

CASE STUDIES

Stadia



Unite Your Audience
The Martin Audio Experience

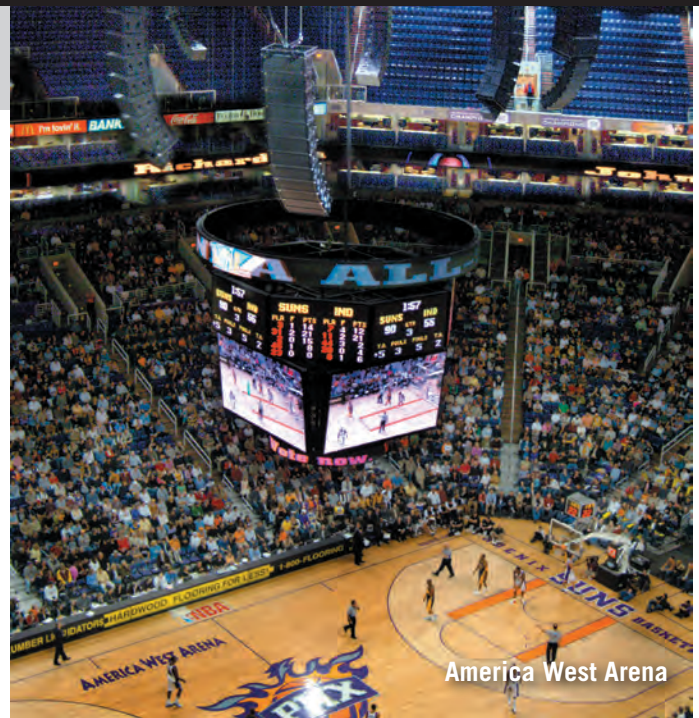


Martin Audio

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.



America West Arena

Stadium Installs

Whether it's Martin Audio's Install Line Array or our Stadium Series the ability to be heard clearly above the noise of the crowd is the defining feature. Our Install Line Array systems combine innovative horn-loading techniques with line array technology to produce extremely powerful systems with maximum dynamic impact. The Stadium

Series provides seamless integration in any sports facility, stadium or arena where high SPL, excellent intelligibility and weather resistance are of prime importance.

When it comes to more interior spaces, again Martin Audio has speaker solutions to meet the diversity of usage needs.



Siauliai Stadium, Lithuania

Vancouver's Rogers Arena Upgrades Sound for Private Suites



“ THE CDD-LIVE 8'S HAVE RAISED THE STANDARD OF IN-GAME AUDIO FOR OUR SUITE HOLDERS AND PREMIUM SEATING.”

Rogers Arena

A team including Justin Sarris, Audio Systems Technician for Rogers Arena, Fred Michael, System Designer and Project Manager for installer Allstar Show Industries, and Erikson Pro, Martin Audio's Canadian Distributor, recently upgraded the sound capabilities for private suites at Vancouver's iconic arena with Martin Audio CDD-LIVE 8 speakers.

The venue, home of the Vancouver Canucks and 11th largest hockey arena in the world with a seating capacity of 18,910, features a number of executive and hospitality suites along with a special Club 500 area that offers exceptional visual access to the hockey action and fine dining for the fans.

Discussing specifics that motivated the upgrade, Sarris explains: “There was nothing in terms of bowl feed fills to the suites prior to this installation. The main PA would catch the bottom two rows of suite bowl view seating, though it wasn't designed to fire into the suites themselves. Many guests like to sit at the bar seating overlooking the bowl, or stand and watch from the suite, and there was a

bit of a disconnect in audio energy/excitement when in the suite interiors. Of course with the new system in place the presence has been improved in those bottom two rows as well. The volume in each suite can be adjusted either locally or remotely, so the experience can really be tailored to each unit.”

Expanding on the overall project, Fred Michaels adds, “Martin Audio and Erikson Pro provided excellent technical and logistics support, so we got off to a timely start. While the audio requirement was relatively straightforward, we had significant challenges with the hardware installation and IT interface within the facility.

“In terms of the hardware, we were working with existing TV Mount locations for about 110 of the speakers and had to customize the mounting hardware in order to match up to four different mounting scenarios.

“For IT, we were tasked with supplying network connections across two levels and several hundred meters of the venue. This involved a solution using facility VLANs to create Hop Points that kept us within the network limits while also

adhering to the Dante networking requirements for point-to-point versus daisy-chain connectivity.”

Asked why Martin Audio CDD-LIVE 8’s were chosen for the install, Sarris responds, “We had a fairly specific criteria that needed to be met for this project to move ahead as proposed. The capacity for new signal cable to the speaker locations was limited, and we needed to maintain control over each unit individually.

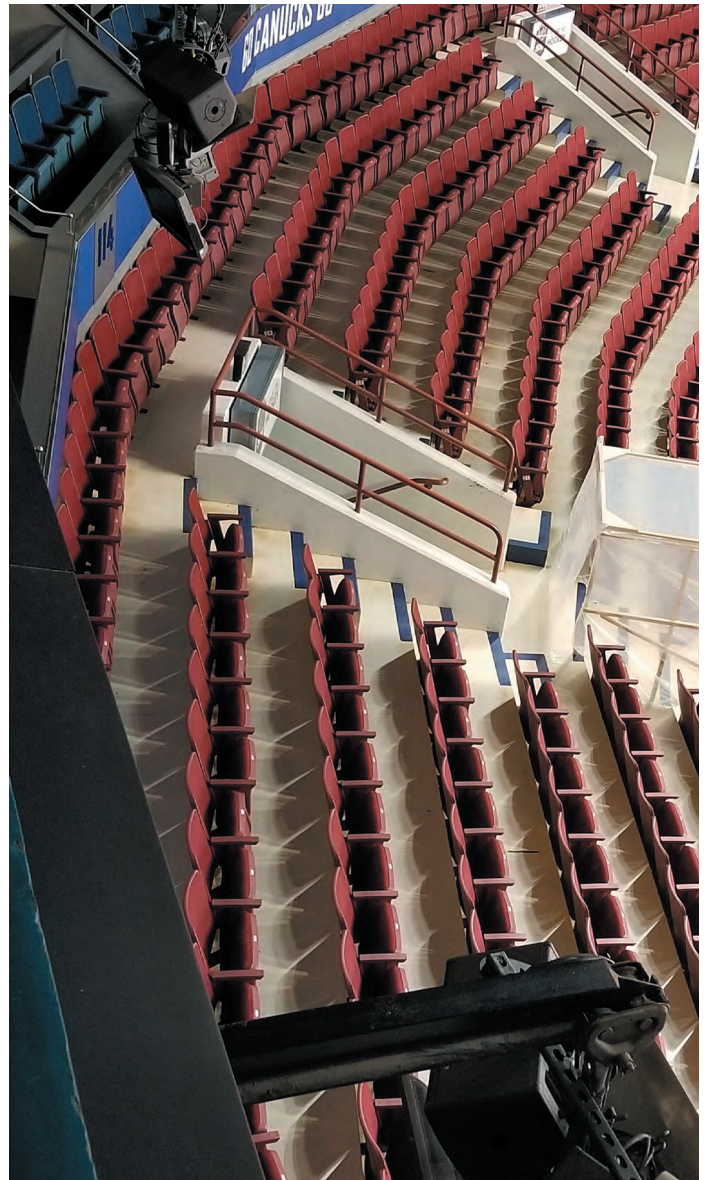
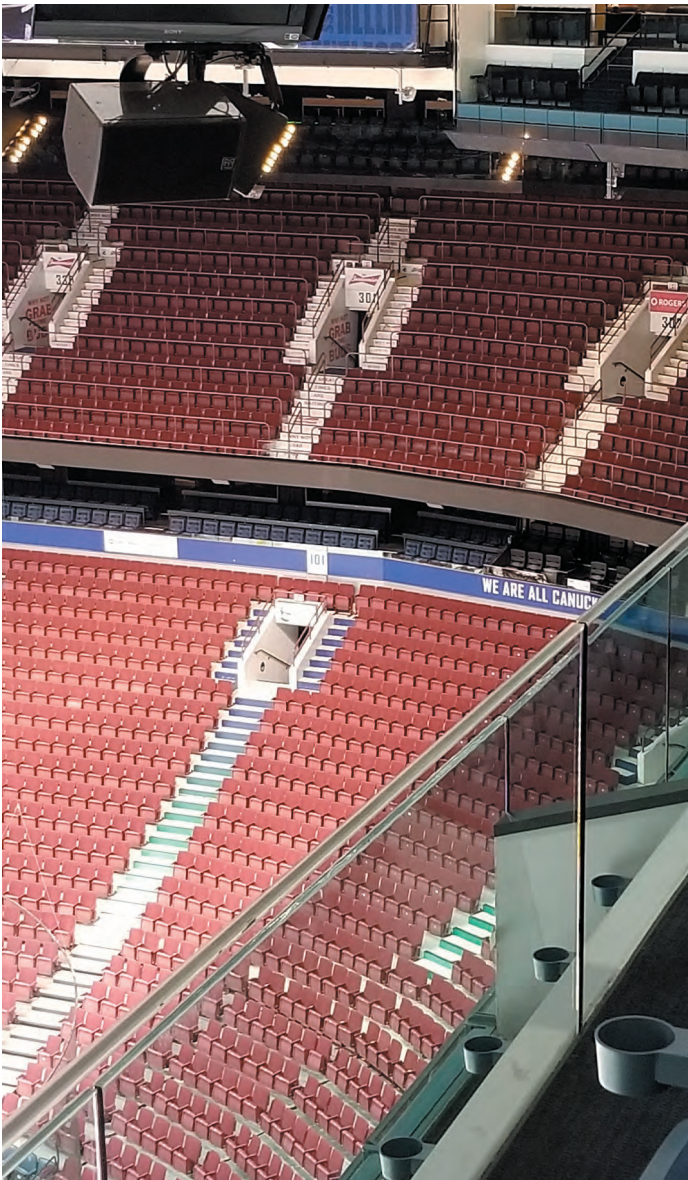
“We also required wide, consistent dispersion in order to cover groups of 8 to 16 seats from close range; and we wanted a high fidelity product that would both enhance excitement for our fans viewing the game from within the suites, and present a smooth frequency response that would blend well with our bowl PA. Fred Michael at Allstar identified the CDD-LIVE 8 as a product that would tick all the boxes. The ability to daisy chain the units via Dante was a godsend in terms of resolving our infrastructure limitations.

“Finally, we had put some time aside to assess and adjust our bowl mix for the suites send that feeds the CDD-LIVE 8’s, as well as to sweeten up the sound with EQ. To

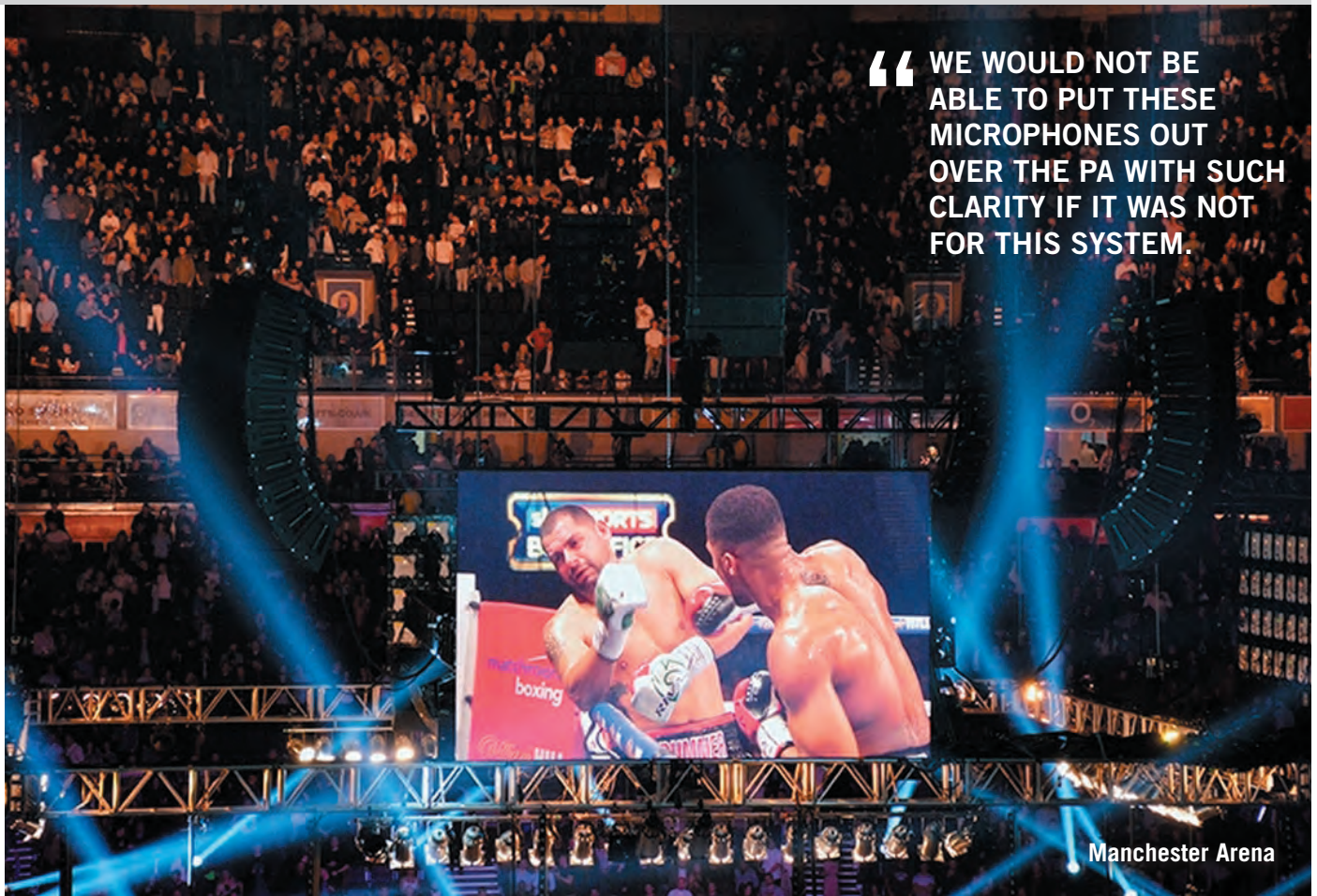
our delight and surprise, once each unit was delayed to the bowl PA, everything locked in nicely and no further adjustment was necessary.”

Commenting on the install, Michaels concludes, “Overall, it was a team effort with a high degree of cooperation between the Arena staff, Martin Audio/Erikson Pro and Allstar. Thanks to everybody’s efforts, we achieved stellar results. The system performs exactly as I expected, providing clean, powerful audio support for the 120 suites and upper lounge areas that previously did not have adequate coverage from the main PA system.”

Summing up the CDD-LIVE 8’s performance, Sarris points out, “It’s been a full season now and they’ve performed as we had hoped. We added a couple of units in front of our game presentation area and staff have had nothing but good things to say about the reinforcement of our bowl audio. It’s funny, we didn’t receive much feedback on the project at all throughout the season until a unit would be inadvertently left turned down, at which point it would become immediately noticeable that something was missing. The CDD-LIVE 8’s have raised the standard of in-game audio for our suite holders and premium seating.”



MLA System Helps Anthony Joshua Punch His Way to Wembley



“ WE WOULD NOT BE ABLE TO PUT THESE MICROPHONES OUT OVER THE PA WITH SUCH CLARITY IF IT WAS NOT FOR THIS SYSTEM.”

Manchester Arena

VME used its flagship Martin Audio MLA System to the full at the Manchester Arena recently, for Anthony Joshua’s latest IBF World Heavyweight Championship defence live on Sky Sports Box Office.

From their 48-box MLA inventory the Manchester-based service providers can rig differently configured systems to suit venue size and technical requirement, with the EQ tailored accordingly. And according to VME head of sound, Mark Cleator, the challenges of reinforcing a live Sky Sports broadcast, in-the-round production for promoters Matchroom Boxing, are entirely different to a conventional rock show.

‘Each venue is completely unique,’ says Mark, ‘and the rig has to be up in the air within three hours. We share a couple of cable bridges with lighting but all our hangs are double motored to reduce the need for having to tie off arrays, which really helps the rig time.’

Manchester Arena certainly provides a challenge for the production company when rigging in-the-round. With the permanent in-house scoreboard providing a 9m square obstruction, getting points in the areas VME require is sometimes not possible due to time restraints.

‘In this instance, we used six hangs of MLA, each consisting of four nine-box hangs (seven MLA and two MLD Downfill), as well as two smaller hangs of six MLA to fire over our LED screens,’ Mark reports. ‘It certainly helps having the

horizontal projection of 90 degrees when rigging in the round, especially when we are pushed so far out due to the scoreboard.’

The MLA system is tasked with providing broadcast mic reinforcement as well as Intro Walk-on music. According to FOH engineer Mike Bell, ‘With MLA running down to 50 Hz, and the low-end coupling when in the round, there is no need to deploy the MLX subwoofers.’

The sound engineer also notes that MLA’s advanced optimisation process allows coverage to be steered precisely where it’s needed - and in this instance the SPL profile is such that the sound is mapped out around the ring where the TV interviews take place. The ‘Hard Avoid’ setting was again used on the reflective VIP boxes, whilst giving full coverage to the main audience area.

Mike Bell is clear about the advantages of MLA’s incredible precision. ‘The broadcast mics are so sensitive that it’s vital we are able to deaden the sound around the ring and then begin the coverage from the VIP section,’ he says. ‘Having that level of control with MLA is incredible - we would not be able to put these microphones out over the PA with such clarity if it was not for this system.’

After a successful and eventful 2016, VME are gearing up for 2017 to follow Anthony Joshua and his fellow Matchroom Boxers for an even more action-packed year.

OBA Completes Third CDD Install for Lee Valley Olympic Facilities



World class Athletics Centre is the latest to benefit. Old Barn Audio has completed its third Martin Audio CDD installation within Olympic class venues owned and operated by Lee Valley Regional Park Authority (LVRPA).

Following successful fit-outs of the Lee Valley White Water Centre and Lee Valley Ice Centre, they have now completed a challenging installation at Lee Valley Athletics Centre in Edmonton.

This required the company to install a 30 metre long roof truss section down the middle of the 200m six-lane oval track, six and a half metres up in the air, to support over half a tonne of Martin Audio's popular CDD 12, CDD 10 and CSX sub woofers.

Built ten years ago at a cost of £15m, the Centre plays host to a wide range of athletes - operating as an elite venue for Olympians as much as a walk-in facility for the general public. Boasting 4,000 admissions a week, it is the busiest indoor athletics facility in the UK.

In such a wide open, cavernous venue, pristine sound is vital, as much for commentary at athletics meets as general messages and voice evacuation. However, the previous sound system was sadly lacking, as Centre manager Mick Bond explained. 'It piggy backed onto the fire alarm system so it was not really fit for general purpose. It was a constant source of frustration and produced feedback whenever turned up.'

'We managed to get funding for a replacement system and got various quotes. Old Barn Audio were both competitive on price and were tried and tested as far as we were concerned.'

Their project manager Neil Kavanagh knew that LVRPA wanted to main continuity with the proven CDD formula and his solution was to specify largely CDD12, enabling the CSX118 sub to take care of the lower frequencies.

This he knew would not only provide the level of speech intelligibility required for commentary and handle background music during daytime training, but also have sufficient muscularity to handle for small concerts. 'The venue is also available for hire so by providing a high spec. Martin Audio system this will facilitate a lot more business, leading to an excellent return on investment,' he said.

Kavanagh's first conundrum was how to tackle the acoustics of an inherently 'live' cantilevered venue, while at the same time integrating the pre-existing sound system. He specified 10 x CDD12, two CDD10 and four CSX118, ensuring that the subs fired down at the rubber floor, which would provide absorption, while the full range boxes were arrayed and directed at the 500 raked seat stand on one side of the oval (avoiding the facing wall entirely).

The internally wired truss itself is suspended from four points, with two tonne weight-loading and safety bonds at each end. The speakers themselves are fixed using half couplers and are safety bonded.

'We assembled everything 1.5m off the ground and hoisted it into positions on four chain hoists and tethered it at the four hanging positions,' said Kavanagh. The installation required 200m of single 19-core cable running back to the power room and 400m of additional speaker cable on the truss.

The result is a potent solution devoid of any reflections, which comes as no surprise to Neil Kavanagh. 'What I really like about the CDD series is the accuracy of dispersion. It has been designed to offer a lot of sound within the budget. Not only that, but the inherent coaxial speaker technology offers power coupled with a sonic performance that is unrivalled for the price.'

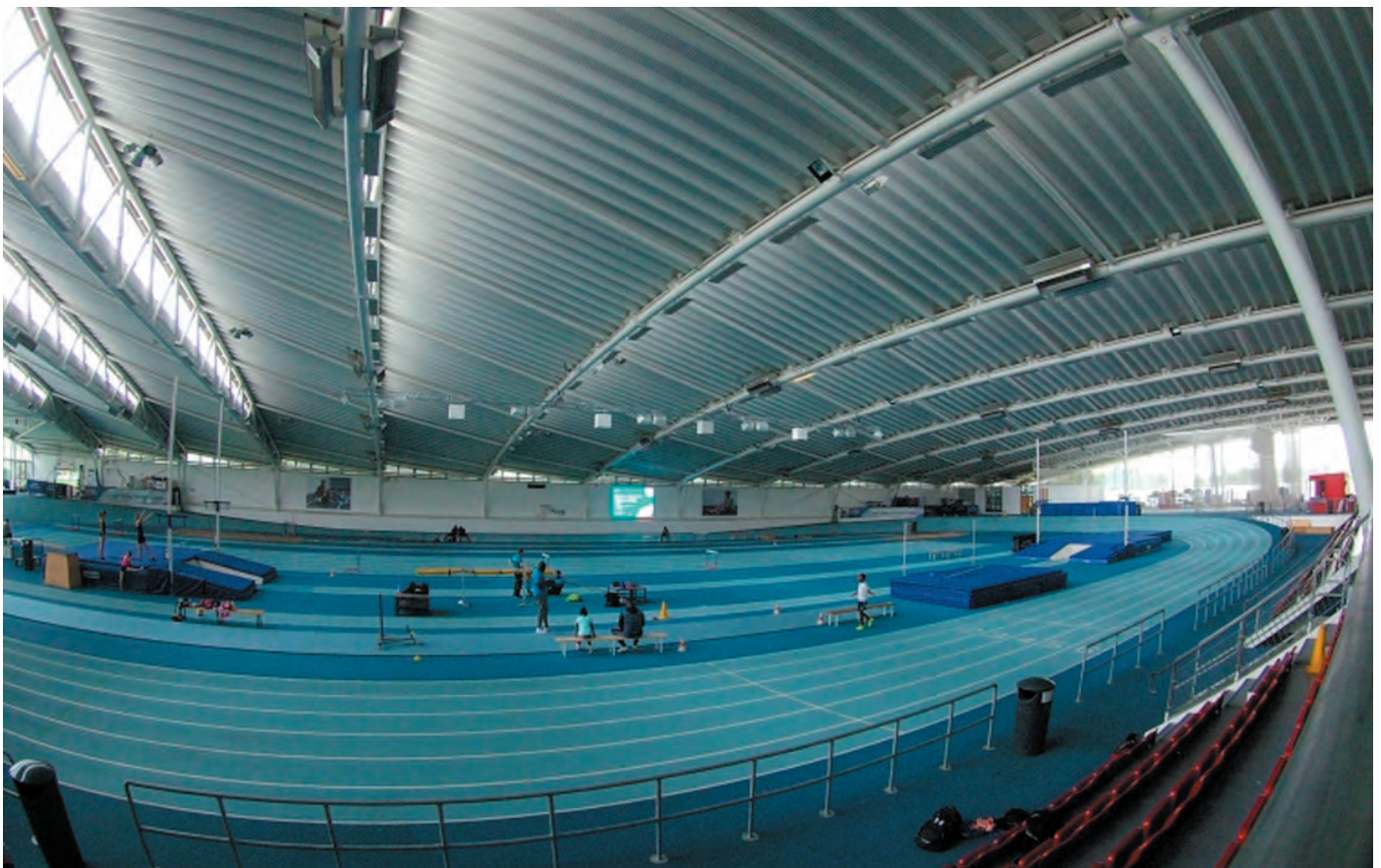
Control and amplification also followed the model set in the two other Lee Valley venues. As for integrating the pre-existing horn system this is now detailed to handle voice announcements only. 'We have put a ducker into the main system so that it cuts for messages,' Neil Kavanagh explained.

In summary he said, 'Now that the Lottery Funding has finished and venues built for the London Olympics need to stand on their own two feet, a powerful sound system such as this is a wise investment. We are also grateful to Martin Audio for the excellent support.'

And according to Mick Bond the new Martin Audio system has proven extremely popular with the staff. 'Although it was only recently installed it is already more than meeting our expectations,' he said.



“ WHAT I REALLY LIKE ABOUT THE CDD SERIES IS THE ACCURACY OF DISPERSION. ”



IMS Deploys CDD-LIVE! at The US Open Squash Championships



Philadelphia for seven years, IMS Technology Services noticed a distinct improvement in the audio quality after switching to Martin Audio CDD-LIVE speakers.

As IMS Director of Audio Chris Leonard points out, 'We definitely upgraded the speaker coverage with the Martin Audio CDD-LIVE 12's and 8's. They had a major impact on the environment with their low-end extension and consistent wide coverage. There's no good place to put subs at this event, so having a speaker with the low-end power of the CDD-LIVE series really helped us out with adding excitement to the audio quality and coverage. This was the 7th year we've done this event and by far the best sounding one yet.'

The Championships takes place at Drexel University's Daskalakis Athletic Center with a custom ASB glass squash court placed in the middle of the gymnasium floor with the audience of just over 1,000 surrounding the court on all sides. IMS, a nationwide company that does full scale production for corporate, higher education and performing arts along with corporate AV installs, has produced this one-of-a-kind event since it moved to their home base in Philadelphia.

This was also a breakthrough year in that the Egyptian male and female champions - Ali Farag and Nour El Tayeb - made history as the first married couple in sporting history ever to win the same major sports title on the same day.

Continuing his discussion of the audio challenges for the championships, Chris explains, 'There's a referee on a headset mic in the center of the gym just outside the glass court and he has to be live the whole time and loud enough to be clearly heard by the players and everyone in the place because he's calling the score and in constant communication with the players.'

'Then they have an emcee that does the player introductions, lots of live music stings, and the need to maintain a pumped-up environment for the presentation. So, in between match play, there's plenty of high energy music and lots of lights flashing.'

According to Chris, budget and logistic limits eliminate options such as line arrays, 'but the ability to maximize the return on investment with CDD-LIVE was very helpful. What's nice about these speakers is the wide 110-degree coverage which only required two per side, so the width of the coverage across the space and the low-end extension really gave the show additional excitement and a feel they hadn't experienced at the U.S. Open before.'

The actual deployment consisted of four CDD-LIVE 12's with one flown in each corner from a special truss while two CDD-LIVE 8's were flown over a VIP bar area for additional reinforcement because it was located outside of the main area of coverage. An additional CDD-LIVE 8 was used to assist Chris in monitoring the event from backstage.



Summing up, Chris adds, 'The Dante networking is great too. I could run the signal in stereo to give it an extra-wide feel. It allowed me to easily distribute signal across the venue with enhanced audio quality and greater flexibility.'

'There's no doubt CDD-LIVE made a big difference because of the coverage and clarity. In the past, we've had trouble

getting the ref's mic loud and clean enough across the whole venue but I could do it now across the whole space without any feedback and with great clarity. When I was playing the music and stings, the U.S. Open Tournament Director Graham Bassett noticed the low-end energy in the space and mentioned to us that the audio sounded noticeably better than in the past.'



“ THERE'S NO DOUBT CDD-LIVE MADE A BIG DIFFERENCE BECAUSE OF THE COVERAGE AND CLARITY.

Dover Athletic Equips Upgraded Stadium with CDD-WR

“ THE WEATHERISED CDD-WR WAS THE PERFECT CHOICE. ”



Dover Athletic Football Club

National League football club Dover Athletic has substantially invested in the facilities at its 6,500-capacity Crabble ground in Kent, both to meet the Football League criteria, and also provide a better match-day experience for its supporters.

The centrepiece is the new £1.3m cantilevered Family Stand, which aside from providing a further 500-seats and improved facilities for players, officials and disabled supporters alike, required a state-of-the-art public address system.

Old Barn Audio (OBA) were awarded the contract, and as they have on so many occasions recommended a Martin Audio CDD (Coaxial Differential Dispersion) solution - in this case dipping into the ‘WR’ series.

‘The weatherised CDD-WR was the perfect choice,’ stated director Phil Clark. ‘And with 32 enclosures installed it is the largest CDD-WR install yet in the UK.’

The company first carried out a demo for the club chairman, Jim Parmenter, using CDD10-WR’s. ‘He was extremely impressed with both the quality and dispersion,’ says Clark.

As a result, OBA’s contract was extended from the Family Stand to all four stands spread over seven zones. The new design would replace a simple 100v horn based system.

The system integrators undertook a site survey which took in the Dover End and River End stands behind the goals and the main stand containing the VIP boxes and Press seating which faces the new all-seater Family Stand and Clubhouse.

‘New TV comms all formed part of the new extension, which required replacement of all the old electrics, whereas we were able to tie into the existing infrastructure on the other stands. Commentary for the TV broadcasts is provided from the new control room.

In terms of speaker deployment the new Family Stand has been equipped with four CDD10-WR, fixed to the

leading edge of the roof, all angled down using standard flying yokes to tilt the angles accurately and ensure even coverage.

The 541-capacity Dover End away stand now benefits from six CDD10-WR in a row along the front leading edge in two banks of three (one array angled out and the other reversed) in order to respectively cover the walkway in front of the stand and the supporters in the stand itself. This stand, being for away supporters, can be addressed independently for advanced post match evacuation purposes.

The facing River Stand offers an identical loudspeaker spec.

The Main Stand is divided into two, bisected by the VIP box and Press seating, which covers two levels. The former is equipped with four equally spaced CDD8-WR at either end - each block variously pointing in opposite directions, while a further pair of CDD8-WR’s operate under separate remote volume control for the VIP box and a pair of CDD6TX-WR covers the Press seating.

Finally, the Clubhouse has been equipped with four of the smaller CDD5TX-WR around the outside of the building.

States Phil Clark, ‘This is our first football stadium using CDD-WR and we have managed to deliver a fully integrated set-up, complete with cabling headroom for further extension. While the layout itself was fairly straightforward it was the vastness of the site and 1.5 miles of armoured cable required, that proved challenging. All had to be terminated correctly, secured neatly on cable trays, as high priority was placed on tidiness throughout the site.’

He said they also designed the system to be ‘bullet proof’ while true integration was implemented with the aid of intuitive custom control panels on a 10in tablet to control mutes, volumes, etc - all linked to the Fireman’s Mic for evacuation purposes. The entire system is driven by Powersoft amplifiers and controlled by Symetrix Solus NX DSP.

Slam Dunk For CDD at £4.5M Community Sports Centre



The new £4.5m Leicester Community Sports Arena — a joint venture project between Britain’s oldest professional basketball club (Leicester Riders), Leicester City Council and Leicester College — opened at the end of January, with the 2,400-capacity audience treated to top quality sound exclusively from Martin Audio’s new CDD installation series.

Twelve of the CDD15 (15”) loudspeakers were specified and installed by local sound and lighting integrators, MBSL.

Mark Broadhead’s technical company was brought in just two weeks before the venue’s inauguration when it was discovered that while the six 100V line speakers, specified by another party, might have been sufficient for voice evacuation, it was certainly not up to delivering American style razzmatazz, complete with cheerleaders, in the arena on match days.

With nearly 30 years’ experience under their belts, and heritage of working with Martin Audio workhorses such as the F15, they were made aware of the new CDD (Coaxial Differential Dispersion) technology which has stimulated huge market demand.

Broadhead instinctively knew that their products were not only reliable but were well supported and offered excellent value for money. “We wanted a speaker that would provide even sound dispersion and work reliably — since it would be located 8m up in the air and we didn’t want to be making service calls,” said Broadhead.

“As soon as I heard the high output generated from the CDD15’s 15in coaxial driver, I was bowled over — it produces an impressive punch and delivers over a wide dynamic range. We had also given the client three different options to show them what a 15in driver would sound like, and they were impressed.”



With the bulk of the crowd facing each other across the court, Broadhead quickly realised he could provide all the necessary coverage from just four CDD15s on each flank, despite the raucous and reverberant ambient noise produced by the crowd. These are fixed to the ceiling using Martin Audio’s standard bracketry.

In one corner at the two end stands, and angled back towards the seating, are two further CDD15s, while from the other corners the final two CDD15s turn to fire into the court.

The system is optimised using the dedicated DX0.5 management system — and despite the fairly cavernous space, and different sound sources pumped through it (ranging from commentator mics to DJ computer derived music) no EQ was necessary — and only the limiter needed to be set.

The ease, speed and simplicity of installation had been a further bonus given the fast-fit nature of the project, he said.

“The CDDs produce a nice, evenly-balanced sound throughout. We may invest in bass bins at a later stage but there is already a decent amount of bass generated from the CDD15s up in the air — and everyone is extremely impressed.”

Meanwhile the originally specified 100V line horns have been redeployed for general PAVA and training purposes only, networked to the main Martin Audio sound reinforcement.

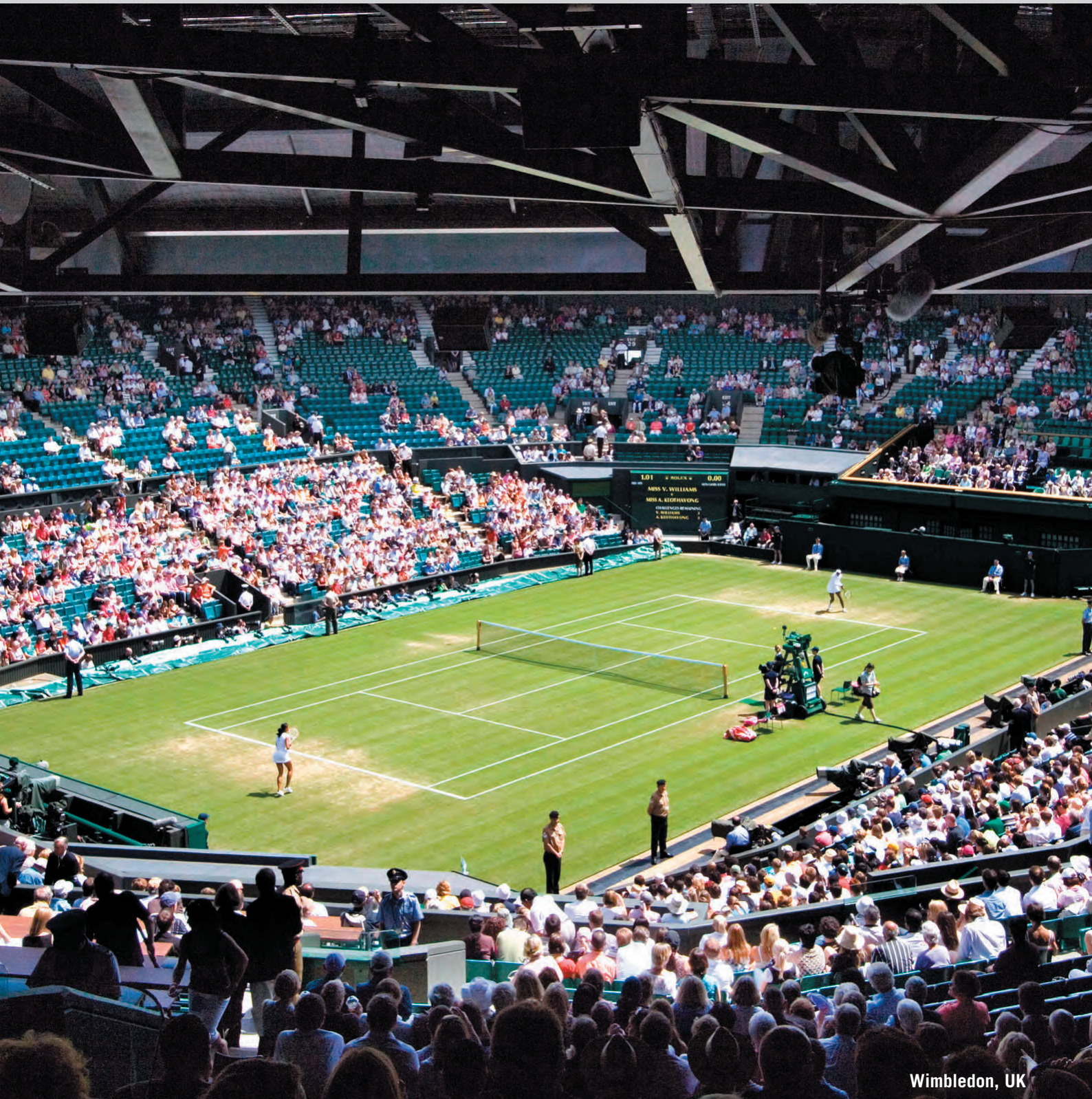
In addition to basketball the venue hosts a local badminton team and in future hopes to stage banquets and weddings and so reconfigurability of the soundscape was essential.

Thus the seating can be retracted electronically when the venue is used for other purposes, and since this is a zoned system, the two court-facing speakers can be disabled when not in use.

Summing up, Mark Broadhead says, “Some of my old Martin Audio systems are still working after 10-15 years and unlike other brands I have never heard anything bad when fitting this brand. The clients know they have good value, and are over the moon.”

Footnote: The Arena itself is operated via Leicester Community Sports Arena, which is owned by the Leicester Riders Foundation. Additional funding for this development was provided by Sport England and the Leicester & Leicestershire Enterprise Partnership (LLEP).

Wimbledon, UK



Wimbledon, UK

The All England Lawn Tennis Club's plan to transform the Centre Court at Wimbledon included the installation of a major public address system.

"We approached a number of different manufacturers," reveals RG Jones' sales and installation dept manager. "The constraint we were working under was the requirement that all speakers had to be located in the fixed part of the roof and provide even coverage throughout, without feedback from the Umpire's mic and presentation mics. Of all the manufacturers we approached Martin Audio came back with the best and most well-supported solution."

The company requisitioned 71 of the AM10's as result.

MLA Compact Creates High Impact at Olympic Stadium

When the annual Müller Anniversary Games took place over two days at London's Queen Elizabeth Olympic Park Stadium recently, the world's fastest man, Usain Bolt, came face to face with Martin Audio's own medal-winning MLA loudspeaker system, provided by rental partner and leading contractor, RG Jones Sound Engineering.

Contracted by event organisers British Athletics, RG Jones fielded Martin Audio's MLA Compact and MLX subwoofers to augment the house PA. This provided additional coverage and impact to the lower tiers of the Olympic Stadium and at the same time enhanced the low frequencies.

According to RG Jones' Project Engineer Jack Bowcher, this greatly boosted the audience experience. Having worked the event for the past three years — along with British Athletics' Birmingham Diamond League at Alexander Stadium in June — this was the first time they had upgraded from Martin Audio's conventional line array to the award-winning MLA multi-cellular platform.

"MLA Compacts were ground-stacked on a single MLX sub — we were able to hit the back of the lower tier with a little help from DISPLAY [Martin Audio's proprietary software], which was great both for LF optimisation and the ability to adjust MLA Compact's coverage," reported Bowcher. In addition, production took advantage of Martin Audio's Differential Dispersion technology by placing several DD6's in the press conference and VIP suites.

But there were plenty of other challenges for the sound team. RG Jones needed to work discreetly to ensure their technology did not interfere with the athletes, working with camera and audience site lines, and multiple PA positions, which were not set equidistant from the audience. Consequently, MLA system tech, Mark Edwards, had to create different optimisations for each individual stack as distances between the MLA and audience changed as they worked to obtain clear sight lines for the benefit of the BBC.

Source feeds included Commentators' mics, Infield Presenters, VT playback, music, stings (to signal the start of all track and field events) and other playback, with RG Jones also providing feeds for the BBC and CT Video OB. All were distributed with pristine clarity over single-mode fibre via their new Dante-based audio system.

The sound engineer responsible for mixing all this, and building the atmosphere leading up to events, was Peter Key. "We tend to choose appropriate tracks depending on the events and also use sound effects to enhance selected field events, such as javelin 'whooshes' — triggered live to the action," he said. "The Anniversary Games is a multi-sports meeting and various factors can affect the scheduled start of events. It is therefore vital that the audio playback equipment is sufficiently flexible to cope with such demands. A large amount of redundancy is built into the system so should something fail a back up option is available."



Queen Elizabeth Olympic Park, London



“MLA GAVE US IMPROVED COVERAGE AND HIGH IMPACT AUDIO.”

Summing up the event, Jack Bowcher said, "MLA gave us improved coverage and high impact audio thanks to the MLX subs, and was more compact than the previous system."

Major Events Director was Terry Colton, while RG Jones' project manager was Matt Sussex and account manager was RG Jones Director, Andrew Williamson.

OBA Equips Lee Valley Ice Centre with CDD

Lee Valley Leisure Trust came into operation in April 2015 to run 14 of the major sports venues and other sites owned by Lee Valley Regional Park Authority.

Last summer Martin Audio partner, Old Barn Audio (OBA) undertook a sound system upgrade at the £31m Lee Valley White Water Centre in Waltham Cross, one of the host venues for the 2012 London Olympics, using the manufacturer's new CDD range. Such was the level of satisfaction that the integrators were immediately asked to provide a similar Martin Audio solution at another Group venue, Lee Valley Ice Centre in Leytonstone.

Within this cavernous space, the operators host a range of learn-to-skate and public skating sessions, while the international sized ice rink is also home to the Lee Valley Lions and London Raiders Ice Hockey teams and the Lee Valley London Skating Club.

But the 15-year-old system was starting to fail and parts were no longer available. Chris Bailey, Technical Manager Lee Valley Leisure Trust, said, "Based on the performance of CDD at White Water I requested the Martin Audio CDD speakers again but being a bigger venue it needed a more powerful solution.

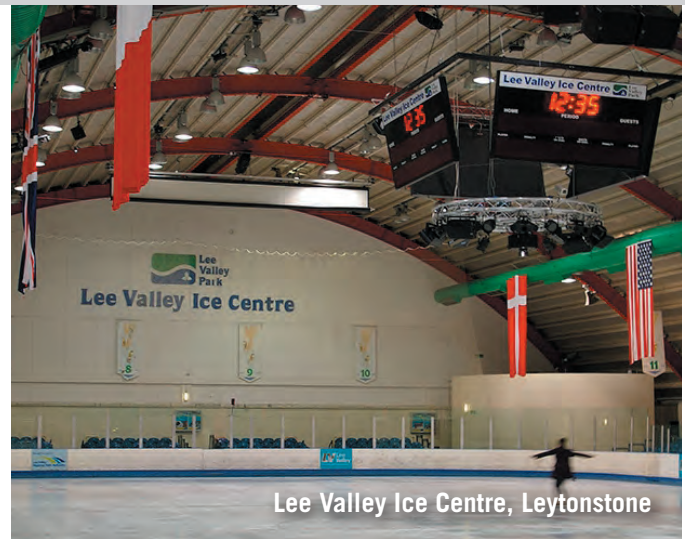
"I had listened to the MLA Compact subs when OBA's touring system was brought in for the ICF Canoe Slalom World Championships at Whitewater, and they told me that the CSX subs were voiced similarly. So based on the performance of the CDD10 with the companion CSX subs I knew Martin Audio was the way to go."

OBA directors Phil Clark and Neil Kavanagh created a cost-effective design that would enable them to work with the existing infrastructure. This would not only mitigate the pre-existing 'spill', but focus the sound over the rink while providing even coverage to the perimeter seating on all four axes.

The central roof truss houses a standard cube which displays digital scoring and timing, and also scrolls messages. Underneath is a circular truss to which OBA has fitted four CDD10 (10") loudspeakers. This is flanked by two further aluminium truss bars, fixed to the roof, and each supports twin CDD12 (12") and twin CSX118F (18" sub) via the Martin Audio flying yokes.

"The whole system has been phase aligned, time aligned and EQ'd so it is seamless — although we could virtually run it straight out of the box," said Phil Clark. "The old system had delivered a lot of echo but we were able to tweak this using SMAART acoustic measurement."

Programming is within a Symetrix DSP environment using the Martin Audio data files, and wall panels provide multiple source select across the seven zones; this not only includes the bowl but also the upstairs private Valley Bar where a further four stylish CDD8 (8") in white are to be found.



The Ice Centre uses PRS-licensed streaming service company, Ambie Media, who curate the playlists and provide constant bit rate streaming of 192kbps over the internet.

At the main rink-side Technical Area ice hockey commentaries are also delivered. And since the venue hosts international skaters there is also an ice-side music station to enable elite skaters to bring their own MP3s.

Meanwhile, in peripheral areas such as the café a button mic will also read ambient noise levels and auto sensors will raise the volume levels of the music accordingly.

Main Reception is also where the new master PAVA paging control is found, with 16 pre-recorded cascading messages with evacuation / fire alarm protocols. The touch screen computer panel is alerted via the bespoke MP3 trigger system designed by OBA, feeding serial ports in the DSP. Other than Reception, further paging stations are located in the rink-side Control Booth and Managers Office.

Both Clark and Kavanagh can reflect on another successful installation using CDD. Stated the latter, "We must have carried out 12 major CDD installations since Martin Audio first introduced the new product line. It is so well priced that we have been able to divert customers who couldn't have afforded Martin Audio previously but who now can."

And Phil Clark added, "CDD delivers a lot of bang for the buck, and the system here has been entirely tailored to the venue. We are honoured to have become part of the Lee Valley procurement team and proud to have carried out our second CDD installation for them in six months using Martin Audio's flagship product."

Chris Bailey concluded, "The CDD installation has made a massive difference. The intelligibility is now fantastic and the frequency response and dynamic range of the music is now so much better.

"It has greatly enhanced the user experience and given us one of the best sounding systems at any ice rink in the UK."

GCS Ballpark Upgrades with Martin Audio



“THE CLIENT’S REACTION HAS BEEN VERY POSITIVE IN TERMS OF THE TREMENDOUS IMPROVEMENT IN OVERALL SOUND QUALITY.”

GCS Ballpark, St. Louis

St. Louis, MO—TSI Global Companies LLC recently upgraded the PA system for GCS Ballpark, home of the Gateway Grizzlies, with Martin Audio CDD-WR weatherized speakers.

Commenting on TSI’s choice, General Manager Paul Murdick, who’s had a longstanding relationship with the facility and Frontier League team, says: “We looked at several manufacturers to present to the Grizzlies, and Martin Audio was our choice based on quality, intelligibility, durability and value for the investment. Plus Martin Audio support is second to none.”

“CDD-WR speakers were a logical option to replace the original system which had been exposed to the elements for over 10 years and was starting to fail. We needed everyone in the ballpark to hear and understand everything going out over the PA, which includes background music and announcements, play by play and color commentary.

“Another requirement was a system that could be easily mounted on the lighting towers so we could maximize coverage while using the existing infrastructure cabling to save the customer from having to rewire the stadium and keep the project within budget.”

Describing the actual setup, TSI Audio Systems Designer Lee Buckalew explains, “we replaced 21 older full range speakers with 19 Martin Audio CDD8-WR speakers and supplemented the bass with two CSX112-WR subwoofers. The majority of the speakers are on very large triangle

trusses for the field lights with a few mounted at the back of lower tier stands adjacent to the concession area.

“From a technical perspective, the choice of CDD was twofold: one was the differential dispersion characteristics with wide up close coverage tapering for a more constant average SPL further out. The other was CDD’s exceptional output capability for size and cost. Ideally, we wanted to go with CDD-12’s because it’s a large outdoor space but the budget wouldn’t allow it. As it turned out, the CDD-8’s are giving us higher SPL than the previous system.”

“And the wider nearfield dispersion gives us very even coverage in fan areas where people are walking to their seats like the larger aisle ways. But it also allows us to maintain SPL out to the edge of the seating.

“The client’s reaction has been very positive in terms of the tremendous improvement in overall sound quality, frequency response and clarity for announcements. The coherence and speech intelligibility are also significantly better.”

Summing up, Lee concludes, “We’re using CDD in a number of locations such as casinos, high schools and collegiate sports facilities because we’re typically able to deploy fewer speakers, CDD pricing is very competitive and it came out as an entire range which is helpful as well.”

Paul adds, “The client is very pleased, they achieved all of their goals in terms of budget and quality, and CDD is definitely far superior to the older system.”

CDD and MLA Slalom into Action with Old Barn Audio



Lee Valley White Water Centre, Waltham Cross

Martin Audio partner and sub-distributor Old Barn Audio (OBA) has been a regular visitor to the Lee Valley White Water Centre in Waltham Cross recently.

Originally constructed in 2010 at a cost of £31m as one of the 2012 London Olympics host venues, it has now undergone an upgrade to its installed sound system in preparation for hosting the recent ICF Canoe Slalom World Championships.

First OBA fitted Martin Audio's new CDD installation series on the terrace, meeting rooms and meeting room balconies, before providing their own MLA Compact rental system for the six-day Championships televised around the world.

OBA director, Phil Clark says 'the building is now being developed as a multi-purpose space for functions, including team building, but the former sound system had been specified for speech only by the main contractor rather than a specialist pro audio company. "As the Centre moves forward into a standalone commercial entity from its lottery grant funding, it needed a sound system that operated more comprehensively so Fieke Reijntjes (Lee Valley's Head of Corporate Services) contacted us to complete this upgrade. Because Martin Audio had launched CDD, with its revolutionary Coaxial Differential Dispersion technology, we thought this high profile venue was a perfect match for this brand new product."

As the upgrade progressed, OBA removed the old amplifiers

and processing and two thirds of the speakers. The new system is now divided into 16 zones served by 22 amplifier channels using powerful processing, while the signals are transported over a Dante network, and offer iPad style control from a fixed position at Reception. A further tablet was supplied, all on a complete closed audio network, offering the staff complete flexibility to walk around the venue and adjust levels and sources.

OBA selected five CDD10 (10"), spaced under the balcony eaves to serve the terraces, while two independent meeting rooms have also been fitted with a pair of smaller CDD6 (6.5"), positioned near the projectors for background music; a local input has been provided for each room so the users can either choose BGM or local input source all via a dedicated digital wall panel. Each of these rooms also contains a balcony where music is fed by a pair of CDD8 (8"), linked to both of the internal systems.

Phil Clark says that while the client began tentatively in setting audio renovation budgets, "they are now realising how good audio can sound, and consequently see the greater hire potential. In fact the end result sounds fantastic — they have not heard anything like it. The difference in sound quality from the original horns is like night and day, and the new CDD's are pumping out high quality background music to every zone.

In addition, OBA has provided numerous plug-in points around the entertaining zones so that bands (and other users) can set up and play through the entire system.

Clark's comments were echoed by Chris Bailey, Technical Manager, Lee Valley Leisure Trust. "The addition of the Martin Audio CDD range of speakers has really made a positive difference to the audio experience at the Centre," he said.

"We had paging horns installed on our roof terrace previously which were primarily designed for speech not music — the replacement of these horns with the CDD range boxes has made a huge difference to the intelligibility and fullness of the music. The CDD boxes have a good dynamic range and produce a soft sound that is not overly dominant in any of the key frequency bands. The bass response from the boxes is good and does not intrude on the clarity of the produced sound."

This is far from the end of the story, however, as OBA have provided cabling infrastructure to allow three further Martin Audio CSX118 (1 x 18") subs to be added to the terrace entertainment area, while they will also be specifying further CDD10's and CSX118 at the Lee Valley Ice Centre in Leyton, which falls under the same administration. This was confirmed by Chris Bailey who stated, "This will be a massive step up for the audio quality at the Ice Centre and will give us one of the best sound systems of any Ice Rink in the United Kingdom."

As impressed with OBA's professionalism as they were unimpressed by the line array that had been temporarily installed for the 2012 Olympics, the British Canoeing Union (BCU) then requested MLA Compact to run along the course for the six-day long ICF Canoe Slalom World Championships to relay commentary both to the crowds who filled the temporary stands, and live to air.

The BCU brought in events company MLS, who not only contracted OBA to provide the sound reinforcement but also Great Big Events, who provided the onsite commentary.

"The existing horns would not have been adequate," reflects Phil Clark, "and so we installed five ground-stacks of our MLA Compact along the course — linked by RF to the internal system, which enabled the commentary to be heard inside the clubhouse venue on the inside. The result sounded fantastic!"

The pair of full-range MLA Compacts that constituted the stacks were supplemented in three instances by Martin Audio WS218X (2 x 18") subs on three stacks, pointing into the stands, while the other two stacks were pointed at the banked seating, carved into the land surrounding the course. Because of the different contouring of the banking, reduced sightlines and need for low impact visibility, it required an imaginative design — and precision optimisation," said the OBA director. To that end five independent designs were developed on each stack using Martin Audio's proprietary DISPLAY software. OBA were aided for the duration of the event by fellow MLA owner, Doug Hunt of DHSL.

Summing up, Chris Bailey says, "Our customers really like the sound on the terrace bar now and they proved a huge success at the ICF World Championships in conjunction with [OBA's] Martin Audio MLA Compact, which delivered all the onsite commentary and music required."

And Phil Clark added, "MLS were thrilled with the results and have promised to work with us again."



“ OUR CUSTOMERS REALLY LIKE THE SOUND ON THE TERRACE BAR NOW

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