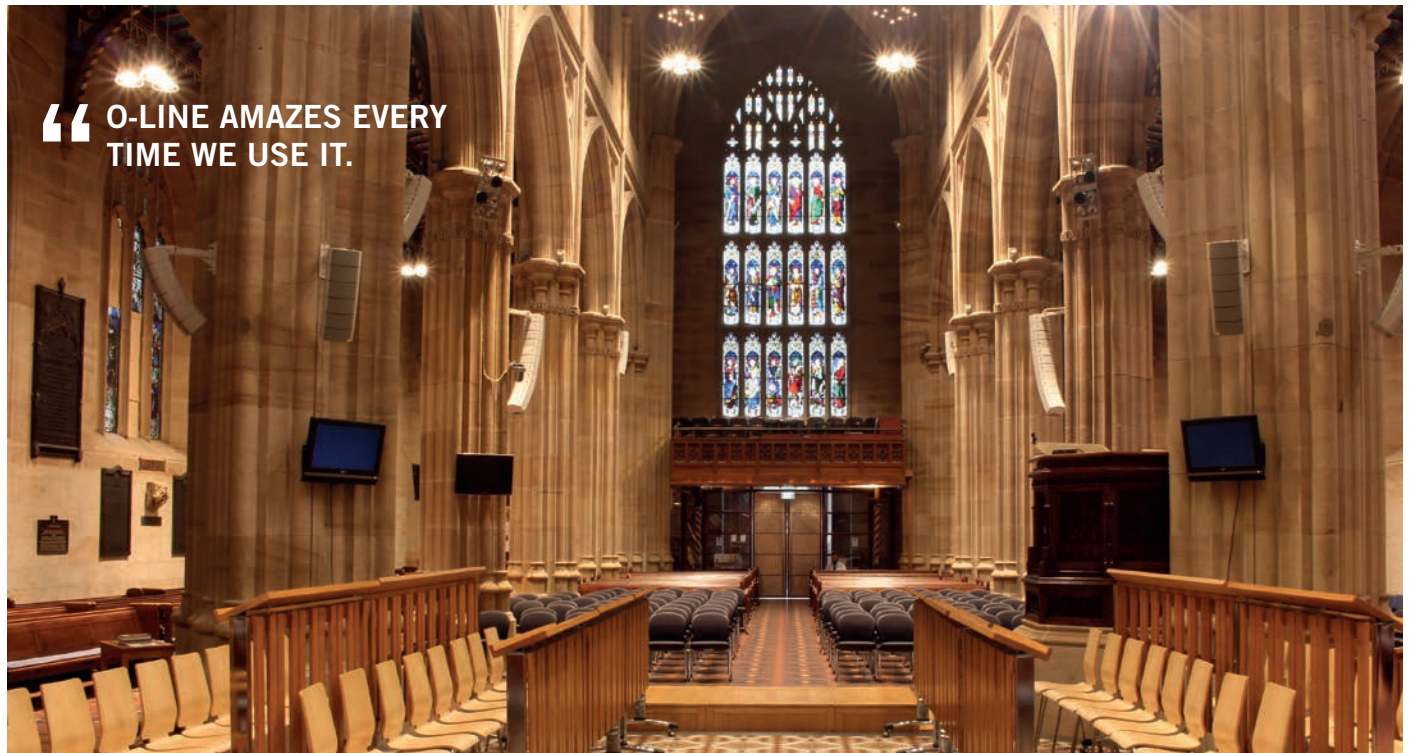
Wizard's design solution was to deploy an unprecedented 140 O-Line elements (distributed over 22 hangs) along with six Martin Audio AQ212 dual 12 inch sub bass. Not only was the quantity of elements enormous but so was the DSP control.

Having used O-Line in other reverberant environments they recognised that a unique aspect of the system is that not only can it be mechanically arrayed and aimed when used in passive mode but it can also be deployed in an MLA [Multicellular Loudspeaker Array] active configuration.

In MLA mode, each element in the array is separately amplified and processed using FIR filters, based on custom software. This enables the system to not only be mechanically and electronically steered but allows consistent frequency response throughout the listening area — without the lobing associated with straight columns.

O-Line is used in a combination of active arrays for the critical areas and passive hangs for spot fill, distributed across 60 channels of 200W-per-channel amps.

The main Western Nave arrays comprise two banks of 12 active O-Lines with a further two banks of 10 active



“O-LINE AMAZES EVERY TIME WE USE IT.”

arrays for the outer north west pews, while the Eastern Nave comprises two banks of eight active elements with a further four positions of six active O-Line for the centre of the transept.

The sub bass system is floor mounted in two banks of three AQ212 with separate amplification and processing for each cabinet, which enables the low frequency to be electronically steered. According to TAG technical director, Anthony Russo, “Because O-Line has such an extended and usable frequency response to 75Hz the spectral balance between arrays and subs is even and consistent — a feature not normally associated with compact array and large bass system.”

TAG also recommended advanced DSP and enable the church to control the system with iPads, using custom designed GUI screens for simple services, or interfacing with the mixer and digital stage box for full scale services.

Other ingenious design features enable the pulpit's local O-Line — mounted a mere 500mm above — to be ramped down, panned and re-EQed to its opposite partner array via the use of an under-carpet pressure mat whenever a priest uses the pulpit with a live mic. O-Line's smooth response is such that only 6dB reduction was required to achieve the pass mark required for gain before feedback criteria.

As Glenn Leembruggen commented, “O-Line amazes every time we use it; the CAD and filtering predictions are absolutely usable; it's an amazing engineering feat; there is nothing I have ever worked with that comes close to this product.”

And Canon Chris Allen added, “This has not only been an extraordinary effort but the compliments from the congregation on the clarity of the system are never ending.”

## Rosary Church, Syracuse



“ I WAS HONESTLY IMPRESSED AT HOW GOOD, HOW ARTICULATE, AND HOW NATURAL THE MARTIN AUDIO O-LINE SOUNDED.

Rosary Church, Syracuse

Brown Sound Equipment Company recently installed a Martin Audio O-Line array in Syracuse’s historic Most Holy Rosary Church to upgrade the sound system and meet current standards for articulation and clarity.

Part of Most Holy Rosary Parish founded in 1913, the church dates back to the site’s original groundbreaking in 1927 through over 60 years of growth and expansion resulting in today’s remarkable construction that is central to the Catholic community in Syracuse.

Asked about the installation, Brown Sound President Jim Messinger

begins by acknowledging that, “Having been in this business for over 45 years, it’s most satisfying when a customer repeats with you as in this installation at Most Holy Rosary Church; and that the technologies we now have at our disposal really do make a tremendous difference in outcomes.

“The Martin Audio O-Line replaces a huge custom central cluster point source system we designed in 1991. The reverb time was the same then as it is now, approaching 4 seconds. These clusters with large long throw horns were the only ‘tools’ we had at the time to minimize splashing sound

all over the place and still throw the energy 135’ to the last pew. Unfortunately, the cluster was large, ugly, black, and a visual distraction in front of that beautiful artwork above the altar. It also was a major challenge to install given the height, 53 feet to the peak of the Church. Everything had to be installed with a system of winches above the dome.”

Messinger recalls the O-Line solution came down to “a matter of timing. I’d played with the idea of column type line arrays, but the church didn’t want the system to visually intrude on the altar and worship area. After a Martin Audio sales rep recommended O-Line, we did a demo at the church with a single module and it sounded very good; even in a big empty space.”

The installation is built around a 16-enclosure O-Line array so compact, it is barely visible in the dome above the altar. A Mackie DL1608 iPad-controlled mixer replaces a “cumbersome” analog console for the music ministry microphones.

Messinger reports that Martin Audio’s array guide software made “assembly of the modules in this array extremely easy. The mechanics of the assembly are also well thought out and engineered. The coverage also allowed us to eliminate all of the original sidefill delay speakers.”

Summing up, Jim adds, “The bottom line is always comes down to ‘how does it sound?’ I attended a service when the pews were approximately 65% filled. Even after 45 years of listening to results, I was honestly impressed at how good, how articulate, and how natural the Martin Audio O-Line sounded in this space. I’ve been in the business a long time and frankly I wasn’t expecting to be this impressed.

“The Director of Music mentioned that his choir members are very impressed with the system, they hear everything a lot better because there’s been so much of an improvement in articulation and clarity.”



## The United Church of Christ, Maryland

The church specified that no acoustical treatment was to be added, and since it was an acoustically challenging space because of the surrounding balcony and hard plaster ceiling and walls, the new system had to be designed around, and to directly combat this issue.

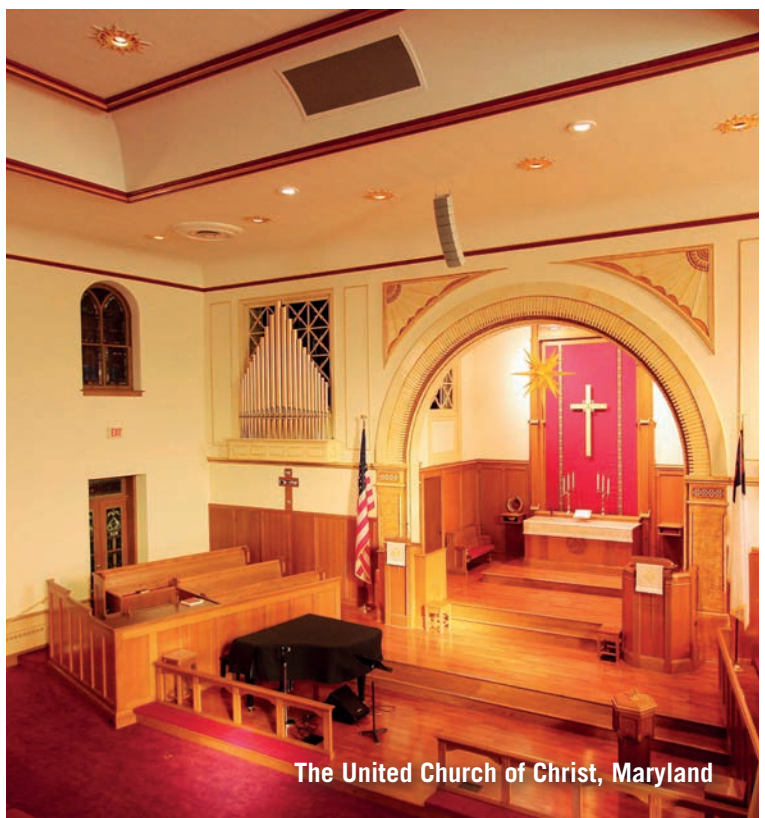
As Audio-Video Group's Chief Engineer Stephen Bon explains, "Martin Audio's O-Line system was our first choice simply in terms of its minimal footprint and aesthetic appeal, which were very important to the Church. It also provided the solution to cover the main level seating under and out from the balcony and the balcony itself with full range sound," adds Bon.

Modular and scalable, Martin Audio's award-winning system was purpose-designed for use architecturally, where it claims significant advantages over current DSP-steered columns. Intelligent software enables an array to be configured to deliver sound precisely over any vertical angle to fit the venue profile without spilling onto surfaces where sound is not required. It is suitable for high-quality music reproduction as well as speech in large reverberant spaces, such as churches, and because of its discreet style and footprint, this unobtrusive system has become particularly popular in historic buildings and places of worship.

The installed system consists of a single hang from the ceiling of 8 O-Line enclosures, and a Martin Audio AQ212 sub above the hang, sited in a recessed opening that originally housed the audio system and covered with a grille cloth.

The United Church of Christ's sound operator Paul Fink was equally enthusiastic: "O-Line speakers are an incredible improvement over the old system. The ability to place them in the active space and aim the sound output directly to the congregation while reducing the bounce effects has made the biggest difference. As to the quality of sound from the speakers, there is no real comparison to the old system. I have occasionally driven them to the limits of my hearing with no sound degradation at all. Intelligibility is the predominant characteristic of the O-Line system. Looking at the entire congregation from the youngest to the oldest member, we were concerned that everyone would be able to understand the spoken word and O-Line passed with flying colours."

"Now it works well for speech and music," adds Bon. "The Church has moved into a more contemporary music program with acoustic instruments and the musical reproduction is fantastic for both. They wanted full fidelity and even coverage up to moderate levels, and that's exactly what they have."



The United Church of Christ, Maryland



## St. David's Episcopal Church, Philadelphia



“ WE’VE BEEN THRILLED WITH THE SOUND.”

The chapel’s previous audio system had never resulted in coherent intelligible audio for voice. John Schofield, Parish Administrator, said, “When the chapel opened, the announcing system was impossible. You couldn’t hear a word anyone was saying or understand it, for that matter.”

The church sought the services of Spinnaker Multimedia Solutions, a design/installation firm that specializes in houses of worship. “It came down to two brands, one of which was Martin Audio O-Line. Bottom line, O-Line delivered the best sound distribution for the least investment. People can finally clearly hear the leaders no matter where we sit,” Fenicia Redman, VP Project Development Redman concludes.

Schofield, impressed with the system’s intelligibility, adds “once we chose the Martin Audio system, we’ve been thrilled with the sound ever since. To the extent that St. David’s is now attracting really big musical events, such as the Philadelphia Boys’ Choir Christmas Concert. It was fantastic. We had the City choir the week before and they loved it too. This has become a popular venue for choral concerts and presentations.”



St. David's Episcopal Church, Philadelphia



## Old Apostolic Church, South Africa



“ THE O-LINE SYSTEM IS THE CLEAR WINNER HERE.

Old Apostolic Church, South Africa

A Martin Audio O-Line micro-array, much favoured by houses of worship, has been installed in the 1500-seat Old Apostolic Church (OAC) Christian church at Mayfield Park in Gauteng, South Africa.

Audiosure, Martin Audio's territorial distributor successfully tendered for the work to install and commission a complete sound system in the new sanctuary, working from the OAC's specifications. O-Line was central to the bid and the installation was carried out by their clients, JRTL Projects.

With Audiosure's Thys Venter overseeing the project, O-Line first needed to meet a number of key criteria aside from the quoted specifications, including technical output, price, quality and warranty, before being chosen to handle the traditional twice-a-week service regime.

The design was based on a single central hang, comprising 12 O-Line elements. In addition, eight Martin Audio architectural AQ8 were specified — two for balcony infill and the remaining six for under-balcony fill. This was a perfect solution for the geometric of the building, with the single hang covering most of the floor and balcony seating.

The project team faced a number of challenges, not least following the sudden decision to lower the ceiling height. “We had to rig the O-Line at the same height in order to maintain sightlines and keep within the proscenium limits,” explains Brendan Venter, Audiosure's Commercial AV Division Project Manager. “The ceiling was closer to the hang than intended but O-Line performed extremely well in maintaining its directivity and keeping sound off reflective surfaces.”

In order to ensure that the system was fully optimized, Audiosure worked closely with the manufacturers. “The original design was carried out in EASE and the O-Line software, and then Peter Child, Martin Audio's Applications Engineer, refined the design using both software platforms to prove its performance.” The Audiosure man then performed measurement tests, and tuned the system for voicing and room interaction via the dual channel FFT platform.

Source inputs to the system include a lectern gooseneck mic, a radio handheld mic, radio ear set and two wired mics on stands. An additional six radio mics are provided for when the church is operating in theatre mode. There are also organ and aux inputs — the latter to accommodate a separate mixer to handle radio packs for plays — while further floor input boxes have increased the versatility of the operation.

Control is via a simple wall panel remote, allowing system on/off, lectern mic on/mute and Sidechain level control, while all other parameters have been optimised in the DSP.

“The O-Line system is the clear winner here,” continues Brendan Venter. “System response and directivity control have afforded speech intelligibility that is second to none. The frequency response across various measurement positions confirms that uniform coverage has been achieved, as predicted by the O-Line software.

“This has not only proven the accuracy of designing a system on the drawing board — but has also made my measurement chops look good!” he concludes.

## O-Line Installed in Thane Catholic Church



St. John the Baptist Church, Portugal

Zoodio carries out major HoW Heritage sound upgrade in India.

St. John the Baptist, a Portuguese style Christian church situated in the Indian city of Thane, north of Mumbai, can trace its origins back 500 years. Having been declared a heritage site by UNESCO, it recently underwent a massive restoration project spanning 18 months, including a complete sound system upgrade.

The older system had consisted of multiple speakers that were spaced along the wall of the church, and neither provided suitable intelligibility nor venue coverage. With the extension to the church (enabling it to expand the congregation size to around 5,000 for Sunday mass), the parish priest had initially requested a demo from another vendor to provide coverage for the growing number of people. 'We were not very impressed with the sound,' admits Cleo Pereira, from Martin Audio partner Zoodio, who has been specifying the British brand for the past decade. 'Instead, we suggested the Martin Audio O-Line as a brand, since we use it in most of our installs.'

Zoodio's Dylan Hilton, who also happens to be one of the parishioners, co-ordinated the project. He set up a demo of this discreet, premium micro line array through integrated Entertainment Solutions (IES), the Martin Audio distributors. 'We suggested that this would do the

### “ ‘THE O-LINE DID A PERFECT JOB IN REDUCING THE REVERBERATIONS WITHIN THE CHURCH

trick, at the same time reducing the number of speakers required and enhancing the overall worship experience.'

O-Line was duly adopted, with Zoodio supplying the components and their team of engineers, technicians and riggers worked on the fit out, to meet Dylan Hilton's specification, with four sets of O-Line (eight elements per side).

O-Line was supported with Martin Audio's CDD8 Differential Dispersion loudspeakers for the delays as well as in the corridors. 'The reason,' said Pereira, 'was that we had a lot of constraints from the Heritage committee; they wanted an extremely compact system that would not block any of the murals and paintings present in the church and also a system that sounded good.'

He also emphasised that this was the first time both the O-Line and CDDs had been used in India.

The biggest challenge had been rigging the O-Line as the walls of the church were not concrete but limestone - and so the utmost care and safety measures needed to be taken





during the mounting phase. 'The O-Line did a perfect job in reducing the reverberations within the church as the limestone walls had no acoustical properties.'

Feeding the system is a combination of six vocal mics for the choir, an acoustic guitar and keyboards, a podium mic for the clergy and three mics on the altar.

In conclusion, Cleo Pereira said, 'Having dealt with all the sound challenges, and taken proper care to avoid any further issues, Zoodio has brought back the voice of the church once more.'

The Parish Priest, the Rev. Fr. Allwyn D'Silva is also delighted with the system, which he says provides him with excellent sound quality.





## Broadway United Methodist Church Upgrades to Martin Audio



**Broadway United Methodist Church**

Bowling Green, KY—CCI Solutions recently completed an audio-video-lighting renovation for the Broadway United Methodist Church that included a complement of Martin Audio CDD-LIVE speakers and CSX-LIVE subwoofers.

Vice President of Sales and Integration for CCI, describes the space as “a more traditional sanctuary which exists in addition to a larger, more contemporary primary worship area nearby on the campus. “The room seats about 300 with a fairly sloped ceiling that’s 30 feet from the peak to the floor and about 100 feet from the edge of the platform to the back of the room. It has challenges such as a wooden ceiling and lots of hard corners.

“They needed a sound system for speech and a traditional style of music which includes choir and acoustic instruments such as a grand piano, acoustic guitars, a harp and small orchestra. However, the room was designed to meet several needs because they also use this space for different youth and weekday activities with more contemporary worship music, which explains why we went heavier on the subwoofers.

“The sound system consists of three pairs of CDD-LIVE 8’s mounted on the ceiling”, Project Lead for CCI Solutions, explains, “a pair downstage, a delay pair about halfway back and a pair out in the foyer to match the experience when there’s overflow. There’s a CSX-LIVE 118 sub

**“ THE NEW PA SOUNDS AMAZING, IT’S LIKE NIGHT AND DAY. THE COVERAGE IS TREMENDOUS, YOU CAN’T TELL WHERE IT TRANSITIONS FROM FRONT TO BACK AND LEFT TO RIGHT.**

mounted in the center downstage and another CSX-LIVE 118 midway back for delay because the room is pretty long and the modeling indicated that it made more sense than going heavier in front and pushing the sound to the back of the room. There’s a single CDD-LIVE 8 for choir fill that’s hung downstage in front the projector.”

“As it turns out, we’re really happy with the way the Martin Audio system sounds, which is not surprising. It provides uniform coverage throughout the space. The differential dispersion technology—covering wide up front and narrowing out towards the back—is really a huge benefit for our design.”

Broadway United’s Production Pastor Louis Tagliaboschi and audio engineer Joel Christian also weigh in. Asked about their original PA, Louis says, “the church had a 25-year old system that couldn’t deliver what they were asking of it. They wanted better clarity without room noise, audio system noise and electrical noise.



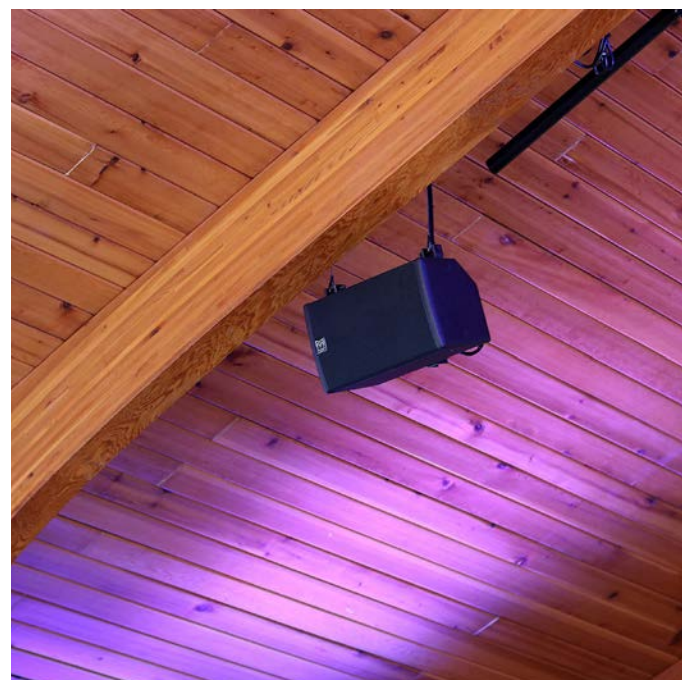


“The Martin Audio system sounds extraordinary. It’s like going from not having a PA to a truly high-quality PA and the whole system is user-friendly. To have such clean-sounding speakers is great for our volunteers because they can easily operate the system without too much mixing and equalization. We launched the system on an Easter Sunday with three services, full choirs, multiple speakers and soloists, and the pastors and congregants could immediately tell the difference. They were blown away. And since then, we’ve gotten a lot of positive feedback about how good the room sounds, not just from our church but visitors from other churches.”

Joel echoes the pastor’s comments: “The new PA sounds amazing, it’s like night and day. The coverage is tremendous, you can’t tell where it transitions from front

to back and left to right. We were having problems with people hearing the pastor in terms of the timbre of his voice but the speakers made that all go away. Running everything off the Dante network has given us a lot more flexibility. Now we can bring in the audio channels from our service in the larger worship space into this one and that’s been very helpful.”

Summing up, a CCI spokesperson said, “The PA sounds great, we love the Martin Audio CDD speakers. There’s never been a project where we weren’t happy with those afterwards.”





## Balanced Input Upgrades Historic Cochran Chapel with CDD



Cochran Chapel, Phillips Academy

Mark Waker, owner of the New England-based integration and consulting firm Balanced Input, faced a variety of challenges for an audio upgrade at Phillips Academy Andover's historic Cochran Chapel.

In addition to two lines of large pillars that run the length of the building and obstruct the passage of sound, the Chapel walls have 10 ft. high wood paneling running around the space along with the wooden pillars and pews, all of which contribute to reflectivity that can further impact audio reproduction. Fortunately, Martin Audio CDD12 speakers would help in providing a one of a kind solution to overcome these challenges.

Phillips Academy, a private boarding school founded in 1778 with a list of prominent alumni that includes former presidents George H. W. Bush and George W. Bush, originally dedicated the Cochran Chapel in 1932. The historic space underwent an extensive renovation in 1998 to expand the balcony and seating and add projection screens, but the audio coverage still fell short.

Discussing the recent audio upgrade, Mark points out, 'the system had to provide superior audio for the wide variety of events held in the chapel including school functions, weekly worship services for different faiths, weddings, concerts and recitals by high profile artists such as Yo-Yo Ma and Bobby McFerrin along with guest speakers like Spike Lee and Jane Goodall.

**“ THE STAFF FELT THE SYSTEM SOUNDED SPECTACULAR WITH EXCEPTIONAL CLARITY THROUGHOUT THE SPACE AND SMOOTH, EVEN COVERAGE IN WHAT WAS A PACKED HOUSE.**

'Of course, the biggest challenge was overcoming the problems posed by the two lines of pillars which are such a huge obstruction the school had to install the large projection screens to the left and right of the altar so people in the side aisles can see what's going on in the center.

'That, plus the reflectivity caused by all the wood in the space which further impacted the original sound system, large arrays installed on pillars toward the front of the space. The system fired right into the other pillars, causing a dead zone behind every pillar, and didn't provide adequate coverage for the expanded seating area in the center balcony.'

Mark had to design a new system that would expand the coverage so everyone in the chapel could hear the message that also had to be virtually invisible to preserve the aesthetic integrity of the historic space and complement the projection screens which can appear and disappear at the touch of a button.



As he points out, 'Usually, if you can't see a speaker, you probably won't be able to hear it either. It should line up with the listener at some point. After trying several different approaches, I realized the best way to go was something that had been tried before; installing the speakers high above the seating area inside the wooden archways at the top of the pillars. But that approach hadn't worked ultimately because the speakers weren't up to the task.'

'Fortunately, Martin Audio had come out with the CDD12, the only speaker that could succeed in that particular application because the horizontal dispersion is wider close in the nearfield and gets narrower as you move away from it. In addition to the unique dispersion pattern, the fact that it's coaxial gave us a relatively small point source that fit the coverage we needed, which we couldn't have done with a conventional 12' two-way speaker.'

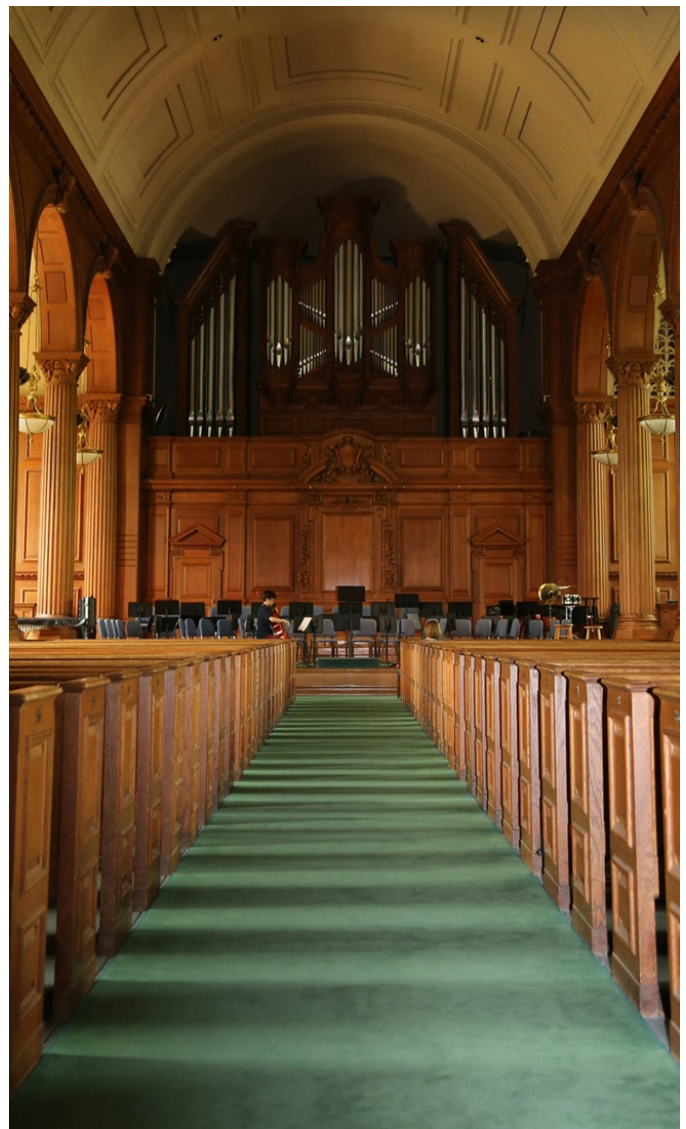
To provide the coverage needed to the people behind the pillars, Mark divided the chapel into 12 specific zones, six on the left, six on the right, with a speaker dedicated to each zone. Each of the 12 zones has a CDD12 driven by one channel of a Martin Audio MA2.8Q amplifier with its own processing channel from the DX0.5 Loudspeaker Management System. Three of the amps drive all the

speakers and each speaker is flown at about 32° up from horizontal and mounted with custom brackets.

In addition to the CDD12's, two CDD8's serve as outfill for the faculty seating at left and right of stage and two others are angled inwards as onstage monitors for the performers and speakers. Martin Audio C4.8T ceiling speakers are used for under balcony coverage. The audio system also included the school's repurposed Yamaha 01V digital mixers along with Shure, Countryman Associates, Audix and Audio-Technica microphones.

As Mark sums up, 'the faculty and AV staff at Phillips Academy is really pleased with the upgrade. They put the system to an initial test at an all school meeting. Their staff felt the system sounded spectacular with exceptional clarity throughout the space and smooth, even coverage in what was a packed house. And everyone appreciates the fact that the chapel has not been visually impacted by the speaker system. It still looks the way it did when it was first built because the technology is virtually invisible.'

'The best sign of approval came when the Head of School looked over and gave us a thumbs-up almost immediately after starting his speech, which definitely showed that we had succeeded.'





## Stonebridge Church Fremont Campus Expands Coverage



Omaha, NE—Martin Audio CDD-LIVE’s exceptional coverage enabled CCI Solutions to design a sound system for Stonebridge Christian Church’s Fremont campus sanctuary consisting of only two CDD-LIVE 12’s and two CSX-LIVE 218 subwoofers.

The Fremont campus sanctuary is housed within a traditional A-Frame style Church built in the fifties with large wooden truss beams and numerous reflective surfaces. As CCI consultant points out, “It’s a very beautiful space, but tough to get even coverage in terms of where to hang the speakers.”

‘The room is much longer than it is wide measuring 60’ by 30’, but we were able cover the whole room very evenly with just two flown CDD-LIVE 12’s. The main is over the center just beyond the stage and the delay about half way back the center aisle. And because the church likes their low end, we have two CSX-LIVE 218 2X18’ subwoofers flown over the front of the stage.’

‘The whole room is all basically hard surfaces in terms of the walls and ceiling with wooden backed pews and no sound treatment. So, we had to cover the back wall extensively and add some treatment to the sides to keep the echoes down.’

CDD-LIVE was initially chosen as a solution based on its cost-effectiveness for a project which necessarily had a

**“ THEY WERE THRILLED. IT WAS ONE OF THE EASIEST APPROVALS I’VE EVER HAD FOR A PA SYSTEM. ”**

tight budget given the church hadn’t originally anticipated the Fremont extension but ‘it was an opportunity too good to pass up.’

‘As it turned out, the CDD-LIVE’s asymmetrical coverage also worked very much in our favor. The horns are 110 degrees wide in the nearfield and 60 degrees in the far field and shaped so that the coverage is more rectangular than circular when you get to the edge of the coverage pattern.

‘It’s quite remarkable because you can walk the rectangle which is twice as deep as it is wide from corner to corner in the seating area and it’s totally covered. CDD-LIVE does that well while making it easier to get the coverage into the front rows, from side to side and all the way back in a very uniform way. That’s why we can cover the room very evenly with just two speakers.’

In addition, the speakers needed to be equally proficient for speech and music reproduction because StoneBridge





Church has a contemporary worship service with 4 and 5-piece electric bands and vocal groups along with the sermons.

'The spoken word is very clear and CDD has always been a very musical speaker, both passive and active. The reason we went active with CDD-LIVE in this setting is so we could eliminate external DSP to do any system alignment, timing and EQ, because that's already built in to the speakers. We could just connect the speakers up via Dante to tune the PA quickly and efficiently just with the built-in DSP.

Asked about the church's reaction to CDD-LIVE, CCI said, 'They were thrilled. It was one of the easiest approvals I've ever had for a PA system. I was there by myself on the initial tuning, spent a couple of hours working on it, getting it to the place where I thought it sounded very good.'

The staff came in the next morning and I played them some tracks, showed them the traces in SMAART and they said, 'Yeah, this sounds awesome!' And then I got on a plane and flew home.'





## Systemmax AVL Upgrades Church of The Saviour UMC

“OUR CLIENT IS ECSTATIC WITH THE SYSTEM. THE INSTALL HAS BEEN A MAJOR SUCCESS.”



Saviour United Methodist Church

Cincinnati, OH—SystemMax AVL was originally brought in to the Church of the Saviour United Methodist Church as consultants for a needs assessment and design working with local contractors, and they ended up doing an audio upgrade and theatrical lighting installation.

As SystemMax’s Darryl Johnson explains, ‘We ended up redesigning and installing the audio system for the worship space which is now doing split services with contemporary Christian worship and electric bands as well as traditional services with organ and choir.’

‘The room had severe acoustic anomalies so we brought in an acoustic consultant, Haverstick Designs from Indianapolis, to do room measurements and recommend treatment for the space to bring it within viable parameters, and then we installed a Martin Audio CDD/CSX speaker system with Elation pro lighting.’

Max Maxwell, Johnson’s partner adds, ‘Church of the Saviour is in a modern structure built in the late eighties, early nineties and the worship area had a lot of drywall and 60% of the back wall is glass with a large stained glass window in the wall behind the platform, all of which created a four or five second decay. The glass is particularly challenging because there isn’t a way to treat that.’

‘Based on the consultant’s recommendation, we put in ProSoCoustic 2-inch wall panels in different lengths and sizes on the side walls specifically sized to the areas where they were being used. With the treatments, we were able to get the decay time down to less than two seconds.’

The Martin Audio system included CDD12 and CDD8 speakers in tandem with CSX212 subs. ‘The way the

structure is built,’ Darryl points out, ‘there was no place to ground-stack the subs or build them into the stage so we flew two left and right with one of the CDD12’s in the center section of the room that has a higher ceiling. Then we flew a CDD12 on the outside right and left of the room which has a lower ceiling. In the rear of the church, there’s a delay ring of three CDD8’s across the upper and lower portions of the ceiling. Luckily, the space is wide enough to rig all the speakers across the church.’

Asked about the system’s performance, Max responds, ‘it sounds phenomenal. We used a matched pair of Earthworks choir microphones and the CDD speakers clearly reproduced all the clarity and quality those mics offer. The church uses a Roland electronic drum kit and all the drums are perfectly reproduced through the system with significant bass response.’

‘And even though Darryl and I are musicians, the main thing we’re focused on is clarity and articulation for the sermons which is critically important. If the pastor speaks and no one understands what she’s saying, we’ve pretty much missed the boat.’

‘We felt that because of the CDD’s pattern control, wide dispersion and the way the high frequency drivers function, it was the most appropriate choice for the install and it turned out great. Speech intelligibility with the CDD’s is amazing,’ Max concludes, ‘and when you factor in the CSX subs, music reproduction is everything we could have hoped for. Our client is ecstatic with the system. The install has been a major success and we’ve gotten other jobs because of how great it sounds.’



## India's First Blacklinex System Installed by Zoodio



Roman Catholic Church, Vashi

Mumbai-based system integrators Zoodio, have carried out a new sound system upgrade at a Roman Catholic church in the Mumbai township of Vashi.

Built in 1993, Sacred Heart Church has taken delivery of the first Martin Audio BlacklineX system in the country.

Zoodio, who have been specifying Martin Audio solutions for around a decade, had been recommended to the project by the priest of nearby St John The Baptist Church, following the installation of a Martin Audio O-Line as part of a major renovation project.

However, this time Zoodio turned to the new BlacklineX range for the first time. BlacklineX is described as 'a classic suite of passive loudspeakers for the modern era' which builds on the heritage of the original, and extremely popular Blackline installation and portable series.

Zoodio project manager and co-ordinator, Dylan Hilton, describes the rationale behind the change of Martin Audio system. 'Sacred Heart Church is much wider than St John's, with its wings extended on one side. The ceiling heights are also different and the reverberation time much higher than St John's.' He therefore reasoned that the church required the loudspeakers to be much lower and closer to the congregation - and in addition to its suitability, BlacklineX also worked within the budget they were given.

### “ THE RESPONSE WE HAVE RECEIVED FROM THE COMMUNITY HAS BEEN EXCELLENT,

'There had been a lot of complaints about the old system as the vocals were not very audible and was quite old and outdated,' said Pereira.

The installation team assessed the challenges of providing coverage for a congregation that can amount to 2,500 people. 'The task was to not only cover the centre of the church but also every corner with evenly distributed sound, and we felt that BlacklineX offered best solution for meeting this kind of installation requirement.'

Consequently, the company has installed a pair of X15's for the PA, a pair of X12's for the wings and two pairs of X8 as delay for the PA and the wings.

Fed from a series of choir vocal mics, acoustical instruments, lectern mic and further altar mics, the new system also needed to set a benchmark for the future.

In summary, Cleo Pereira said, 'The response we have received from the community has been excellent, and the priest also confirmed that clergy now really enjoy saying mass, as they can clearly hear themselves speak while doing so.'



Products Featured

O-Line

PASSIVE OPTIMISED  
MICRO LINE ARRAY



[martin-audio.com/products/series/o-line](http://martin-audio.com/products/series/o-line)

Wavefront Precision

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LINE ARRAYS



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CDD

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LOUDSPEAKERS & SUBS



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CDD-LIVE!

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XD Series

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BlacklineX

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This is just a small selection from a wealth of examples from around the world that you can find out more about by visiting [www.martin-audio.com](http://www.martin-audio.com)

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