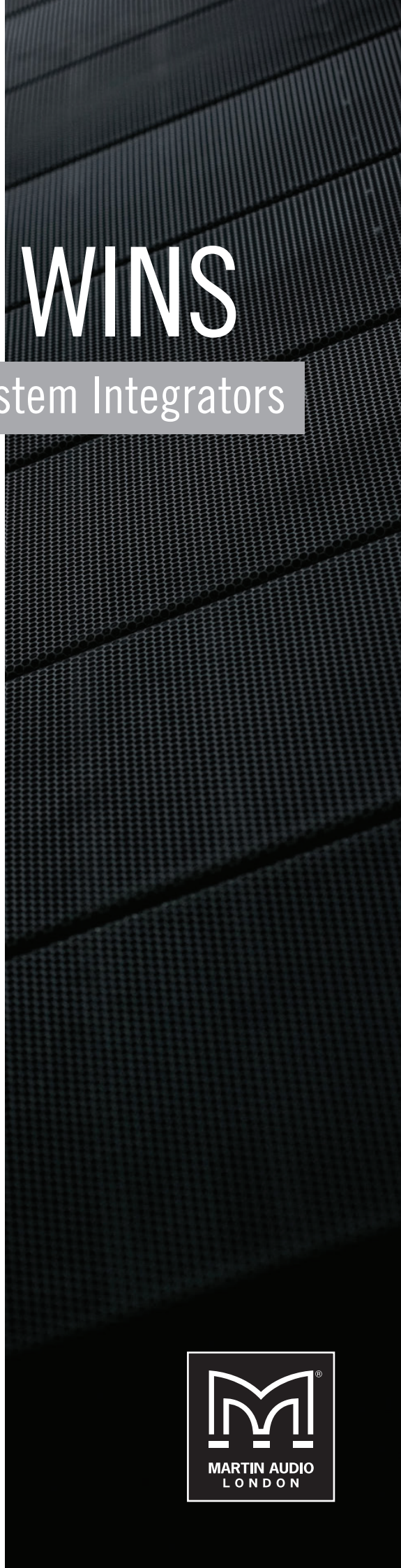
# WHY MLA WINS

## For Installation and System Integrators



MLA®
MULTI-CELLULAR LOUDSPEAKER ARRAY

MARTIN AUDIO
LONDON

# WHY MLA WINS

Marquee Nightclub, Sydney, Australia

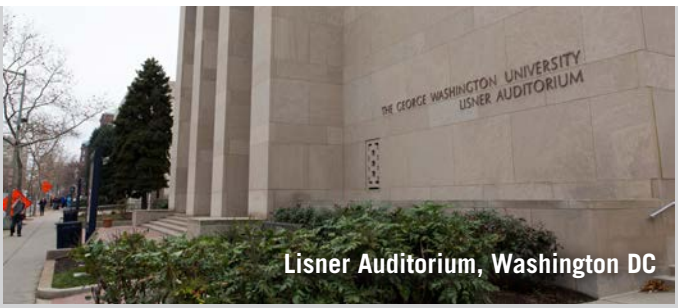
## Creating More Successful Venues

From the club, ballroom, auditorium, House of Worship or theatre, every venue creates its own specific acoustic challenges that traditional line array systems fail to adequately tackle. And if the audience's audio experience is below par, then that venue simply won't ever maximise its potential.

Whether its sound leakage behind and below the array, or hard ceilings, balcony edges and rear walls that cause slapback and reverberation, ensuring that the audience sonic experience guarantees a successful venue can be a thankless task.

Wouldn't life being simpler if the sound system was designed in such a way where audience coverage and consistency was more predictable, regardless of venue, and there was absolute control for where that sound should and shouldn't be?

Well, that's the product promise of Martin Audio's MLA.




Lisner Auditorium, Washington DC

# WHY MLA WINS

## MLA – Multi-Cellular Loudspeaker Array

The multiple award-winning MLA, MLA Compact and MLA Mini systems represent a new direction in the way loudspeaker arrays are configured and controlled. They deliver much more consistent sound across the audience compared to previous technologies, such as line array.

With line array, sound levels and frequency response can vary widely, depending on the distance from the array. This is because line array technology generally aims to produce coherent wavefronts as they exit from the speaker grilles — often way up in the air in real-world applications. The system-tech then 'manages' whatever comes out of the array using simple zoned EQ and by scrolling through preset libraries to find a 'best-fit' set-up when the sound arrives on the audience floor.

MLA (Multi-cellular Loudspeaker Array) technology completely reverses the situation specifying exactly what SPL and frequency response is required at the front rows, the mix position and the rear seats, and then using this information to automatically control the array to produce that result.

With MLA technology, cellular drive is combined with fast, automated intelligent software to hold both frequency response and SPL's within a very tight window from the front rows to the rear balconies.

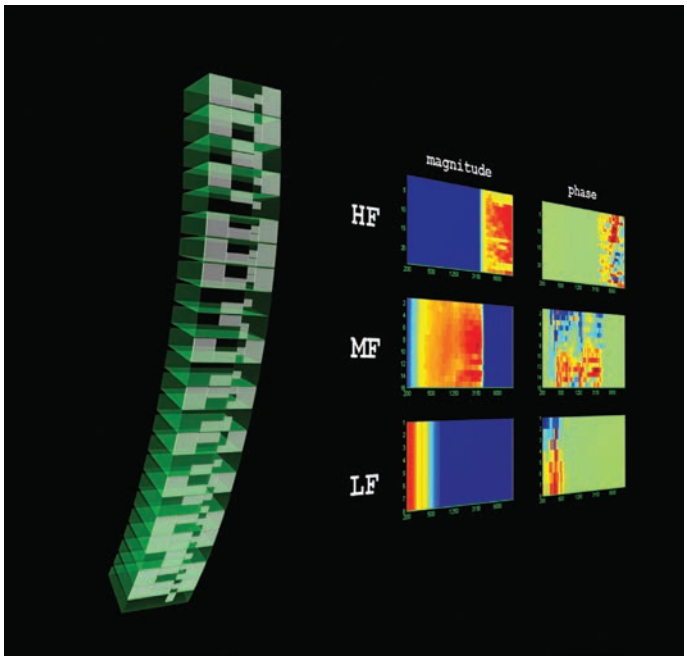
### AUTOMATED SOFTWARE

Each full-size MLA enclosure has 6 separate channels of onboard DSP and Class D amplification — 1 for LF, 2 for midrange and 3 for HF to control and drive each individual cell. An MLA array of 24 enclosures has 144 cells, each independently controlled by DISPLAY2.1™ automated intelligent software.

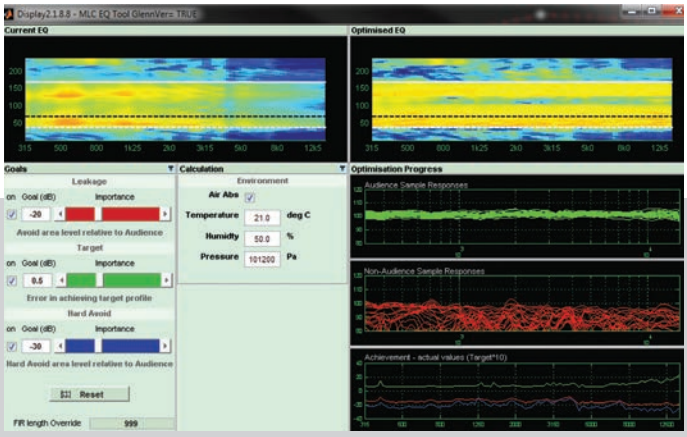
With every cell under computer control, MLA systems are not bound by the 3dB decrease in SPL with doubling of distance that is associated with line array. Normally an MLA array is programmed to be 3-4dB quieter at the rear, compared to the front, but it can achieve exactly the same level throughout if desired.

DISPLAY2.1 calculates the array tilt and splay angles in 2-3 minutes. Whilst the array is being rigged, it calculates the DSP filter coefficients which will achieve the specified result. Once rigged, the DSP parameters 3,600 per MLA enclosure are uploaded via the inbuilt U-NET™ digital network.

'Hard avoid' areas such as behind and below the array, ceilings, balcony edges and beyond the venue perimeter can be programmed in. Vertical coverage can also be fine-tuned electronically in-situ to cope with changing environmental conditions and last-minute changes in rigging height.




MLA cellular drive




Automated optimisation

# WHY MLA WINS

## Marquee Nightclub in Sydney, Australia

Part of The Star Casino complex overlooking Darling Harbour, 'Marquee – The Star Sydney' is more than just a nightclub and represents a development of the Casino into a much larger leisure and retail complex with the emphasis on entertainment, nightlife and shopping.

Within this, the Marquee Nightclub stands out as an independent enterprise, part of an international franchise that includes some of the hottest clubs in the world. It is fitting, therefore, that in the MLA, the Marquee Nightclub should have commissioned by far the most advanced sound system in the world as the central component to what is comfortably the largest nightclub investment ever undertaken in Australia.

After being awarded the contract, TAG's Director of Engineering, Anthony Russo, proposed the flagship MLA Multi-cellular array system on the main dancefloor. "Considered by many to be the most cutting edge system available, this was to be MLA's first installation in the world and compatible with Marquee's market position," said Anthony. With such headline acts as Will.I.Am, Redfoo and Avicii appearing at the club, the request "for no technical compromise" further justified the selection of MLA.

The club itself has been designed around 13 zones over the two main rooms. Even coverage and control were paramount, delivering high SPL where required and comfortable clarity elsewhere. AECOM Sydney undertook internal acoustic treatment given the high SPL's generated and mechanical isolation was also essential for all speakers with premium industrial caged rubber/spring isolators installed throughout.

A major challenge for speaker selection was the unusually low ceiling height for a club of 2.8-3.5 metres in some areas with a plethora of existing hydraulic and electrical services and the added constraints

# WHY MLA WINS


Marquee Nightclub, Sydney, Australia

of a stretched Barrisol false ceiling over the dancefloors, so that tight vertical dispersion characteristics were the order of the day.

The main dancefloor speaker system is comprised of six MLA enclosures and six MLX sub bass, with 18 specially modified VHF bullet arrays ensuring it specs right out to 32KHz, according to Anthony.

With its onboard six amplifiers, cutting edge DSP and networking, and with peak capabilities of 140-145dB, MLA is barely idling at Marquee, delivering nightly levels of 120dB or more. “As MLA is unlike any other loudspeaker manufactured, its set up requires a venue optimisation programme to be loaded specific to the task, and is exclusively venue based,” confirms Anthony Russo. “The amazing ability to listening for hours on end with no fatigue is truly unique.”

But TAG’s involvement with the Marquee went well beyond a PA system for the Main Floor. Apart from the Boombox and the chill-out Library there are several other small, segregated areas of entertainment and bar systems

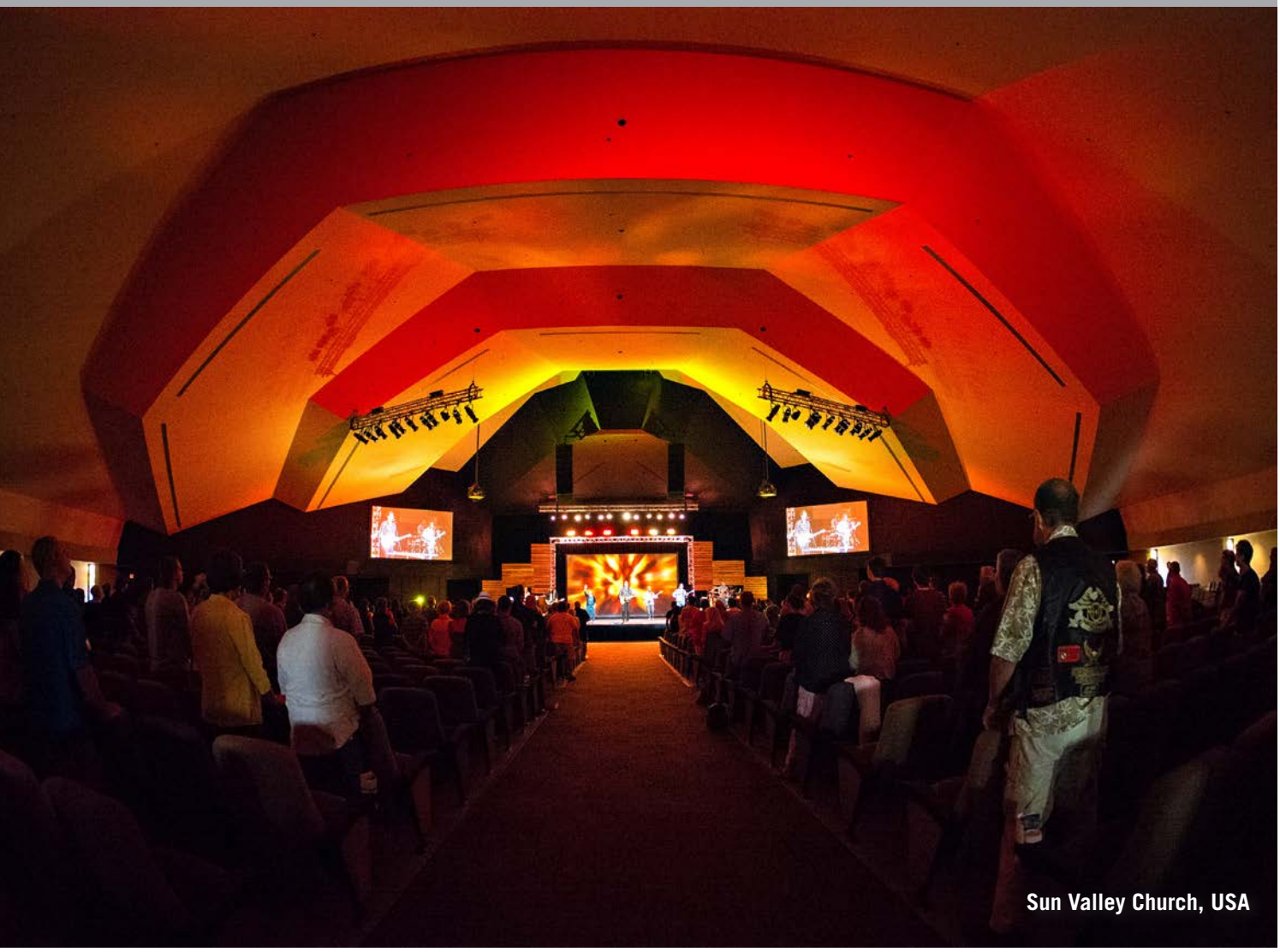
The dance systems deployed here include 20 x Martin Audio W8LM line array elements plus VHF bullet arrays, and five WS218X subs — while the three bar areas are catered for with banks of Martin Audio OmniLine micro line arrays, totalling 76 elements, with specially suspended banks of AQ212 subs. And with DJs also playing inside the enormous unisex toilet a high-end Martin Audio 6.8T and sub ceiling speaker system have been installed to satisfy waiting punters.

Finally, the DJ’s thirst for monitoring is well catered for with Martin Audio AQ215 subs, Blackline F12+ and LE 2100 monitors.

Summing up, the TAG director says, “Marquee Nightclub at The Star Sydney has just installed by far the most advanced, cutting edge sound system in the world … full stop. We are delighted to have been the company responsible for specifying and being part of the team. The most exciting aspect is reading countless reviews of events and seeing comments relating to the sound system such as ‘jaw dropping’, ‘amazing’, ‘killer system’ and ‘best ever sound’; the list of superlatives is never-ending.”

# WHY MLA WINS

## Sun Valley Church, USA



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 ream 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.

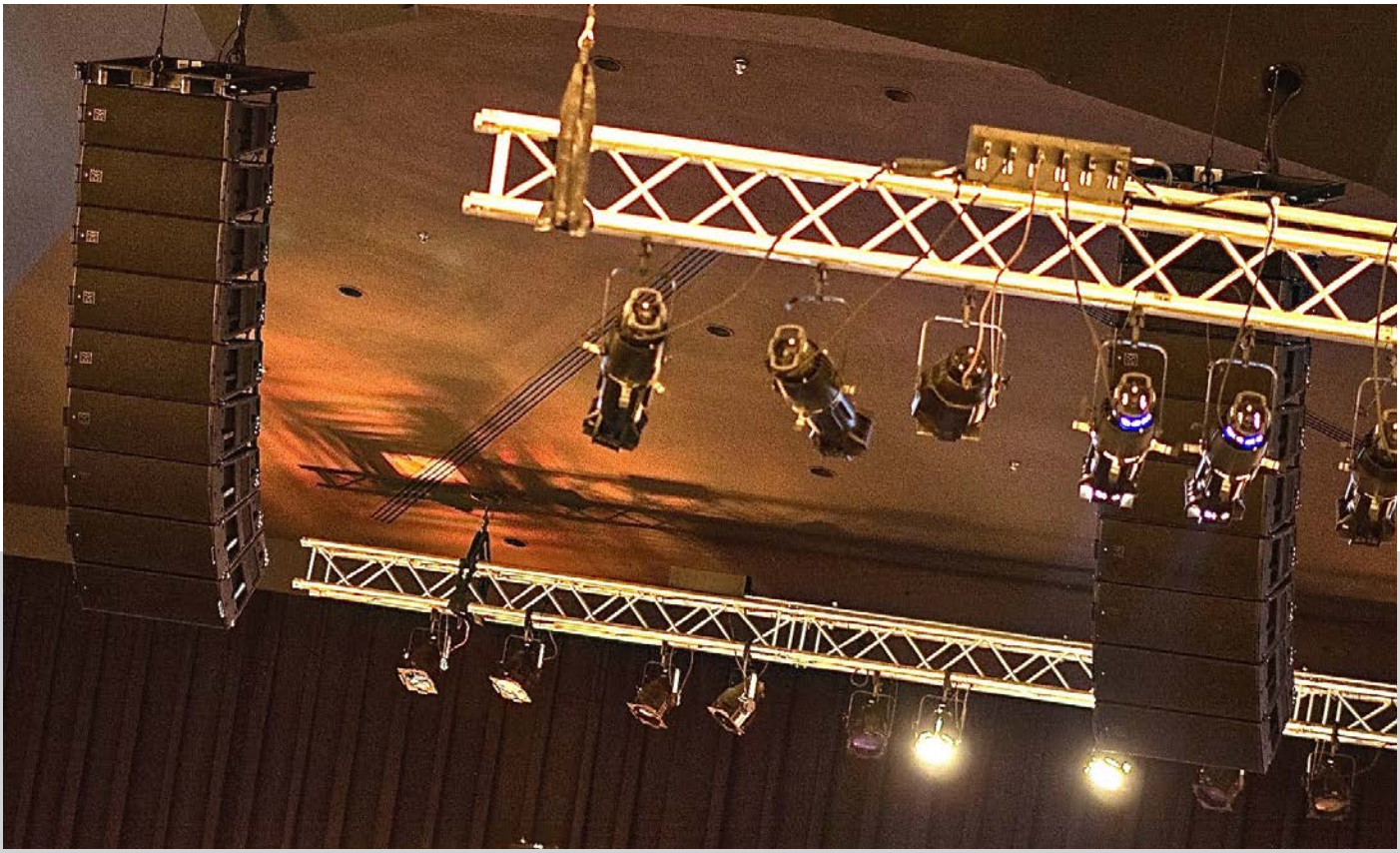
Completed in the first week of April, the system debuted on Palm Sunday and according to Eric, "it was an overwhelming success. Ed Crippen was there for the whole weekend, which included rehearsals and the first service. He was taking measurements for the service and one of the things we discovered during 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."



# WHY MLA WINS

## Redemption Church, Arizona USA


**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'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."

# WHY MLA WINS

## Lisner Auditorium, Washington DC

A fixture in Washington DC live entertainment since the Second World War, George Washington University's Lisner Auditorium has hosted an eclectic mix of performers from Ingrid Bergman to Pink Floyd, along with leading world music artists, local opera and symphony companies and celebrated political dignitaries over the years.

The university recently decided to upgrade the venerable auditorium and MHA Audio, a successful local production company and integrator based in Hagerstown, MD, was tasked with installing the new audio system.

**Lisner Auditorium, Washington DC**

MHA owner Mike Scarfe said, "It was a perfect opportunity in terms of timing to bring Martin Audio's new MLA Compact into play and it all came together really well. The 1500-seat venue was the perfect size for the system. We put eight MLA Compacts per side with a centre array of six DSX subs under the stage. The system was a natural choice because we'd had such a great experience with Martin Audio's MLA touring system and this technology is definitely state-of-the-art."

Discussing the University's decision to modernize the sound and lighting systems, Executive Director of Lisner Auditorium and Partnership Development at GWU Maryann Lombardi explains, "We haven't had a significant upgrade since the early forties and we needed to make the venue more competitive in terms of attracting high-profile talent.

"The environment for entertainment venues in the District of Columbia, Maryland and Virginia has changed dramatically in the last 20 years with more venues offering increasingly sophisticated capabilities. Our job is to become more competitive within that market. We've held a very prominent place in the past, but we really wanted to branch into other genres and better support our world artists."

Since the upgrade, Lisner has presented a series of popular and well-attended world music concerts by artists such as the Brazilian singer-songwriter Gilberto Gil and Acoustic Africa, as well as the sold-out debate between Fox's Bill O'Reilly and the Daily Show's Jon Stewart.

Asked about her impressions of the sound system since the MLA Compact system was installed, Lombardi enthuses, "I'm thrilled. It really has made an enormous difference in the sound quality. We've also gotten very good reactions from legacy clients such as the Air Force Band, Gilberto Gil, the Heritage Awards and artists using the equipment for the first time.

"We are now vetting performers and looking through their contract riders as we venture into new genres and it's really cool to say we now have this sophisticated sound system in place that they can put to good use."

Eric Annis, Production Manager and Technical Director for Lisner, is also enthusiastic about the new MLA Compact, "We think it's fantastic and so do all the users who have come in since the installation. "We've had several televised events in a row and maintaining the sightlines within the auditorium is wonderful," adds Annis. "The shows have run the gamut from loud electrical music to a single mic bluegrass band, and the MLA Compact system has proved to be equally articulate and clear."

## Starlight Express - Bochum's Stadionring

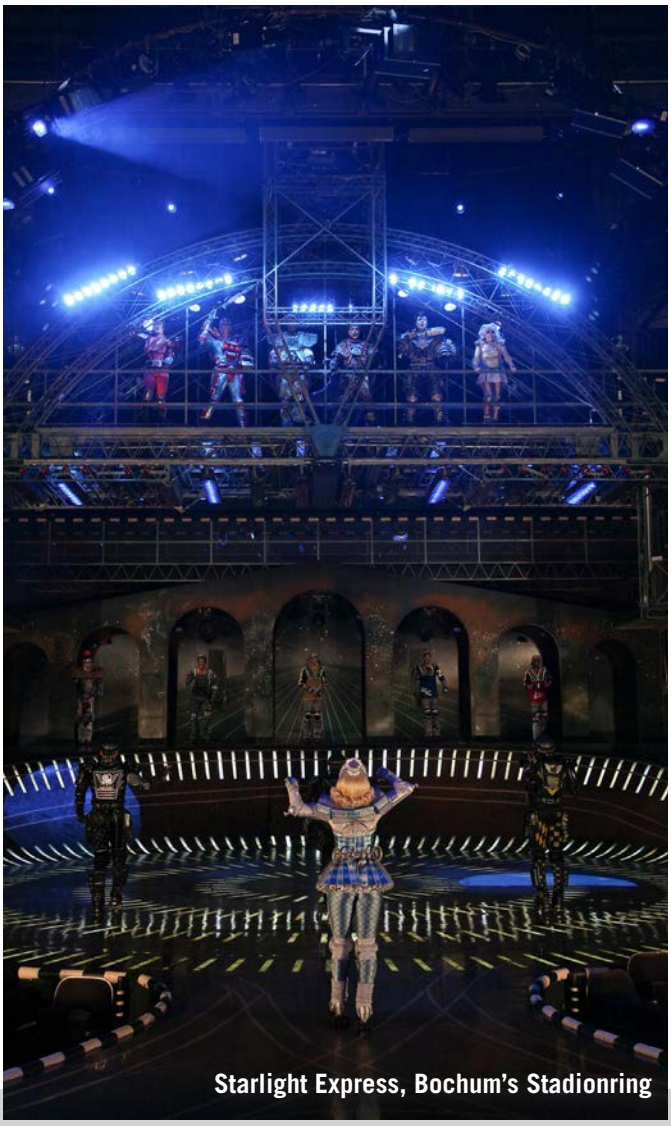
When the updated production of Starlight Express opened at Bochum's Stadionring — celebrating 25 years since its first performance at the specially constructed 'Starlight Express Theatre' in June 1988 — it featured for the first time Martin Audio's new award-winning Multi-cellular Loudspeaker Array (MLA) platform.

Advertising itself as "the fastest musical in the universe" it fell to sound supervisor Riccardo van Krugten and system engineer/installation manager, Georg Hentschel to supercharge the next generation production while remaining faithful to Martin Levan's original sound design.

Overseeing the sound in Bochum since early 2010, Riccardo van Krugten was eager that the production remained faithful to a single system to cope with the fast roller skating action. "We wanted a stereo set-up for the orchestra, and a separate system for vocals, positioned above the main performance area," he said. "This required a PA solution that would reproduce music and vocals equally well." Another issue was the need to reduce spill and crosstalk from the PA speakers into the fast moving 25 Microport headsets.

Since the new production promised "to take audio engineering to the highest level", van Krugten knew that the audience expectation today is far greater than it was two decades ago. He was also mindful of past complaints concerning vocal intelligibility and clarity in parts of the auditorium. "And so we searched for a system that would provide even coverage for all seats in the house, maintaining frequency response and sound levels."

That search began after Andreas Karsten had produced a 3D EASE model of the Starlight Express Theatre. Said Riccardo, "We ran various simulations with the existing speakers and looked at the problems. Then we ran the same simulations with a two conventional line array rigs at different positions to identify whether a line source solution could be used in this situation, before inviting nine manufacturers for two shoot out sessions."



**Starlight Express, Bochum's Stadionring**

To thoroughly evaluate the competing systems, Riccardo prepared a file in ProLogic containing samples from the show (and other vocal recordings of different tonalities) — as well as music that everyone would recognise. "For the second half of the session we had the Starlight rhythm section and three cast members perform live from different positions on stage," he said. "In two shoot out sessions, we heard nine different (mono) arrays rigged side by side. The MLA Compact never left any doubt it would handle reliably whatever kind of audio we threw at it."

As a result, 27 MLA Compacts have been divided into three flown L/C/R arrays of nine elements each — along with three DSX subs ground stacked left and right of the stage. This is designed to cover the entire auditorium including the balcony


**Starlight Express, Bochum's Stadionring**

and the middle sub on each side is reversed to produce a cardioid pattern. The subs are set unconventionally just outside the left and right array — stacked on the middle track level a few metres above the ground — and are sunk into the proscenium wall, via a specially-designed setup.

A pair of Martin Audio W8VDQ hybrid boxes provide outfill coverage extension of the centre array, while production rigged a so-called ‘crossfire’ system, so that those sitting at the sides of the auditorium would also receive a stereo orchestra image.

Georg Hentschel explained, “Starlight has a large cast equipped with omnidirectional lavalier mics who constantly move around the set on three levels behind the speakers and also in front of the PA — often directly facing the arrays. During one particular scene, six highly amplified singers are elevated directly behind the centre array which mainly handles vocals. The amazing reduction in backspill of the MLA Compact masters these challenges in a very impressive way. The other aspect, of course, is MLA’s outstanding tonal quality.“

He set ‘Hard Avoid’ for the areas behind the arrays where there is a lot of singer traffic as well as to the areas underneath the speaker systems. Further back down the auditorium, the problems become even more complex, with two tracks running right through the audience, who are seated on different levels. Finally, there is a balcony and several rows of seating at both side walls that need to be covered.

“I challenged the system with various optimisations to achieve the best solution, and it has really delivered; we were able to solve many problems with MLA’s advanced technology, and it was absolutely the right system for the job,” he said.

# Roswell Church Retains Natural Acoustics With MLA

Roswell 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.

"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."

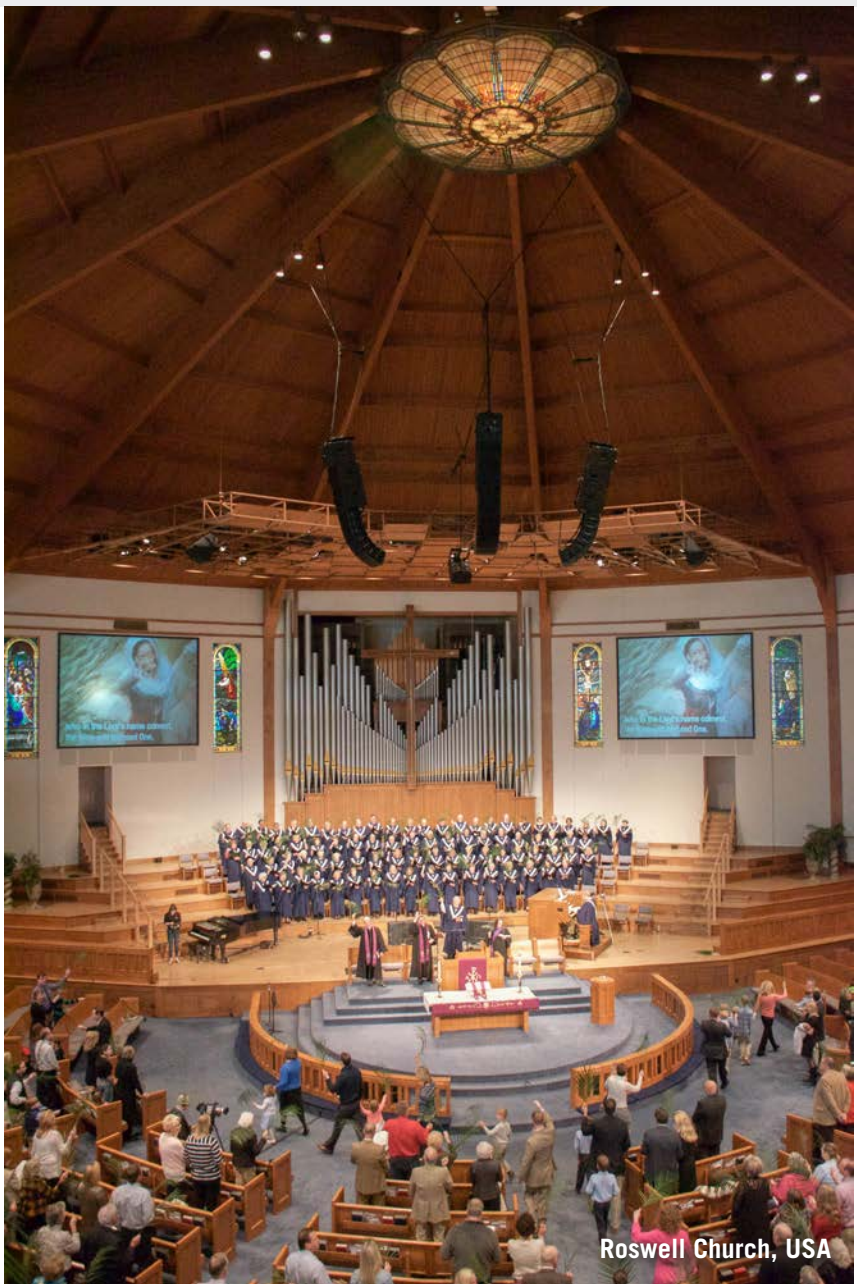
Aaron Freeman, AV Assistant at Roswell, echoes Houston's feelings about MLA. "The worship space seats around 2,000 and it can be challenging to get the coverage you need with the high domed ceiling and stained glass windows at the top.

"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. 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.

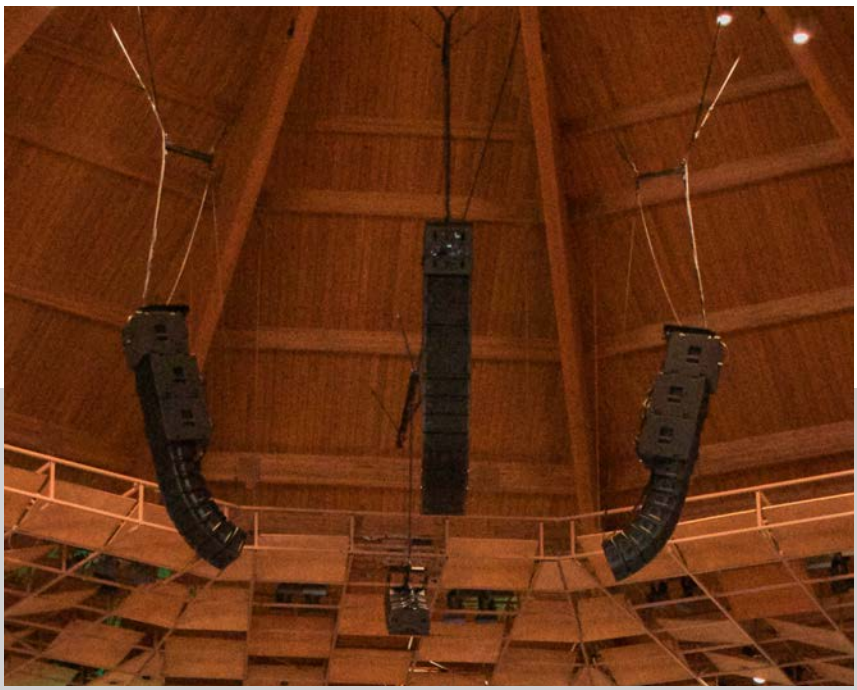
"We have two services, one more contemporary with electric guitar, bass and V-drums and MLA sounds great for that. For the second service, which is more traditional, the system's allowed us to get more of the choir out of the speakers where it doesn't sound reproduced electronically, but naturally amplified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



Roswell Church, USA



## Big Sound From Martin Audio MLA Mini System

Broadmoor Baptist Church, Louisiana, USA

A large metal building, plus parallel walls, plus a budget of zero for acoustical treatment can certainly equal headaches for audio system designers... Especially when the music format is anchored with live drums and electric guitars. Such is the case for our newest worship venue at Broadmoor Baptist Church in Shreveport, Louisiana. With a great need for more space for our fast growing DOXA worship service, the goal seemed simple enough: build a 1,200 seat space for under four million dollars.

With a hard ceiling of funds available, we went looking for a way to defeat the problems we knew the physical space would present. First on the list was the main PA system.

We attended the InfoComm Show in Las Vegas to demo systems, because our space is similar to the large convention center rooms' manufacturers use for the demos, and we felt confident that the show would provide a great short list for us to pursue.

Our short list was made even shorter after hearing the Martin Audio MLA Mini system. I say "system" because it's so much more than just a speaker enclosure. The MLA Mini is a group of components, which they call "cells" that work together to create one of the most controllable audio transducers I've ever used. The key selling point though was the ability to use their DISPLAY2.1 software to control the DSP within the power module to create "Hard-avoid" coverage areas within the room.

Before we get too far along, let me describe our space and how the system fits within it. Our room is 120 feet wide by 100 feet deep. The stage sits within the room (not a stage house) and it is 58 feet wide by 30 feet deep and is only 42 inches high. So the coverage area for the audio system is basically 120 feet by 70 feet deep. The ceiling is exposed steel beams which is 24 feet high on the sides and 28 feet high in the center. The floor is flat with movable seating.

Our Martin Audio package is made up of two MSX Mini-sub Power Plants and eight MLA Mini enclosures per side. The speaker portion of each Mini-sub includes a single 15" voice coil, long-excursion driver that is reflex-loaded into a box that is only 20 inches square. The power portion of the MSX is a clever package that I call a backpack, which is mounted to the backside of the box. It's held in place with an edge frame and it's easily removable, even with the enclosure in rigged in the air. The Power Plant Module includes nine channels of Class D amplification. One channel is used to power the sub itself and then eight other channels to provide, as Martin Audio says, "cellular drive of up to four bi-amped MLA Mini enclosures." The Power Plant also houses the DSP for Crossover, delay and EQ functions which are all controlled via the VU-NET control software.

The MLA Mini Enclosure houses two 6.5" LF drivers and vertical column of three 1.4" dome HF drivers on a 100

# WHY MLA WINS

degree horn. The placement of these elements within the enclosure is somewhat complicated to explain, but the bottom line is this 20" wide by 7" tall box is designed to work hand in hand with the other enclosures and the configuration, once they are connected, provides an astonishing amount of control. Not only control in tone and color of sound, but also in putting the sound where you want it and, more importantly in our case, where we don't want it.

Installation of the system is simple and in our case we were able to fly the rig from a single point via a weight rated beam clamp. Martin-Audio's DISPLAY software gave us the proper angle adjustments after we simply entered the dimensions of our room and the areas where we wanted coverage, and of course where were didn't. Tuning the system was unlike anything I've done in the past. Jim Jorgensen (UXM Product Specialist for Martin-Audio) was able to join us on-site for the setup of the system and provided training to our tech staff and our contractor All Pro Sound from Pensacola, Florida. Jim was able to quickly verify the components working order with the VU-NET control software and within 15 minutes we were playing music and listening to one of the most satisfying PA systems I've ever heard.

Beyond the ease of installation, fast set up and the beautifully transparent sound of the system, there is one more feature that can't be missed. Because of the flexible seating, our room can be adjusted by removing seats and creating more aisle and row space to make a crowd of only 600 not feel like the room is empty. Or we can load in all the chairs and make the room hold 1200. The size of the crowd and the placement of the chairs (in particular how close they are to the walls) plays a big role in the reflection aspects of the room. By creating pre-sets or snapshots of the system settings within the DISPLAY software, we are able to adjust the system based on how full the room is. And because we live in the deep south, where summer-time humidity levels average 90 percent, we can add environmental components to the pre-sets. This feature is so precise, we even have a setting for when people are standing up as opposed to sitting down. Certainly this feature can be used to the extreme and could end up being confusing for users. However, as in our case, we also have a pre-set called "normal" that is a best case setting for our most common seating and service configuration.

As church we have to be strong stewards of what God has provided. Our church is debt free and sometimes we have to wait until funding is provided to purchase the equipment we need. We feel blessed that the Martin-Audio MLA Mini system fit into our budget and even more blessed that it goes so far beyond our basic needs.

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