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Astera Shines At SUNSTUDIOS

Robe T1 PCs for Pilbeam Theatre

Riedel for Thoroughbred Racing Productions

d&b audiotechnik launch d&b Fanblock

The Persians at Epidaurus

MA Lighting consoles in the NBA bubble

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Astera Shines At SUNSTUDIOS

by Louise Stickland

Sydney's SUNSTUDIOS is a diverse creative hub for the photographic and motion picture / imaging industries and creatives. Owned by Canon Australia, the Sydney facility offers five studio spaces plus camera and lighting rentals, CPS service, a gallery space, fine art printing, and other specialist services.

With the video elements of the business expanding, explained sales manager Zoltan Blazer, they sought more flexible and practical options for lighting, and were hearing good reports about Astera's wireless battery-operated LED product range from several sources.

So, he and motion specialist Neale Head thought they should take a further look for themselves.

Astera's Australian distributor ULA group arrange a demo and the Titan range of LED tubes "really impressed us," stated Zoltan, "and after seeing this we knew we wanted this product so discussed the opportunities and additional exposure that SUNSTUDIOS could bring to the equation as a re-seller."

Zoltan explains that they saw many parallels between SUNSTUDIOS and ULA Group including expertise, strong technical sales, thorough and efficient support with

an established infrastructure for rapid troubleshooting and repairs if needed.

This came into effect last year and SUNSTUDIOS has been selling Astera, especially the Titan Tubes, regularly since then. "There is a long list of extremely well-thought-out features in these products," he says.

They believe that colour quality and consistency is an essential feature and that this has been a major factor in the brand's success so far in Australia, together with build quality, the highly functional and intuitive AsteraApp, programmable battery life and the casing options. "There's nothing lacking at all really!"

Titan Tubes have also proved popular in rental, and in the pre Covid-19 period had been out on many projects involving both stills photography and video shoots, from automotive adverts to music videos. People regularly comment on their reliability and innate usefulness.

They have also sold Titan sets to several freelance gaffers, to a director shooting corporate training videos as well as to some e-commerce businesses dealing with fashion and clothing for their ongoing photoshoots.

SUNSTUDIOS works closely with universities and educational establishments including AFTRS – the Australian Film Television and Radio School – Australia's national screen arts and broadcast academy, known for its rigorous selection of 'featured' products made available for students' project use. They have recently purchased both Titan and Helios (the half metre version) kits.

Before committing to purchasing Astera, AFTRS did an in-depth evaluation including colour tests, output tests, usability, etc., alongside all the competitor brands over a few months, and selected Astera as the best product option.

SUNSTUDIOS has recently added Astera Hyperion (the two-metre version) Tubes to rental stock.

While the coronavirus pandemic has had a profound and disruptive effect on the industry as a whole, Zoltan explains that SUNSTUDIOS has been very lucky and kept operating throughout the period, with strict Covid protocols in place to prioritise the health and safety of staff and clientele. Since June, they have been offering the same levels of superlative customer service and support for which they are known industry-wide.





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Robe T1 PCs for Pilbeam Theatre Rockhampton

by Louise Stickland

The Pilbeam Theatre in Rockhampton is a lively performing arts hub for the city and region. Located in a commanding position fronting onto the Fitzroy River, before the coronavirus pandemic dramatically impacted on all areas of performing arts, the venue regularly presented a diverse mix of drama, dance, musical, concerts and comedy productions in its main 1,000 capacity auditorium, and they also invested in Robe T1 PC wash moving lights.

These are replacing 12 tungsten moving head washes as part of a general lighting upgrade, part of a programme to transition to LED.

Jim Thorogood is the theatre's head of lighting. The venue is both a producing and a receiving house, and he lights most of the shows produced there. Jim was integrally involved in the specification of the T1 PCs together with Ashley Salta who, as supervisor of technical and production services, oversees all the equipment spends.

They wanted a product that had more output than the previous tungsten moving lights and that was good quality.

They looked at several single source LED options, but what struck Jim about the T1s was the richness and depth of the light produced by the multichip LED. "It was far superior to anything else we looked at," he commented, adding that he also liked the barndoor mechanism and other features of the T1.

"We were keen to replace tungsten with the newer technology, but the source also had to match as much as possible in appearance and style, and the T1 was the only fixture that did this well, specifically in the white ranges where the quality was outstanding."

Up to five shows would run during a standard (pre Covid) week in the Pilbeam's busy

schedule. Sometimes, a show would play daily for three or four weeks and other times there will be a selection of different productions.

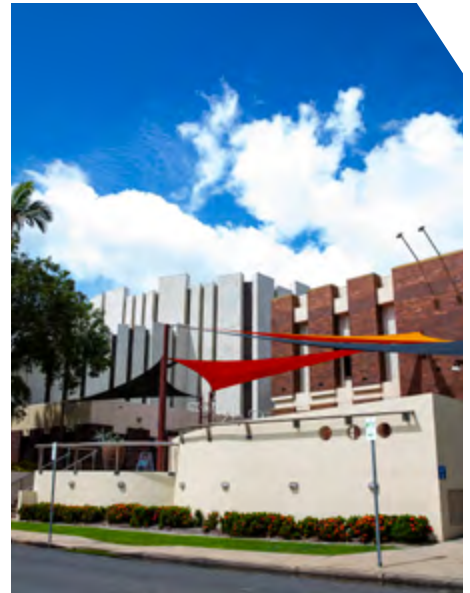
From Ashley's management perspective, "it was vital we chose a product that is reliable and well supported, both now and in the future". He explained that their geographical location, which is not near any large cities, means they need to utilise their cap ex prudently and be able to rely on other factors like consistent and competent phone support.

He feels that they have developed a good relationship with both Robe and Australian distributor Jands.

"The transition to LED lighting is a big step and we are keen on getting as much tungsten emulation as possible from the replacement fixtures so we can offer Jim and any visiting LDs all the effects that they know and love but in a new and more sustainable source."

In addition to that, there are all the other advantages of LED like reduced power requirement and less heat being generated, so less AC needed, etc.

Often the case, this isn't always the cheapest option, but they do reckon it's the best and have been spirited and convincing in their arguments when applying for the funding.



Jim Thorogood and Ashley Salta

The theatre's low pros arch meant having a wide zoom was important, and the T1 scored there too. "We have found a wash light that's great quality, compact in size and weight and offers great versatility," stated Jim.

The high colour rendering is also needed for perfect flesh tones, and the additive mixing is another essential for the range of performance genres that they light.

A further consideration was the ongoing – and changing – requirements of touring companies and lighting designers.

Jim has been head of lighting at Pilbeam for the past 10 years, and his association with the venue started before then when he worked there as a technician in the 1990s, so he has seen the technology and the demands change dramatically in that time.

The T1 PCs were also not the first Robe at the Pilbeam! Some ParFect 100s joined the house rig in 2015 when Jim needed to replace older LED backwash fixtures and chose Robe because these were "exactly the right unit for the job".

While he's more of a 'correct tool' person than a brand advocate, he's been consistently impressed by the many touring productions that have come through with Robes.

The new T1 PCs join a generic rig including 48 1200W fresnels and 36 Source Four profiles, and everyone is looking forward to seeing them in action!



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Riedel for Thoroughbred Racing Productions

Thoroughbred Racing Productions (TRP), a leading provider of production services for the Australian thoroughbred horse racing industry, has migrated its communications and signal routing infrastructure to Riedel Communications' Artist digital matrix intercom, Bolero wireless intercom, and MediorNet real-time network. The centerpiece of the Riedel installation is TRP's largest OB vehicle, HDOB1, which has undergone a modernization to Bolero from its previous two-way radio intercom system.

Based in Melbourne, TRP covers 525 thoroughbred events throughout the state of Victoria and produces over 3,500 hours of live HD racing broadcasts every year. The new 22-camera, 14.6-meter HDOB1 trailer, designed by TRP and built by Sony, is a mainstay at the high-profile Spring Racing Carnival, which includes one of the world's most famous races, the Melbourne Cup.

"Of all the intercom solutions we considered for the HDOB1 upgrade, Bolero offered the most advanced features. Coupled with the decentralised signal routing flexibility of MediorNet, Bolero gives us outstanding voice quality, reliability, and range," said Charles Cole, Engineering and Technical Operations Manager, TRP. "Bolero has simplified comms for our field operations, but at the same time, it gives us massive capacity over traditional RF communications. Setups, changes, and additions that were always a challenge before are now easily done with a few mouse clicks. Plus, we've seen a considerable reduction in distribution and interconnect costs within our facility."

Previously, TRP's main facility relied on a two-way radio field communications workflow and a traditional, centralised video router, with racecourse infrastructures that varied from racetrack to racetrack. TRP faced challenges common to any operation that relies on multiple two-way radio channels for communications: licensing issues related to

multiple users on a single frequency who were attempting to use the frequency at a particular site, interference, and the complexities of spectrum management for large productions with multiple vendors. Bolero eliminates all of these issues working with a MediorNet MetroN core router and 21 MediorNet MicroN nodes, including fly-away frames and integrated multiviewers. The integrated Riedel solution enables modular and seamless distribution of video, communications, and data signals within each racecourse for broadcast production.

The Bolero-MediorNet combination has removed the bottlenecks of the previous intercom setup, giving each field communications position a discrete channel and enabling teams to work independently and efficiently. Before, the reliance on the single video router meant that users were constrained by the size of the router and

design of the OB unit infrastructure; with MediorNet, each position is able to access all signals without affecting others.

"TRP's installation is a real milestone — the first OB truck project in Australia in which Bolero replaces a previous two-way radio workflow. The deployment is especially notable for its heavy focus on IP-based solutions, leveraging Riedel's expertise in IP-based workflows based on the SMPTE ST 2110 standard for broadcast," said Espen Brynildsen, Technical Solutions Manager, Riedel Communications Australia. "One of the key success factors for this project was the outstanding cooperation and open communication amongst Riedel, Sony, and TRP around aspects such as switch functionality and network optimisation. It's another example of TRP's technology leadership and outstanding track record in broadcast coverage for thoroughbred racing."



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d&b audiotechnik and Autograph partner to launch d&b Fanblock



German audio technology and solutions company d&b audiotechnik announced the company has partnered with leading theatrical and creative sound designer, Autograph, to co-develop and launch a stadium sound application, creating a live crowd atmosphere at empty sports events.

A global leader in the development of sound experiences, d&b's newest venture d&b Fanblock – powered by Autograph Stadium Sound, delivers a real-time controlled, sound solution to venues without fans or with a reduced number of fans on site. Using a d&b sound system design positioned within an arena, d&b Fanblock creates a multi-channel surround sound system which, when combined with Autograph's cutting-edge playback software, means stadiums are once again filled with the much-missed sound of fans.

Over the last few months, sports have faced disengaged fans, lower viewer numbers and anticlimactic games as the usual high atmosphere matches took place behind closed doors. In some cases, organisations have stepped in, with the National Football League (NFL) earlier this month announcing that sound must be played during all games to combat the negative impact of the quiet stands and recreate some of the vital dynamic energy brought to the game by a noisy, responsive crowd.

Not only will the players benefit from the pioneering technology from d&b and

Autograph, fans at home will be able to experience the sounds of the stadium while games are broadcast live. The basic audio content consists of non-team specific sounds including background 'bed' loops to provide a continual atmosphere within the stadium and a library of sound cues that can be triggered by operators in reaction to the action on the pitch. The custom sound design package offers club-specific chants made possible through Autograph's content partner, FanChants.

Designed and developed by long time theatrical and dramaturgy experts, Stadium Sound by Autograph creates a live crowd atmosphere at sports events that can be dynamically controlled in real-time to directly respond to the events of the game. The system is operated live by engineers in the stadium in order to follow the energy levels and punctuate the dramatic moments as they happen.

"By partnering with Autograph, we've come up with revolutionary new sound solution," said Amnon Harman, CEO d&b audiotechnik. "No longer will sports teams hear the echo of empty stadiums and venues, instead with

d&b Fanblock, they will once again hear the strength and passion of their fans while on the field."

d&b Fanblock uses the matrix functions of the DS100 Signal engine to distribute audio to the d&b loudspeaker system. As the backbone of d&b Soundscape, the DS100 Signal engine enables further enhancement of d&b Fanblock through its En-Scene software. Users can take advantage of object-based signal management, allowing complex sound events to be moved dynamically around the stadium in real-time, and add additional subtlety and detail to the effect of Stadium Sound in response to the actions on the field. This approach allows the sound engineer to have spectator chants grow from one section before building out to fill the entire stadium.

d&b Fanblock powered by Autograph Stadium Sound not only helps to bring the sports industry back to life, it also provides a new business opportunity and revenue stream for d&b rental partners during a time of economic uncertainty.

"While we are facing an increasingly challenging time in the industry, here at d&b we continue to innovate and address the needs of the market," commented Harman. "Today's introduction is yet another example of our dedication to continuous improvement and providing new opportunities for our partners and end-users alike."

The system is scalable and can be put in any size stadium or arena around the world. Its first scheduled full-scale use will be at the Championship games at The Kiyan Prince Foundation Stadium in London.



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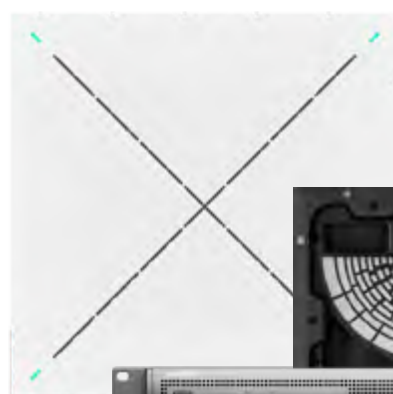
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The Persians at Epidaurus >

The National Theatre of Greece (NTG) staged three acclaimed performances of Aeschylus's *The Persians* – first produced in 472 BCE – in July at the ancient Epidauros open-air amphitheatre, complete with a fully socially distanced audience of 4,500 instead of the usual 10,000 capacity, who enjoyed the drama and energy of live performance in this classic tragedy.

Lighting designer Christina Thanasoula chose Robe LEDBeam 150s to add flexibility and multiple options to her design, placing 10 of the versatile little fixtures in the footlights position around the front of the stage floor.

All three shows, directed by Dimitris Lignadis (artistic director for the NTG), were fully sold out, and the second night's performance was live-streamed worldwide with support from the Greek Ministry of Culture in partnership with Google Greece as part of the 2020 Athens and Epidauros Festival. Over 100,000 tuned in to catch the action which was widely applauded by press, critics, and the public.

This was the first production by the Greek National Theatre since the initial pandemic lockdown ended and outdoor shows were permitted again in Greece from the 17th of July. They lost no time in sating the public's appetite for live entertainment, scheduling these landmark performances for the end of the month.

Christina first worked in the Epidauros venue two years ago, designing lighting for *Electra*, directed by Thanos Papakonstantinou, also for the National Theatre of Greece, where she used Robe BMFL Wash Beam fixtures. Before then, she has utilised Robe moving lights for numerous event and theatre designs.

She added the LEDBeam 150s – supplied

by MSH-Europe – because it is a low profile and quiet running fixture with no fan noise, imperative as they were positioned just 2 metres from the first row of the audience.

"Small size and quietness were top of my checklist, I wouldn't have been able to further consider using these Robe luminaires, without 'ticking' these two boxes first," explained the designer.

She also likes the "excellent dimming" curve which is "a great asset for those extremely slow theatre fades."

Additionally, "this small fixture offers a great colour palette and some very special tints / shades of white, with an excellent zoom (3.8 – 60 degrees) allowing it to cover many lighting needs from general wash palettes to a tight spot for 'specials'."

She also considered the simultaneous presence of different lighting sources for the broadcasting cameras carefully. It was a scenario where tungsten, HMI lamps and LED all had to work together harmoniously and create a solid visual on-camera look.

The LEDBeam 150's colour palette and the high CRI made it straightforward for Christina to match the different colour temperatures and create well-balanced scenes.

The creative team's raw, emotional, and

minimalistic scenography integrated fully with the venue's natural environment.

"We didn't want to obstruct the wonderful view by adding truss towers or any other huge structures at the back," explained Christina.

The set – designed by Alegia Papageorgiou – comprised an elegant row of church seating and the absence of other physical set elements onstage demanded "humble" use of lighting fixtures, that would not create any "visual noise". In Epidauros, because of the very steep viewing angle, the floor of the stage is always visible, and it becomes – by default – an incidental backdrop to the action. So, it had to be neat and clear of any clutter!

Lighting for both live and streaming audiences added extra challenges and all the lighting decisions were made with this in mind. Live streaming also made it imperative there were no dark moments whilst live.

"The LED Beam 150s served dramaturgically as the main lighting fixture for the chorus parts and also were a safety-net for the live cameras in case we needed to raise intensity levels or sneakily illuminate specific areas of the stage that looked slightly underlit on the camera monitors," underlines Christina, who was delighted with the results.

MSH-Europe is one of the biggest audio-visual equipment providers in Greece. Christina described the company – where her account was handled by Charalambos Economopoulos – as "really helpful" in keeping a close eye on their needs and seeing that all the Robe equipment was well prepped and in good condition, including spare units. They also offered 24-hour phone support – if needed – to the National Theatre's lighting crew.

"Their professional attitude definitely facilitated our work during the long night shifts at Epidauros," she adds.



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MA Lighting consoles score big in the NBA bubble

When professional basketball resumed in the US during the coronavirus pandemic, the NBA protected its players by establishing a “bubble” isolation zone at Walt Disney World near Orlando, Florida. Although the general public was not permitted in the stands at ESPN’s Wide World of Sports Complex where the games were held, fans were glad to be able to watch the season’s televised final games and the playoffs once again.

Fuse Technical Group, which supplied all the court video systems, provided four programmers with an arsenal of grandMA hardware to play back and trigger various assets and effects during the games: 5 x grandMA3 full-size units with 1 x MA NPU (Network Processing Unit) plus 2 x grandMA2 full-size and 1 x grandMA2 light consoles, the latter as backup systems and the tech desk.

Three basketball courts were created in the sports complex with giant, wraparound LED video screens topped by graphics displays. A pre-recorded national anthem as well as player intros were displayed on the massive screens before the start of games and virtual fans were shown enjoying and reacting to game play. To customize the courts for the designated “home team,” a database of music, audio cues and graphics that the teams would ordinarily use in their home arenas was used – with the dynamic audio

and video elements building in intensity as the playoffs progressed.

“The NBA wanted to create an interesting on-camera experience that would engage as many fans as possible. The solution they arrived at was to line the courts with a U-shaped LED arrangement,” says programmer Jeremy Lechterman, principal of FragmentNine, a live event creative direction company. “That high-resolution element was primarily used to display team content and the virtual fans while a low-res ribbon element was hung above to simulate traditional in-arena video.” In addition, a scoreboard element, about one-quarter the size of a typical centre-hung arena scoreboard, was set on the side under the camera platform primarily for coaches and players.

The grandMA3s were programmed to integrate with 13 disguise gx 2c media servers, which handled the teams’ screens

content, and a Barco E2 system, which switched the virtual fans, the disguise team content, stats, and the program cut from broadcast.

“During the seeding games, which were an extension of the regular season, all three courts were running concurrently with up to seven games a day,” notes programmer Michael “Hank” Hankowsky.

“This was the first time any of us [programmers] had done sports and the first time this format was used,” Lechterman points out. He and Hankowsky were joined in the bubble by programmers Jackson Gallagher and Charles Dabezies.

“The grandMA3 is not the system typically used in these teams’ home arenas to handle video,” Lechterman points out. “None of the usual in-arena systems could be used in the bubble where we needed to serve up content for 22 teams and have multiple simultaneous users. Without the grandMA3 there wouldn’t have been a solution.”

Early on when the programmers were in quarantine Lechterman had one of the grandMA3s in his hotel room. “We had multiple exhaustive Zoom calls with all the team reps making the content so we could play it back for them and they could see it in the 3D environment that was replacing the broadcast experience,” he explains.

It quickly became clear to the programmers that given the size and scope of the game play, “the whole system needed to be one giant session, one giant show file,” instead of 22 show files one for each season-starting team, which “would have been a nightmare,”

Lechterman says. “We needed to move things between venues very fast so all 22 shows were built into one show file and all the venues were networked together.”

The NBA restart marked the first time any of the programmers had used grandMA3 hardware for a long-term show although the grandMA3 is their platform of choice. “We came to the grandMA3 with muscle memory from the grandMA2, and it didn’t take us long to adapt to the grandMA3,” says Lechterman.

He gives kudos to the grandMA3’s multi-user environment – something not found on other platforms. “We had four programmers working independently at the same time and handing the programming seamlessly,” Lechterman reports. “We built a complex series of macros to achieve this, but we were able to program four games simultaneously without stepping on each other.”

Hankowsky notes that the programmers had tallied a staggering “7,000 individual clips by the middle of the process. The grandMA3 is so extensible; we could write custom script to automate a lot of the data entries. Then with data and preprogrammed looks in the desk we could copy and paste them where we needed them.”

“It was amazing the way Hank really scripted the consoles,” says Chris Peterson, Vice President of Entertainment at Fuse Technical

Group. “The ability to parse large amounts of data and build huge cue lists was instrumental in the success of this job.”

During the seeding games the programmers typically worked games at FOH alongside a screens producer representing their own team’s in-arena presentation. The screens producers were armed with Novation Launchpad X MIDI loaded with in-game reactive elements such as player headshots and animations for a three-pointer or a spectacular dunk. “Because they understood basketball better than we did, they could trigger those elements on their own in the grandMA3 via the MIDI pad,” Lechterman explains. “While we were handling the big switching elements – the virtual fans, the video packages, time-out highlight reels – they could quickly trigger all the game play reactions.”

Additionally, “On the corner screens in the ribbons, we were tasked with displaying and changing sponsor advertisements and specific intervals on the game clock,” says Lechterman. “This was accomplished with Cycling 74’s Max 8, which read the incoming game clock signal from Mixon Stats and sent DMX triggers to the consoles. System Engineer Josh Flitel also wrote a Universe show control file to give us full access to the E2s and routers from the desk. The entire show could be run using the grandMA3 as the only control surface. Josh did an incredible job

building out this handshake between all the parts of the system.”

Content was constantly upgraded as the season progressed and milestones were marked. “As of September 10th the media managed totaled 14,200 individual video clips,” Hankowsky reports. “Changes were still being made as we reached the Eastern Conference finals. Having the grandMA3’s flexibility to make changes on the fly was invaluable. Everyone was very pleased with the system’s performance.”

Lechterman says that ACT Lighting provided “A+ level support all around” for the NBA’s resumed season. “The first couple of weeks I’d call ACT’s software support manager Ryan Kanarek for gut checks that what we were doing was okay and to get help with any head scratchers,” he recalls. “We got some pretty in-depth macros to make it all work seamlessly; even MA Lighting’s German headquarters contributed. Also, special thanks to Philip Norfolk at UK-based Ambersphere Solutions for his grandMA3 support.”

For his part, Fuse’s Peterson was “happy to put some of our brand new grandMA3s to use during the pandemic. The NBA bubble was a successful strategy all the way around.”



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NEW GEAR

Acoustic Technologies Blackbird 2020

The Blackbird 2020 is a compact self-powered three-way producing very high SPL with low distortion. Utilising coaxial component integration, the Blackbird contains 2 x 10 neodymium low frequency transducers rated at 1600W continuous, and 1 x ring radiator mid/high frequency coaxial exit compression driver with 4" mid and 2.5" HF rated at 220W continuous. The rotatable waveguide is available in 90x60 or 60x40, and the unit is powered by a Powersoft DSP amp capable of producing 3200W. Max SPL is 135dB. Ten rigging points make for easy installation, and two rear handles allow for safe lifting.

Australia and New Zealand:
atprofessional.com.au
or +61 (0) 7 3376 412

Zero 88 FLX

The Zero 88 FLX lighting console features a 7" multitouch screen, mobile and tablet apps for iOS and Android, a fixture library of over 20,000 personalities, and a physical numerical keypad with extra command and attribute buttons, which allows users to control the console either by control faders or directly interface with command line inputs. Blind Mode allows a user to update cues without interrupting a live running show, and the FLX also offers Preview mode to assist with cue programming, playback and editing. It can handle 2048 patchable channels across 64 universes (upgradable to 8192 patchable channels) via DMX, sACN, Art-Net 4 and C1TP protocols, and supports RDM.

Australia: Clearlight Shows
clearlight.com.au
or (03) 9553 1688
New Zealand: Theatrelight
theatrelight.co.nz
or (09) 622 1187

Cameo EVOS W3

The Cameo EVOS W3 is a LED wash fixture moving head with 4,035 lm luminous flux, employing seven 40 W RGB and warm-white LEDs to produce rich RGB colours. With a high CRI > 90 at 3,200 K, the warm-white LED not only lets you mix warm pastel shades but also warm-white light for illuminating people and objects. All LEDs are individually controllable, granting pixel mapping capability, and refresh rate is adjustable for flicker-free filming.

Australia and New Zealand:
Direct Imports
directimports.co.nz
or (+64) 21 352 598



Chauvet Professional Rogue R1X Wash

The Rogue R1X Wash is a fully featured RGBW LED yoke wash fixture with zoom powered by seven RGBW 25 W quad-LEDs, featuring a unique 'bubble' lens design. With user-selected calibrated white for 7500 K at full output, other standout features include 11° to 48° zoom angle, fast and smooth pan and tilt movements, simple and complex DMX channel profiles, plus 3-pin and 5-pin DMX connectors.

Australia: Showtools
showtools.com.au or (02) 9824 2382
New Zealand: M.D.R Sound & Lighting
mdrlighting.co.nz or (06) 355 5073





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NEW GEAR



Elation Proteus Lucius

Providing up to 33,500 lumens output from its custom-designed hotspot 580W 6,500K LED engine, the Proteus Lucius is the ideal fixture for any outdoor or indoor application. Featuring 13 rotating and 7 fixed glass gobos, full animation wheel, overlapping dual prisms, dual frost and a high-speed iris, its indexable framing system allows full-blackout shutter cuts for precise beam shape control. Sealed optics for maintenance-free operation and Elation's proven IP65 rating for protection from dust and water make the Lucius the perfect choice for reliable operation indoors or outside.

Australia and New Zealand: ULA Group
ulagroup.com or AU 1300 852 476 / NZ +64 9 218 6532

Williams AV IR Plus

Williams IR Plus is the first IR technology that is audio-over-Wi-Fi capable as well as being the first technology in its class that provides a single cable solution from the modulator to the emitter. This scalable IR system uses Distributed Emitter Array design to accommodate up to 16 emitters with flexible coverage in a space up to 26,750 square metres. The IR Plus system features a WaveCAST network output for streaming audio via Wi-Fi when combined with a wireless access point. The WaveCAST Wi-Fi Assistive Listening Output features an iOS or Android app for supporting mobile devices. This means users can discreetly access hearing assistance without the need to ask facility managers for an additional device.

Australia: Amber Technology
ambertech.com.au or 1800 251 367
New Zealand: Amber Technology
amber.co.nz or +64 (0)9 443 0753



Dynalink USB 3.0 Active Optical Leads

Dynalink's new range of USB 3.0 optical leads provide a 5Gb/s USB interface between computers and devices over distances up to 50 metres. The ultra-thin optical profile is easy to run through conduits and features a tight bend radius. Compatible with both USB 3.0 SuperSpeed products, they are a cost effective solution for connecting devices between server rooms and AV racks without sacrificing the high performance that USB 3.0 offers. Seamless interoperability between existing USB 3.0 hosts, hubs and devices, ensures a trouble-free plug-and-play experience.

Australia and New Zealand: Altronics
altronics.com.au or +61 (0) 8 9428 2122



Christie Griffyn 4K32-RGB

Boasting 4K resolution, 34,000 ISO lumens while operating at 46dBA at full brightness, the Griffyn 4K32-RGB is designed for use at theme parks, sports venues, and other large-scale environments that call for both high brightness and the extended colour range of an RGB light source. This compact and powerful all-in-one, omnidirectional projector is also the first to be equipped with Christie's new all-in-one TruLife+ electronics platform for unrestricted connectivity, eliminating the hassle of removable option cards. It also offers a new digital convergence feature that users can adjust via remote control for easy picture-perfect alignment.

Australia & New Zealand:
Christie Digital
christiedigital.com
or +61 (0) 7 3624 4888



ETC ArcLamp

The award-winning ArcLamp LED solution from ETC gets an upgrade with the addition of a new Flicker variant as well as new driver options. Ideal for use in themed environments, the specialised Flicker lamp creates a 2700 K Fade to Warm effect by flickering randomly to imitate candlelight. Flicker lamps can also be used at constant brightness by changing the DMX value on its single control channel. New ArcLamp driver form factors are now available, including wall mount and rack mount options for the 350 and 700 versions.

Australia and New Zealand: Jands jands.com.au or +61 (0) 2 9582 0909



Warm Audio WA-87 R2

An update to the WA-87, the new WA-87 R2 uses top-quality components like a NOS Fairchild transistor and high-bandwidth polystyrene and film capacitors from Wima. The WA-87 R2 uses a custom-wound Cinemag USA output transformer like the original WA-87 did, with the new version providing a slightly increased output level and improved frequency response. The result is an incredibly accurate sonic replica of arguably the widest-used studio microphone in popular recording history.

Australia: Studio Connections studioconnections.com.au or (03) 9416 8097

Antari CH1 Cinema Haze

The Antari CH1 Cinema Haze machine uses CO2 and a specially formulated CHL2 liquid to produce high quality fine haze. This technology allows for very quiet operation while running at an efficient 2ml/min @ 40 PSI for fluid and 0.36kg/hour @40 PSI for CO2. Controllable via DMX, manual, timer or optional wireless DMX.

Australia: Eventec
eventec.com.au or (02) 9897 3077
 New Zealand: Edwards Sound Systems
edwardsnz.co.nz
 or (09) 571 0551



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Event Lighting Enforcer 1000

The Enforcer 1000 is a high output hybrid fixture featuring a 1000W white LED engine, CMY, CTO, zoom range of 5-55 degrees, animation wheel and framing system. It also has a colour wheel, dual gobo wheels (1 rotating, 1 static), dual frost, iris, dual prism, W-DMX on-board, RDM and Art-Net interface.

Event Lighting DMXRTWALL

The DMXRTWALL wall plate works with the DMXRT DMX recorder trigger to give instant access to six pre-stored scenes or programs within the DMXRT. Designed to mount on a wall, the plate makes for a tidy solution for architectural lighting jobs.

Australia and New Zealand: Eventec
eventec.com.au or +61 (0) 2 9897 3077



Powersoft ArmoniaPlus

The latest update to Powersoft's ArmoniaPlus software will give system integrators the tools to easily manage even the most intricate of fixed install (FI) projects through its dedicated Install Skin. This new version redefines what Powersoft amplifiers are capable of, delivering a plethora of new features and streamlining existing ones. Install System projects now reflect the needs of system integrators for sources and zones management, allowing the creation of fully customisable user interfaces and controls in the new Views Designer.

Australia and New Zealand: PAVT
pavt.com.au or +61 (0) 3 9264 8000 / +64 (0) 21 410 050

High End Systems HPU and Hog 4 OS v3.14

High End Systems has released the new HPU hardware for Hog 4, along with an update to Hog 4 OS with v3.14 software. HPU replaces both the DMX Processor 8000 (DP8K) unit and the Rack Hog 4 in a modern, 2U rack mounted unit. This processor unit can be run either in Rack Hog 4 mode with a 16 universe capacity, or in Processor mode with a 64 universe capacity. The new Hog 4 OS v3.14 Software includes several advancements in functionality in addition to bug fixes. A new patching structure allows users to patch to internal universes, which then get mapped to outputs on consoles, DP8Ks, Widgets and Gadget II units, sACN and/or ArtNet. Individual patch universes may be mapped to multiple outputs as needed and can be moved from one output to another without universe cloning.

Australia: Eventec eventec.com.au or (02) 9897 3077
New Zealand: LS Group lightsup.co.nz or (09) 845 5616



TVU Producer

TVU Producer allows anyone to produce professional quality multi-camera live video regardless of their level of experience. It's a cloud-based solution that uses a web interface from any standard browser and requires no hardware or software. TVU Producer has robust features such as zero latency frame accurate switching of up to six video streams, professional graphics/overlay capabilities, instant replay, PIP/dual/quad multi-view and the ability to simultaneously output directly to social media platforms and CDNs as well as SDI through a TVU Receiver. It features a separate audio mix interface with independent input channel level control, pan, mute and solo monitor functions. TVU Producer also supports TVU Partyline video conferencing which enables production crews, talent, and guests to virtually collaborate with each other in real-time, as if they are in the same physical location.

Australia: D2N – Technology Solutions
d2n.com.au or (02) 9837 6748

Roland V-1HD+

The V-1HD+ is a professional HD switching solution for live events, livestreaming, or both at once. A standalone video switcher and 14-channel audio mixer for single operators, the V-1HD+ is compact and portable for fast set up. With a familiar interface that's quick to learn and easy to use, features include technology-assisted automatic video switching, four-layer effects and keying engine, lower thirds, and social callouts.

Roland UVC-01

For livestreaming, the NEW UVC-01 USB Video Capture device gives you a simple HDMI-to-USB solution, letting you convert any Roland V-series switcher and HDMI output into a plug-and-play USB 3.0 webcam feed. Get the right tools for professional-grade HD livestreaming on Facebook Live, YouTube, Zoom, and other popular platforms with UVC-01.

Australia: Roland Australia proav.roland.com or (02) 9982 8266
New Zealand: Music NZ musicnzl.co.nz or 0800 775 226



GEAR



Redback S 6150

Designed in Australia by Redback, this horn speaker features an internal MP3 player and 10W Class-D amplifier which plays messages when a 24V input signal is applied. Offering a multitude of uses including general announcements, evacuation notices and doorbells, or playing warning signals for industrial equipment to alert staff. The tone will play as long as 24V DC is applied, and can be selected via a rotary switch on the back of the horn. SD card may be loaded from a slot in the side of the horn case.

Australia and New Zealand: Altronics altronics.com.au or +61 (0) 8 9428 2122

L-Acoustics K3

L-Acoustics rounds out its industry-leading K Series with the introduction of K3, the manufacturer's smallest full-range enclosure, designed to deliver big sound for mid-size events with audiences ranging from 1,000 to 10,000. Providing the full-range L-Acoustics contour from an enclosure that is 33% smaller than K2 and weighing only 43 kg (95 lbs), K3 is ideal for applications that require plenty of power and bandwidth from a small form factor, including mid-size tours, festivals, corporate events, religious services and other productions. Dimensioned to keep sightlines clear, K3 integrates easily into venues with space restrictions.

Australia: Jands jands.com.au or (02) 9582 0909
New Zealand: Jands NZ jands.nz or 021 674 601



Kiloview MG300

The Kiloview MG300 media gateway is a high-performance embedded multi-functional device which integrates functions such as streaming media protocol conversion, streaming media distribution service, multi-channel video decoding, and video image segmentation. It can be applied to video format conversion, protocol intercommunication, decoding, and splitting displays from different systems, manufacturers, types, and encoding. It also works as a streaming media server with the capability for 100 concurrent access.

Australia: D2N – Technology Solutions d2n.com.au or (02) 9837 6748



THE DARKNESS AND THE LIGHT

by Andy Stewart



People offer many perspectives on mixing – how to finesse compression settings, EQ curves, reverb lengths, panning arrangements, even song arrangement – but very few mention how it all comes together. For all the knowledge flying around about specific techniques, very little about the art of mixing is ever really discussed.

So this issue I want to talk about just that: the Art of Mixing, because, in the end, that's what mixing is – an art form. It's also why educators and bloggers mostly avoid the topic like a snake on the path – because 'art' is hard to describe (let alone define) whether it's via video tutorials or on paper.

Anyone can talk specifically about how compressors work, why that EQ filter should be applied, or how that vocal delay creates space, and so they do. But discussions like that are the tutorial equivalent to falling off a log, especially in abstraction. What the online tutorial 'experts' mostly fail to address is the core question of how mixes come together holistically. How the millions of decisions along a timeline result in this elusive thing we call 'a mix'.

It's something I'm asked about almost every day: "How do you mix like that?" Frankly, it's a question I dread.

Depending on who's asking, I'm either motivated to answer with something meaningful, or decidedly reluctant to say a word. The reason being that opening the lid on this vast conversation – at least half of which involves concepts around 'art' – is always an endless dive to a depth very few can endure. Besides, I'm usually in a session where I can't afford to spend half my time waffling on about the very job I should be shutting up and doing!

Excuse Me, Mr Van Gogh

In many respects, asking a skilled mix engineer: "How do you mix like that?" is akin to wandering up to Van Gogh, and for each and every discernable blob of paint on the canvas, asking him why he's placed that bit of paint there, why it's that colour, and why it's even there at all. The question is, in every respect, naïve.

It would be absurd, surely, to expect a

meaningful answer, and even if one were forthcoming – although I suspect in the case of the Dutch master he'd tell you (in Dutch) to take a hike – how would you apply it to your own work anyway? Asking questions is a great way to learn, don't get me wrong. But in the case of this particular inquiry, expecting a satisfactory answer is the height of fantasy. There isn't one to give, unfortunately. It's like asking Van Gogh to provide a timeline of his life's work, experiences, personal beliefs and artistic journey – an absurd request, basically.

How you really learn to mix – as opposed to just knowing how gear works – is by getting in there and getting your hands dirty, while at the same time learning to appreciate that your pursuit is an artistic one, not scientific.

You make inroads, learn techniques, make mistakes (always), develop certain insights (then have them dashed); discover some more techniques and a new insight (hate them soon after), learn how sounds work together (only to hear someone else mix them totally differently).

Next you develop some 'advanced' theories; apply them far too often, eventually discovering that they're mostly based on a fallacy. Then you develop a new mix theory, only to find that this one doesn't really apply in most instances either.

After developing several of these new 'audio philosophies,' lurching from one concept to another, you eventually discover that trying to make sense of this job by applying theories to



your workflow is a fool's errand.

Eventually – sometimes years later – you learn that mixing is indeed an art form, that your art is unique, that there are no rules (though you may keep developing a few in secret) and that none of what you do requires an explanation or justification to anyone but those with whom you work.

The Collision

There's one caveat, however, to all of this. As an art form, music mixing – and I'm talking specifically about album production here – differs significantly in one respect from painting in that the medium through which you work not only varies in quality, it also changes over time. In other words, you don't paint on a canvas and then sell the work as a unique, one-off commodity to a buyer who then hangs it on a wall somewhere. Instead, you're making an artwork that, by its very nature, is copied and replayed in ways over which you have little or no control.

Inevitably, this has a bearing on how you proceed with your artwork from the outset. Within this somewhat scientific framework, your work then becomes largely about imagining how it will sound outside the studio walls. It's that old chestnut again: that it's not how your masterpiece sounds in the studio that matters, but how it plays out in the world around you.

This arguably makes album mixing more about the collision between art and science than the

more isolated, pure expression of painting on canvas. But the artistic aspect of our pursuit remains.

Depth Of Field

I intend to talk about the Art of Mixing in the next few issues of CX Magazine, so apologies in advance to anyone who's bored by discussions around art.

The reason I think it's important is because all too often mixing music gets confused with simply understanding how gear works. That is not mixing. Knowing how to use the tools is part of it of course, but it's not the art itself. That would be like saying that brushes, paints, canvases and a palette is painting. It might be what you use to paint, but it's not painting.

This is what needs to be delineated if we have any hope of investigating the art of mixing, or progressing as mix engineers.

Seeing Depth

In the space we have left this issue then, I want to talk about depth perception as an artistic endeavour.

When it comes to audio mixing, one aspect of the art to consider – though it is not a rule to adopt by any means – is music, as it might exist in physical space. If it were a style of painting, perhaps we might be talking here about landscape painting.

Depth is something we see and hear every day in the real world, even when we're unconscious of its influence, and it's this 'seeing into the space' that many mix engineers struggle with. The trick to mixing depth – if that's what you're aiming to do – is to become highly conscious of depth perception in your daily life, as well as more specifically in your mixes.

The real world is great at informing you about how to mix for depth, provided you're looking for the clues. Listen to it, analyse the world around you every day, and ask yourself: "how are these sounds being created, and what of their characteristics convince me of their placement in three-dimensional space?"

Back-To-Front Mixing

One thing to consider trying that helps develop a sense of three-dimensionality is mixing your music from back to front, and from the darkness to the light. I know that might sound like esoteric excreta (bullshit basically) but it's not. Actually, it's a well-trodden painting technique.

Mixes are often – but again, not always – constructed of musical elements in the foreground, the middle distance and background. Remembering of course that the concept of depth in a stereo mix is illusory – i.e., not real – we're trying to convince the listener that they're experiencing three-dimensionality when they're not. There is no front to back, near or far, only characteristics of sound that humans innately recognise as being close, left or right or further away. If that

sounds something along the lines of how you want to mix, then this idea might suit you.

In some of these mixes, core feature elements will typically be louder, clearer, and in many cases, more detailed sounding than audio that's further back in the mix. As you place things 'further away' from the listener, the quieter, wetter and less detailed they become, either by design, or because at lower levels they cannot compete with the louder, more immediate musical elements.

But another thing happens in nature, that you can – if this idea takes your artistic fancy – deploy to emphasise the illusion of depth. As sounds in the real world recede into the distance they significantly lose their fidelity, they react completely differently to their environment, and lose all sense of stereo width.

So, as a process, try this: collect all the sounds together that make up the background 'horizon' of your mix – mute the rest – and blend these together first, almost like a separate mix. Without all the other stuff getting in the way, you can more easily balance these elements, creating a sense of distance and scale that you think befits the overall size of the 'landscape' of the entire mix.

Make sure you work this sub-mix up to feel far away: make it deep, have no pre-delays, lose some fidelity in your sounds with filters and distortion, add some convincing echoes and reverbs, make things sound smokey and indistinct... just like they would be in reality. Make sure nothing is panned stereo – that would only make sense if something were up close. Have most things mono point sourced, again as they might exist in nature. Pan them, by all means, just not left and right – very few distant sounds in nature appear to come from everywhere!

Now add middle distance elements, but be careful of these. Too many can start to crowd out the background. Less is more if you want your mix to sound transparent. These can have more fidelity, but still need blurring around the edges, so as not to pull focus too much.

Now finally, add the foreground feature elements. These can have the most fidelity, the greatest detail, the widest bandwidth and the most appreciable stereo. They appear as significant highlights in the foreground of your final stereo image that the listener naturally focuses on. They are the brightest sounds, relative to the darker elements that make up the horizon.

'til next issue...

Andy Stewart owns and operates The Mill in the hills of Bass Coast Shire in Victoria. He's happy to respond to any pleas for recording, mixing or mastering help... contact him at: andy@themill.net.au

UK and UAE: Overseas perspectives

by Jenny Barrett

Two countries, two approaches. One open for business, one not exactly sure. Two industry stalwarts, both familiar with the New Zealand live entertainment sector, provide insights into how COVID-19 has impacted the industry in the UK and in the UAE.

The UK Perspective: The Invisible Sector

Rick Latham, Operations Manager at Auckland's Spark Arena for three years, returned to England in January 2019, establishing a successful event management company, 305live. He had work lined up for the next two years either as a consultant to festivals and tours, or in event management roles ranging from Health and Safety Manager to Event Director. With his connections to venues, promoters and event organisers, he has not only felt the personal impact of the global pandemic but is also witnessing the wider effects on the industry in the UK.

The Financial

There are stark similarities to the situation in New Zealand, such as a furlough scheme where contractors often fell through the cracks, having to rely instead on much lower universal credit payments. He believes that the worse is yet to come, "The furlough scheme finishes at the end of October and the new approach is to have employees work at least a third of their hours, then employers and government both top this up, twenty percent each, to eighty percent of the salary. So employers need to find fifty percent. The government doesn't understand that for many in our industry there is no income." Rick anticipates mass redundancies as employers have to let staff go, "Within my professional networks I see people moving out of the sector, retraining. Over the last few years there has also been a significant growth in event management courses in the UK, and those graduates now have nowhere to go. When we do re-open I worry that we will have a lost a lot of experience and the next generation."

The Emotional

Mental well-being is suffering, "The situation is very uncertain here with a lot of miscommunication, misinformation and government leaks. That combined with the lack of income security and a loss of sense of self-worth is taking its toll." Rick talks about doing an online government-sponsored questionnaire that assesses the 'viability' of a profession, "You answer ten or so questions

that are not even work related, focusing instead on personal attributes. I was told I would make a good prison warden. This had a massive impact on me personally. It makes you feel that everything you have worked for in life doesn't mean anything and that is how a lot of people feel right now."

The day CX Magazine spoke to Rick, a government ad campaign to promote the tech industry ran a photo of a ballet dancer with the line, "Fatima's next job could be in cyber (she just doesn't know it yet)." This caused uproar amongst the Arts community and somewhat undermined an announcement on the same day that 1,300 theatres, museums, orchestras and music venues would share £257m in funding as a lifeline to keep them going for the next six months.

The Legal

Rick believes that there is no-one in government driving things strategically from a live entertainment perspective, "Whereas the Jockey Club and the Premier League have been supported to re-open, we seem to be invisible and consequently it is very difficult for us to get going again." The current legislation is a huge barrier, "Events can happen as long as they are COVID compliant, but the approvals process has been devolved to local council licensing teams, and every area is operating under a different set of rules." Rick has been organising a US-style

drive-in tour and has had to deal with five licensing agencies, "The risk for promoters is huge. Capacity is drastically reduced so you need to do multiple shows in multiple areas to make it financially worthwhile, and to tie together all those permits under the threat of the situation changing at any time doesn't make running an event an attractive proposition." On a positive note, some venues with established relationships with the licensing bodies are managing to get events approved. The O2 is hosting Squeeze for a socially distanced show in December with capacity reduced from twenty thousand to just under five thousand, and the Royal Albert Hall returns to socially distanced live performances at Christmas.

The Long-term Impacts

Rick is already seeing the impact as shows postpone, and re-postpone, rather than take the risk, "Scheduling is becoming a problem as 2020 tours push out to 2021, and now some 2021 dates are moving back to 2022. We could see market saturation when we open up again. Sooner perhaps in countries like New Zealand and in the Asia-Pacific region where domestic-only shows are going to reach a limit to who they can attract."

Looking ahead, Rick remains optimistic about the industry pulling through and possibly with lessons learned, "We have all spent time reflecting and there is a realisation that we need to concentrate on the people. We need to support others, accept support ourselves and become more mindful of what people are going through. It is the businesses that look after their staff that will come out the other side. We acknowledge that we all need to work together, and that's not just here in the UK, but globally too. Hopefully that, and a shift in priorities around work-life balance, will be the two positives to come out of all this."



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INDUSTRY

AV	32%
Other*	26%
Sound	23%
Lighting	18%

*typically Audio/Lighting/Staging



WORKPLACE

Other*	27%
Production Supply	19%
Corporate	15%
Conventions & Exhibitions	13%
Theatre	13%
Education	8%
Worship	5%

*typically Audio/Lighting/Staging



EMPLOYMENT TYPE

Permanent	67%
Freelance	11%
Other*	9%
Perm/Casual	7%
Casual	7%

*typically self employed



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\$10K - \$49K	14%
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\$100K - \$499K	15%
Over \$500K	15%

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P | +61 0407 735 920



Dubai, UAE: Green Shoots of Activity

Guy Ngata, CEO of the recently opened Coca-Cola Arena in Dubai and ex-CEO of Eden Park & Vector Arena, is also waiting to re-open but more imminently. The last arena event was in mid-February, when Maluma visited Coca-Cola Arena as part of his world tour. A country wide lockdown period similar to New Zealand began in March. Life has slowly returned to normal, all be it with masks worn everywhere outside the home, “We still have COVID-19 in the community and are experiencing a bit of a second wave with about a thousand new cases a day. The testing rates are very high here, reaching one hundred thousand tests a day, so the government is doing a very good job with the UAE recently becoming the first country to conduct more tests than its entire population.”

Open for Business...

As a result, Guy is witnessing the first of what he refers to as green shoots of activity, “Tourism is very important, and the government is promoting Dubai as being open for business but mindful of safety. There is a testing protocol for people entering the country with a quick turnaround on results and subsequent self-isolation at home if you test positive among other steps.”

This approach is showing results, “We see growing activity in the market and our insights through our Marriott partnership shows consumer activity increasing as we head towards the high season of winter. There have been events in the city and ticket sales have been solid for a number of socially distanced shows. For us, sport seems to be our pathway back to opening. The broadcasting opportunities mean that there

is less of an impact due to limited capacity and we have events lined up for November.” The live entertainment market in Dubai has always been unique in that it was outside of the traditional global touring routes, and one of the objectives of the Coca-Cola Arena was to address that, “Now I guess it is a positive because for us one off dates have never been an issue.”

...With a Difference

Going forward, Guy sees definite long term, potentially permanent impacts on the industry, “I think the expectation around hygiene standards, sanitisation and screening will become an ongoing component of our business.” Part of the ASM Global group including the team in Dubai have been involved in the development of a protocol referred to as VenueShield, “ASM Global want there to be a sense of consistency in place across all our venues. Audiences are going to be very sensitive to what we are doing to ensure venues are safe. Social distancing is not viable in live entertainment, so hygiene and screening are key.”

ASM Global has been exploring a number of interesting technologies around sanitising, “We already have compressed time frames between pack-in and audiences arriving, or in the case of family shows, the turnaround between multiple performances per day. We need to find ways of ensuring long term sanitisation of venues and particularly of high-volume contact points. There are some great concepts out there, but they need to be certified fit for purpose.”

From the staff perspective too, there is an obligation to provide a safe workplace, “We are doing a lot of work with hirers and our

teams on the ground so that we all have a good understanding of the standards we want to set.”

Guy sees there being knock-on effects in terms of the acts and their crews, “I think there will be limited travel for some time yet. We will have a lot more backstage riders relating to hygiene, and tour parties will potentially be scaled down, not only to mitigate costs but to reduce risk.” Guy sees this as a possible benefit to local contractors and on-the-ground networks, “This is an opportunity but there will also be added pressure to meet the standards that will be expected.”

Like Rick, he sees changes in the market ahead, “Initially there will be pressure on ticket pricing to attract the masses but maybe that is an adjustment that needed to happen as they had reached stratospheric levels. This will impact promoter relationships with artists and venues, but I think everyone is prepared to work together and take a hit to get things back up and running. Ultimately, we need fans to want to return, and we need to give them a reason to come back.” Guy is sure this will be balanced by an eagerness in the market to “get back to normal, to go out” and he can see a swift recovery.

Similarly to Rick, he also feels that there are positives to take from the crisis, “My team were already pretty tight but we have worked really hard to keep each other motivated and supported so that the lows haven’t been so low, and to keep everyone on an even keel. There has been this extraordinary global connection too, and I can see that continuing, sharing lessons learned and positive practical examples of how we can get through this.”

“The expectation around hygiene standards, sanitisation and screening will become an ongoing component of our business.”



by John O'Brien

DIS-INTEGRATION

When pulling it all together falls apart

AV integration is all about getting different devices and people to play nicely together. It requires a holistic view of the big picture while knowing enough about each of the component parts, both what they do and how they do it.

For the most part, it all goes to plan. Consumers are blown away by their funky new tech and installers are paid with a margin that keeps their business growing.

Sometimes, though, it doesn't work out like everyone expected. There are multiple reasons why this might happen, but poor design, poor implementation and poor management of client expectations are the common bogeys. Let's look at these and illustrate with real world examples.

Design Failures

The one that hurts me most is inferior design. Most mistakes can be eliminated before pulling a single cable. If only this was always the case. Over-promising, hubris or incompetence has compromised many a good job before an electron has flowed.

Some system designers will blow the budget on fancy speakers or bigger screens and then compromise the whole show by cheaping out on minor things, bringing the entire project to a lower level of user experience. Like using

IR bugs for one-way control when serial options are available. (Yes, it will cost more to program, but it will provide an infinitely better time for the user.) Or using onboard TV streaming rather than a media server, or using cheap cable and connectors that degrade the signal to expensive endpoints. All to win a bid but potentially lose reputation.

When installing all the original video walls at Crown Casino, we had cutting edge video processors and the sharpest high-resolution screens available only to be let down by a composite video feed from the main media servers. That's where I first saw the crossover between consulting and insulting!

Scope Creep - The Integrator's Bane

Good system design also counts on educating the end user enough to know exactly what they are getting. Good service means delivering exactly that - adding only approved and costed variations. Commercially, this is relatively easy, assuming that the consultant is asking the right

questions. If not, see scenario above...

Residentially, it can be a nightmare. I have been on countless site visits sorting out tech issues when the client pops their head behind the rack and says "While you are here, can you just add XYZ?" It's hard to kick a winner when the goalposts don't stay still.

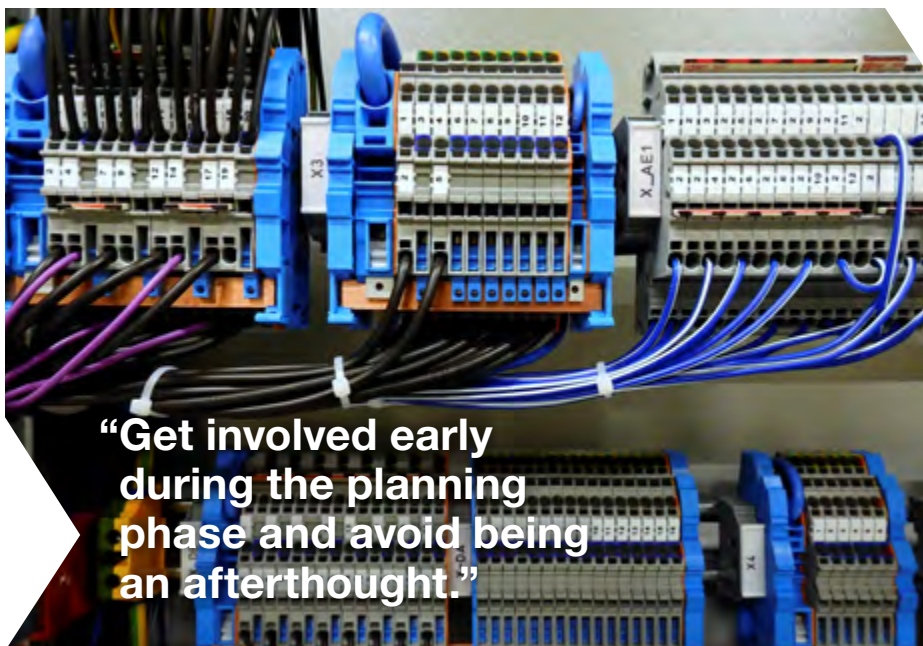
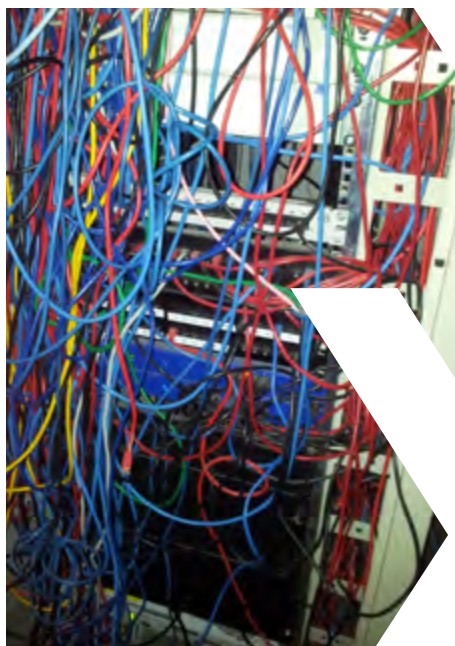
My broken record response became "Yes, we *can* do it but it will cost you more money. I'm sure our sales rep would be happy to re-quote."

Even more frustrating is the "I don't like the look of the screen layouts but I can't tell you what I do like" line. Best to get GUI mock-ups done and signed off before the contract is finalised.

Implementation Failures / Fixing Someone Else's Mess

Sad to say but there are cowboys in the game. Man-in-a-van or HiFi store owner gets involved and it's "Yeah mate, I can get your home theatre / boardroom fully sick. Those big boys will just rip you off." Poor old consumer can get left with a barely functional birds' nest of wires and expensive mismatched products. The ultimate insult is they then have to pay even more to get another company to come in and put their spin on the whole thing. I've seen it happen too often and it drags the whole industry down.

An integrator friend recently regaled a story



“Get involved early during the planning phase and avoid being an afterthought.”

where exactly that happened. The HiFi store guy left a shambolic and dangerous mess that didn't do half what it was meant to. Now, after a complete strip and rewire of the comms room, it is a study in correct cabling and running without fault for 12 months. As ever, end client footed the bill for the rebuild but at least it was done right the second time around.

Similarly, I once got called to assess a non-functional system installed in a second-rate seaside estate full of McMansions. A child could have done a finer job – set-top box and decoders precariously gaffer taped to chipboard shelves, bare wires everywhere and no labelling of anything. My quick appraisal was "Bin it all and start again". The poor end client was beside himself - he'd been sold a total lemon and the original installer was long gone.

More amusing was a car lifter getting stuck halfway between floors - the client couldn't drive out in their favourite Ferrari and "had to take a bloody taxi". Turns out a relay went faulty and was quickly fixed but the finger always gets pointed at the tech onsite.

Then there is the ultimate cock up - after umpteen weeks adding and then re-doing new functions and features (while our company bled countless unchargeable site hours and any margin that ever existed on the job) - a water mains burst on the top floor and flooded the entire house, turning it into a \$10m swimming pool. They'd already spent more than \$600k with us and it was all a write off. I moved on as our company folded in the aftermath - not sure what happened to that job.

Maybe it was karmic payback for the owner swanning around the house buck naked to show off his recent surgical enhancements while we were trying to finish fitoffs. Few AV jobs pay enough for that sort of thing.

Software Is Not For Dummies

A big headache is the problem of who owns the source code. The larger the system, the more complex the custom software keeping it running. If the AV company or programmer gets dismissed or goes bust and didn't leave every uncompiled line in a repository, the consumer can face a full re-write to change or update even simple functionality.

I always handed over my full code (and got paid for it) but I can see the argument for third-party programmers recouping investment on hours of module development, particularly when unscrupulous integrators then re-use that code for themselves without license.

Speaking of custom code, I got involved in trying to sort out a job that was experiencing mystery problems. A stunning peninsular residence, tech savvy and gracious clients, awesome gadgets galore but it continually slowed down every week, requiring resetting. Not ideal on a high expectation job like this. Some of the best brains on the planet got involved and, between us, we couldn't solve the issue. We ended up hiring a different programmer to re-architect the code and it was humming within a few days.

Low Voltage Cultural Differences

Way back when, I was looking after in-house AV for a US-based diner franchise. Their systems were all designed in California and they did a pretty reasonable job of getting it right. When a multichannel amp blew, I made a temporary fix with some local hire amps and arranged a replacement to be sent out. All looked good on receipt, so I plugged it in and ran up a few zones. Bang - it let go! Turned out they'd sent a 110V amp and not the requested 240V version. I politely pointed out the mistake to head office and they were sheepish but sent another straight away. Which I hastily plugged in and, once again, 240 into 110 and boom. This time, I didn't bother with the US and got a local tech to

change the power supply - warranties be damned.

Speaking of 110V, I've eaten it several times and had some sides of 240V to boot. Ohm's curse has had me thrown five metres into the PA stack and pirouetting inside the concert truss. These are not recommended practices for good health or long life.

These things were front of mind when I got stuck inside a wall cavity among live wiring, on a Saturday, with no-one else around! A few deep breaths and I got out unscathed, vowing to never do something so stupid for any client ever again.

If pushed, I might admit to some scary back-of-house mess getting trade shows running at the last minute. Normally "making mistakes is better than faking perfections" but these shows are time poor and promise heavy, so standard pedantic wiring or coding conventions get compromised in the pursuit of having the latest shiny working in time for the punters. Hopefully, there are no incriminating photos...

How to do it better

As a contractor, get involved early during the planning phase and avoid being an afterthought - it will save numerous hassles later. Be open to client changes but firm on costing and getting paid for them.

As a client, make sure you know what you are buying. Confirm early with the integrator your budget and expectations. Try to find a company that offers ongoing service agreements as they are more likely to want to do it right so that they can be around for the long haul.

Gripping aside, there are plenty of good integrators and nice clients with fat wallets. It's a joy when these match up together nicely and everyone is happy.



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GET CONTROL... CENTRALLY

by Simon Byrne

One of the challenges for show operators is getting things organised in a way that makes it easy to operate through the show. You need to be able to access things fast and don't want to have to think. This is especially a problem where you are using software-based solutions for vision switching, playback and slides. Using computer mice and keyboards are too slow and restrictive for fast cues, especially if you have more than one. I've never got used to mixing on a iPad because of the lack of feel.

You need hardware controllers. Something with buttons that you can feel, and lights up to give you feedback.

There are lots of suitable devices such as MIDI controllers and the popular Elgato Stream Decks out there, but the challenge is to make them talk with other devices. A superb solution is Joe de Max's Central Control.

Central Control is Windows only software that links up hardware controllers with other devices on the same machine and local network, or even remote networks (more on this later). Think of Central Control as a control routing matrix that is totally customisable. You can control multiple devices from a single controller or several controllers if you prefer.

For example, using a cheap Akai APC Mini MIDI controller routed via Central Control, I could map its buttons to control for example, an ATEM Switcher, Provideo Player (PVP) on a Mac by way of MIDI, some PTZ cameras, Powerpoint on the local PC, a Soundcraft UI series mixer, OBS Studio and more. All from the single APC Mini. Multiple devices all in one place.

I can have multiple commands on a single button complete with timing delays built in as well. So with a single button push, I can play a video out of PVP, switch to it in the ATEM, bring the audio up on the Soundcraft mixer and advance to the next slide in Powerpoint. If my lighting desk supports MIDI commands, I could bring down the lights too! All with just one button.

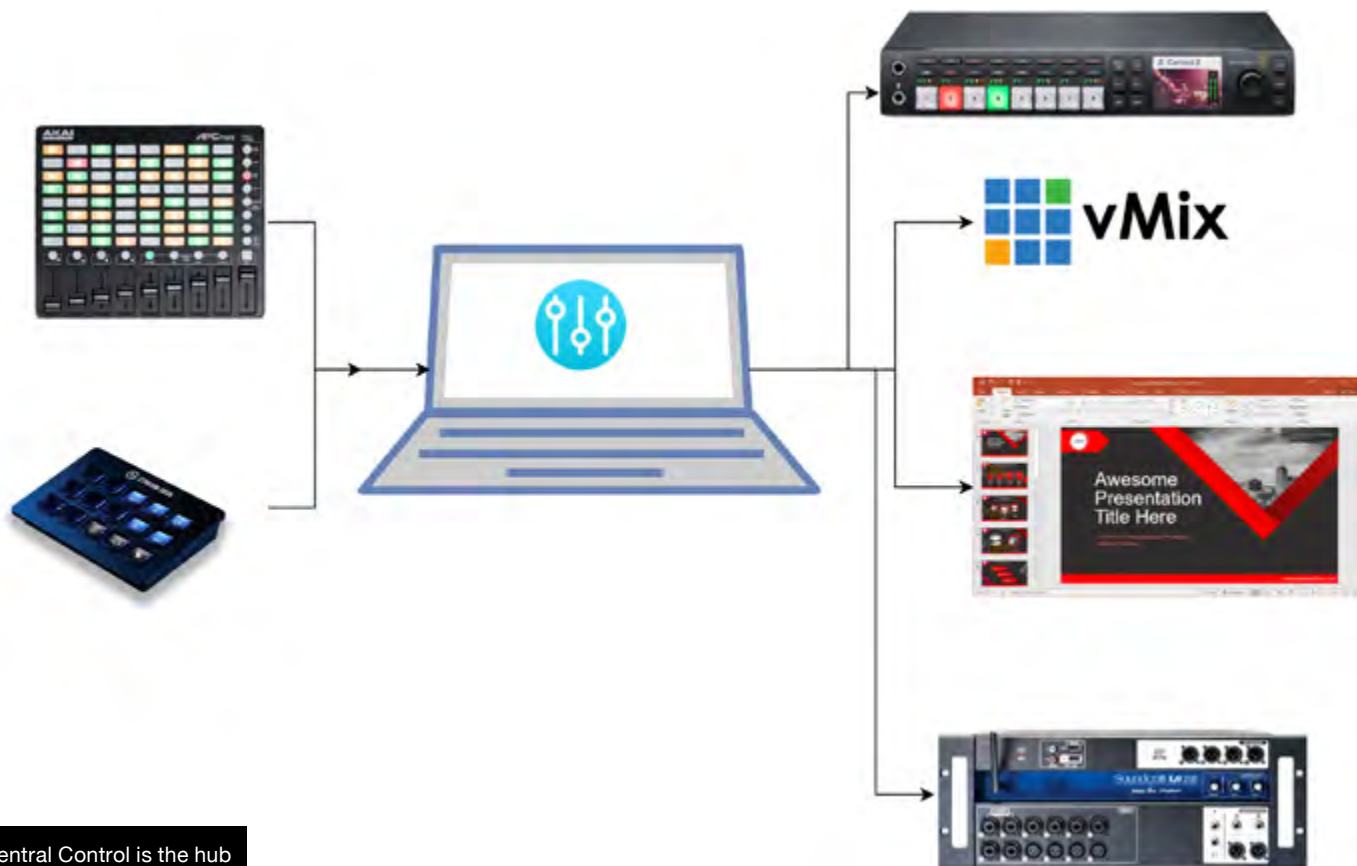
Central Control also passes state information back to the controllers. So if input five on the ATEM is selected on the preview bus, the appropriate button on the APC Mini will light up green if you program it to do so. If your vMix is streaming, you can set the streaming button on the Stream Deck to red and so on.



APC Mini



Central Control with APC Mini



Central Control is the hub

The power of Central Control really shows up with remote production. If I'm running an instance of vMix remotely in the cloud, I can have control of it on a controller in front of me, simply by telling Central Control the IP address of my cloud vMix instance. And there is no reason why I cannot have several controllers. This means I can have another operator switching inputs on the Akai APC Mini controller, whilst I control the lower thirds, slides, recording and streams on a Stream Deck. Connecting USB devices to cloud instances has been a real challenge in the past.

Central Control support layers so you can set up multiple pages on your controllers.

The program is still in its infancy at version 1.3 and the documentation is well...non-existent. Having said that, by watching the tutorial videos on Joe's website you quickly get things going. A range of devices are specifically supported. The obvious ones like Stream Decks, numerous MIDI controllers, X-keys, Tricaster control surfaces, OSC and even X Box 360 controllers, and you can expand its capability by taking advantage of generic MIDI as well as its ability to send keystrokes and so on.

So what is the process? Download Central Control (link below). It has a fully functional thirty day trial. All your devices should be connected by USB on the same machine that Central Control is running, or on an accessible network to which the machine is connected. Then add your devices to Central Control. Once they are added this is where the fun starts.

Firstly, I like to set up the button feedback on my controllers. This is where you set their light state. For example, on the Akai APC mini you can set the buttons to light up either black (off), yellow, red, or green. You can have them in their default state, a state that is specifically off, and an on state. If I'm going to control an ATEM Studio HD switcher with a program row, I'll set those to be red when they are selected, and for my preview row, green when they are on. Perhaps I'll set my take button's default state to yellow so I can spot it quickly.

Central Control supports the labelling and feedback state on the Elgato Stream Deck, which is especially useful. A library of icons is also included.

Now that your key mapping is set up the way you like it, you assign commands to the keys. It could not be simpler. Using the 'jump to control' feature, you select the key, then select the device you wish to control on that key, and a list of available commands for that device is presented. You select the appropriate command, and if applicable, the parameters on the device to be controlled (which input etc).

Finally, the device's address on the network may need to be entered in Central Control, otherwise it does not know where it is. And that is it!

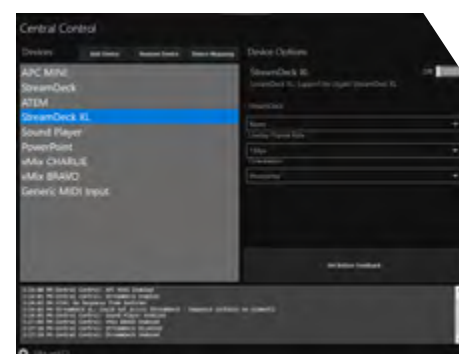
The powerful feature of Central Control is to connect to other IP networks, and more than one at a time. Recently I did an online job where I was running two copies of vMix on separate instances in the cloud with different IP addresses, plus an ATEM Studio HD switcher locally. All of this was brought together onto a single Stream Deck XL which meant I had

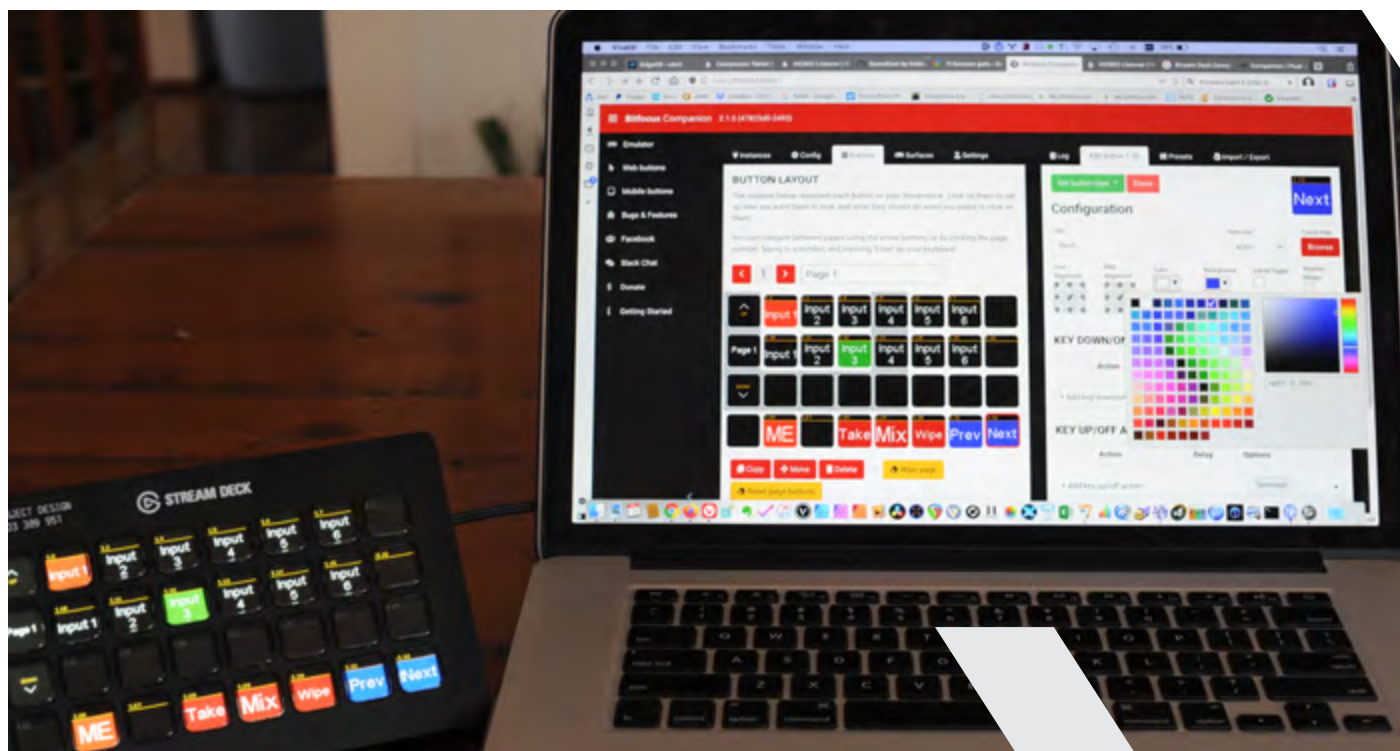
every input from the three locations all on a single, easy to read controller in front of me.

As well as allowing simple control mapping, Central Control also has the ability to convert between protocols. For example, use your MIDI controller to send TCP commands, or fire off HTTP requests from an OSC device.

At only \$50 USD, Central Control is an invaluable addition when combined with your favourite controllers.

www.centralcontrol.io





STREAM DECK'S COMPANION

by Simon Byrne

You've heard me talk of the advances made in the computer games industry making their way into our domain before. Here is another one. The Elgato Stream Decks are a range of USB key pads where the buttons are little LCD screens made mainly for online gamers. Being a gaming device, you can pick them up at EB Games, JB HiFi, and Harvey Norman. Alex Hughes goes into their history in CX back in July 2019 (link at the end).

The Stream Deck's LCD buttons can display labels as well as provide visibility for various states. For example, turn red if your microphone is on.

Stream Decks come with their own software to configure them. However, an open source movement has developed a much more powerful solution called Bitfocus Companion. This is where it gets really interesting as it

opens a huge amount of devices that can be controlled by Stream Decks over a network. Oh, and it is free and is available for Windows, Mac, and even Linux.

Because it is open source, contributors make their own device modules and contribute them back to the project. There are hundreds of devices currently supported ranging from projectors, mixers, switchers, PTZ cameras,

lighting desks, software controllers, wireless microphone receivers, and LED screen processors to name just a few.

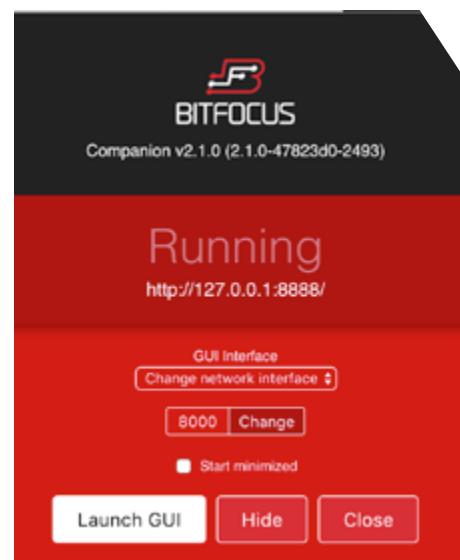
Companion replaces the Stream Deck's own software. It is an application that runs in the background of the computer that is hosting the Stream Decks. To make changes, you launch Companion's GUI in a browser and that is where the magic happens.

First of all, you don't actually need a Stream Deck if you are happy to click buttons on a screen with a mouse, because it has its own Stream Deck emulator and web button interface. You still get all the features and connectivity, just not with the cool hardware controller.

Within the GUI, you scan for your Stream Decks (if you have any), once that is done, start assigning buttons.

You select what devices you wish to control (called instances in Companion) and add them to your template.

Because it is open source, you get a lot of contributions to the project that would be unlikely to occur otherwise. A clever



example is Vicio Listener which gives you the ability to control any computer program that supports hotkeys which you trigger from within Companion.

Vicio Listener is a small program that sits on the client machine (the machine that needs to be controlled) waiting for incoming TCP connection/commands. It uses pre-defined commands to simulate key presses on the machine. You can use this program combined with Companion to perform hotkey actions remotely. For example, fire off Ableton,

advance Powerpoint slides, or play videos in Resolume. Very cool and very cheap.

Because Bitfocus is open source, it suffers a little in terms of polish, and understanding some of the programming code does get geeky. Also, some of the GUI layout is less than ideal and programming buttons can get cumbersome and slow. However, if you push through those irritations it is well worth it. The ability to integrate various devices and software together so control is all in one place is extremely powerful.

Stream Deck Companion

<https://bitfocus.io/companion/>

Alex Hughes, CX July 2019 - How the Gaming Industry Accidentally Created an Industry Leading Product

<https://www.cxnetwork.com.au/how-gaming-accidentally-created-an-industry-leading-product/>



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Hands on in Oslo with Müller-BBM's Vivace electronic room acoustics system

by Jason Allen

The Lillestrom Cultural Centre in Oslo, Norway, is just four years shy of its 100th birthday. Its Theatre Hall seats 600, and like most small performing arts venues, there's huge variety in the styles of acts it hosts, from classical music to stand-up comedy. It's a perfect example of a venue that benefits enormously from having an Active Acoustic Enhancement System (AAES) installed, and in January 2020, that's exactly what consultants and integrators Audiens were doing. As Audiens are the Norwegian distributor for both Fohhn loudspeakers and Müller-BBM's Vivace system, the auditorium was being graced with products from both manufacturers. What was unusual about the installation and commissioning process was the team of Australians who were there to take part in it.

Mark Hanson and Mark Thompson of engineering consultancy Hanson Associates were joined by Lee Stevens of Australian Müller-BBM and Fohhn distributor CMI to experience first-hand the process of installing, tuning, and setting presets on a Vivace system in a relatively small venue. Jo Wang,

Project Manager at Audiens, Bernd Noack, Consultant and Project Manager at Müller-BBM, and Henri Meißner, Project Engineer at Müller-BBM were all on hand to talk through the process step-by-step, provide deep insights into how the technology functions, and advise on how to get the best results



from an installation. There was also time to experience both Vivace and Fohhn systems in Audiens's purpose-built demonstration facility, which enabled the team to explore the technology outside of the commercial pressures of a live work site.

"Mark Thompson and I have both spent time with Active Acoustic Enhancement Systems from other manufacturers, and we wanted to get to know Vivace," relates Mark Hanson. "This was a unique opportunity to experience Vivace as it was being commissioned, with engineers on-site. We were also very interested to see what implementation of an AAES was like in a smaller performance space, as it's particularly relevant to what we see as the future of projects in our market. Both Jo and Bernd were willing to share the whole process with us, from getting the venue to adopt the technology, how to work with the client, and managing hirers and musicians."

"You almost never get the opportunity to be this intimately involved in a technology and its processes," concurs Mark Thompson. "By the time we arrived in Oslo, Jo and Bernd were most of the way through preliminary system checks. Then it was time to tune speakers, develop the acoustic relationship between each room microphone and loudspeaker, and build the large processing matrix. Vivace's optimisation algorithms running in the background would then give an indication of how the system should be configured and apply those parameters, which would generate reverberance. We then took measurements of acoustic properties



Lee Stevens, Jo Wang, Bernd Noack, Mark Hanson, Henri Meißner, and Mark Thompson.

like Reverberation Time, Early Decay Time, and more, at multiple positions throughout the venue, and tuned the acoustic response for each performance type preset from there.”

The next stage of the commissioning process was perhaps the most important; bringing in regular clients and performers to tune the system based on their feedback. “This was the third day of the process and entailed a full day of rehearsals with everything from

a classical guitarist to a 64-piece brass orchestra,” retells Lee Stevens. “We started with a simple ‘walk and talk’, moving to an acoustic guitar player, and some playback. We cycled through a concert pianist, opera singer, the in-house audio team, who were using it as an effect from their console, right up to the orchestra. What really struck me was how easy it is to manipulate the room compared to other systems; you can really

sculpt the sound to suit the space. After setting up some presets with reverb times of 0.4 seconds up to 2 seconds and some in between, you get a real feel for what you can do, especially by manipulating the side reflections, which with some alternative systems, this is not as accessible. It’s difficult to explain the sensation this creates, but you can make the feel of the room sound narrower or larger with simple changes to the side and

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Jo Wang, Bernd Noack, Mark Hanson and Mark Thompson



overhead reflections. This also gives the user the ability to define the acoustic energy in the space to match the type of performance, or even create the sensation that the roof is lower than it physically is. The creative possibilities are endless. I'm really excited to try out the 3D audio module and really push the artistic side of the system."

"It was essential to get critical feedback from performers, not just rely on metrics obtained from acoustic measurements," observes Mark Thompson. "A unique component of the Theatre Hall design is that the Vivace system design for the space includes performer support across the stage via Fohhn steerable line array columns mounted on the balcony and around the stage. The Vivace system was able to incorporate the use of these strategically placed line arrays into its processing of the room acoustics so as to achieve this very important acoustic support for performers on the stage. That element was the most surprising for the performers. They

performed both with and without it enabled, and all preferred it on, as it made such a huge difference. In addition to the performers, the in-house venue technicians and the CEO all shared their subjective impressions about the acoustic response in the space during the different performance types. After all the feedback was collated, presets were finalised for the different performance types and saved into Vivace, which are recalled by a simple touch interface."

While tuning Vivace to performer's preferences in a working space was an invaluable experience, getting to manipulate a completely artificial acoustic at Audiens' demo facility was enlightening. "Where Vivace excelled over other AAES I've heard was in the dead space of the Audiens demo facility," shares Mark Hanson. "Jo and Bernd took a dead space and created an acoustic that sounded real. Normally you take a space with its own acoustic quality and enhance it. They created this realistic acoustic completely

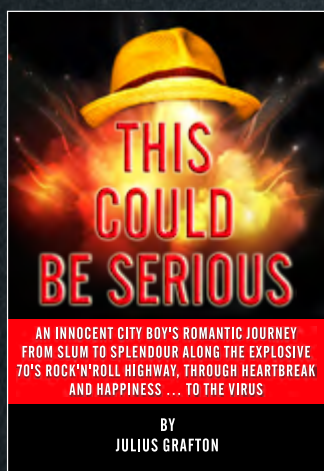
from a dry room, and when I've heard that done with other systems, it has sounded electronic."

Lee Stevens was impressed by the results Audiens and Müller-BBM achieved with their design for the Cultural Centre. "I liked that the stage was treated as part of the same room," conveys Lee. "The overall design goal is that the performers feel there's no amplification, and they've achieved this. Beyond musical performance, I think it's interesting how an AAES could also be valuable in spoken word or corporate scenarios. When we were testing the system by speaking on stage, Vivace was intelligently lifting the vocal level by just enough over the ambient noise to make our voices natural and audible through the whole auditorium. You're naturally amplified without even realising it, which in certain scenarios means you could minimise the requirement of radio mics or mics on lecterns."

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Balwyn High School

OLD SCHOOL – OG PA WITH PAGE PAC AND REDBACK

by Jason Allen



Page Pac Pty Ltd is one of the few remaining ‘old school’ PA, paging, and EWIS companies left in Melbourne. Their stock in trade is 100V line in public places, and lots of it. Current proprietor Alex Bernach bought the company from his mentor, the late Gordon Setterfield, when he retired in 2002. Trusty impedance meter in hand, Alex was recently called in for a quick fault-find in a high school and ended up replacing the whole system....

Balwyn High School is one of those vast, exceptional public high schools that parents move to the suburb to get their children into. Alex’s colleagues Dalton Electrical are the incumbent maintenance contractor and called Alex in when one of the existing PA amps ‘let the magic smoke out’.

“I was told that it had caught fire, or at least let some electrical smoke out,” laughs Alex.

“It had then been replaced, but the system wasn’t really working across the whole speaker network. It had been deteriorating for a while, and certain zones didn’t work at all. Dalton called me to come and have a look. I was expecting to drop in for an hour, and ended up staying for four, auditing the system – I had no idea it would be so big! Balwyn High School has 2,500 students and 220 teachers! It’s bigger, and better resourced, than most of

the private schools I’ve worked at.”

Alex’s impedance sleuthing located multiple faults across the speaker network that were causing the whole system to fault. The ancient power amps would let one page through and then power off because there was too much load caused by shorts. The only practical solution was to locate and rectify the speaker cable faults, then replace everything in the PA racks.

“The 100V line network was run using the old multicore telephone cable,” relates Alex. “It’s easy to identify faults on that kind of network, and it was actually well designed. I measured about a 1300W load. It was split into three main areas, so I replaced the two old amps with three Redback A4395 500W mixer amps and shared the load across them.”

The sources coming in are what you’d expect in a large school installation; paging, an evacuation controller, alert, and bell tones. There’s also an integrated telephone paging input so anyone with an access code can pick up a phone, dial in, and do an emergency page through the school’s NEC telephone system. A Redback A4510A yearly school timer can be programmed to play the

school bell tone, and any mp3 file can be scheduled. The timer also has a relay out for triggering an external player. The unit is programmed with school times two years out so the bell doesn't sound during holidays, saving the neighbours the trouble of complaining to council!

Being an emergency system, the whole PA has back-up power supplied by two deep cycle batteries rated for 90 hours of operation. A Redback A4512 Backup Battery Charger keeps them ready for action.

Redback is a go-to brand for Alex in these kinds of jobs. "I use Redback because it has been designed for the Australian installer," he says. "For example, on Redback's six input mixer amps, each input is switchable between mic and line level. Other brands come with fixed configurations of two line and four mic, so they're inflexible. There's also a ducker in the Redbacks – when the paging mic inputs signal, the BGM fades under it, and when it stops, the music fades up again. I've used both these mixer amps and power amps in Coles Myer and Target stores. They're just 'end user proof' and almost impossible to blow up."

Reliability is also high up on Alex's reasons for brand loyalty. "We find with some other amps that, after a couple of years, they develop a bad earth hum and become a throwaway item. Redback gear comes with a 10-year warranty. If there was ever a problem, I'd drop them into Altronics's base here in Melbourne, and they'd repair it. Not that it ever happens; once they're in they don't get touched."

Tales From The Frontline

With servicing old-school public address becoming a lost craft, Alex shares some fault-finding pearls from across his decades of experience. "This is all the stuff they don't teach in school. This knowledge has been passed down to me from my old boss and his engineers. It's all learnt hands-on."

"I did a service call for the ceiling speaker network at a Coles supermarket two years ago. The manager said "You're the fifth person here. I hope you can fix it." An amp had blown up. The in-house service crew put in a new amp, and that promptly blew up too. I put my impedance meter on the line, found a low reading, searched the store and found a volume control that some bright spark had inserted in-line on the speaker cable run in the staff training room. It was shorting the whole network. Removed. Problem fixed."

"Sometimes you get faults that you have to go back five times to find," continues Alex. "You start asking yourself if it's cheaper to just run a new cable network. The most difficult fault to find I'll never forget; it was a rubber manufacturer in Moorabbin. Their paging system wasn't working. I'd go there, see the fault on the line, and then it would disappear. I'd go away, and the next day it would come back. Several visits later, I was back and searching for the fault. When a certain machine was started up, it would vibrate the whole area. The speaker cable run was above it, and would rub against the metal of the roof when the machine was on. When the machine stopped, the fault would disappear. It was only by chance I found it. It was one of the worst jobs I ever had!"

Balwyn High School - The Gear

2 x Redback A4427 8 channel mixers

3 x Redback A4395 500w mixer amps

1 x Redback A4510A yearly school timer

1 x Redback A4565 Alert Evac System with remote triggering and paging console

1x Redback A4564 Paging Console with Alert/Evac/Chime

1x Redback A4578 Remote Control Wallplate to suit A4565

1 x Redback A4512 Backup Battery Charger

2 x Powerhouse SG4573 90Ah deep cycle batteries




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ZAGAME'S HOUSE

Presented by Bose

The Zagame's brand is well known throughout Victoria. Brothers Victor and Robert Zagame are passionate hospitality veterans who put their heart and soul into each Zagame's venue, from family restaurants to casinos to car dealerships.

Zagame's House is among the latest of the brothers' ventures. Built on the site of an old pub on trendy Lygon St in Carlton, the luxury boutique hotel showcases exquisite sustainable architecture, thoughtful design, and a no-expenses-spared execution. Its 97 rooms include chic suites and spacious downtown pads. The top tier Lord Lygon Wine Shop is part of the venue, along with the 1851 Coffee + Kitchen, a 24 hour gym and a resident rental Fiat named Freya.

The Challenge

Light & Sound Solutions supplied the AV for Zagame's House, including all internal and external audio and IPTVs. The brief was simple and open-ended: the AV had to match the Zagame's brand of creating luxurious, opulent experiences using only top notch products.

"Zagame's House is the first of their flagship hotel chain," says Daniel Thomas, Senior Project Manager at Light & Sound Solutions who oversaw the project. "It's a very boutique, very stylish spot."

"The design of the entire hotel is to create a homely vibe," says Adam Taloni, General Manager at Zagame's House. "After all, we are a house! I believe we have succeeded in this given our guests tell us this regularly. There are various factors that create this desired 'feel', and music is one of them."

"From the music in the carpark when you arrive, to the lifts, gym, café, wine bar and even the bathrooms, our music is designed to not overpower our guests' mood, but to help enhance it and make them feel at home. Comfortable, relaxed, happy."

The Fix

All the common areas have distributed Bose FreeSpace systems including the wine bar, reception/lobby, dining room, carpark/ garden areas and function rooms. Proprietary Bose PowerMatch Series amplifiers run all loudspeakers.

"We chose Bose because of its reputation and quality," says Daniel. "Bose's product range suits that kind of environment, but it's also a brand name that makes people happy. It's very easy for us to stick that badge on and know it's going to tick all the boxes, as well as deliver a quality result."

The entrance to Zagame's House is a courtyard adjoining the carpark. The client requested this drop-off area has high quality background audio to envelop a guest before they set foot inside the hotel.

"The analogy given to us was a shopping centre atrium with quality sound," comments Daniel. "What we wanted to create was the background music vibe of an atrium even though there's no 'lid'. We used a combination of the Bose FreeSpace 360P environmental loudspeakers and DS100SE surface mount loudspeakers to create an atmosphere. We put a lot of thought into speaker placement to direct sound where we wanted it."

Part of the challenge in meeting this brief

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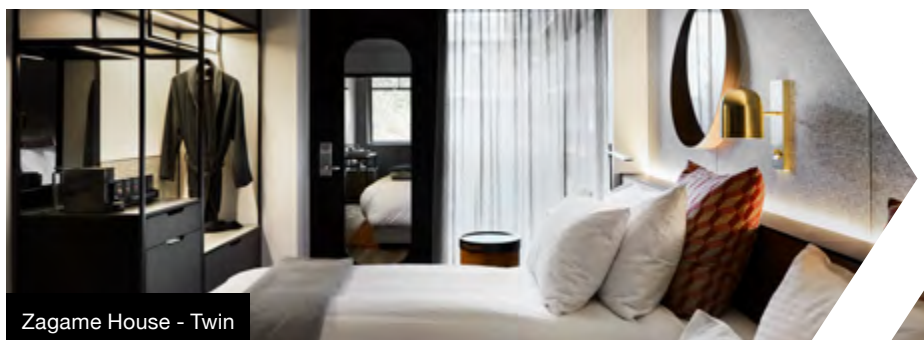




Zagame House



Lord Lygon



Zagame House - Twin



Lord Lygon



Zagame House - Reception



Lord Lygon

was not only the amount of ambient noise spilling into this area from busy Lygon St but also a residential fence which backs onto the carpark putting a ceiling on the SPL. The DSP capabilities of the Bose PowerMatch amplifiers was essential in complying with noise limits. "We utilised the Bose DSP to manage minimum and maximum volume levels and also the scheduling of attenuation, so at 6pm the level drops 10dB. The volume control on the scheduler also keeps staff from accidentally turning it up too loud."

Inside the hotel, a combination of Bose FreeSpace DS40F flush mount and DS100SE surface mount loudspeakers comprise the venue-wide audio reinforcement, along with Bose RMU108 utility loudspeakers in common areas and hallways. Bose MB210 subwoofers

are installed in the dining room and wine bar for additional low end impact. According to the brief, adaptability was key.

"The music system had to be very versatile," comments Adam, "from soft, welcoming music in the carpark on a Monday morning, to upbeat vibes and more bass on a Friday and Saturday night, to an awesome event in any of our event spaces with a DJ and dancing in mind."

The Result

"It's a flagship project for us and Zagame's are a great client to work with," reflects Daniel Thomas. "The client feedback was fantastic, they loved it. Typically the first few weeks after project completion you're asked

to go back and change some things; adjust levels here, too much bass there. But since commissioning, it hasn't been touched."

For Adam Taloni, the Bose sound system just adds another layer of flair to the luxury hotel. "We went with Bose because they are globally known as one of the best in sound systems. Our conference and events guests rely on us to deliver quality to their event in every aspect – whatever it may be. We know and trust Bose, so do our guests. We get regular feedback on many aspects of our guest experience from the food we offer, to the service we provide, to the performance on all our AV systems – including the Bose system."

Upgraded System supports Netstrata Jubilee Stadium

Georges River Council takes advantage of coronavirus break

Jubilee Stadium is the premium sporting venue in the Georges River Local Government Area, with capacity for 20,000 patrons. This year, the ground has been home to three major clubs including long term tenants St George Illawarra Dragons, alongside the temporally displaced Cronulla Sharks and the A-League's Sydney FC.

Georges River Council resumed management of Jubilee Stadium in February 2017 and has since embarked on a series of improvements, including the installation of a new video scoreboard. Taking advantage of the break in sporting activity earlier this year due to the coronavirus pandemic, Council put out a call in April for the design and installation of a new sound system to cover the grandstand and terraces on the western side of venue.

The P.A. People have presented a number of

proposals to previous management teams to upgrade the sound system at the venue over many years, and as the incumbent supplier and sponsor of Sydney FC for the past two seasons, they were keen to respond.

Council required a comprehensive solution to achieve a number of outcomes: improved audio coverage of the grandstand area, a better experience for patrons and corporate attendees, additional flexibility and ease of use for a range of hirers. "The geometry of the

venue provided quite a few challenges - the roof is very low so we could not use a few larger cabinets," commented Brett Steele, Manager of the Installed Systems team at The P.A. People. "JBL AWC series speakers were selected for the stand based on their throw-distance and dispersion. Linea Research C88 series amplifiers were paired to the speakers, along with a QSC Qsys Core 110f, Shure mics and a Yamaha TF5 Mixer."

The system uses a Dante audio network to integrate the side of field patchable inputs, the DSP and the amplification along with the mixer, which is located in the production suite on the other side of the venue. The use of a Dante solution also provided the capability to augment the new system's additional equipment for extended coverage of the rest of the ground.

The new system is also able to be controlled in a simple stand-alone mode (without the mixer) through a series of wired and wireless Android touch panels connected to the Q-SYS system, which provide access for basic and professional



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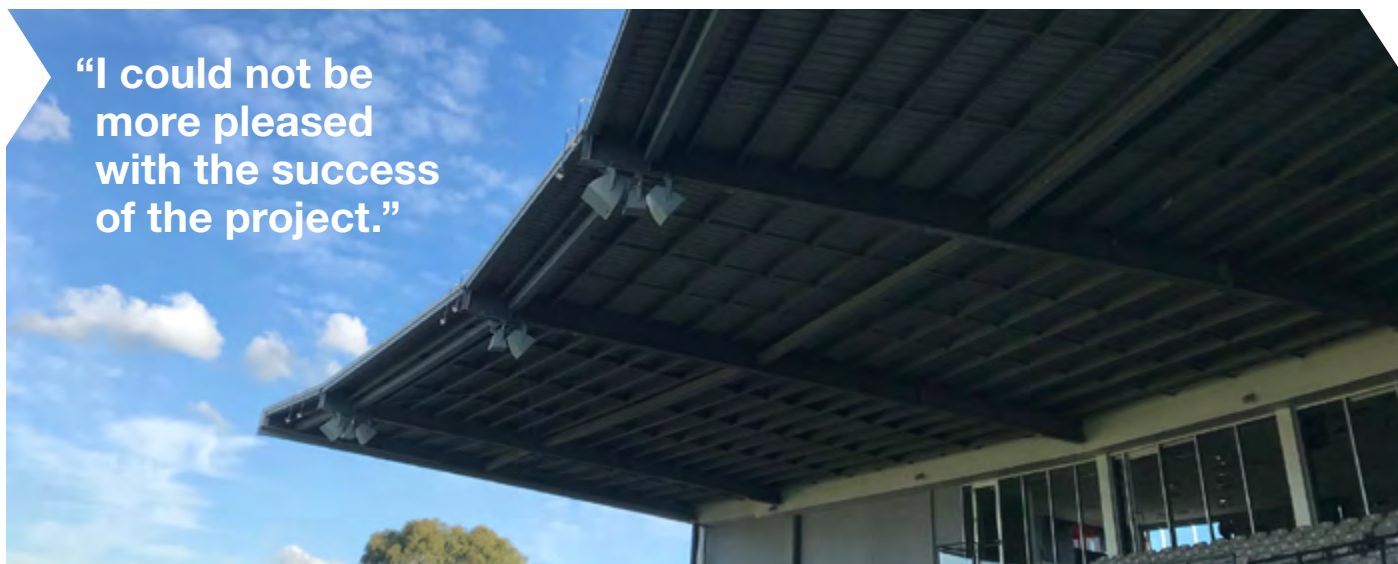
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“I could not be more pleased with the success of the project.”



modes depending on user/hirer requirements and their experience level.

Luke Coleman, Manager of Premium Facilities for Georges River Council said “The P.A. People have delivered an excellent sound system solution for Georges River Council in the western grandstand at Netstrata Jubilee Stadium. The capability of the system, apart from producing a quality sound, has the ability to interface with the augmented system for the whole stadium, as well as operate independently through wireless control, and the simplicity of that control to enable venue staff to operate as required.”

Luke Coleman added, “The installation has fulfilled all the requirements in the project and has been achieved on time and delivered in a professional manner. This important addition of infrastructure enhances the game day experience for the hirers and their patrons that are seated on the western side of the venue, in particular, in the upper tier. I could not be more pleased with the success of the project.”

“The much needed audio upgrade of Netstrata Jubilee Stadium enhances the event experience for our valued members who sit in the upper tier of the Western Grandstand.”

**- Amy Lugg
(Game Day Manager, St George Illawarra)**

“At Netstrata Jubilee Stadium, the game-day experience for our Sharks members and fans has been lifted - with new, improved audio coverage of the Grandstand area. The P.A. People have provided an excellent solution!”

**- Jessica Ciccio
(Game Day Manager, Cronulla Sharks)**

“The improved audio coverage in the stand at Netstrata Jubilee Stadium enhances the game-day experience for our valued Sydney FC Members and partners. Congratulations to The P.A. People for delivering a solution which has made that happen.”

- Danny Townsend (CEO Sydney FC)

Equipment List

JBL AWC159 15” Speakers (Terrace)

JBL AWC129GY 12” and JBL AWC82GY 8” Speakers (Upper Tier)

JBL AWC62GY 6.5” Speaker (Under Balcony)

Linea Research 88C10-DANTE and 88C06-DANTE DSP Power Amplifiers

Ruckus Wireless Zoneflex WAP

Ruckus Network ICX7150 series Switches

QSC Qsys Core 110f DSP + Dante Software

Yamaha TF1 Mixer and NY64-D Dante Card

Yamaha TIO1608-D Stage-Rack

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THE LOCAL INTEGRATOR — FREDON

by Jason Allen

Fredon is a 100% Australian owned electrical, data, HVAC, security, technology, and asset services company, though we at CX know and love them for their work in AV. With offices in every Aussie territory except Tasmania and the NT, and even a presence in Auckland, they have their finger on the pulse of the local market. I spoke with Director Nick Orsatti about navigating through the straits of COVID, and where the growth might be in 2021...

The good news is Fredon have managed to stay relatively healthy through the crisis, with the obvious exception of Melbourne. “Our big challenge is that a lot of our work has a long lead time,” explains Nick. “As an integrator, if you had a lot of projects running or signed up pre-COVID, you kept running. Since then, it’s all gotten leaner. We work across corporate, government, education and performing arts, with the balance varying from region to region. In NSW, we’re involved in the Walsh Bay Arts Precinct redevelopment, which is entering its second phase with another year of work in front of us. At the moment, the QLD office is working on the Cairns Convention Centre. Projects you thought would halt have continued, while others have stopped

or postponed. As a result, we’re seeing integration businesses looking outside of their traditional sectors for work.”

Staying Competitive

With a steady pipeline of projects keeping them on the tools, Fredon are happy to report no wholesale redundancies. “We didn’t qualify for JobKeeper for a long time, and the majority of the business still doesn’t,” reports Nick. “What we’re seeing now is the lag in project deliveries catching up, and everything becoming much more competitive. We’re pleased to see that everyone seems to be keeping their skill base in the workforce and doing the right thing by their people. There will be casualties, but we’ve not seen them yet.”

With Melbourne enduring one of the longest and strictest lockdowns in the world, it was unavoidable that Fredon would be worst affected in Victoria. “That’s where the majority of our temporary standdowns were, after Level 4 restrictions were instated in August,” Nick conveys. “We’d been remote work enabled for a while, but the biggest effect on our staff was social and cultural. When Stage 4 restrictions were placed on the construction industry, that’s when it really bit us. A lot of projects dramatically slowed or stopped. It’s been very tough on our Victorian team.”

Since the industry has come back to life, with Melbourne slowly opening at time of publication, everyone is sharpening their pencils as jobs become available. “From our perspective, we’re seeing what we would have regarded as tier two or three fitout companies bidding against the big tier one builders,” observes Nick. “There’s now a fervour in competition. Adding to the workload, we’re also seeing designs to be quoted on going from one or two iterations up to six or ten. A lot of this is clients rescoping fitouts as the ongoing delays and changing COVID requirements means their meeting facilities have to keep re-adapting.”

Support Your Team(s)

It’s not all downside, though. “We do a lot of unified comms, and that’s one market segment that’s gone absolutely ballistic. The leader is Microsoft, as they’re present in so many businesses already. Microsoft had a 70% lift in active users of their services in Q1



2020 alone. The reason is most Office365 subscribers already had Teams as part of their package, and they just turned it on. Zoom tended to be the alternative for non-Microsoft houses. We were ahead of the curve here, as we'd started the journey to become a Microsoft Certified Gold Partner well before COVID."

With a lot of Teams and other remote work systems rushed into service, Nick sees some remedial work needed in the near future. "It's about understanding security implications. A lot of clients were in a hurry to get something up and have bypassed the normal IT security concerns. There's going to be a lot of work to fix that retroactively. Fredon will now be more proactive and aligned in our ICT capabilities publicly; we've always provided those services, but not as visibly as we do now."

While organisations and staff have settled into using platforms like Teams comfortably, they've now been using them long enough to want improvements and add-ons, while expecting their remote capability to be added to existing facilities. "Clients that have collaboration and presentation rooms that are not necessarily remote conference enabled want them brought online. There's also now a big emphasis on contactless tech, enabling BYOD, and converting existing four-person huddle spaces into 'two in and two remote'. With the amount that's been going on, if you tried to get a Logitech web cam in March or April, you were out of luck!"

Show Me The Money

With almost every university in maintenance mode for the foreseeable future, Fredon still sees activity in the K-12 sector. "You have to follow the government stimulus," advises Nick. "Where are they spending? Government funding of the tertiary sector is pretty much gone. In what there is left in tertiary, we're seeing a lot of 'value engineering' where they're trying to wring every last bit of life out of their existing systems."

"Nationally, we have cautious optimism," Nick continues. "Queensland is healthy, Sydney is doing alright, as is the ACT. Melbourne has a long road out, and it all depends how it comes out of restrictions. I can see opportunities off the back of infrastructure spending, though they're not necessarily traditional. Because we're a multi-service company, we have a wide lens. For example, command and control rooms – there's demand there across a number of sectors. Emergency facilities, some corporates, network operations facilities, and data centres, for example."

Our inherent nature as a social species should also be a growth vector. "Sport can provide the social interaction people are yearning for," predicts Nick. "Health and K-12 education will also likely expand in both the private and government sectors. NSW have a lot of design and build projects in both happening right now. We've also seen a lot in corrections in recent years, which is tied to population growth, as is road and rail."



Nick Orsatti

The Year Ahead

"Every business is going to have to tweak what they do," posits Nick. "There's going to be both direct and indirect government spending on a global scale. I think 2021 is going to get tougher, and you need to figure out how to navigate that. I believe companies like ours have a moral obligation to keep their staff on and protect their livelihoods. I think all companies should make sure they can both retain and grow their skill sets and value proposition. Do your best to come out victorious."



Melbourne Convention & Exhibition Centre

THE MULTINATIONAL INTEGRATOR – DIVERSIFIED

by Jason Allen

After forty years under the Rutledge banner, the integrator's sale to New Jersey-based Diversified was finalised in April 2019, and the name change to Diversified completed in August 2020. In the meantime, they'd delivered an award winning 3,500 loudspeaker PA system to the MCG and were operating under one of the world's hardest lockdowns out of their Northcote, Melbourne head office. I spoke to Andrew Morrice, Diversified's Country Manager in Australia, about their new international superpowers, and what 2021 looks like for our most established AV company...

While the sale process of Rutledge to Diversified seemed relatively quick and simple from the outside, I assume it was longer and more complicated. How did it work?

The sale followed a fairly traditional process with a business broker engaged to represent Michael and Sandy Rutledge. We worked

together on an Information Memorandum and the broker then managed the engagement process. The complexity of the transaction, the size of the company, the professionalism of Diversified, and the involvement of private equity meant there was significant due diligence to be undertaken. As part of the process, delegations from Rutledge and Diversified met in Hawaii. Diversified

being based in New Jersey, Hawaii was approximately the halfway point. It was an exciting process, but not without its stresses.

In the end, it was the significant similarities between the two companies that made the acquisition relatively easy. Diversified has followed a strategy of growth both organically and through acquisition for some time and is well rehearsed in the process, meaning it all ran smoothly in the end. We share a matrix reporting structure and are now well integrated with multiple lines of communication to maximise the sharing of knowledge across what is now one global business.

Now that you're Diversified, what difference is there in the customer experience compared to the Rutledge days?

To the customer or end-user, the experience is mostly the same. There's still the extensive local support that there's always been, but now it's backed by a major international organisation that has significant horsepower in specialities. Rutledge was always a full-line generalist, with expertise across the company servicing multiple industry verticals. Given the size of the US market, Diversified has organised its business around verticals with specialist divisions. In Australia we are able to leverage that expertise, complementing

Sometimes it all gets too much...



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Andrew Morrice



485 La Trobe Street - The Lobby: Digital Experience and Information System



MCG – EWIS and PA System Upgrade (Credit – Image courtesy of Auditoria)

the knowledge and experience that we have locally. For example, when working on the recent MCG PA Upgrade project, we had access to Diversified's team of dedicated stadium experts. We now also have the backing of multiple network operation centres around the world. We're currently implementing a global 'follow the sun' model for service, which will enable our customers in Australia to benefit from Diversified's Global Services Ecosystem. This system has a lot of similarities to Rutledge's original service offering. From a marketing perspective, we have more resources and more power to get our message out. It's all a benefit to our customers.

What other new products and services has the acquisition enabled you to provide?

Diversified's speciality business units have both strengthened and added to our offerings. For example, we are doing a lot of work around medical innovation in partnership with a local medical technology company which is opening the door to new opportunities. Diversified has a big footprint in broadcast in the US, which is tying in nicely with our broadcast specialists both with Diversified and in our sister company, Soundcorp (also a Diversified Company). There's also expansion opportunities in digital signage; Diversified has thousands of digital signage endpoints under management via US based control centres. They have remote cameras in New York's Times Square, set up to watch digital signs to ensure uptime with actual visibility of what is displayed, given the cost of advertising there is at such a premium. These same control centres can manage digital signage end points here in Australia. And, of course, the newly launched Global Services Ecosystem, which we anticipate will reshape how service is delivered in Australia.

How has the pandemic affected Diversified's operations both here and in the US?

It's turned Australia into a multi-speed economy. Victoria, Melbourne in particular, is stuck in first gear, and every state and territory seems to be running in a different gear. For example, in NSW, we just won a major contract to deliver the new Sydney Football Stadium, WA is almost business as usual, but here in Melbourne we are dealing with significant challenges. The introduction of Stage 4 restrictions in Melbourne in August was almost a blanket 'stop work' which unfortunately resulted in standdowns. This was so frustrating, as the border closures prevented us from moving our teams interstate. This has been a very effective model in the past, dealing with peaks and troughs in demand around the country. It has been demoralising on so many levels, though we are beginning to tentatively emerge from it now and everyone is looking forward to positive announcements from the Victorian Government. Diversified US has been very supportive throughout the whole ordeal. They have certainly had their own challenges to deal with given how hard the US has been hit by COVID-19. The approach from Diversified on both sides has been 'what can we do, and how can we help?'

What is changing in AV integration in response to the pandemic?

So much, so fast. For example, over the last couple of years, huddle spaces have been very popular. But how do you now utilise them when we are all supposed to be socially distancing? We are now "huddling," on our own, in different rooms/locations. The market progression for Teams and Zoom has moved forward at least five years in just three months. I think that one of the most

significant implications for this technology is the move into, and take up by, the consumer market. This has had a major impact on its usability and acceptance. Not too long ago, if you'd proposed a trivia night with your friends over Zoom, it would have been unlikely they would have known what it was or how to set it up. Even if they did, it would not have been thought of as a real substitute. Now it is accepted, particularly in Melbourne, as perfectly reasonable. When it's being used by GPs for telehealth it has to work seamlessly. You can't have a 70-year-old with asthma who needs to talk to their doctor fumbling with installation instructions. It works because it must.

Where to you see the business opportunities being in 2021 and beyond?

This again depends on location. We are seeing strong opportunities in traditional markets in some states, but Victoria seems to be about government infrastructure spending on tunnels, bridges, rail, and roads. Opportunities for AV integrators are there, but it's not classic corporate AV. For example, we have been looking at tunnel PA systems and how to tune and align them correctly. It's an interesting sound and physics problem requiring specialised products and skill sets. Any work gained off the back of that infrastructure spending is going to take thought and effort. It is hard to see any significant investment in hotels or office buildings next year, but there is a raft of COVID-19 workplace modifications evolving which will provide opportunity, provided there is budget. Diversified in Australia has some level of shelter with major projects underway in Sydney and a lot of work being driven out of Canberra in our Secure Agency business. Ideally we'd like to see that kind of health in the market spread to the rest of the country, but it will take time.

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THE MULTINATIONAL CONSULTANCY – WSP

by Jason Allen

Canadian headquartered WSP is a multinational engineering professional services consulting firm with 50,000 employees worldwide. With building services at the core of their offering, they've always had a strong presence in AV and technology design here in Australia. I spoke with Manoj Indraharan, Associate Director, Technology Systems, at WSP about the 2020 view on projects both locally and internationally...

"The vast majority of WSP Australia's projects are local," says Manoj. "But as the Australian tech team is regarded as a centre of excellence for the Asia-Pacific region, we work internationally as well. All of the countries we deal with have been affected by COVID-19, either by slowdowns or halts on projects. The big difference is in how individual countries have reacted to the pandemic, what level of activity they've resumed, and how quickly they've done it. Some countries in South-East Asia returned to normal fairly soon after lockdown, and others, such as Australia, have been slower to open up. While we're seeing less investment

from the private sector overall, the common element in every country is that a return to normal has been subsidised by government incentives, which is kickstarting projects that have mostly had their start dates brought forward."

There's no denying that the market in Australia has been impacted. "We've seen certain sectors across the market become quiet and that are expected to remain quiet," observes Manoj, "a recent study by the Property Council of Australia found that the Hotels, Tourism and Leisure sector will be most impacted by COVID-19, followed by shopping

centres and commercial office. I think there is a sense of optimism across the market though, as Victoria looks to be coming out of its second wave, and local governments work to reactivate CBDs across the country."

On the other side of the COVID downturn is the surge in demand for particular products and services in specific sectors. "There was a huge increase in activity in the health sector very early on in the pandemic as they increased their telehealth capabilities," reports Manoj. "The need for physical distancing and minimising the number of non-essential visitors to hospitals needed tech to help solve the challenge. This included telehealth not just for medical consultations, but also so loved ones could communicate with patients whilst they were in hospital, this trend also boomed in aged care."

While large corporate projects may have slowed, the immediate need to send an entire workforce to work from home transformed the market. "In the workplace, video conferencing projects saw a massive rise from early March. Since then, it's not just about video conferencing, it's also about enabling different ways of working and looking at the workplace through a different lens. Companies, architects and consultants are now questioning whether current workplace design is right for the times or whether we

should be looking at the issue from an entirely different perspective. We're looking at smart signage, smart lockers, heat mapping, staff distancing, touch free control systems and desk booking systems, the last of which we're currently implementing around the world. It's all about managing people's movements and interactions while granting more flexibility."

With the shift en-masse to remote working, there's been ample talk of the collapse of commercial office space, and large corporates abandoning big CBD offices for something more affordable. Is this hype or what big corporates are actually contemplating? "Six months ago, I'd have given a different answer," contemplates Manoj. "At the start of the pandemic, people thought we'd abandon office spaces all together, but as time has passed, we've seen a social and mental health element that just can't be addressed by technology, and businesses are aware of this. The office as we know it will not go away, but will be reimagined. Some corporates I've spoken to were considering consolidating satellite offices into a single head office, but now they're rethinking that the satellites are a better option, giving a balance between working near home, from home, and coming into HQ to meet with co-workers. In my opinion, that's the better model."

Working for a multinational himself, Manoj can appreciate the complexities and challenges that organisations are now facing as they work to reactivate their offices. "The sentiment across the market is that staff have become comfortable working from home, yet there's no replacement for the collaboration and innovation that an office environment fosters. What that means is that we need to be re-thinking the way an office supports its occupants; so, if you're coming into the office,

you're doing it for a specific purpose and the office has been designed around that."

With so many in the workforce experiencing a sudden and dramatic shift in the tools they use to communicate, hundreds of thousands of people are now comfortable with a technology they previously had limited exposure to. "I've noticed in the last couple of months that people are now talking about what is good versus bad quality video conferencing. People can now differentiate between a proper integrated solution and a 'hang-and-bang'. While there are countless out-of-the-box solutions for self-install, my concern is that it's not going to support your staff with a better video conferencing experience. I'm hearing this all the time now from different sectors; people are already getting really annoyed with low quality video conferencing."

The huge uptake of video conferencing has propelled the technology forward the best part of a decade. "Video conferencing becoming not only normal, but available on multiple devices is a massive change in the workplace," marks Manoj. "Regardless of age, your working status, or who you are, you're used to it now. What will be exciting is how we'll now see that being integrated with smart building tech, alongside other building systems like automation and control. The big upside will be using the data analytics and artificial intelligence to better utilise spaces and manage physical distancing policies implemented by the company or even by Government policy. While the current level of integration of AI within AV or smart building systems varies across different implementations, there have been some really clever use cases. Room booking is a good example; if you've booked a seven-person room and eight people have accepted



Manoj Indracharan

the meeting request, the meeting room AI might rebook to a larger room, taking into consideration any distancing requirements. Conversely, if only three people respond, the AI might automatically reallocate your meeting to a smaller room and make the larger room available for others. We're deploying systems with this capability right now."

With a global perspective through WSP, Manoj notes the effects of the virus are universal, as is the reaction to them. "I'm working on a project in Kenya at the moment. This global experience of COVID, regardless of in which country and under which circumstances, everyone's going through it together. There's a common element connecting us all, which is uncertainty. Even in Kenya, they're looking at the exact same technological solutions as we are in Australia, and the US. Even though we all like to think of ourselves as innovative, we're all trying to solve the same problems."

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¹Passion, Pride, Pitfalls Dec 2014

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Boardroom



The Local Consultancy - Pereira Projects

by Jason Allen

Sydney AV and ICT technology consultancy Pereira Projects started life three years ago when principal consultant Jamie Pereira hung out his shingle at the behest of customers he was already servicing. Western Sydney University kickstarted Pereira's growing presence in technology for education, and a slew of tertiary, corporate, and government customers followed. 2020 sees Pereira Projects continue to grow, after bringing on partner Jack Wilson in late 2019. I sat down (via Zoom) with Jamie and Jack to talk COVID reality, business opportunities, and the direction of future AV projects...

Pereira Projects has always been nimble and forward-looking by design, which has helped them weather the COVID-19 storm. "We've always worked from home," explains Jamie Pereira. "We embraced future ways of working before COVID. We have people working with us interstate, we manage them remotely, and it's just easy. We don't have the overheads bigger consultancies do, which means we can provide our clients our full focus. That's why we have continuing relationships with the same clients – owning projects from end to end."

As Pereira has grown, they've chosen to bring in contractors and specialists on a project-by-project basis, as opposed to appointing new senior consultants to the business. It's allowed them to pivot quickly in the ever-changing COVID environment and respond with expert advice that was not necessarily within their existing fields of expertise.

"A good example of this is our work in room acoustics," illustrates Jack. "Six months ago, we hardly did any work in that space, and now it's one of our biggest growth areas. We've partnered with the best acoustics specialists

in Australia, and we're doing acoustic reports on spaces and offering solutions to improve the room. This has been driven by all the fancy office buildings full of glass and hard surfaces where they're bringing in cameras and mics for video conferencing. Without treatment, the audio is awful and often the ambient light is terrible as well. Due to current circumstances, we're now having more say in lighting and lighting control, as well as acoustic treatment. Our sub-consultant model means we can flex with the job requirements, and our clients are happy they're getting specialist advice while still having just one point of contact for the entirety of their technology footprint."

This rapid change in service structure due to market demand was turned around quickly by the small and nimble Pereira team. "After we decided to bring in acoustics and lighting, two days later it was part of our portfolio," relates Jack. "Being a dedicated team solely focused on the technology piece, we have an unrivalled ability to move with the market. I can't see how you'd do that at a multinational building services company; there's just too much red tape. We're now approaching our designs as 'intelligent spaces'. It's all about signal flow in all its forms. We explain to the client it's not just the AV, but the whole space we can help with. We're including sensors, metering, space utilisation measurements, and integrating everything into other building systems, enhancing other metrics like energy usage."

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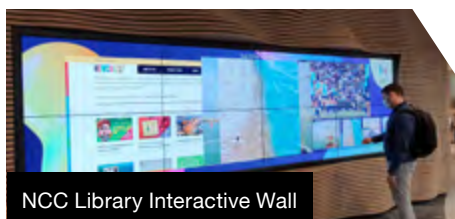
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The Pandemic Impact

As March 2020 unfolded, how did the COVID crisis affect Pereira Project's work? "A lot of our work in universities took a hit early on," explains Jamie. "Though we were lucky as one of our major tertiary clients doesn't have a huge reliance on international students. A lot of big corporate projects went on hold, and even with things relaxing a bit more now, corporate tenders for design and consulting have slowed down. We've been very fortunate in that we're currently working on a large, national tertiary project across campuses to fix disjointed systems, migrate to the cloud, and develop an 'as a service' model, which is a project that will last for some time. In some ways, tertiary projects have been helped along by the absence of students, and we've been able to turn around projects much faster. That's also because there's more focus from customers within these organisations."

"I'm seeing a lot of projects being pushed forward," adds Jack. "Along with that, I'm also seeing condensing tender time frames and shorter procurement schedules. There's a push on to get work done before the end of year. Interestingly, instead of being brought in to do a pretty standard 'design and flip 50 rooms', we're often being engaged to conduct feasibility studies or thoroughly audit existing AV and IT systems to determine how a client can get the longest life and best value from what they already have. There's a lot of 'Value Engineering' going on, as budgets are often half what they were. AV gear with long life cycles like mics and speakers are getting refreshed, not replaced, and we're adding value to that workflow with project management. We start with design, then do value management, and are engaged for the project management piece during construction, which mitigates risk and provides our clients with some great outcomes"



NCC Library Interactive Wall

What Clients Want

The hot buzzwords in education, from secondary through tertiary, are 'hybrid' and 'blended' learning. Everyone wants to implement it, though it's clear not everyone agrees on what it actually means. "These terms get thrown around when educators want to bring classrooms online," clarifies Jack. "But what they mean by it could be anything from the ability to log into Zoom, right up to two-way collaboration rooms with ceiling tile mics, cameras with different presets, and far-end collaboration. There is no perfect technical solution to all of these requirements at the moment. We're doing some proof-of-concept builds, and it's almost like an arms race. Everyone's trying to create a blended environment that 'just works'. Most stakeholders don't understand that you can't just throw a mic and camera and speakers in the room; the platform you choose today will more than likely be limited to a handful of certified peripheral devices. What we are trying to do is develop solutions that work for in-room clients and external clients who opt to BYOM (Bring Your Own Meeting)."

"This is exactly what happened when we all started talking about 'flexible working'," adds Jamie. "We all want to be flexible, but no-one ever really knew what that actually meant. Are you talking about bidirectional communication, or broadcasting to your students? In the digital classroom space, COVID has rapidly sped up adoption. The challenge now is talking to the right people in your client's organisation; the ones who know what's needed, what's possible, and what's not."



Jamie Pereira

The New Environment

As corporate and education alike have rushed to implement workflows based on Teams, Zoom, or Webex, there's been a nationwide crash course in technology for video conferencing. "There's been an understandable rush to implement systems that won't necessarily be their final form," observes Jamie. "It got everyone online, and they're working with what they had. These systems now need to evolve. The organisations that stop and think through their systems properly will come out in front, not necessarily the ones who are first to market."

"I've seen a lot of off-the-shelf solutions implemented where the client didn't see the need for a consultant," Jack shares. "They've bought a bundle that some integrators are offering. But more thought needs to be put into it. Some of these kits are using products that we know are great, but aren't certified for Teams or Zoom. That means if there's a major upgrade to either software platform, then the systems could fall over. Over the next year or two, there's going to be a lot of tweaks and changes because there are so many variables. We're already seeing it and getting pulled into jobs to sort it out. It's the middle and larger scale rooms with flexibility at most risk."

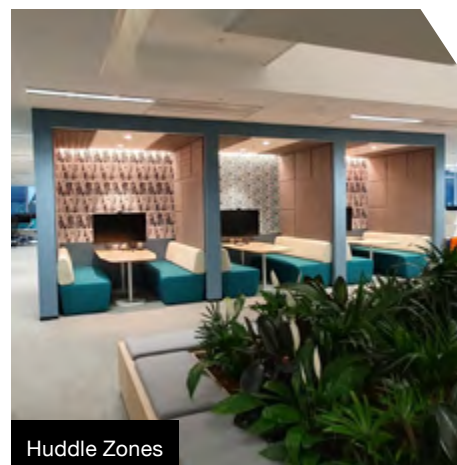
"Measure twice and cut once," concludes Jamie. "You don't want to be reactive, no matter what. Some places are spending big and getting everything online, and in six to 12 months' time they're going to have to spend the same if not more to fix it. It's frustrating, as I hate seeing money wasted, especially when it is not hard to get it right the first time. But I guess that's just more opportunity for us to help our clients, which is good."



Jack Wilson



Corporate Foyer



Huddle Zones



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ICVFX - Australia's first full-service LED Virtual Production solution

With a history in film, TV, VFX and production, Sydney-based Spectre Studios strengthened its virtual production (VP) toolset whilst working on the Hollywood blockbuster X-Men: Dark Phoenix.

The company used real-time engines and virtual production to help visualise complicated stunt and VFX shots for the film, a technique that has been mastered by the team at Proxi and successfully replicated on Triple Frontier. In the true spirit of creative company collaboration, Spectre Studios joined forces with NEP Studios and Big Picture to create ICVFX: Australia's first full-service LED virtual production solution for local and international content creators, bringing the future of in-camera VFX under one roof. Brompton Technology's Tessera SX40 4K LED processor was chosen as the driving power for the studio's LED virtual production workflow.

The facility demonstrates a fully functioning LED wall volume and dynamic 3D environments for VP, as well as motion and facial capture all in one facility, and all with remote access.

"It made sense for us to approach NEP and Big Picture to see where we could help leverage their extensive experience and technical capability to help bring our concepts and research into a reality. NEP had been developing an offering of its own and it seemed like the perfect storm to join forces to see what could come out of this partnership," says Spectre Studios' Technical Director, Rick Pearce.

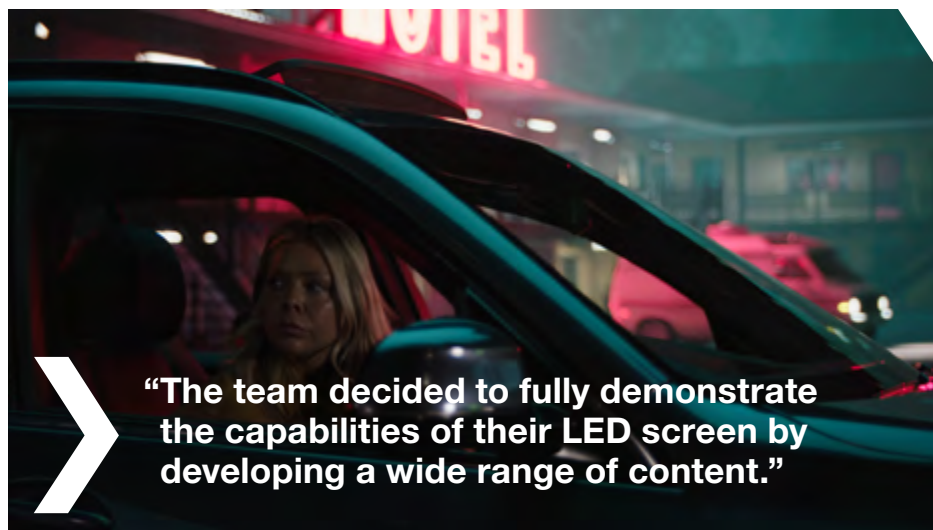
The team decided to fully demonstrate the capabilities of their LED screen by

developing a wide range of content - from SimTrav [simulated travel], interior and exterior locations, as well as a range of sci-fi environments that they staged in order to demonstrate what shooting a production on LED would be like. "We were lucky enough to have our friends at Arri and VA Hire provide some great camera and production gear to create a dream combination of concept, tech, production, and talent," continues Pearce.

In their testing of different products, Pearce and the team at Spectre quickly found that the solution that Josh Moffat, Business Development at Big Picture, developed

for ICVFX was perfectly aligned with what the team was trying to achieve in terms of production workflow. The team chose four of Brompton's cutting-edge 4K Tessera SX40 LED processing system along with eight Tessera XD 10G data distribution units to drive 13.5 by 4.5 metres of ROE Black Onyx 2.8mm HD-LED displays for the wall, as well as 46 square metres of ROE CB5 LED panels for the ceiling, and additional 20 square metres of ROE CB3 panels for ambient lighting and as reflection screens.

"Choosing Brompton was a no-brainer for us," says Moffat. "The company has been our loyal partner and a perfect LED processing solution for years, with its Tessera processors offering exceptional colour control and comprehensive image manipulation, coupled with quick easy tools like the OSCA seam correction feature. The advanced remote control options have also been a particular benefit to us in this workflow, given the current situation."



"The team decided to fully demonstrate the capabilities of their LED screen by developing a wide range of content."



MDG theONE

by Tony Davies

If you want to make your lights look special, you'll need some sort of smoke effect. Over the years, we've seen all sorts of machines on the market but we are really impressed with theONE from MDG. Sure, it is expensive, but you get what you pay for with this unit.

At Chameleon, we always have a vast and diverse inventory of products for hire. We've had MDG's Atmosphere machines running on shows for a long time and liked how they worked.

It's On All The Riders

In the world of smoke machines, there are some that will only be used by SOME artists. A lot of the top artists are specifying this unit, so that's what we invest in. It doesn't really matter if the choice is driven by artist sensitivities or the production crew who also spend hours in this 'smoke', if it's on the spec, we need to be able to supply it.

It's not some low-end carcinogenic machine "blowing whatever out" but a best practice, safe, and easy-to-use elite bit of kit. It does the job both well and reliably.

The high-end stadium market is limited, but it's where we sit, and MDG's theONE is one of the best products in that sphere.

ROI – Eight Into Two

You could probably buy a small car for the price of one of these, but we still get good return on the investment. Before we had theONE, an arena gig would need six to eight earlier generation foggers and hazers. We can easily cover a big stage with just two of these. That also means only two machines to maintain, so we keep our ongoing costs down and payback high.

The great benefit of theONE is that it runs both fog (for a blast) and haze (for a mist) and seamlessly switches between them, with 100% duty cycle in both modes. Because the tanks, juice, fans and everything else is

Tony Davies has been heading Chameleon Touring Systems for over 30 years. Since 1988, Chameleon have supplied equipment and personnel for live entertainment, concert, film, television, theatre, architectural design, installation and consultation as well as special events in Australia and around the world.

contained in a cradle, it's great for touring. We also use a soft cover for transit. Roll them in, pull the cover off, and away you go.

Oils Ain't Oils

Some people might be tempted to put different or cheap fluids in their atmospheric generators, but we only ever use the recommended material. That way we don't damage our machines and get optimum performance from them. To us, it's a no brainer.

The CO2 cannisters that the power theONE are standard hospitality style and we keep a stock on hand to run a few different machines with appropriate regulators. The run time is fantastic, and we can do multiple shows before refilling.

theONE Touring, Back



theONE Touring, Front Fan down

theONE Touring, Front Fan up

As a production hire company, we are pretty hard on our gear. It's in and out of trucks every day and moved around pretty harshly, so we look for solid engineering in products that we buy. In the 12 months that we've had theONE, we've had absolutely zero issues with them. They are very much bulletproof and reliable.

Service and Support

ULA Group's Technical Sales and Support Manager Thor André has been a real find for ULA. He understands both Chameleon and our business, and knows that these things matter.

Product Info:

www.mdgfog.com/en/theone

Distributor Australia & New Zealand:

www.ulagroup.com

MDG theONE – The Specs

Fluid consumption:
65 ml at 2.07 bar per hour / max output

Haze volume control: Yes - variable

Gas consumption (CO2 or N2):
0.35 kg per hour / max output

APS (Automatic Purging System):
Yes - standard

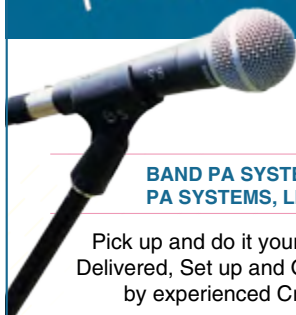
Haze Colour: Pure white

Particle size: 0.5 - 0.7 micron

Total running time: 308 hours
(50 hours – gas) 20 L container,
full intensity

Fluid type: MDG Neutral

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WHAT'S A PA SYSTEM?

by Duncan Fry

When I first started playing in a band we had no idea about using a PA system, and used to put the vocals through my guitar amp, which was a little Jansen combo from New Zealand that looked exactly like a Fender but cost me a lot less. All valve, with two 6L6 power valves and some little 12AX7s or similar. It was like a blackface Princeton but with the power of a DeLuxe.

This vocal arrangement was somewhat less than perfect, as we also had the rhythm guitar and the bass going through the amp as well! Hey, it had 4 jack socket inputs, so we decided they must have intended them all to be used. Although convenient, vocal clarity was not its strong point. It was a great amp for guitar but not so much as a PA for the whole band. When we started to get gigs other than at friends' parties it was obvious we needed something better and more suitable for the purpose.

The thing was, you never really saw the PA system on television or in films. People would jump on stage and start singing, and miraculously a complete backing track and their voice would come out as if by magic!

So we went to watch other bands, to see what they used. Some had bought their own PA systems, but they were ones that were semi or fully professional and could afford it. We were still at school, poor and broke. "You should rent a PA from McLean Sound," said other bands who were in the same boat as us. "See Mrs Mac, she'll sort out something for you. They're in Balaclava Road - give 'em a

call and see."

We had a party to play at that Saturday, so in the morning the drummer and I went to check the PA situation out, and met Mrs Mac, as everyone called her. A lovely lady who ran the business with her husband Stewie, who built the equipment and also ran the tin horn side of things at racetracks, concerts and stuff.

"Well boys," said Mrs Mac, "for bands we've got the budget systems, with two microphones, or the bigger systems with three microphones."

"What have you got available for tonight?" asked LL, the drummer.

"Ah, tonight?" she said, flicking through the pages of the order book. "Only the better system left I'm afraid," she said. "Saturday's a busy night."

"Can we take it now?" I asked, fearful that my poor little amp would be doing all the work yet again.

"Yes, boys - here, just fill in your names, address and Driver's License number, and bring it back after you finish tonight."

"That might be a bit late," I said cautiously.

"That's alright, we'll be open," she replied.

"How much is it?" LL asked. As the bands' financial controller, he was worried that the cost might blow out any chance we had of making any money from our fee for playing at the party.

"That's a \$5 system," she said, "paid in advance."

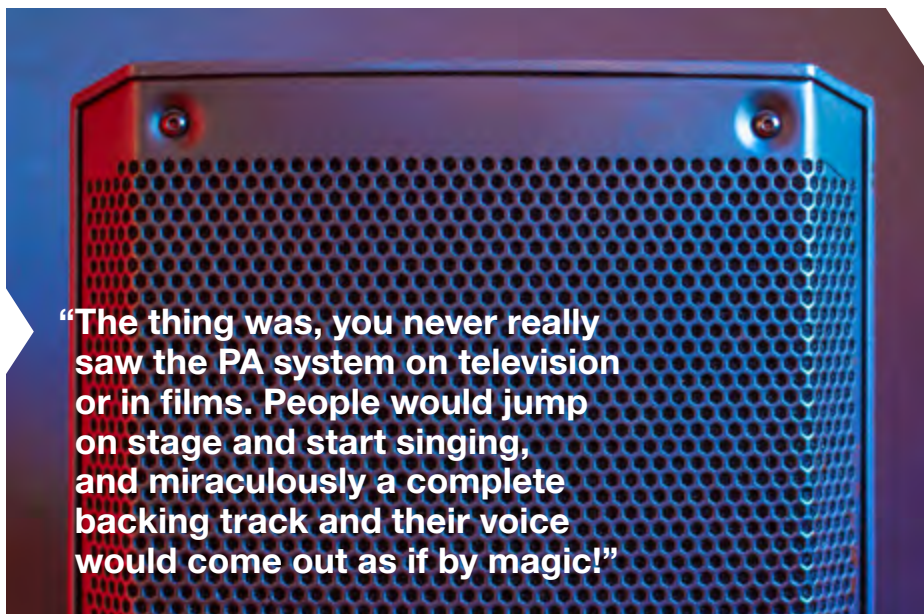
I nearly fell over. That was exceptionally cheap even at 1960s prices! LL opened his wallet quick smart, pulled out two crisp \$2 notes and a \$1 and handed them over before Mrs Mac changed her mind!

We went out to the back of the shop and hauled the PA out into the car. I had borrowed the family Ford Falcon wagon with the fake woodgrain trim down the sides, so there was plenty of room.

The PA consisted of two lacquered wooden columns each with four 12" speakers in them, a small steel grey lunchbox containing the amplifier with three or four knobs on it, three microphones and stands, plus a cardboard box of various cables. In later life I used to dream of a simple system like that as I loaded my double 4-way in and out of venues around Melbourne and Victoria. I used to console myself with the thought that I was at least getting more than \$5 a night for doing it!

And so began our musical adventures in the nocturnal world of the PA/band business.

Pick it up in the afternoon, take it back after the gig at about 2 am. That was the life, week in, week out. The band members might change, the whole band might change, but calling in to McLeans to pick up a PA for the night stayed the same for a long while.



It was a time before the use of the PA as a complete sound system to mic up every instrument. All we did was put the vocals through it, and maybe hang a mic over the drums if required. If you needed more guitar volume you had to turn it up and, when that didn't work, you bought a bigger amp!

So I sold my little Jansen amp and have regretted it ever since. It had a great sound and not once stopped working - and you can't say that about many guitar amps! But I needed a louder amp so I bought a 60W Strauss 'Polka' amp head from Gary Nessel, with two speaker boxes each fitted with two of the classic Celestion G12M speakers in each of them. Then I got a cabinetmaker to build me a Marshall shaped double stack, and put all four speakers into the top angled box. I used just the top angled cabinet for small gigs and for big gigs just sat it on the empty bottom box! Image was everything and bigger was obviously better.

The prices gradually changed, but Mrs Mac was always there to book a system out and welcome it back in at all hours. Some nights their son Young Hughie would be wandering around in his pyjamas, absorbing the nuts and bolts of running the business.

One night drummer LL, bass player RH Positive and I dropped the system back to the shop and Stewie was busy testing out a big system for Flemington Racecourse - I think it might have been for the Melbourne Cup, but I couldn't swear to it. There were tin horns and speaker boxes piled up everywhere as well as quite literally kilometres of cable.

"Have a listen to this, fellas" he called out.

'WEEEEEEEE' A monster burst of feedback shredded our eardrums and we ran outside screaming, our hands pressed over our ears. Stewie stood there unfazed, and leant over to turn it down. He turned to us, chuckling and said,

"That bother you, does it, boys?"

Stewie actually did the PA for the Queen's visit, where she was going to speak to a huge crowd that had gathered in the city. Unfortunately when she spoke she couldn't be heard. It turned out her security people wouldn't let Stewie through the crowd to turn the system on. Eventually they had to let him through, and then it all went off without a hitch. But the next day's morning newspaper had a picture of a smiling Stewie holding an SM58, and in the accompanying story, not holding back with his opinion of the Queen's security people. In big type the headline read
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