



LIGHTING | AUDIO | VIDEO | STAGING | INTEGRATION

THE INSTALLATION ISSUE

- › FORTITUDE MUSIC HALL, BRISBANE
- › FCTN NIGHTCLUB, CANBERRA
- › PRINCE ALFRED COLLEGE, ADELAIDE
- › PRINCESS CRUISES WELCOMES L-ISA ONBOARD
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Kinetic lighting, form,
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- Sydney venue
rout continues
- Eventing The
Future, Wellington
- QSC Pro back
with TAG
- Inaugural
Australian
Festival Industry
Conference

REGULARS

- Andy Stewart
- Jenny Barrett
- Duncan Fry
- How To

ROADSKILLS

- Childish Gambino
- Dope Lemon

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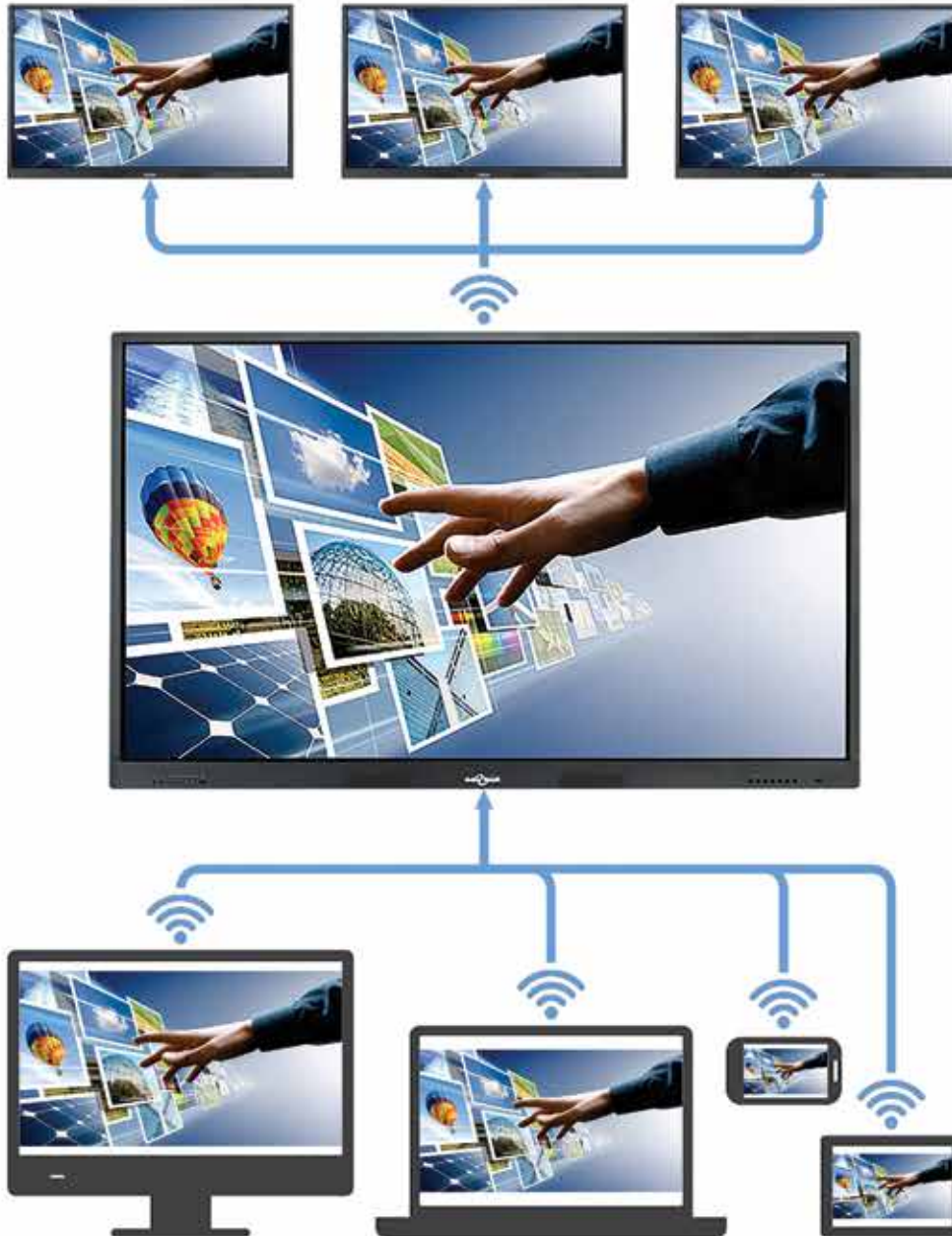
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by **HARMAN**



ASTERA IS A MATCH FOR THE TITANS

Titan Fitness is an independently-owned fitness studio in Coogee, NSW, which prides itself on being a unique experience with a dedicated team of instructors and experts plus state-of-the-art facilities focussed on offering the highest standards of equipment and inspiration to its members.

The fully-equipped 4-floor facility has been open since 2009, and its Spin Studio has recently seen the installation of 24 Astera AX1 Pixel Tubes in a ground-breaking new LED lighting installation, supplied to installers Aeromic by Astera's Australian distributor, ULA Group.

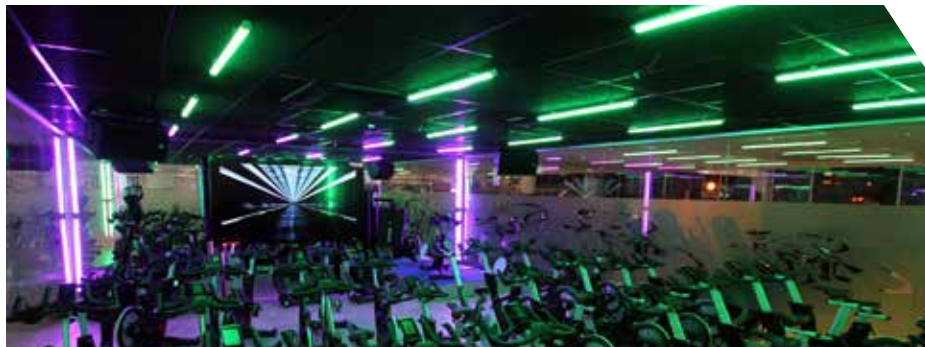
Aeromic has been supplying and manufacturing audio and AV products to the fitness and professional health industries since 1994, and Titan Fitness has been a client for some time, explained Andrew Zarounas, Aeromic's director and co-owner. He and Titan Fitness CEO Mets Analin share

a passion for the industry and a flair for being innovative, different and pushing the envelope.

Mets approached Andrew about the potential lighting installation, wanting to ensure that Titan Fitness stays at the forefront of the game. "Any gym can have the same equipment and classes, but not everyone has the same focus on ensuring that every customer's experience and interaction is the best and most positive possible," he stated.

He and Andrew have both noticed lighting playing more of a role in fitness spaces with some of the progressive overseas operators, and they recognise the positive benefits that lighting and colours can have on moods and an environment.

Mets specifically wanted lighting in the



Spin Room where he thought it would be invigorating and energising to have different lighting states, colours, and sequences available to the instructors as they developed their classes.

Andrew compiled a plan of what he thought would work well and look good utilising the AX1s, then he and Thor Andre, ULA's technical sales & support specialist, got together and finalised the design. Two Pixel Tubes are mounted vertically in each corner of the room, with four rows of four tubes rigged in the ceiling above all the spin machines.

All the tubes are controlled via an ART7 AsteraBox CRMX interface and an iPad running the Astera App.

Andrew selected the Pixel Tubes after conversations with Mets, and because "they

create great lighting effects without needing complex DMX programming!"

In the world of fitness, simplicity is essential, and the AX1s allow a large variety of lighting sequences to be accessed at the touch of a button, which was a key factor in the decision.

Thor visited the site several times to get the installation just so and to answer all the questions that arose during the process. "Without that fundamental relationship, I may have chosen different products," stated Andrew. The combination of the quality of the product, the fact that it is IP65 rated - spin studios have a high humidity - and the App control were the main three features clinching the decision.

The installation also needed to be easily operable by fitness trainers and managers

and other non-technical staff, and the App-based control is a big hit with the instructors.

"The Astera App is a perfect solution," enthuses Thor. "Coupled with the sound-to-light functionality, it works beautifully and doesn't put people off exploring the many possibilities."

A range of different sequences specifically for Titan Fitness have been programmed including walk in, warm up, cool down and high energy states which can be activated, changed and controlled at the tap of a button in the app. Some of the sequences are sound-to-light triggered; the Astera ART7 interface box listens for 32 discrete frequencies in the music, so when sound-to-light is applied it produces a dynamic effect.

Everyone is delighted with the results. "Music and lighting are extremely important in our setup - it really does enhance the workout for our members and instructors," commented Mets, who adds that they have seen an increase in class numbers since the lighting was installed.

Thor sees great potential for this style of lighting system: "It is all about making it fun and interesting for those working out, and professionals at the cutting edge of the commercial fitness industry like Metz recognise that."

QSC 'Aligns' Distribution as QSC Pro Returns to TAG

In early August, 18 months after Jands were appointed the QSC Pro Distributor for Australia, Marcus Winkler, Managing Director QSC EMEA GmbH, issued a 30 day "no fault" notice of termination. Jands originally agreed to take on the distribution following an approach by QSC stating they were looking for an improvement in their Pro business and positioning in Australia.

"When we first met with QSC Pro we were given six key areas that QSC wanted to target for improvement in Australia" said Geoff Smith, General Manager Jands Distribution. "Last month we completed our first full fiscal year with QSC Pro and Jands have delivered on all requirements, including as we understand it, growing the business by about 20%. To be told we were being terminated while on such good terms was unexpected."

"In our short time with QSC Pro we made some great friends and received enormous support" said Paul Mulholland, Managing Director, Jands. Paul went on "Everyone is asking why and unfortunately all I can offer is what we have been told by QSC and that is that 'QSC is aligning the brand'."

"I would like to both personally, and on behalf of Jands, thank everyone from QSC

Pro who supported us throughout our short time together. Thanks to our staff who committed to QSC with enthusiasm and passion and delivered on everything that was asked of them. Finally, and most importantly, I would like to thank all of our dealers who believed in Jands and QSC and helped us deliver a great result." said Paul Mulholland.

QSC then announced that TAG will again distribute its Live Sound and Systems solutions in Australia, effective immediately.

"We are thrilled to expand our 25-year strategic partnership with TAG," said Andy Pearce, QSC Director of Sales for APAC, who will be managing the transition. "TAG brings the same level of expertise and passion to the new CP Series loudspeakers, the expanding "World of K" loudspeakers/subwoofer portfolio and TouchMix Series, as it brings to the Q-SYS Ecosystem."

"Our customers in Australia are comprised of sophisticated users who demand solutions that are innovative, simple to use, and help them create the exceptional experience end customers have come to expect," says Giles Brading, National Sales Manager, Technical Audio Group. "We can now offer those customers a more holistic offering spanning the entire QSC portfolio and a singular focus on delivering the right solution. We value our relationship with QSC and are proud to be brand ambassadors for one of the most trusted and innovative manufacturers in our industry."

Soundcorp ends retail sales – Focuses On B2B And Integration

As part of the acquisition of Soundcorp and Rutledge AV by American AV giant Diversified, Soundcorp are restructuring their core business model.

Soundcorp discontinued the retail side of their business and closed their beautifully appointed shop in South Melbourne on Friday 9 August 2019. They will also be closing their online business over the coming weeks as they clear remaining stock through their eBay store.

Soundcorp's focus moving forward is business-to-business sales and audio visual system integration. Already a giant in the field, Soundcorp counts several major educational institutions amongst its integration customers.

Soundcorp have assured existing customers that they will provide ongoing support on all warranties or returns on purchases from their showroom or online store. Email support@soundcorp.com.au

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Amber Technology launches Learning Glass lightboard products in Australia and New Zealand

Created by Dr Matt Anderson, Physics Professor at San Diego State University, Learning Glass allows lecturers and presenters to scribe instructional text and drawings onto a transparent glass board, while the audience can see through to the scribe.

The Learning Glass lightboard has internal lighting to illuminate clear and crisp writing or drawings, while electronically flipping the image to enable the audience to read text in the correct direction.

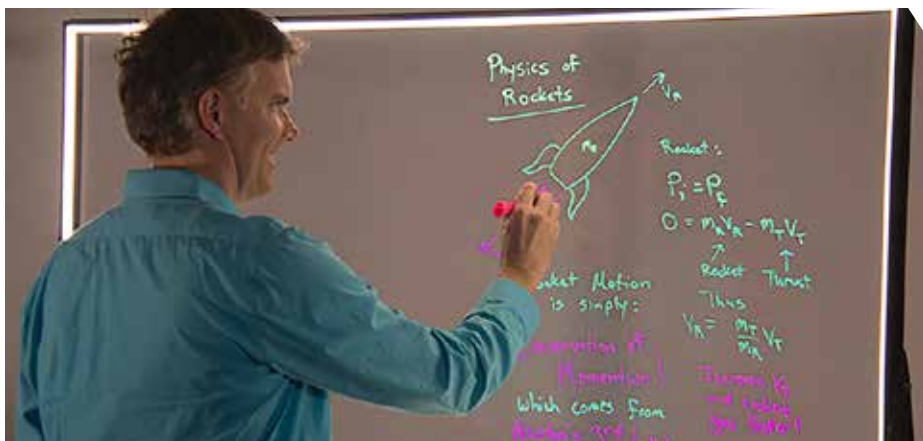
“Learning Glass is looking forward to developing our partnership with Amber Technology to introduce our technology to the Australian education market” said Dr Matt Anderson, CEO and President of Learning Glass. “Like the team at Amber, our commitment to quality and service is unrivalled.”

“Amber Technology is excited to include Learning Glass in its expanding portfolio of brands,” commented Peter Amos, managing director, Amber Technology. “Its innovative

technology is an exciting addition to our range, and complements Amber Technology’s current projector and interactive screen brand offering, providing installers and integrators with an even stronger range of solutions to meet different customer requirements.”

Learning Glass technology provides K-12 to higher education institutions, businesses and media production companies an innovative solution to deliver engaging and informative content, while improving the viewer’s experience.

Amber Technology launched Learning Glass Lightboard products at its Showcase Road Show which ran in major cities across Australia during July and August 2019.



Riedel Further Expands APAC Footprint with Two New Appointments

With the recent opening of its Beijing office, Riedel Communications’ presence in the Asia-Pacific region now spans across Japan,

China, Singapore, and Australia. Riedel’s ongoing efforts to establish a regional framework for supporting a growing Asia-Pacific customer base will now see the company providing tailored customer service, system design, training, and sales functions.

“We combined Riedel Asia-Pacific into a single region in 2015, and we’ve seen some excellent growth since then,” said Cameron O’Neill, Director, Asia-Pacific. “This has come to include technical service and repair capabilities in the Asia-Pacific region, localised sources for training and education, and generally being able to get closer to our current and future customers.”

To broaden knowledge and empower Riedel customers, Julian Hewitt has been appointed as Regional Training Manager. As part of this very strategic role, Hewitt will lead the development and deployment of various training materials, workshops, and industry educational programs.

Hewitt’s 10 years of Riedel experience has covered roles from user to consultant and he has worked extensively with many key customers in the region including Lighthouse Church in Singapore, TV18 in India, PCCW in Hong Kong, and the Sydney Opera House in Australia.

“Having excellent equipment is only half the story. Having amazing operators and engineers using the equipment completes the picture,” said Hewitt. “With comprehensive training materials and educational programs tailored to the specific needs of the region, our APAC customers will get even more out of their Riedel gear.”

To further strengthen pan-regional communication and awareness, Riedel has also appointed Deidre Joubert as Regional Marketing Manager, Asia-Pacific. With experience in commercial roles in both professional sport and event broadcast for events such as the America’s Cup and Ryder Cup, Joubert will focus on supporting the Asia-Pacific region by developing a more localised approach.

“Our marketing strategy needs to reflect, both, the differences and similarities in customer motivations and requirements across this economically and culturally diverse region while providing a conduit to the full range of Riedel’s knowledge and global experience,” said Joubert. “To be effective in our communication and have a genuine impact, we have to be able to talk to our customers where they are, in a language they understand. By developing local support structures, we increase our ability to influence decisions and deliver positive outcomes for Riedel.”



Julian Hewitt



Deidre Joubert

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Inaugural Australian Festival Industry Conference Announces Second Round of Speakers

The inaugural Australian Festival Industry Conference (AFIC) will be held across 24-25 October 2019 at Opal Cove Resort in Coffs Harbour, NSW. Founder and organiser, Carlina Ericson, has unveiled AFIC's program of speakers, who represent some of Australia's biggest names in festival management, consulting and Government.

AFIC's keynote speaker is one of the biggest names in the international music industry, former Senior Business Development Manager – Australia, New Zealand & Hawaii for SXSW (South by Southwest) Conference & Festivals (USA), Phil Tripp.

Phil is a veteran of the festival, music and entertainment business, having worked in the industry for almost 50 years. His career spans across numerous internationally renowned festivals, including working for George Wein's Festival Productions Inc. on Newport in New York, New Orleans Jazz and Heritage Festival, Kool Pacific Jazz Festival, Houston Jazz Fest, Atlanta Jazz Fest and the Memphis Music Festival.

For Afro-American promoter Quentin Perry of Taurus Productions, he handled artists such as Earth Wind and Fire, Rick James, Spinners, Marvin Gaye, The O'Jays, Prince, Parliament Funkadelic and many more across festivals and concert tours. He also delivered festival and concert production for leading Southern concert producer Alex Cooley, covering internationally recognised acts such as The Allman Brothers, Lynyrd Skynyrd, ZZ Top, Pink Floyd, Jess Beck in major metropolitan outdoor stadiums.

In 1981 he moved to Australia where he later founded Australia's leading music news website (TheMusic.com.au), published the AustralAsian Music Industry Directory for 22 editions, and ran the Australian Music Industry Conference over 19 years in Sydney.

In 2002, he took over Pacific operations for South by Southwest Conference and Festivals (SXSW) in Austin, Texas, and grew its Australian attendance from 20 delegates and five bands to 850+ delegates and 54 bands.

AFIC is the only one of its kind in the country and aims to discuss key national issues facing the industry, in addition to facilitating professional development of, and the promotion of careers in festival management.

Attendees will have the chance to learn from some of the country's most experienced professionals around legislative changes, operational developments, event management technology advances, volunteer management strategies, and more.

"Anyone who works in the business of supplying services and infrastructure to festivals and major events (including music, arts & culture, food, etc) is encouraged to attend", says AFIC founder, Carlina Ericson.

"The program comprises of two days of expert speaker sessions, workshops, local event facilities fam and cocktail party industry networking event – a perfect opportunity for suppliers to engage directly with some of Australia's most prominent festival managers".

Other confirmed speakers and workshop presenters include:

- Heather Croall, Director and Chief Executive of Adelaide Fringe
- Glenn Hardy, IER Pty Ltd
- Angus Abadee – A/Director, Policy & Legislation, Liquor & Gaming NSW
- Jon (J.C.) Corbishley FSIA, Director, The Safety Officer Pty Ltd
- Chris Spencer, Director of Saltwater Freshwater Alliance
- Dan Heather, Coffs Harbour City Council's Section Leader, Stadium and Major Events
- Mike Hammond – CEO & Director, EMS Event Medical
- Elliot Williams – Clinical Lead, St Johns Ambulance
- Daniel Madeddu – Director, Alcohol and Other Drugs, NSW Ministry of Health
- Sam Wild, Create NSW
- Alana Hay, Director, Milestone Creative
- Leah Trafford, Australia Event Director, SailGP
- Dane Hunnerup, Australia Council for the Arts

Tickets are on sale now. To view the program or to purchase tickets, visit australianfestivalconference.com.au

Eventing The Future Sets the Scene - Wellington conference delivers two days of value

by Julius Grafton

The annual 'Eventing The Future' conference in August ran a full house, bringing event professionals from all over NZ together for two days of sessions. Put together by Peter Burnley and his partner Anne Hindson, this 19th annual conference is also their last as they have sold it to trade association NZEA.

With the theme Recalibration, over 30 sessions were run up to three at a time, with some startling insights into the NZ events industry. The continual impression I saw was that they do more with less – and that Government are much closer stakeholders than seen in Australia where there is an adversary gap between the industry and regulators.

Of note, the session 'Esports Explosion' outlined a dramatic upswing in this kind of competitor event form. Duane Mutu, Director & Co-founder of Letplay.live detailed the surge in live and online events associated with online games, an avalanche that started in Asia and has now reached NZ.

He put some startling numbers to the value and growth of events around Esports, and detailed the first specific arena for Esport. Engadget say: "The Overwatch League's Philadelphia Fusion will build a \$50 million esports arena to host its matches and is expected to be playing in the new building by early 2021. The 3,500 seat arena will be notable as it's the first dedicated, purpose-built stadium for Esports in the Western Hemisphere."

Mutu also outlined the revenue streams for Esport are different because a game like Fortnite is owned by the developer company, in this case Epic, from North Carolina. Events are licensed, and are sponsorship heavy. But the numbers are themselves epic.

Wikipedia: "In January 2019, Marshmello collaborated with the free-to-play video game Fortnite Battle Royale to throw an in-game concert, along with releasing merchandise based on the game. On February 2 and 3, the

concert was held online, amassing over 10 million players on the first day."

Andrew Tuck from Homegrown Events spoke of the Homegrown Festival on March 23 along the Wellington Waterfront which followed the terrorist attack in Christchurch a week earlier. Initially all outdoor events across NZ were cancelled, but Homegrown worked with the city and the police to reinforce its safety and security planning.

"We had 25,000 at 6 stages and planned a minute of silence at 9.30pm across the whole site. The Police detected a suspicious activity in Zone 6 and at 9.18pm we evacuated that site – over 10,000 people. The emergency plan had all radios go to one channel – we had everyone out before 9.30".

"17 seconds after that went on social media, I had a call from Germany. That's how hot social media runs. The Police cleared the site and we did an Invac and put everyone back in again. The band came on at 10.10pm."

Tuck is the guy you want in the hot zone. "We had plans on plans. If we need to shut a street right now, we just put fire engines across the end. We had forklifts, trucks. And the line of command went back to just one guy – that was me".

Some testimonials were surprisingly frank, as is the way in NZ, with raw honesty more evident than seen in Australia. One event producer told of budget cuts after she had engaged all the suppliers, so she went ahead and paid them herself, not getting fully reimbursed. "I learned to say no from that".

The conference was heavy with event managers and organisers, but strangely light on production suppliers, with Aggreko Generators the only supplier sponsor. It was a surprise to me, since this was an audience who engage with and hire technical and event production.

The NZ industry were alarmed at the challenges faced by the Australian industry,



Peter Burnley and his partner Anne Hindson



Eventing The Future



Andrew Tuck from Homegrown Events

such as the NSW Government's 'War on Festivals' and Sydney's moribund night-time economy caused by the lock out laws that stop patrons entering a venue from 1.30am in the city. Stories were circulating about Madonna and Bruce Stringsteen with their tour parties being turned away from Sydney's Ivy. It was frankly embarrassing for this writer, hailing from Sydney.

"How can your industry be so at odds with your Government?," a NZ Government events professional asked me with complete confusion painted on her face. "Surely they count the value of live events and festivals like we do. Don't they?"

Now that NZEA hold the reigns, the conference enters a new era. It certainly was worthwhile.

Sydney venue rout continues – RHI closes to events

by Julius Grafton

On May 1st the Royal Hall of Industries was taken off Sydney's event venue market and given to the Sydney Swans for their new HQ. The 5,500 square metre space has been used for decades, most significantly as the annual venue for the huge Gay and Lesbian Mardi Gras party that caps the event. The Mardi Gras contributes many millions of dollars to the Sydney tourism industry, which is struggling against reports internationally that Sydney's nightlife is very poor following five years of lockdown laws.

When announcing the RHI would be 'repurposed', the government said that by retaining the adjacent Hordern Pavilion, and with the inclusion of an 'event space' within the new Swans floorplan, the site would still be available for the Mardi Gras. In fact, the event space within the RHI renovation is actually what they call a 'Multi-purpose indoor facility available for community use and public events such as junior club nights, school graduations, functions' has no access for plant or production to the multi purpose field of play so no boomlift for rigging or fork access. The floor is an expensive sports floor which, no doubt, will preclude many essential pieces of production equipment.

Also note there are no public toilets directly accessible from the sports floor unless guests at an event are able to use the locker rooms. This possibly means no licence for public events.

Ideology Against The Arts

Further, the NSW Government seems to have a problem with truth. The recent walkout of

builder Lend Lease at the Sydney Football Stadium revealed that the 'one contract to demolish and build' that was announced before the state election in March, was actually not one contract at all. It had a quit provision, and Lend Lease did indeed walk away, saying they could not deliver the project for the agreed \$700m+.

Now the RHI redevelopment faces contradictions as well, with the original announcement saying the government would contribute \$20 million to both the RHI and some Hordern Pavilion refurbishments. This turns out to be an untruth, as none of that money is directed at the Hordern. The total AFL investment in the RHI is \$55m, with \$15m coming from the federal government.

Sydney's event industry now has less floor space than when the current government came to power eight years ago. It closed the 12,000 seat Sydney Entertainment Centre and the Darling Harbour Convention Centre, leaving Sydney without those venues for three years while a 'design and construct' deal then returned the International Convention Centre, with its 8,000 seat venue.

The builder won a windfall, converting the Entertainment Centre site into five high rise apartment towers, while the smaller replacement venue at ICC cannot accommodate most of the sport and larger touring shows that the Entertainment Centre did. As to the ICC, many industry observers have complained that the venue was value engineered with the design and construct delivering deficiencies such as pillars in the lower exhibition hall, low floor weight loadings in The Gallery (due to a cheaper concrete slab design) and bad access to the Parkside Ballroom – which runs right through The Gallery. Melbourne recently expanded their MCEC to make it the largest in Australia, while Brisbane's BCEC has increased its event volumes every year since an expansion earlier this decade.

One small glimmer of hope for Sydney is that the developer-centric State Government is currently reviewing the lockdown laws. During the review, nightclub boss Justin Hemmes said that late night takings at his signature Ivy venue had fallen 55% since the laws, which are the cause of the complete closure of the Kings Cross nightclub precinct. The other two industry concerns in NSW are the 'war on festivals' (a punitive government licensing regime that imposes impossible costs on all outdoor events) that has seen many small and large festivals closed or relocated interstate this year, and the mooted announcement of a new operator for the shuttered Theatre Royal. If the theatre does eventually reopen, it will move Sydney's theatre market up. Sydney will then have just under half the number of theatre seats as Melbourne.

A final note on Sydney is a high visibility police operation, allied with the war on festivals, and one that delegates at the recent Eventing The Future conference in New Zealand point-blank refused to believe is called 'strip search'. Currently deployed outside every music festival, and at sites like Sydney's Central Railway Station, it involves a large number of police forming a cordon with sniffer dogs. Anyone the dog indicates, or anyone who 'looks nervous', is taken behind a screen and stripped naked. They are then told to squat and cough. Males are directed to lift their genitals, so the police can check whether they have pills taped or hidden.

This terrifying invasive attack on civil liberties is a hot topic on social media across the world, and clearly is deterring tourism. The ideology behind all these attacks on venues, culture, the arts, theatre and music is hard to understand. But so was the 'greyhound ban' where the entire sport of greyhound racing was told to shut down. That uproar did produce a backflip, but the routing of the arts didn't. The state government won the recent election.

Dave Coxon joins PAVT

Last month, veteran Sydney integration business DJW Projects was sold to Marrickville firm Buzz AV Projects. Dave now finds himself back in the news with the announcement that he has joined distributor PAVT, continuing to operate in the hospitality and entertainment scene that he knows so well, not just in Sydney, but nationally.

Long known for his championing of PAVT-distributed brands EAW, Powersoft, and Symetrix, the newly created position is a natural fit. "Dave was such a great business partner for PAVT, we couldn't let him leave the family," says Graeme Stevenson, Managing Director of PAVT. "Dave has a profound understanding of the regulatory, technical, and practical nature of hospitality, and has been consistently delivering excellent work in

partnership with us for over 16 years. We're really happy to keep his knowledge and experience in the industry."

"As an Install AV contractor over the past 16 years, I have watched technology advance dramatically," says Dave Coxon, "and I have been privileged to work with many talented people. As the chapter of my life involving lots of after-hours commitments winds down, I look forward to new challenges. I am looking forward to working with the team at PAVT in my next adventure. Through the DJW days, I developed a love of PAVT's brands, primarily because of their sonic qualities and reliability."

"I hope that going forward with this opportunity enables me to pass on any useful knowledge I have garnered over those years

to the next generation," concludes Dave. "It's about passing on the baton, so to speak."



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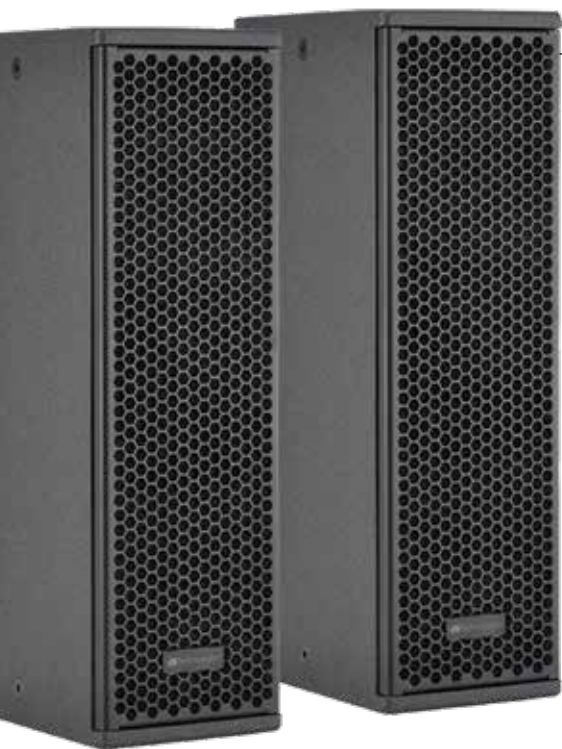


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NEW GEAR



dbTechnologies VIO X205

The VIO X205 is a 2-way speaker equipped with 2x5" (1" voice coil) and 1x1" driver (1.4" voice coil). The 400 W RMS DigiproG3 amplifier powers a cabinet able to deliver up to 126 dB despite its very compact dimensions. The X205 is enabled for real time monitoring and remote control via RDNet protocol and Aurora Net software (Windows and Mac). The cabinet is also provided with on-board controls to set High Pass Filters as well as input sensitivity. On-board presets let users adapt High Pass Filters to the chosen application. The solid wooden cabinet is reinforced with a polyurea finish and features M10 threaded nuts on top and bottom allowing installation with accessories WB-VIOX205 H (horizontal bracket) or WB-VIOX205 V (vertical bracket). The cabinet can be easily installed on a pole thanks to the SA-VIOX205 pole mount adaptor (35mm) allowing two tilt options.

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New Zealand: Direct Imports directimports.co.nz or (06) 873 0129

Tascam SERIES 8p Dyna

The SERIES 8p Dyna is an 8 channel mic preamplifier with analogue compressor designed for professional studios, home studios, and live recording. It features high spec ultra-low noise input using Tascam HDIA mic preamplifiers, and supports audio formats up to 24bit/192kHz. Phantom (+48V) power is selectable per each channel, and the analogue 1-knob compressor is capable of true bypass. Two S/MUX optical outputs allow eight simultaneous channels up to 96kHz (using both ports), and Word IN/OUT BNC connectors (with IN/OUT/THRU switch) allowing syncing to other equipment.

Australia: CMI Audio cmi.com.au or (03) 9315 2244

New Zealand: Direct Imports directimports.co.nz or (06) 8730 129



Claypaky Sharpy Plus

The Sharpy Plus is fitted with an Osram Sirius HRI 330W X8 lamp and weighs 23 kg. Its body is slightly larger than the Sharpy's, to house an optical unit with a zoom that ranges from 3° to 36°. Its minimum beam angle of 3° makes it possible to generate the narrow parallel light beams essential for beam light mode. Its wide zoom range also allows large beam angles, which makes the Sharpy Plus a perfect spotlight for all purposes.

Australia: Show Technology

www.showtech.com.au

or (02) 9748 1122

New Zealand: Show Technology

www.showtech.com.au

or (09) 869 3293

Epson EB-L20000UNL

The new EB-L20000UNL Laser WUXGA 3LCD projector delivers white and colour brightness at 20,000 lumens at WUXGA (1920 x 1200) resolution with HDBaseT connectivity. It has a robust, compact and lightweight chassis that makes it easy to integrate into existing infrastructure. The new projector also features support for HDR, 360-degree installation, and a sealed light source and optical engine to protect from dust and smoke.

Australia: Epson

www.epson.com.au or (02) 8899 3666

New Zealand: Epson

www.epson.co.nz or (09) 366 6855





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Fohhn PS-800

The PS-800 is a multi-purpose 18" subwoofer. It's a passive sub with a vented design and direct dispersion – designed to match Fohhn's concert sound systems Focus Venue and Perform Tops, as well as for tops from their X Series. In conjunction with the DSP-driven DI-amplifiers it provides precise and powerful sound for concert halls, clubs, stadia and open-air festivals. PS-800 is suitable for horizontal, vertical or end fired sub-arrays, and cardioid setups.

Australia and New Zealand : CMI Audio
www.cmi.com.au or +61 (0) 3 9315 2244



NovaStar NovaPro UHD Jr

The NovaPro UHD Jr is NovaStar's all-new video controller, combining 4K processing and 4K transmission into a single piece of technology. The UHD Jr puts out 4K x 2K @60Hz or 8K x 1K @ 60Hz, which is 4096*2160@60Hz / 7680*1080@60Hz. It also allows free scaling to any size, with post-scaled images remaining clear and sharp. Onboard are Real4K inputs, including 1x DP, 1x HDMI, 2x SDI, 4x SL which can change to 2x DL DVI. The four DVI inputs can link together into a single independent 4K x 2K or 8K x 1K input. There are a total of 16 Neutrik Ethernet ports and 4 optical ports, with a total loading capacity of 10 million pixels. The UHD Jr has ultra-low latency, making sure that in live applications the display matches the live action.

Australia and New Zealand:
NovaStar www.novastar.tech
or +61 (0) 435 970 315



NEW

AKG K361 & K371

The AKG K361 & K371 are closed-back professional headphones that marry the sonic precision of a studio headphone with consumer fit and form factor. 50 mm drivers provide superior performance and extended bass response. The headphones are foldable, notched hinged, and collapsible for maximum portability. Slow-retention foam ear pads provide superior comfort and fit for longer listening sessions with less bass leakage. The closed-back, over-ear design provides superior isolation and improved bass response.

Australia: CMI Audio
www.cmi.com.au or (03) 9315 2244
New Zealand: JPRO
www.jpro.co.nz or (09) 275 8710



Acoustic Technologies SS Series

Acoustic Technologies has released a new suite of high end install cabinets, including full range and sub bass models. All models are of Finnish birch construction, with custom colours and all-weather versions available. All speakers are supplied with PowerSoft Armonia DSP settings.

The SS18 is a full range installation speaker with 800W RMS power handling, an 8-inch mid bass driver and 1-inch compression driver. It has a 90° x 60° rotatable horn flare, and 70Hz-18kHz frequency response. The SS18iso is a 150 degree by 20 degree wide dispersion variant.

The SSB800 is an installation subwoofer with single 12-inch transducer, 800W RMS power handling, dual port reflex design, and 38Hz-500Hz frequency response.

The SSB500 installation subwoofer features a single 10-inch transducer, 500W RMS power handling, single port reflex design, and 40Hz-500Hz frequency response.

Australia and New Zealand: www.atprofessional.com.au or +61 (0) 7 3376 4122

Chauvet DJ

Freedom Cyc is a wireless, battery-operated cyclorama light that surfaces with a wide, even wash. Freedom Cyc can be used on battery power or connected to electrical mains for greater output. It can be controlled remotely and works in Master/Slave with other Freedom fixtures. The unit has multiple wireless control options via FlareCON, IRC-6, or DMX using a D-Fi transmitter. Quick access to the built-in colour temperature presets eliminate programming time, and high-frequency LED dimming makes Freedom Cyc flicker-free and perfect for video use.

Australia: AVE

www.avecorp.com.au or (03) 9706 5325

New Zealand: M.D.R Sound & Lighting

www.mdrlighting.co.nz or (06) 355 5073



Chauvet DJ

Freedom Q1N is a battery-powered RGB+WW pin spot fixture with a built-in D-Fi transceiver. Part of the wireless Freedom ecosystem, Freedom Q1N can be controlled remotely and programmed in sync with other Freedom products. The fixture features a narrow beam perfect for highlighting special event elements. Its magnetic base and small size mean effortless mounting, controlling, and transporting. The Freedom Q1N system includes 4 fixtures, a carry bag, multi-charger, and IRC-6 remote.

Australia: AVE

www.avecorp.com.au or (03) 9706 5325

New Zealand: M.D.R Sound & Lighting

www.mdrlighting.co.nz

or (06) 355 5073



GEAR

Barco UDX-4K40

The UDX-4K40 is a 4K UHD 3-chip DLP laser phosphor large venue projector featuring 4K UHD resolution and 37,500 lumens output. The Constant Light Output (CLO) functionality guarantees peace of mind by providing constant brightness and colour over time. The UDX platform offers the widest colour spectrum in the industry. Without compromising on brightness, the UDX colour quality matches the renowned Xenon quality and outperforms the Rec. 709 colour space.

Australia and New Zealand: Barco Systems
www.barco.com
or +61 (0)3 9646 5833



Sennheiser XSW-D Pedalboard Set

Sennheiser's new XSW-D Pedalboard Set provides an ideal entry-level wireless system for guitar and bass players. Like all XSW-D sets, it works on 2.4 GHz for worldwide, license-free operation, and comes complete with a transmitter, pedalboard-style receiver with guitar tuning function, instrument cable, belt clip as well as powering and charging accessories. The XSW-D transmitter plugs directly into your instrument. The transmitter can be linked to the guitar or bass with the included instrument cable and worn on the belt. The receiver, which is additionally fitted with a guitar tuning function, can be accommodated in and powered by the pedalboard. As an alternative, it can be powered by the included power supply unit.

Australia: Sennheiser
en-au.sennheiser.com
or 1800 648 628
New Zealand: Sennheiser
en-nz.sennheiser.com
or (09) 580 0489



Chauvet DJ

Hurricane Bubble Haze is a multi-purpose atmospheric machine that emits bubbles, haze, and haze-filled bubbles. Its always-ready technology lets the unit run continuously to keep the party going. Hurricane Bubble Haze features a gravity-fed bubble reservoir that recirculates unused bubble fluid reducing fluid consumption. A built-in cleaning function increases machine longevity and reduces clogs. Hurricane Bubble Haze is compatible with BJG fluid.

Australia: AVE

www.avecorp.com.au or (03) 9706 5325

New Zealand: M.D.R Sound & Lighting

www.mdrlighting.co.nz or (06) 355 5073





CHILDISH GAMBINO

by Cat Strom

Photo Credits: Troy Constable

With shows that are as immersive, interactive, and mesmerising as they are entertaining, Childish Gambino lights up the stage like very few artists can.

In Australia to headline Splendour in the Grass, Childish Gambino played a handful of arena shows for those not lucky enough to get to Byron Bay. Cory Fitzgerald was the Creative Producer, and lighting design was by Sarah Landau.

The show featured little in the way of video except for the six rolling floor pods which were custom made by the lighting supplier Chameleon Touring Systems, as there was no time to ship the originals over. These pods each contained six Claypaky Mythos, two TMB Solaris Flares, two lasers and fog machines on two sides. Smoked Plexiglass was used as a video surface on the platforms, creating a different look to regular screens.

"The video content we use on the platforms is minimal," added Sarah. "It's more about

highlighting the structure of these moving pieces than the actual content on the screen. At festivals we utilise the full upstage video wall and have content running on that, but for arena shows, the artist prefers a more open and stripped back look. In Sydney, we didn't even have a black backdrop to hide the seats behind the stage."

Above the stage, staggered down to the upstage, were four trusses, each holding nine Robe MegaPointes, four Martin MAC Viper Performances and 12 GLP JDC-1 strobes. Together they formed a stunning back wall of lighting, with Sarah remarking that the MegaPointes are her new favourite fixture.

"I always preferred the Pointe over the Sharpys because of the prism, and I like the colour wheel," she said. "Now with the MegaPointe,

there's colour mixing, the beam is that much brighter, and the optics that much better, so it's really a spot/profile fixture and a beam fixture in one." As for the JDC-1s, she says they are the best strobe on the market; "The JDC-1s carry a lot of the more rhythmic and percussive hits and pops in the programming. We run them in 68-channel mode with every pixel individually controlled to get some really organic effects and make them look less like bricks of light," Sarah elaborated.

Four short side trusses were added to the Australian design to help light the band, who were on risers that were significantly shorter than the rolling video pods, making them difficult to see. There were a couple of sections in the show where the pods swept to the side to allow a good view of the band.

These downstage side trusses were great for side lighting the dancers that performed at the front of the stage. Each truss held three MAC Viper Wash DXs, while the two downstage side trusses housed Robe RoboSpots for side and back spot work.

The thrust was lined by GLP impression X4



Bar 20s, great for side lighting the artist who spent 90% of his time on the thrust and the lift. The X4 Bars played an important role providing colour, light and eye candy around him. A handful of X4 Bar 10s constructed a circle of light on the lift.

Three trusses out front also held MegaPointes, MAC Viper Performances, and GLP JDC-1 strobes, as well as two more RoboSpots, to deliver a cohesive look. There were no followspots out front in the house with Sarah saying that the RoboSpots “changed her life.”

“The RoboSpots are great; they’re fast, the colour mixing is beautiful, they’re super easy to balance for colour temperature with the separate CTO wheel, and they are simple to set up,” she said. “I take control over everything except intensity and iris which is left to the operator. I can override effects and make them strobe or do dimmer chases on top of what the operators are doing. I can set a master level that is the correct brightness for camera from the console and I just need to worry about telling an operator when to fade up or down. I really like that I can set the exact colour that I need rather than relying

on specifying gels, using substitutes, calling frame numbers, and so on.”

Integrated into the lighting rig were many laser positions, with the laser show designed to look good wherever you are in the arena. Spreading out those termination points to give it different layers is key to why it looks so cool. The laser show was designed by Marco Posevic with Genius Laser Technology providing 18 of their GENLAS 30W lasers to the tour.

The light show was programmed on an MA Lighting grandMA2 by Davey Martinez with Sarah commenting that he was instrumental to the whole process and great to work alongside.

“I can describe something in vague sounds and hand waves and he gets it!” she laughed.

The show used copious amounts of smoke with Sarah revealing that Childish Gambino has never once complained about there being too much smoke - in fact he encourages it.

“So we really went for it!” she said “We had plenty of smoke and haze from Look Solutions Unique 2.1 under the risers and in the pods,

JEM ZR44s and DF50s. You can never have too much smoke when lasers are involved!”

An important element is the live video that showcases the intricacies of Childish Gambino’s performance, directed by Damien Gravois. Live Show Director Danny Purdue called all the cues, and programmed and ran the media servers.

“The Chameleon lighting team, headed by Graham Walker, was excellent,” added Sarah.

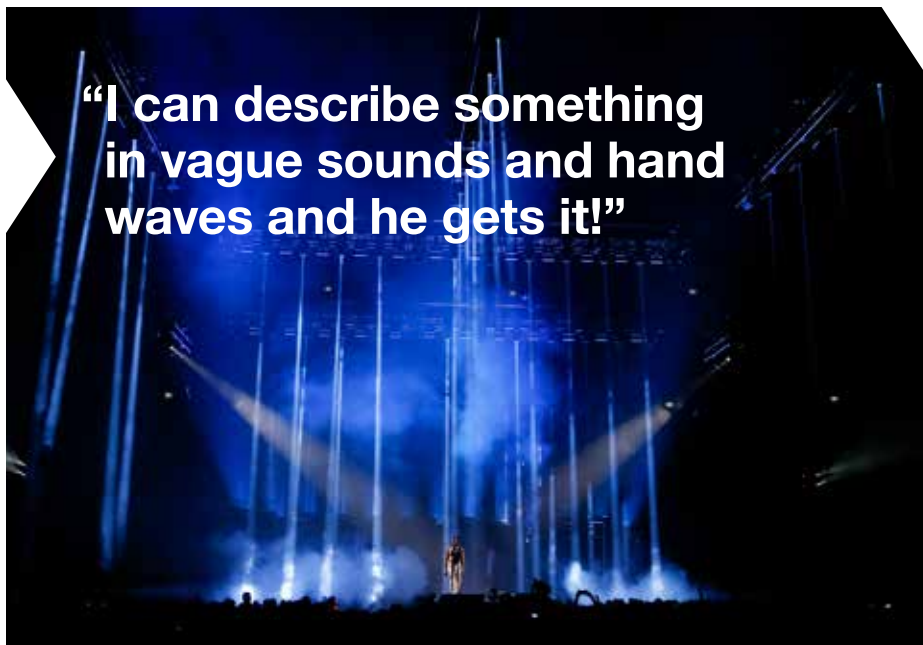
FOH Engineer Kevin Brown has been fortunate to work with some very talented artists over the years, which include Toni Braxton, American Authors, Chris Brown, OutKast, Joi, Nicki Minaj, and Cody Simpson. He has been with Childish Gambino for only four months after he was approached by Tim Colvard, the artist’s previous FOH guy, to take over after the first weekend of Coachella.

Kevin was mixing on a DiGiCo SD7, saying he has tried to use the SD Platform exclusively for quite a few years.

“At the time it was the only desk that didn’t make me feel restricted by its workflow,” he



**“I can describe something
in vague sounds and hand
waves and he gets it!”**



Sarah Landau



added. "The SD7 has a very powerful engine and you can do almost anything, whenever you want. That type of flexibility is paramount in allowing us to be creative as mixers."

Kevin was using a Neve 1073 and Avalon 737 for the main vocal, remarking that the 1073 is a great mic pre, and if you combine that with the smooth EQ of the Avalon, you start off in a great space for your vocal. For effects processing he was using an Eventide H3000 along with various UAD and Waves plugins for reverbs, delays and some chorusing.

Kevin describes Childish Gambino as a solid performer and dynamic with the microphone; there are times when he projects and others where he forces you to listen.

"It's all about dynamics, the ups and down are what create the journey," he added. "This is a very exciting mix, especially from a mixer's position. There is six-piece band on stage that consists of drums, bass, two guitars, keys, and percussion. On top of that, you have playback tracks and five choir members. This puts us in the ballpark of 110 channels. There are so many layers that allow you to create a dynamic mix with lots of depth."

JPJ Audio provided gear and crew for the Australian leg of the tour and Kevin found himself using a Clair Brothers CO12 PA system for the first time. The system comprised of 16 CO-12 in the main with six CP-218 subs flown. For side hangs there were 14 CO-12 plus eight CO-8 for front fills and 16 CP-218s on the ground.

"The first word that comes to my mind is powerful!" commented Kevin. "In the air the PA looked smaller than some other systems, but they sound big, and the subs sound huge. I was really impressed. It's not every day you get that type of energy moving from an active speaker."

Kevin remarked that there was nothing special going on with microphones. There are a few Shure 57s, 58s, 98s, and AKG 414s on stage whilst Childish Gambino is on a Shure Axient Digital 58. As Kevin concludes, the main ingredient is the group of talented individuals on stage. It starts at the source!

A touring comms package included a Riedel Artist comms system, 2300 Series Smart Panels with David Clark headsets, and Bolero wireless comms for the stage, all interfaced into Big Picture's comms system for seamless integration with cameras and directors.

Tour radios were also supplied by JPJ Audio with D2N also supplying a Hytera radio solution for the tour.

Charlie Izzo, who has mixed monitors for Childish Gambino the past 18 months, says everyone in the band has really good ears and expects a higher level of fidelity in their mixes. He ran a Solid State Logic (SSL) L500, with a Lexicon Pro 480L and a Bricasti M7 outboard, and Shure PSM 1000s for IEM.

"I just really like the sound of SSL's live consoles," he added. "The preamps, EQs and summing have a real analogue feel to them. I use a Waves package as the flexibility and quality of Waves plugins really makes a huge difference for me."

Charlie utilised an ELI Distressor to control vocal dynamics and a Lexicon 480L for the vocal reverb, saying it has been a standard in recording studios for years for a reason.

"In the IEMs it really shines," he said. "I also have a Bricasti M7 for verb. It is a really solid reverb unit that produces very clean, rich verbs. I use the internal SSL buss compressor. There are so many companies that emulate it with plugins, but having it straight from the source is spot on."

"I use the Shure PSM1000's because they simply sound great. They have a super quiet noise floor for IEM packs and they really translate what I'm doing on the console well."

Charlie commented that it really is a pleasure to mix for Childish Gambino, adding that aside from everyone being incredibly talented musicians and performers, they are also really great people to work with.

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“They (JPJ) were there day after day as the room changed and evolved...It’s a seamless sound walking around the venue.”

FORTITUDE MUSIC HALL

Brisbane’s new Fortitude Music Hall is the largest ballroom/theatre styled venue in Australia, with 3,000 person standing and 1,100 seated capacity. The venue is inspired by some of the world’s most loved live music venues, from classic art deco theatres to larger clubs, while still paying homage to the iconic venues of Brisbane’s past. The Fortitude Music Halls’ prime location in the heart of Brisbane’s entertainment precinct and state-of-the-art production make the venue a truly world class performance space.

John ‘JC’ Collins, one-time Powderfinger bassist, is co-owner and manager of Fortitude Music Hall in partnership with Paul Piticco and Jess Ducrou of Secret Sounds Group, construction giant Hutchinson Builders, and Live Nation.

Set in the middle of Brunswick Mall, the Music Hall offers different sized configurations; the

3,300-capacity room can be transformed into 1,200 or 2,000, with a smaller upstairs bar-style for 300.

The venue owners contacted JPJ Audio to design and install an audio system that would reflect their considerable investment in the venue. In recent times, JPJ has been installing elite, high-end systems into venues as a

pay-as-you-go option, which helps them sell the room and saves touring acts production costs and makes tight touring schedules a bit easier.

JPJ is a leader in this area and currently have similar installations in the Palais Theatre, State Theatre, Horden Pavilion, Luna Park, Festival Hall, and The Forum Theatre. Bruce Johnston, one of JPJ Audio’s Directors based in Melbourne, headed the project, drawing on JPJ’s extensive network of experienced audio specialists around the country.

“For the Fortitude Music Hall, we decided on an L-Acoustics K2 speaker system with an L-Acoustics monitoring system, as that would give us a bit of consistency with all the amplifiers and drive and thus some good redundancy,” explained Bruce. “In the console department, we have gone with an Avid S6L 24C out front and a DiGiCo SD10 for monitors, as this gives the venue both options and the ability to flip them end-to-end; we see that a lot in touring. We have also run multiple multicore options to cater for all consoles. Both consoles come with Waves servers.”

When designing the system, Bruce asked Bob Daniels from JPJ’s Sydney office to plot and plan the room in order to cover as much



Room Construction

as possible. The venue has viewing areas throughout and this had to be taken into account.

The main system is 16 K2 (eight per side flown) with 12 SB28 subs in pods of two running across the front of the stage. Downstairs there are two zones per side of two ARCS Focus, totaling eight, and four X8 live monitor enclosures for front lip-fills. Upstairs, to supplement the main hangs, there are three ARCs per side to service the outer corners and throw up the sides until the K2 takes over. At the rear of the room under the balcony are some more X8s filling in.

The venue built sub containment

compartments in brick so JPJ could evenly run the subs across the front to reduce the sub-low getting back under the stage and this has worked really well.

“We did have rigging challenges to get around some air conditioning ducting,” added Bruce. “However the overall result has been very good and we have now had a few shows through with some great comments on the system. Over the next few months we will do some tweaking and go from there.”

JPJ supplied a variety of microphones to cater to all requirements including Shure B58A, B57A, SM57, B52A, B91A and Sennheiser 904 and 901s.

Bruce commented that Jay Van Lieshout from JPJ in Brisbane managed the installation and with his team, did an outstanding job.

“We wanted to give the Brisbane shop ownership of the install and be a part of the process,” he said. “They were there day after day as the room changed and evolved. Brendan Keane spent time aligning the system with a great result. It’s a seamless sound walking around the venue.”

JPJ Team: Jacob Elmer, Dan Charlton, Clint Crawford, Brendan Keane, Justin Ryan, Mathew Morrison, Regan Downs, Andrew Werlick.



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Here today... and tomorrow... and the next day.

by John O'Brien

Shows and live productions are pretty transitory affairs. Huge efforts go into the logistics and budgeting for just one show and then, save for a few faded flyers and fanboy clips on the internet, the next day it's all but a memory. Permanent installations are just that - permanent. They will be there the day after they're finished and, until they fall apart or are upgraded, will be an enduring testament to your prowess (or lack thereof!).

Making the transition

I've written plenty about transferable skills and there are heaps of parallels with gigs and installs. The key is using your show expertise while learning a whole new bag of tricks. You'll still run cables, connect them to equipment, then test it and use it. But so many other factors differ.

For starters, cable types and connectors might diverge from what you are familiar with, particularly their attachment method. A mainstay of temporary production, gaffer tape, is rarely seen on a building site. Here it is swapped for cable ties, clips and any manner of proprietary tie-downs.

Copper is copper but different cable stranding, shrouding and sheathing applies to different uses. The most obvious is solid core CAT cabling for all in-wall applications but stranded for fly leads. Same with power cabling. I loved getting all OCD on "tram-tracking" cables across gig access ways but that level of neatness applies to all install wiring and fixings. Let's not even get into rack layout and building - an artform unto itself.

Even the connectors can get weird. Live, analogue audio using XLR is defacto; install, you can end up with terminal mounts, screw downs, punch blocks, Phoenix, RCA or even banana plugs to transfer the same signal. 8 ohm or 100v? Which one comes down to system design and specification. Depending

on where you are in the food chain, you may or may not get a say in that.

Building in a new industry

The construction industry is far bigger and more entrenched than the AV production industry. With that comes established conventions for all manner of things, from



site hierarchy to shop stewards. The most obvious difference is working hours - daylight basically - which is a rude shock for a gig vampire. More subtle are the power plays that establish who gets what treatment (and payment) on site. On the bigger and more unionised sites there are usually better awards and better conditions for those on the tools but more hoops to jump through from a management perspective. Keeping Site Managers and Project Managers onside really helps your cause.

Schedules, tickets and compliance are relatively easy to achieve - just tick the boxes. Hopefully, the boss allows enough time for that. If not, you're up against a mountain.

The primary problem I've seen is AV contractors being a bit of an add-on to the main program. Commercially, AV sub-contractors are becoming part of the electrical contract. This has the distinct benefit on the head builder's program. Domestically, AV integrators are often engaged directly by the end client. The main building contractor and electrical sub-contractors might not see your work (or even presence) as a priority. After all, they get no direct financial benefit from assisting you. This will evolve as builders and other trades see ever more white vans full of black boxes ... as will security measures ensuring that said boxes don't mysteriously disappear.

Hitting your cues

Timing is another big adjustment. The construction industry is by nature slower and more deliberate than gig world. There is a long, drawn out design and approvals phase before tenders, RFIs and contracts go out. You'll next have to wait for the basics of site work, concreting, framing and roofing before even getting near site. The first hands-on AV involvement is pre-cabling, which requires licensed cabling or electrical contractors. Then you wait for other trades to do their thing before first fit happens. Here, you'll prep cabling in rack areas, maybe get some screen brackets and wall plates in. Then back to the factory to finish off the racks and test the gear (your schedule has allowed this, right?) while the painters and decorators do their thing.

Finally, when it comes to the pointy end of the game, you get to do the final fit and commission the system. The job is likely already over budget, invariably over schedule and the end client wants it all NOW ("but can I just change a couple of things?"). And that's when the gig training really kicks in. Your ever-decreasing time window is under great pressure when all of the main players are starting to get frazzled and your gear isn't working flawlessly straight out of the box. Cool, calm but firm wins the day.

Being next to last on the schedule, you will not have much wiggle room if things go wrong or if the pre-wire didn't include those essential runs that are now covered by expensive final finishes.

Good, clear communications with the main builder and electrical contractor from early in the project are paramount to your success.

Manual labour in the office

On a smaller domestic or simple boardroom fitout, you won't have to do much more than supply, install and commission the gear. A quick once-over with the end client and you are ready to send an invoice. But the bigger the site, the bigger the contract, the bigger the risk. Larger jobs, and particularly consultant specified ones, tend to require greater amounts of paperwork - boring, but paying attention to this means you get paid too.

Progress reports, progress payments, transmittals and variations - all part of general contract administration. When you think it's all done, handover documentation may include: site manual, user manuals per room, assets register, product manuals for each and every product supplied, maintenance schedules and training arrangements.

After the defect rectification period, you will still be responsible for a site warranty and enabling manufacturer warranties as required.

The beauty of all of this is getting long term maintenance contracts. If you play that well, there will likely be regular upgrades over time too. All dollars in the bank for your installation company.

The ultimate installation

Emptying my bank, I embarked on the ultimate installation a few years ago - building my own house from scratch. Wearing my best Project Manager's hat, I had GANTT charts and spreadsheets galore, outlining a tight but achievable schedule of 18 months. Six months in, a prolapsed disc smashed any hope of meeting that timeline! Fortunately, I recovered enough to get back on the tools nine months later but it still took a further 4 ½ years to complete. I blew the budget too but we do now live with the rewards of a meticulously built home! For ease of maintenance it's purposely low tech but I did pre-wire for four audio and two video zones. One day I might even finish the custom patch panel to hook it all up! Making and installing ELV light switches with stainless steel and aircraft style toggle switches was a highlight. Skills gained from construction sites were sure handy but the gig skills of perseverance, lateral problem solving and getting the show on before inspector time were of equal importance.


Everlasting impressions

It's kind of warming to go back and visit some of the installations that you are most proud of. What a good feeling to know that you have left a mark that is a little more permanent than a used gaffer ball in the rubbish bin?












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The trend towards beamforming technology is now revolutionising the microphone market. What makes this technology particularly attractive for meetings is that it localises and evaluates sound sources and suppresses interference. For both installation and use, beamforming products perform better than conventional microphones. The benefits range from low installation costs, invisible cabling and a wide-ranging recording area, to freedom for the speaker to move around the room, and enhanced audio quality for listeners. And if you're planning a new meeting room, intelligent microphones also make sense from a price point of view as well.

But not all beamforming technology is the same. For ceiling microphone arrays used in meeting and conference rooms, there are different types of beamforming technology: static beamforming with fixed speaker zones and automatic, dynamic beamforming, which is more flexible. The former uses several static beams at the same time. For the latter, there is just one beam, which automatically aligns to the position of the person speaking.

Contrary to popular belief, having several beams does not increase functionality. Quite the reverse, in fact. A look at the characteristics of the beams shows that the decisive criterion is the way the beam works (i.e. flexible vs. static). A dynamic beam, which connects several microphone capsules, allows greater flexibility for day-to-day use, and at the same time reduces the time required for installation and set-up.

Beamforming technology with fixed speaking zones

Ceiling microphone arrays with multiple beamforming zones use pre-configured, static and separate recording areas. The width and directivity of the beams must be pre-defined and fixed. These settings can be saved as pre-sets in the configuration software. For the initial alignment of the individual zones, a set-up mode is usually used. For this purpose, test speech is spoken in the designated zones and the beams are aligned accordingly. The zones can be aligned even more precisely by means of manual fine tuning, i.e. configuration using a software interface. Speech recognition using the auto mixer allows multiple speaking zones to be activated simultaneously. As a combined signal from the static recording areas, the audio channels are bundled so that in the event of several attendees speaking simultaneously, everything that is said can be reproduced with consistent audio quality and volume. However, as it is impossible for a listener to follow several speeches simultaneously, a bundled signal offers no advantage if several people are speaking at once.

What is the 'cocktail party effect'?

This refers to our ability to block ambient sounds from our awareness during a conversation to which we are paying attention. Subconsciously, however, the noises are still registered. If, for example, one's own name is spoken in a nearby group, this will quickly force its way into our awareness.

Since in defined speaking zones there is no dynamic, automatic alignment of the microphone beam to the person speaking,

audibility decreases as soon as the speaker leaves their pre-configured zone. This restricts speakers' freedom if, for example, they want to leave their seat at the table to write something on the whiteboard.

The pre-sets for the static beams must be adjusted if the room layout changes or if the number of attendees is higher than planned. Each adjustment of the static beams involves a new configuration.

Flexible beam allows ad hoc change of speaker's position in the room without the need for Reconfiguration



The Sennheiser TeamConnect Ceiling 2 is the only ceiling microphone array with a patented combination of real-time recognition of the person speaking and automatic, dynamic beamforming technology. It first detects the position of the person speaking and then aligns its directivity to this position in real time.

What does 'automatic, dynamic and flexible beamforming' mean?

The 28 omnidirectional microphone capsules of the TeamConnect Ceiling 2 microphone array record all the audio signals in the meeting room. By means of digital signal processing, the relevant speaking area is then selected in real time. This means that the system can determine the position of the speaking person at any time, regardless of whether he or she is sitting, standing or moving around. The realignment of the beam's directivity takes just milliseconds.

Static beamforming technology	Flexible beamforming technology
Fixed speaker zones	Flexible speaker zones
Multiple static beams	One flexible beam
Width and directivity of beam must be pre-defined and fixed	Directivity changes automatically to the person speaking
Loss of audibility if speaker leaves pre-defined zone	Speakers can still be heard if they leave their original position
Beams have to be adjusted if room layout or number of attendees changes (configuration effort)	No adjustment necessary if room layout or number of attendees changes, as directivity changes automatically

The speaking zones therefore no longer have to be configured manually. The KE-10 capsules used have already proven their value in numerous Sennheiser microphones and ensure perfect audibility. This means that every word spoken in the meeting room can be heard by the off-site attendees. As soon as another speaker takes the floor, the directivity is immediately adjusted to his/her position. For products with flexible beamforming technology, this eliminates the need to have pre-defined positions for persons speaking. Since the TeamConnect Ceiling 2 system can, by means of automatic, dynamic beamforming, capture all areas of the meeting room within a radius of 60 square meters with a single beam, there is no need for additional microphone beams. Speakers who leave their original position, e.g. when they stand up or move around the room during the meeting, are also recorded.

Larger meeting rooms can be covered by installing additional ceiling microphones. Even in the case of a quick-fire exchange between several people speaking, microphones with flexible beams can realign the directivity within milliseconds. This ensures the best possible audibility at all times. In practice, meetings are not always perfectly audible. They are often characterised by lively discussions and several people speaking at once. When using products with a flexible beam, such as TeamConnect Ceiling 2, everyone in the room can be easily heard by every remote participant of the meeting.

Speech Transmission Index (STI)

The speech transmission index (STI) is used for the objective evaluation of the quality of speech transmission. This parameter is used, for example, to evaluate the transmission quality of PA systems (e.g. at railway stations), telecoms transmissions (e.g. with mobile

phones) or in room acoustics to determine the quality of speech transmission with or without a microphone. The STI indicates transmission quality on a scale from 0 (incomprehensible) to 1 (excellent audibility). The STI value for TeamConnect Ceiling 2 is 0.79, which is within the best possible category on the scale (0.75 to 1.00). Source: <http://www.firealarmsonline.com/2016/12/voice-intelligibility-for-occupant-notification.html>

With the Team Connect Ceiling 2 microphone array, the automatic change in directivity eliminates the need to adjust microphone configuration when changing room set-up or increasing the number of attendees. With its patented automatic, dynamic beamforming technology, the microphone array can track the position of the person speaking. This gives the speaker maximum freedom of movement in the room. In workshops, this means that a wide range of techniques can be used by the speaker and they can freely choose where to stand or sit without compromising audibility. Coupled with the unobtrusive design of the array, this unrestricted movement radius of the speaker ensures that they do not have to align physically with the microphone or think about where it is positioned. The speaker can in fact forget about the microphone altogether.

This creates a natural speech situation, which makes it very easy to follow the spoken word, especially for remote attendees of phone or video conferences. The speaker's natural speech and free movement create an authentic experience that gives remote participants the feeling of being physically present at the meeting. With TeamConnect Ceiling 2, the configuration effort is minimal, as full room coverage is guaranteed, even with default settings. The ceiling microphone allows the meeting room to be used flexibly, regardless of how tables or rows of chairs

are positioned. No technical know-how is required to operate the microphone array or to configure it with the Sennheiser Control Cockpit software. Once installed, TeamConnect Ceiling 2 is always ready for use. The ceiling microphone array automatically adapts to any room layout without the need for reconfiguration. This means that the installation costs can be significantly lower than for other comparable ceiling microphone arrays.

Flexibility in focus – one beam, many benefits

The beamforming microphone that you choose for your meeting should ultimately depend on how flexible it needs to be. The above comparison of the two beamforming technologies shows that, when compared to products that are limited to pre-defined speaking zones, products with automatic, dynamic beamforming technology with flexible alignment have numerous advantages in terms of installation and use. This is due to their flexible beam.

Maximum freedom of movement

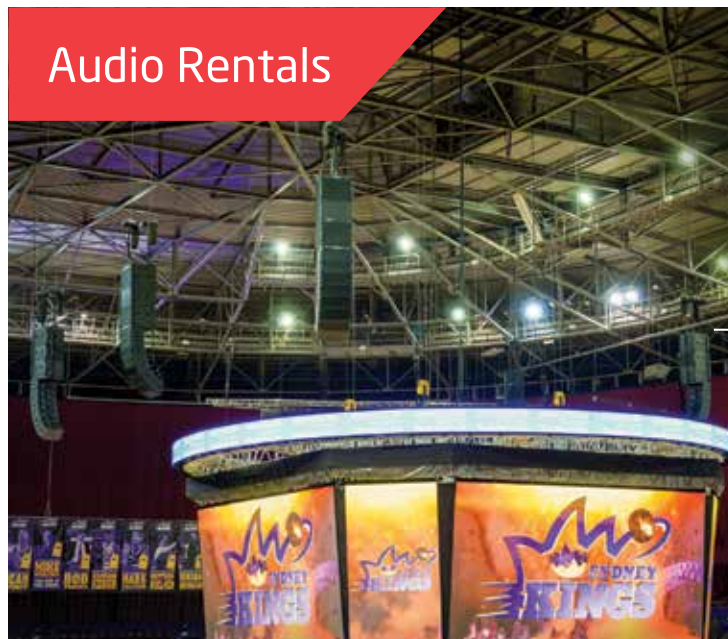
The person speaking can move freely in the room. They don't have to worry about not being heard by remote attendees, as they don't run the risk of moving outside of a pre-defined speaker zone.

Universal room usage

Meeting rooms can be used completely flexibly. No matter how the chairs are arranged, whether in rows (as for a lecture) or for a workshop with flipcharts and pinboards, audibility is guaranteed throughout the room.

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Bose Professional - Daydream Island Resort



First opened to guests back in 1939 and counted as one of 74 islands that make up The Whitsundays, Daydream Island Resort is a private hideaway that stretches about a mile long and is dotted with secluded coves for that total castaway feel. In April this year the iconic space officially reopened with a brand-new look, following an 18-month \$100 million refurbishment.

"The Island has undergone a huge journey from the devastation caused in 2017 by Cyclone Debbie and we wanted the new brand to signal the evolution of the Island. The new brand gives a nod to the Island's heritage whilst also looking to the future," says Director of Sales and Marketing, Jayson Heron. The new-look Daydream Island Resort today boasts 277 totally refreshed guest rooms, spruced-up indoor and outdoor schemes, and a range of event spaces that can host major events like conferences, down to cocktail parties, gala dinners, destination weddings and more.

Common across the entire property is the outstanding aural experience, thanks to a comprehensive Bose Professional solution, designed by Queensland based system integrators NQAV. Bose Professional's FreeSpace series of high performance full-range loudspeakers are powered through the PowerMatch series of networked amplifiers and controlled through ControlSpace engineered sound processors.

Kevin Booth, Director at NQAV, shares, "We had a fairly flexible brief from the client, with a strong emphasis on superior quality sound and great aesthetic appeal. This meant that we were able to pick Bose Professional as our preferred supplier for the project, to ensure that we met the requirements that they were looking for throughout the entire venue."

"We chose loudspeakers from Bose' FreeSpace series as it provided us with options to develop a high-quality reinforcement solution for indoor as well as outdoor applications, in addition to blending beautifully with the aesthetics and facades across the island. Also, using the networked amplifiers from Bose means that we could monitor and control the amplifiers remotely, which was critical to us, considering the fact that the venue stands on an island location. The ControlSpace ESP and software allows us to keep a check on the audio that's coming in and out, as well as the amplifiers status and any other system related info that we need to check on. The performance is really good, it creates a fantastic sound through the space,



and the feedback we've had from the island is that everyone is very happy with the outcome. Also, the support from Bose we've had on the whole project was excellent."

Delivering high-quality reinforcement for background music and speech reproduction, FreeSpace DS40SE surface-mount loudspeakers have been outfitted across the entire expanse of the outdoor area which includes three new pool sections, the Living Reef freeform coral lagoon, and the Eclipse room with an expansive outdoor terrace.

Moving indoors, the NQAV team have maintained Bose' sonic signature with surface-mount as well as ceiling versions of the FreeSpace DS40 and DS16 loudspeakers integrated across the expanse encompassing the Atrium, indoor dining restaurants, and indoor bar sections. Additionally, Infinity, which is one of the premium dining destinations at the resort, features multiple units of the FreeSpace DS40F in-ceiling flush-mount loudspeakers in black finish to match the décor and interiors of the space.

Praising the overall performance value of Daydream Island Resort's new audio system Craig Williams - IT Manager, affirms the establishment's approval as he comments, "The old system here was outdated, and we were looking for an audio solution that not only delivers great quality sound performance, but is also visually pleasing. Since the entire system is networked, managing it becomes much easier as we can control it efficiently from a central location. Overall, the performance is fantastic - the quality of sound is crisp throughout the space, and the amount of volume we can derive from the system is amazing."

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Do you understand? Intelligibility

by Simon Byrne

Obviously an audience needs to be able to understand what is spoken or sung. That is, the performance must be intelligible. Therefore well implemented PA systems combined with acceptable acoustics are crucial for this to be achieved. This becomes a major safety issue for evacuation PA systems in buildings such as concert halls, shopping centres, airports, or railway stations. The public must be able to understand emergency announcements or lives could be at risk. It is not just the loudness that affects intelligibility.

Signal distortions, frequency response, sound pressure level, multiple sources and reverb time all affect intelligibility.

You'd think that by simply talking through a PA system, a few "Check one TWO, one TWOs" with careful listening would quickly establish that things are intelligible or not. As it turns out, humans are quite poor at determining intelligibility.

This is because when you know what is spoken, or likely to be spoken, your brain fills in the unintelligible bits. So repeatedly doing "Check one TWOs" is close to useless because you know what is being said. Even if you are not forewarned as to what is being said, the brain has great capacity to construct the missing bits from a sentence.

And the end of this article is a Bitly link to a Youtube video called "Can you trust your ears?" By NTi, it demonstrates the remarkable effect by playing a distorted signal which cannot be understood. However, once you are told what it says, you subsequently understand it perfectly. The effect is amazing.

On a touring show or long theatre run, it is an interesting fact that the regular crew and performers are probably the worst people to comment on intelligibility. The performance is so ingrained into them that their brains replace missing auditory information. I've certainly been to concerts where the vocals are lost in the mix, possibly because the front of house operator is plagued by this phenomenon and simply doesn't realise that they are benefiting from knowing the show.

Also, the brain can be tricked into replacing what you hear with what you see! The effect is

called the McGurk effect.

The McGurk effect is an interaction between hearing and vision in speech perception. The illusion occurs when the auditory component of one sound is paired with the visual component of another sound, leading to the perception of a third sound. The visual information a person gets from seeing a person speak changes the way they hear the sound! If a person is getting poor quality information but good quality visual information, they may be more likely to experience the effect. It is not the same for everyone either. People who are better at sensory integration have been shown to be more susceptible. Many people are affected differently by the McGurk effect based on many factors, including brain damage and other disorders (there is none of that in the production industry is there?). Interestingly, females are more susceptible to McGurk effect than males.

NTi have a stunning demonstration video of the McGurk effect on Youtube. A Bitly link is at the end. Check it out...it is worth it!

So an objective way to measure speech intelligibility had to be found. In the old days, they would get a large group of people into the space to be tested, and literally read a very long list of random words to them, and the people would then write down what they thought they heard. The results would be gathered, and the correct results counted which made up the score. Very labour intensive and not so practical, so it wasn't done much.

Fortunately, with modern technology and techniques, we have the Speech Transmission



Index or STI. This is still quite complex to test because it requires 98 separate measurements to be obtained which takes a lot of time. Therefore an optimised version of STI for use with Public Address systems was developed, called STIPA.

STIPA has emerged as the most widely accepted method for objectively measuring the speech intelligibility of PA systems. STIPA gives you a single number between zero (totally unintelligible) and one (excellent intelligibility).

Measuring speech intelligibility using the STIPA method is not particularly difficult. With the proper tools and a minimal amount of practice, measurement results are quickly obtained that are the most accurate among all intelligibility test methods.

There are two ways to measure STIPA. The first is the Impulse response method, which you can do in Smaart. This method has some challenges, so the more accepted method is using a STIPA test source signal and a meter with STIPA capability, such as NTi's XL2 sound level meter with the option installed.

The STIPA test signal is a noisy signal that contains all frequencies present in human speech, from approximately 80 Hz to 11 kHz. In real speech, information is encoded through intensity fluctuations. Loss of modulation depth means loss of information, which translates into a reduction of intelligibility.

This is how the STI works: the artificial test signal (STIPA) has a carefully designed pattern of modulation frequencies. The STIPA analyser measures how the transmission through the PA system and room has reduced the modulation depth. This is measured in multiple frequency bands (125 Hz – 8 kHz), across a range of modulation frequencies (0.6 – 12.5 Hz).

The STIPA test signal is injected into the system by way of a generator which injects the signal as a line input, or a 'talkbox', which has its own built-in signal generator. A talkbox



Band	STI Range	Examples of typical uses
A+	> 0.76	recording studios
A	0.72 - 0.76	theatres, speech auditoria, parliaments, courts
B	0.68 - 0.72	theatres, speech auditoria, parliaments, courts
C	0.64 - 0.68	teleconference, theatres
D	0.60 - 0.64	class rooms, concert halls
E	0.56 - 0.60	concert halls, modern churches
F	0.52 - 0.56	PA in shopping malls, public offices, cathedrals
G	0.48 - 0.52	PA in shopping malls, public offices
H	0.44 - 0.48	PA in difficult acoustic environments
I	0.40 - 0.44	PA in very difficult spaces
J	0.36 - 0.40	not suitable for PA systems
U	< 0.36	not suitable for PA systems

is a specially calibrated loudspeaker that serves as a 'human speaker replacement' and is positioned in front of the microphone that feeds the PA system. The STIPA meter is located where the audience is likely to be (the listening positions). It is important that the meter does not move during a test so it must be on a stand with the operator standing well back. The meter records 15 seconds of the test signal and computes a result. For accuracy, several tests are taken and the average is derived. In large spaces, tests are taken every 6 - 10 metres and once again the results are averaged.

The final scores are ranked and given a score. 0 is obviously pathetically unintelligible through to 1 which is perfect. 1 is never achieved by the way, with greater than 0.76 being considered excellent and greater than 0.62 considered good in concert halls.

Using the Impulse Response method, Smaart provides figures for both STI and STIPA, however STIPA in this case is more properly termed STIPA(IR), since it is based on impulse response (IR) data rather than

measured directly using the modulated noise method. STIPA(IR) data is not considered to be as resilient as data gathered using the modulated noise method, but it has the advantage of being much faster to acquire, plus having a full STI reading also.

Rational Acoustics (the makers of Smaart) consider it for informational purposes, for example, to facilitate comparison with readings from hand-held STIPA meters and is literally just a subset of the full STI measurement, calculated from exactly the same measurement data.

Another interesting way to access STIPA readings is by using the Sound Tools IOS app. It now has a STIPA in-app purchase. If you are interested in playing with it, they apparently offer a free seven day trial.

Speech Intelligibility can have serious legal implications where people's safety is potentially at risk. It is in these installations that properly qualified acousticians, who have the skills and equipment (and insurances!), must take the STIPA measurements to ensure

that the readings are accurate and comply with the legal standards.

STIPA is tool that gives users an objective measurement as to how effectively the spoken word is being understood. For live sound professionals, it is a useful exercise so as to understand how well PA systems combined with room acoustics are performing against a known set of parameters.

Can you trust your ears?

<https://bit.ly/2Kmk2Dc>

The McGurk Effect - What you hear is not what you see.

<https://bit.ly/2ZO6l9g>

STIPA Module for Soundtools on IOS

<https://bit.ly/2Mex5J6>

Nti Speech Intelligibility Application Note

<https://www.nti-audio.com/Portals/0/data/en/NTi-Audio-AppNote-STIPA-Measurement.pdf>

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FCTN is a multi-purpose entertainment venue in the heart of Canberra that can host anything from concerts to club nights, exhibitions, theatre, live art, and innovative performances.

Housed in an old renovated movie cinema with charismatic industrial décor, FCTN is a two-tiered basement venue that can cater for up to 1000 people. The name 'Fiction' is a play on the old cinema heritage of the building which occupied it for over three decades. More recently the building was home to Academy Nightclub, which closed a year ago.

The landscape of the venue has been significantly transformed, in particular the original balcony has been changed into a mezzanine that wraps around the club. This area runs as a separate bar that looks down into the club area.

The owners spent 'a s*&t load' of money renovating the venue according to Darren Russell, Managing Director of Elite Event Technologies, who were tasked with designing a complete lighting, video and audio solution for FCTN on a permanent rental basis.

"The brief we were given is that the club will operate similarly to Academy, in that it

would primarily be a nightclub, but they did want to be able to do live entertainment," he explained. "We purchased all the lighting and VuePix LED Screens as new stock, but the audio is from our existing inventory. We had the Turbosound Flex Array in there previously when it was Academy, and as it worked really well in the room, we decided to put it back."

Installed in the club area are six elements of Turbosound TFA-600H either side of the stage with a sub array of six Turbosound TSW-218 subs across the front of the stage and a couple of iQ12s as DJ monitor speakers, all powered by Lab Gruppen PLM Series amplifiers.

Four QSC AD-S10T surface mount speakers are delay fills under the mezzanine in the bar area.

The bar upstairs is catered to by six Martin Audio CDD10 speakers and two CSX212B subs, driven by three QSC RMX2450a power amplifiers.

"We designed the PA to be one big system, so we have just one Yamaha MTX 5D Audio DSP to run the whole club," added Darren. "We've got EX18 input and EXO8 output expanders upstairs with a separate rack of amplifiers so we didn't have ridiculously long speaker cable lengths. But essentially it's one big system, and the whole point of that is the staff will control everything via an iPad."

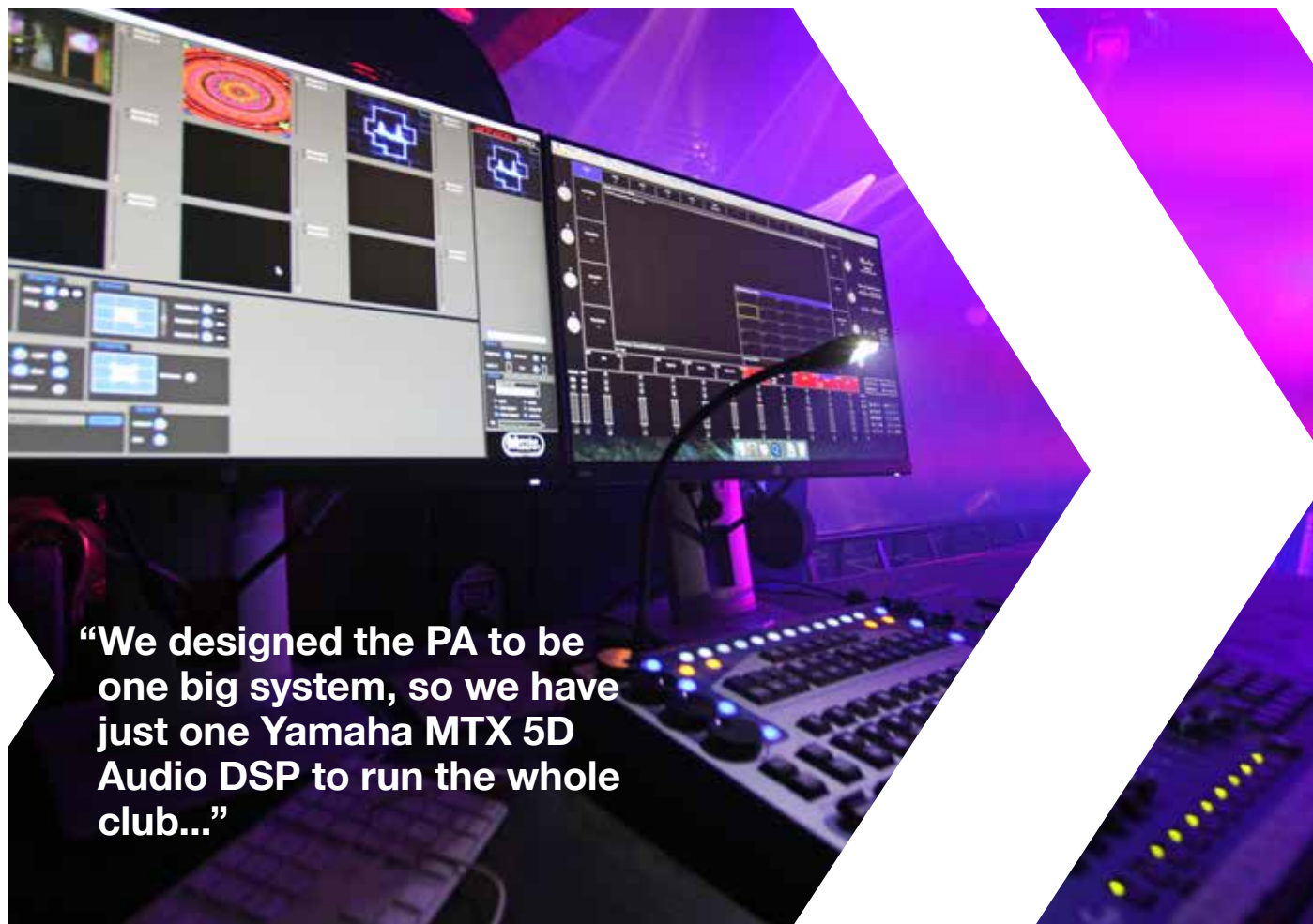
Most of the time the upstairs bar and downstairs club will operate as separate entities, but for large events, such as live shows, the owners wanted the ability to be able to sell upstairs as part of downstairs and be able to route any of the audio anywhere.

Consequently Darren designed the one big integrated audio system that can be configured on an iPad utilising Yamaha's fully customizable app.

"We use these DSPs a lot and they really sound good," he said. "It works great, is priced well and is user-friendly."

The DJ gear is all Pioneer Nexus MK2 with three DJM-900NXS2 DJ mixers and 12 CDJ-2000NXS2 CD players, essentially two systems of a mixer and four CD players with a whole spare set-up kept on site.

Visually, the club is dominated by a back wall of the Vuepix LED Panels, which provide incredible eye candy and images. Framing the VuePix on three sides are ACME Dotline 360



“We designed the PA to be one big system, so we have just one Yamaha MTX 5D Audio DSP to run the whole club...”

LED battens, ACME XA-100 hybrid movers, and Martin RUSH Strobe Panels. Together these fixtures form a powerful frame of movement and colour to complement the action on the VuePix.

“The operators in the Club love the ACME Dotline 360 LED battens,” added Darren. “They’re quite cool because their zoom works in two halves in two different segments, so you can get some great effects out of them especially in the air.”

Providing action over the dancefloor are ACME XA-400 spot movers and ACME CM-300ZR-II washes hung from a large square truss grid.

A pair of MDG ATME Hazers, one either side of the stage, supply atmosphere with Darren saying the second one is more for redundancy. They are run at only 10% yet still easily fill the venue.

“We tend to always install two into clubs because sooner or later someone will spill a drink in one midway through a gig!” laughed Darren. “Or the bar staff are filling it up in the dark and pour fluid all over the machine!”

Control is via a Chamsys MagicQ MaxiWing and a Power Mac running Chamsys MagicQ and ArKaos Media Master Pro Software as well as a pair of HP E230t 23” touch screen monitors. ACME EN28 Art-Net DMX Converters enable 14 universes of DMX to be utilised in the venue, where everything is running in full load.

“We have a number of club installs that we have done where we have video and we usually install ArKaos along with Chamsys,” explained Darren. “The integration between the two works really well, in fact I’d say ArKaos works better with Chamsys than anything else. Together, they make pixel mapping very simple.”

Elite also supplied Global and CLS truss, Chainmaster one tonne hoists and Chainmaster control, Mojo Crowd Barriers, and Global Stage Deck.

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ANZAC HALL

Prince Alfred College, Adelaide

Adelaide's Prince Alfred College (PAC), one of Australia's leading private boys' colleges, celebrated 150 years since its foundation this year. As part of the festivities, the college has upgraded its 800 seat theatre, ANZAC Hall, with new audio, lighting and control systems installed by integrator Andy J Sound.

PAC sought an audio consultant's recommendation from Adelaide Sound Hire's Peter Morris for a PA system that met their requirements and modest budget. After reviewing a number of systems, Peter selected Martin Audio's WPM Wavefront system, incorporating six elements a side with a pair of SX118 subs, to be driven by Martin's IK81 DSP amplifier, set to recall its presets remotely via an Extron control unit.

Tim Bekker, Senior Programmer at Andy J Sound, used this remote control capability to enable different sub and top configurations, dependent on what mode the hall is being used in, while still maintaining a single interface for the audio, vision, and lighting systems.

The school chose an Allen & Heath dLive as their FOH audio console, feeding directly into the Martin amplifier. Stage monitoring is controlled via the Allen & Heath app on an iPad, which drives six QSC K10.2 active

wedges. A package of microphones including MiPro ACT7 series radio mics rounded off the audio upgrade.

The client added a third Epson L Series to their two existing Epson projectors, focussing to a 13m x 5m scrim. The feeds to the projectors are controlled via an Extron DTP 10 x 8 matrix switcher, allowing a huge variety of physical input points in the hall. In addition to the projectors, output patch points feed overflow monitors, confidence monitors, recording, and streaming.

An MA2 on PC Command Wing was the chosen lighting control system, feeding an 8-port node via Art-Net. Local supplier Showtrek installed motorised bars to expand the lighting infrastructure, and made modifications to the existing stage winch systems.

New lighting fixtures chosen included Quad 18 LED Pars, Cyc2 RGBAL, LED Fresnels,

LED profiles and Martin Rush Par2 RGBW Zooms from Show Technology. Acme XA400s were chosen as a LED moving head Profile.

The greatest challenge in the project was to maintain constant engagement to ensure issues were picked up as quickly as possible. Chappell Builders in Adelaide liaised with AJ Sound's Head of Commercial Sales Luke "Phasey" Hattam, who watched the project like a hawk, picking up a number of infrastructure challenges that required quick resolution. The effective communication between Chappell, Andy J Sound and Showtrek was critical to the success of this project.

"The ANZAC Hall refurbishment was the culmination of several years planning and development," stated Dan Woolford, AV Technical Assistant at Prince Alfred College. "Upgrades and redevelopments were undertaken in preparation for the college's Sesquicentenary celebrations this year, honouring the College's past, present and future, and recognising our 150 years of educating boys."

"Our vision was always to create a user-friendly integrated platform that was also easy for our students to use and learn with," Dan continued. "Tim, Phasey, and myself wanted to design a system that could run in both basic operation mode for general teaching staff use and advanced mode for my use or contracted experienced technicians."

"The basic mode for the system has been a game changer for me, as it means with the



Luke Hattam



push of one single button, I can quickly give teaching staff access to projectors, wireless mics, lights, and the sound system. This frees me from having to attend every single general day-to-day workshop, classroom, or lecture activity across the three Schools within the College, allowing me to prepare and plan effectively for our big ticket events such as musicals, theatre performances, bands and special assemblies. For these events, I use Advanced Mode and can capitalise on the full

extent of the new audio, video, and lighting capabilities, which as you can imagine, the boys love."

"Concert Mode (Advanced Mode), gives me greater control of the system, using the Allen and Heath dLive for audio, the MA2 onPC on Command Wing for lighting and Extron Crosspoint for switching video. The overall outcome has far exceeded my expectations and all the team at Prince Alfred College

are absolutely thrilled with the end result, including me! The team from Andy J Sound have been completely professional to work with over the past few months and have catered for all my needs. They have been completely flexible throughout every part of the build, fitting in with the busy schedule and divergent needs of an operational school."



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CLOCKAUDIO'S TIM-1000 TRACKING INTELLIGENT MICROPHONE

Clockaudio Ltd, a global leader in pro-AV microphone technologies, have introduced their latest product innovation the TIM-1000 Tracking Intelligent Microphone.

Streamlining huddle rooms, conference rooms and videoconferencing facilities, the TIM-1000 tracks the person in the space that is speaking, and follows that person anywhere in the room.

The concept behind TIM-1000 is simplicity; ease of installation, user-friendly set up and adaptability. The TIM-1000 installs just like a ceiling speaker (using dog legs) and can easily be installed in a drop ceiling or hard ceiling. TIM is "set to go" and does not require any programming or the need to set up different lobes. In addition, it can self-configure to any space.

At the core of TIM's new level for microphone intelligence, is Clockaudio's Adaptive Proximity Technology (APT). This APT allows TIM to keep a consistent sound level for the person speaking and will automatically compensate for the distance of the participant from the microphone while maintaining real-time audio capture.

TIM's features are many; it only requires one channel of AEC, making it cost effective. UL listed, TIM works well with any soft codec, and is compatible with both Dante and AES67, making it easy to work with any DSP.

Other features for TIM-1000 include noise suppression, 3-band EQ, intuitive GUI, and an RGB ring that provides for visual room status. Powered over Ethernet, the device utilises API control via UDP commands and comes with separate control and audio paths.

When it comes to AV functionality and room design, beauty is in the eye of the beholder. For some, a well-dressed conference table

with a microphone neatly installed at each seat is the preference. For others, a minimal aesthetic is. Therefore, putting the microphones overhead in the ceiling is the ideal solution.



Product Features

- Tracks meeting participants within the room
- APT technology for best possible sound output
- Eliminates unwanted steady state noise e.g. air conditioning, projectors
- Built-in equaliser
- Supports Dante and AES 67
- GUI through standard Web browser
- Powered over Ethernet (PoE+), IEEE 802.3at
- Separate control and data paths for added security
- API commands via UDP
- Easy setup and install
- Available in 2 models; Ceiling mount (TIM-1000-CM) and Pole mount (TIM-1000-PM)

Product USPs

- Tracks sound in a field around the microphone
- Ultra-sensitive – pickup range at least 9m x 9m
- No lobes or beams to configure
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Princess Cruises Welcomes L-ISA Onboard

Two Princess Cruises ships – Diamond Princess and Sun Princess - have undergone a major upgrade to their entertainment offerings with a new approach to live sound, bringing L-ISA Hyperreal Sound and Immersive Hyperreal Sound experiences to their guests.

Princess Cruises decided to raise the on-board sound reinforcement to a new standard and has specified L-Acoustics L-ISA configurations, supplied by Norwest Productions.

L-ISA is an object-based immersive sound technology that uses placement of sound sources to achieve spatialisation, enabling anything from a customisable, ultra-realistic live sound field to fully immersive 360° sound design. Individual audio objects or channels can be independently panned and located anywhere in the soundscape. The main components are the loudspeaker system, the L-ISA Processor, and L-ISA Controller: a software suite that takes care of positioning, movement and visualisation of all sound objects in the 3D mixing space in real time.

In seeking to offer exceptional guest experiences, Princess Cruises Entertainment Experience department began exploring implementation of immersive live sound, noting that live performance audiences are increasingly exposed to immersive technologies in other contexts such as cinema, gaming and VR. “Bringing a new level of guest experience is our foremost consideration,” observes Mark Simons, Princess Cruises director of production operation and projects.

The first demo of L-ISA took place at the company's US offices in Westlake Village,

California utilising L-Acoustics purpose-built L-ISA demo facility. The company realized that the technology would contribute to making shows sound more vivid and natural, ultimately making the audience feel more connected to the performance. The final decision to proceed with L-Acoustics L-ISA integration was made during the 2018 InfoComm exhibition in Las Vegas when the opportunity to compare the systems on offer from other manufacturers was extended. The ability of L-ISA to spatialise objects by controlling proximity and distance as well as smooth panning left to right was what made the technology stand out from other options. The company felt the technology could make listeners feel like they were in the heart of the

action happening on stage.

The frontal Scene systems for both the Sun Princess and Diamond Princess installations use five arrays of six Kiva II ultra-compact modular line source speakers across the width of the stage. These are augmented with ARCS WiFo cabinets to widen the panorama with an Extension system, along with two SB18 subwoofers.

The Diamond Princess installation takes the system even further into the immersive realm with 12 X8 enclosures to create the surround system. The Sun Princess system was installed in August 2018 and the Diamond Princess installation happened at the beginning of 2019.

The results in both theatres are remarkable, encapsulating the audience in audio that rivals and even surpasses West End and Broadway theatrical standards of production and immersion. “We are proud to be the first cruise line in the world to offer L-ISA technology on board our vessels,” concludes Simons. “Our early adoption of this transformative audio technology, currently used by world-class events, venues and artists, underscores our commitment to identify and act upon every opportunity to surprise and delight our guests.”

“We are proud to be the first cruise line in the world to offer L-ISA technology on board our vessels...”



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The Bille Brown Theatre, where “great and amazing things are found.”

The late Australian actor William Gerard ‘Bille’ Brown was a proud Queenslander, and like many from that vast Australian state, a larrikin. He once told a newspaper reporter that schoolteachers should teach their students that theatre is a bad influence. “They’d be lining up then,” he said to reporter Rosemary Sorensen of The Australian. “Theatre is a smelly, dark, dirty place in which great and amazing things are found. It is a cave, it is a quarry. And yet, at the same time, it is a place of purity and generosity.”

Bille passed away in 2013, leaving behind him a legacy that is honoured by Queensland Theatre in their newly renovated Bille Brown Theatre (formerly the Bille Brown Studio). Unveiled in October 2018 after a 12-month closure, the former ‘black box’ space is now a corner stage theatre seating 351 people who are never more than 15 metres from the stage. This brings the Bille Brown Theatre into a family of prestigious venues up and down

the East coast of Australia that share both their layout and touring productions created by the major theatre companies of Sydney, Melbourne, and Brisbane.

Accommodating yet intimate, the theatre needed a PA system that was unobtrusive, powerful and flexible enough to support multiple configurations. The Front of House loudspeakers needed to be rigged from a

steel grid structure and sit below a steel tension net. Any loudspeaker system chosen was going to be very close to both the stage and the audience. Sightlines needed to be preserved while rear rejection was paramount to ensure maximum gain before feedback.

Daniel Maddison, Queensland Theatre’s Technical Coordinator, and the technical team diligently evaluated possible solutions. One of the loudspeaker products on Daniel’s list was the Y-Series Y10P from d&b audiotechnik, a dual 8” with a 1.4” compression driver. “Y-Series is renowned for vocal clarity and rear rejection, which were two of the qualities we wanted the PA to have,” Daniel explained. But sightlines remained an issue.

Thomas Kelly, Consultant Liaison and Projects Team Sales at Australian d&b audiotechnik distributor NAS Solutions, was visiting the theatre while it was still a building site. He had met with Daniel to discuss another part of the facility entirely but was inspired to draw up a PA design after a tour of the construction works.

“I offered Daniel an LCR design with Y10Ps arrayed in pairs vertically, as is conventional, and he said no,” related Thomas. “Size, weight, and pattern control were the keys. Doug Pringle, Technical Sales, Design and Support Specialist at NAS, worked to model a compromise that would preserve sightlines,



Thomas Kelly



Daniel Maddison



Doug Pringle

listened carefully for audible changes in the coverage as we moved between the top and bottom loudspeakers in the arrays. Coverage was very smooth, with no perceptible differences. Matt and I commented on the first day of the install, before tuning and commissioning, that we would already be happy to run a gig on the PA as it was."

Since reopening, the Bille Brown Theatre has hosted three mainstage productions, a host of corporate events, and a touring production of Belvoir Theatre's 'Barbara and The Camp Dogs' that featured a four-piece rock band and a cast wearing wireless lavalier microphones in their hairlines. "The Belvoir touring party were very complimentary about the sound system," disclosed Daniel. "The gain before feedback we achieved was excellent, and the sound design of their show allowed us to fully exploit the infrastructure of the venue and the capabilities of the PA."

The fan-shaped auditorium of the Bille Brown Theatre, along with its relatively modest size, make it an ideal venue for sound designers to experiment with surround effects, soundscapes, and immersive techniques. Patch points have been installed throughout the theatre and grid, making placement of the compact E6 loudspeakers quick and easy. Queensland Theatre operates a QLab rig for sound effect automation and distribution, which can be used in conjunction with their Yamaha digital mixing desks, and computers running Dante Virtual Soundcard. With the d&b audiotechnik D20 and D30 power

amplifiers receiving signal via our Yamaha Rio Racks, and each loudspeaker assigned its own channel, configuration and deployment of the system is completely in the hands of the designer.

"We've run shows with the E6s as surround rigged up past the tension net, deployed around the back wall, and used as fill," outlined Daniel. "Every show we've done is as different as each sound designer. For our own Queensland Theatre production of Hydra by Sue Smith, we created a seaside soundscape, taking the audience from inside a theatre to a seaside village, which garnered us a lot of positive feedback."

The Bille Brown Theatre now joins its siblings The Fairfax Studio in Melbourne and The Belvoir Theatre in Sydney as part of a national circuit of intimate corner theatres, equipped with the latest technology and home to the most innovative theatre companies in their city, making sharing stories and culture across the continental spaces that divide Australia's main urban centres easier and the better for it.

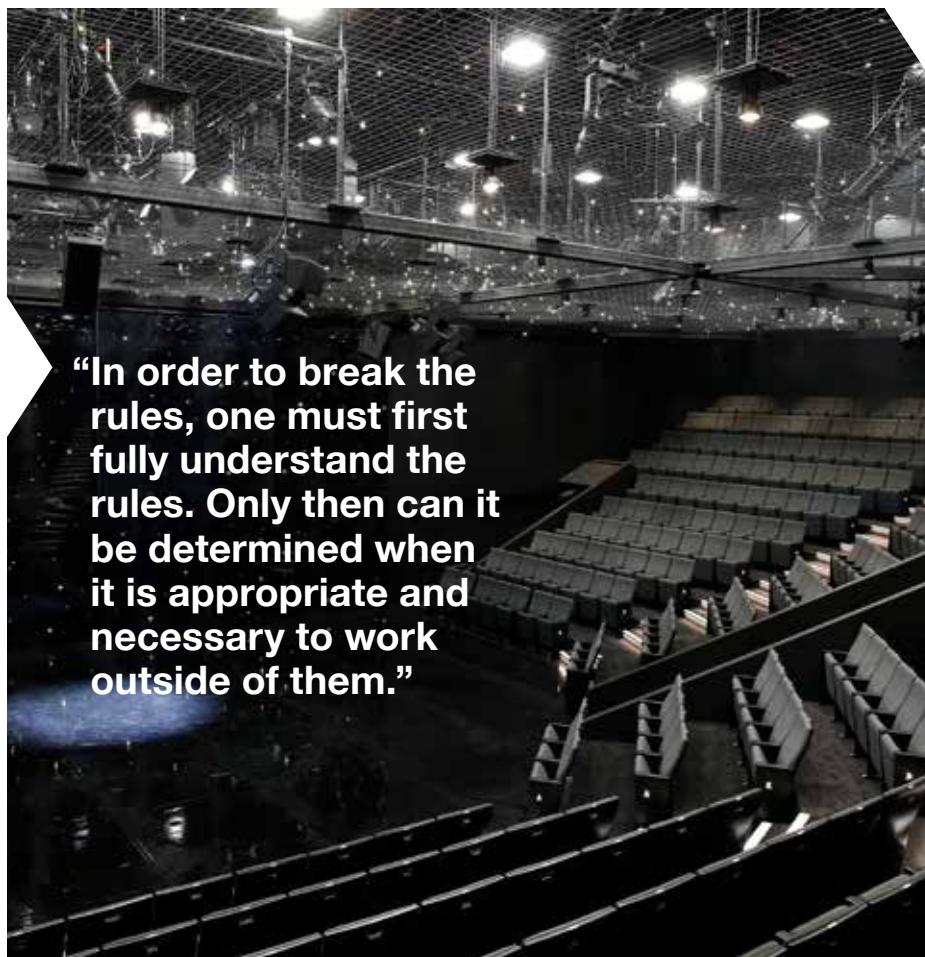
"I've been with Queensland Theatre for 12 years and worked on a number of shows with Bille Brown," reminisced Daniel. "It would have been lovely for him to see our finished theatre. He would have got a real kick out of it. He was larger than life and put everything of himself into all of the shows and films he performed in."

deliver pattern control and rig in the available space."

In order to break the rules, one must first fully understand the rules. Only then can it be determined when it is appropriate and necessary to work outside of them. "Doug and I created a solution in which three pairs of Y10Ps were hung horizontally," illustrated Thomas. "The horns were rotated to make coverage wider and the lo-mid pattern control was then effectively working in strips across the audience plane. Exhaustive modelling was used to get the correct spacing between the Y10Ps to minimise comb filtering. Finally, we built a demonstration rig and took it to Daniel to make sure it met expectations."

The demonstration worked. The full system proposed included the three pairs of Y10Ps as LCR, two single Y7Ps dual 8" loudspeakers as outfills, two 21S single 21" subwoofers, and six E6 coaxial loudspeakers that can be deployed as surround, effects or fill. For maximum flexibility, every loudspeaker in the theatre has its own dedicated processing and amplification channel, courtesy of two d&b 30D and two D20 power amplifiers.

"During installation, Sound Consultant Matt Erskine and I spent some time playing with the angles and splay of the Y10P arrays," divulged Daniel. "It was advantageous for us to be able to build the array brackets on-site in our workshop to millimetre accuracy, based on the modelling NAS Solutions provided. After install, we walked the seating and



"In order to break the rules, one must first fully understand the rules. Only then can it be determined when it is appropriate and necessary to work outside of them."



Paul Doornbusch in Studio One



Harman's Chris Hansen

Collarts – Reference Monitoring and Immersive Mixing

by Jason Allen

Collarts (Australian College of the Arts Pty Ltd) is an independent tertiary college specialising in degrees and diplomas in the creative industries, including audio engineering and music production. With four campuses all in the Melbourne hipster havens of Collingwood and Fitzroy, Collarts starts their audio students' careers right with groundings in all the fundamentals of studio recording, live production, and sound for film.

When the college moved its main campus from South Melbourne to Wellington St, Collingwood, they had an opportunity to build their recording, mastering, and post spaces to a high-end, modern specification, and have chosen JBL monitors in all their main rooms; Studio One, Critical Listening, and a mind-blowing, immersive Atmos Room.

The Rooms

JBL's flagship M2 Master Reference Monitors take pride of place in the primary recording space, Studio One, soffit-mounted into the wall, powered by a Crown amplifier and driven from a hit-making SSL AWS948 mixing desk. The Critical Listening room also boasts a pair

of M2s driven by a Crown amp, and doubles as a mastering suite. Three smaller recording spaces benefit from JBL LSR305MKII 5-inch powered studio monitors.

The Atmos Room, primarily for creating Dolby Atmos mixes to video, has been fitted with an incredible 20 JBL loudspeakers, including three JBL LSR708P monitors in L/C/R, 10 705P monitors around the walls and six Control 2P monitors on the ceiling, assisted by a JBL S2SEX 15-inch subwoofer powered by a Crown amp. A JBL Intonato 24 monitor management and tuning system sits at the heart of the Atmos setup, taking care of EQ, delay, and format switching between Atmos, 7.5, 5.1, and stereo.



Intonato in Atmos Room

Consistency

What's amazing about moving between Studio One, the Atmos Room, and the smaller spaces, is the consistency of tone, coverage, and accuracy between the JBL monitors, which range from the flagship performance and price of the M2s down to the everyday affordability of the LSR3s. This is particularly noteworthy in the Atmos Room, where different designs and driver sizes across models (8" in the LSR708P, 5" in the 705Ps and Control 2Ps) all work together with coherent phase response to create a flawless mix.

"The new waveguide that JBL designed for the M2s is a big part of that consistency," said Chris Hansen, Director of Recording and Content Creation for Harman Professional Solutions in Los Angeles, who was visiting Collarts as part of a 'Meet the Maker' event run by JBL distributor CMI in July. "It was designed to work with the new D2 Compression Driver, also designed for the M2. Because of the new HF driver and the waveguide, the M2s have a much wider sound-stage than other monitors. Listeners can move up to 60 degrees off axis and still get the same frequency response as centre. This technology has filtered down the range, and is a big part of the reason for the sonic consistency."

Reference Quality

"The D2 Compression Driver JBL have engineered for the M2 is astonishingly good,"



Atmos Room



Atmos Room in demo

agreed Collart's Associate Dean, Dr Paul Doornbusch. "We're all hearing better mid-range and more transparency in the high-end. To my ear, the M2s sound just as good as my personal reference, the legendary Quad ESL electrostatic loudspeakers. JBL have solved problems at the source by developing new drivers instead of retro-fitting an existing design or using DSP; it's a fundamentally better solution. The R&D that JBL have put

into those loudspeakers is underreported and underappreciated. It's a fresh approach, with smart engineering, and the results are sensational."

New Market Demand

JBL's design goals for the M2s were driven by changes in the recording and production industry that have seen audio mixing moving from purpose-built facilities (professional

studios) into renovated and adapted spaces. The M2's two way-design and optimised HF driver that crosses over at a surprisingly low 800Hz are both products of needing to make a 'big' monitor that is still 'small' enough to fit into most spaces, while keeping costs down by not adding a second woofer and all its attendant electronics and processing. The demand for mixing in new and smaller spaces is even more pronounced in video and post.

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INSTALLATION

As content companies like Netflix require all submissions to be in Dolby Atmos, there's been an explosion in new environments being fitted with immersive mixing systems. "This trend is driving the design flowing from the M2s into the LSR7s," pointed out Chris. "The engineers need high output to hit the Dolby SPL spec at the mix position, with even frequency response and ultra-low distortion. The waveguide design matched with new compression driver and two new woofer models used in the LSRs have achieved this."

Future Proofing

Dr Doornbusch sees the Atmos Room at Collarts as essential for preparing their students for the immediate future of the industry; "I see a world where there will be convergence of gaming, cinema, and VR. The audio industry should be moving towards a 'produce once and deliver' workflow where we mix to a standard such as Dolby Atmos which then renders at playback to suit the

equipment it's being reproduced on, whether that's Atmos, 7.1, 5.1, stereo, or Ambisonics. I think VR and gaming are definitely moving that way."

The Atmos Room's mix of 708Ps, 705Ps, and Control 2Ps was arrived at to satisfy a Dolby Atmos specification. "A lot of studios are mixing with the Dolby minimum recommendation of nine loudspeakers," related Dr Doornbusch, "but we wanted to go for something more impressive. The consistency of phase and voicing across the different models used in the Atmos Room is impressive and as good as I've ever heard. The 708Ps and 705Ps are highly comparable, with a little more bottom detectable in the 8s, but remarkably, not a big difference in the mid-range."

With a range of strong competitors in the monitoring space, Collarts chose JBL monitors for their performance and price. "The decision was partially financial, and partially

on the results," confirmed Dr Doornbusch. "Other monitoring solutions were similarly priced, or more expensive, and the JBL range simply gave better audio performance across the applications."

"Collarts students now have access to studios, a mastering suite, and an Atmos room with a quality of sound reproduction they can't get anywhere else," Dr. Paul Doornbusch concluded. "Even if they have decent monitors at home, you just can't get the lower couple of octaves, the lower distortion, surround, or treated rooms without spending the money. Our students are now receiving a premium audio education, and that gives them every reason to come and work on campus. It also establishes a benchmark for them, so when they graduate and are working in the industry, and are in a position to specify equipment, they can specify something that sounds just as good."



Critical Listening Room



The JBL monitoring family



The M2s at Collart's 'Meet The Maker' event

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LORD OF THE FLIES

by Cat Strom

Photo Credits: Zan Wimberley

At first sight, Sydney Theatre Company's latest production of Lord of the Flies offers a naked rehearsal stage under harsh fluorescent light, but then stagecraft takes over and the stage is transformed.

William Golding's *Lord of the Flies* is a 20th century masterpiece, as relevant today as it was on its publication in 1954. In it, Golding created an enduring modern myth, examining humanity's terrifying capacity for self-destruction.

Adapted for the stage by Nigel Williams in 1996, that script is now being directed by Sydney Theatre Company artistic director Kip Williams.

Williams and set designer Elizabeth Gadsby construct the world of the play through a bare stage; STC-branded storage trunks and unadorned scaffolding stand in for various set pieces. It doesn't look like much at all until Alexander Berlage's lighting comes into play.

"We wanted to create a space that felt like a theatre at its core, so the set design is quite minimalist at first appearance," explained Alex. "We then had to work out how to plunge the audience into a sense of theatricality without them realising they're being led into

this dark world. It was Elizabeth Gadsby who came up with the idea of using the fluorescent tubes of the theatre to create different landscapes."

The original idea was to have fluoros that flew down from the grid and could divide space in different ways whilst also changing colour and creating a variety of shapes. The design team then had to work out how to realise this idea and Corinne Fish, Head Electrician for the production, eventually discovered the Astera Titan Tubes. These smart LED tube lights feature programmable and customisable effects, TruColor calibration and most importantly, they are battery powered and offer wireless control."

Chameleon Touring Systems provided a kinetic lighting system of 40 wireless Titan Tubes and 72 new motors.

"This gave us the ability to use the Titan Tubes on individual winches so each could be flown in to various different heights," said



Mia Wasikowska



Joseph Althouse

Alex. "They could also be unclipped by the actors which was integral to the brief. They have been amazing; we use them as eye candy, scene setting and also illumination. They have RGBA so they have great colour control and colour mixing plus they have a long battery life span. We have them on a six hour setting, which allows us to have full control and full use over them and then they can be charged during dinner breaks."

The Titan Tubes can be arranged into arrays and shapes that describe the physical and emotional landscape of the story. The production is a prime example of set design and lighting blending into each other as the Titan Tubes are part of the set. They change position and colour to suggest the ocean, the tropical forest, and blood red to highlight the violence.

"They are a part of the set that just happen to light up," added Alex. "It seems that as we integrate new technologies into theatre, the lines become blurred as to what is light and what is set, even what is automation. Normally winches or anything flying would fall to the mech department but in this production it fell to the lighting department."

The show was programmed by two programmers; Blake Garner programming the conventional fixtures in the rig on an ETC Gio and Corinne Fish programming the Titan Tubes and winches on an ETC EOS Ti. The



The cast of STC's Lord of the Flies, 2019

"The stagecraft initially disappoints: my heart sank when I saw the setting for the first scene, which resembles a rehearsal room. "It's all blue," cries one of the boys atop some unadorned scaffolding, as though he is looking across the sea. But the pitch black walls and floor are lit by 16 ugly white fluorescent tubes hung from the ceiling; there is nothing here to denote we are looking at an island. Lighting ingenuity soon provides aesthetic relief, however: 20 additional tubes appear and all 36, now lit in blue, are lowered closer to the floor in various formations to indicate waves of ocean. Later, the lighting turns a blood red, signifying power and chaos as the tubes are unhooked by the cast to become weapons."

Steve Dow, The Guardian



Mia Wasikowska



Alexander Berlage

winches are run through the EOS software. Corrine controlled the heights of the winches using the beam parameter, setting a range of beam palettes for the winches at various heights. A less glamorous but more typical theatrical rig of ETC Source 4s, LED Lustres, Selecon Pacifics, 1.2K, 2K and 5K Fresnels, 2K PCs and PAR 64s added powerful side and top light. Added to that were Ayrton Wildsun TCs which Alex described as an incredible fixture similar to a moving head HMI.

"They really are punchy and have such an incredible white," he said. "I also had eight Martin MAC Viper Performances for specials to pick out certain moments in the piece. We

had to find ways to shoot around all the wires but also give the appearance at the beginning of the show of a brightly lit theatre."

There is a moment in the piece where the cast rip up the floor to create a fire pit and Alex chose ShowPRO Hex 16 LED Bars to provide the illusion of fire, along with a couple of smoke machines and a fan.

"We weren't looking for a replication of a realistic looking fire but rather the illusion of a heightened psychological fire," added Alex. "We then had six Martin Atomic 3000 strobes in the grid to emulate lightning strikes and one in the fire pit to give that initial burst of a fire

starting."

The cast do quite a bit of running around with Look Solutions Tiny Foggers, a sturdy unit that Alex says delivers a really nice fog.

"I'm always surprised by how much smoke manages to pop out of them," he laughed. "We also have some Magnum 1800 smoke machines." The images produced by this production of Lord of the Flies are quite unlike anything seen before on a theatre stage in Australia. Alex's lighting is eerie, scary yet quite exquisite. It sets the tone and paints the landscape in the most abstract manner, subtly suggesting shape, form and foreboding.

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MIXING SLASH RECORDING

by Andy Stewart

When you're recording, do you have the final mix in mind for each and every sound, or do you just try to capture 'best sounds', and worry about all the other stuff later? Some of us try to record 'context appropriate' sounds, whenever possible. Others don't. Often circumstances don't give us much choice anyway, and some sounds are inevitably recorded with either no plan, or by accident...

But when you do have the headspace, the right room, and the luxury of time, which camp are you in: the 'best sound possible' camp, or the 'context appropriate' camp? I'm in the latter, I think... except when I'm not.

It's a much-overlooked engineering concept: making predictive decisions about a sound's

role in a mix, and having the conviction to record it specifically to suit that context. Some would argue it's a fool's game trying to anticipate where a sound might end up in the stereo image of a final mix, and predicting how it should be recorded spatially is therefore pointless. For these engineers, it's a decision

best left until later, or to someone else – the mix engineer, in most cases. Other engineers would disagree, passionately in some cases.

At this more ardent end of the spectrum, engineers and producers go to great lengths to get the context of each sound spot-on during the recording phase. It's a slower, more labour intensive process, where there are no guarantees that the decisions made will ultimately be the right ones for the final mix. This approach also makes more demands on the recording spaces themselves – that they be the right ones – and often involves more pre-production and setup time to ensure that mic placements and recording chains are the right fit for the producer's sonic vision.

The benefits, however, can be profound. Putting aside for a moment the potential saving of vast amounts of time during the mix, by making so many of the creative decisions during the recording process, some of the greatest sounds in recorded history have been engineered this way. While there are literally thousands of such examples, one of



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the more iconic among these would have to be the drums on *When The Levee Breaks* by Led Zeppelin. I doubt John Bonham's drums would have had the same vibe, or possibly even been played the same way, had they been close mic'd and treated later in the studio with SPX90 hall reverb.

The Middle Ground

In between these two starkly opposed engineering approaches – where, at one end, everything is close mic'd or D.I.'d, and at the other, sounds are captured to fit into a context the moment their faders are raised – there's a huge grey area. Most of us inhabit this space, floating around in it, sometimes bumping up against the 'context appropriate' end of the spectrum – recording a big backing vocal from 40 feet away in a large commercial studio, or country hall – and at other times, close miking things to ensure sounds are captured full-toned and virtually bereft of any spatial context. Sometimes this decision is a conscious one, at other times circumstance makes the decision for us – there might be no money for studio hire, or rain pounding on the tin roof at home. Occasionally we just throw up a mic and go for it, not too sure of exactly what might be captured. (As we all know, embracing chance and serendipity has its place in almost any production.)

Some producers and engineers also have their pet preferences for context-appropriate sounds: a drum kit recorded in a big, bombastic space perhaps, or loud guitar overdubs that trigger big studio wall echoes. For other sounds, they may always prefer a close mic – like main vocals, perhaps. They might even record lots of quietly spoken, heavily compressed speech, and for that, prefer a very quiet, very 'dead' space. Sometimes an engineer or producer repeats their favourite process so often that it eventually forms their 'signature' sound. But to do all this well, of course, producers and engineers need the still air of a recording studio, or extremely quiet surroundings and/or deaf neighbours.

But to maintain this level of professionalism, where sounds are manicured as the producer sees fit, requires recording budgets, a clear understanding of the value of a large recording space, and the time and engineering skill to make the most of these precious environments. Unfortunately, almost none of us have all these key ingredients in place each and every time we produce an album. So while recording with the final mix in mind from the outset may demand great spaces, lots of gear, money, time for pre-production, and a month where every member of the band has no other commitments, for most of us this scenario is a pipe dream. Meanwhile, getting the job done, requires us to fudge our productions, one way or another.

This fudge takes place on many levels, and for different reasons, but mostly it's through financial necessity – having no money, or

at least not enough. As we all know, album productions usually lack the funds to hire a large recording space for any length of time, though I'm not entirely convinced that it's always the case. Sometimes people just don't think there's value in hiring a big space with lots of great gear, especially when their mate down the road is peddling the idea that his spare bedroom can produce the same result. Easily convinced, most people record their whole album in a small space, with only a few mics, as one massive collection of solitary overdubs.

That's all well and good, and each to their own, of course. But make no mistake, the albums we record this way, do, in the end, sound very different to the albums we might have otherwise recorded in a big space with lots of mics, time for thoroughly considered setups, and full band performances.

But reality is reality, and if you can't afford to go into a big commercial studio, you make do, one way or another. The trick then is to make the most of mic distances wherever possible – never just record everything up close all the time. Try to find spaces around you that sound interesting in some way: be they dry, highly reverberant, or idiosyncratic. If, for example, you can open a door from your recording room into a long hallway, at the other end of which is a tiled bathroom, then perfect! Capture that bathroom's highly charged response to your electric guitar overdub, with a long lead, a mic, and a compressor pushed hard. If you make this extra effort now, the bonus room response you capture can make a massive difference to your final mix. Search for these spaces consistently, every time you're at work. Never give up on finding them, and just remember, if a room mic sounds crap 15 feet away, that doesn't mean you stop looking... go further and further away. If you can't, record it regardless and delay it later in your DAW. It's the combination of both the room sound and the distance in time from the source that's key here.

Music Never Stops

Some of us record whole albums in our bedroom, others record bed tracks in a big space, then head back home for the remainder of the overdubs. Some of us build studios at home and get thoroughly side-tracked (for years, in some cases) by that process, while others record in rehearsal spaces and their grandparent's farm shed while they're on holiday in Rome. In the end, the desire to record an album is usually far stronger than the desire to fork out big dollars for a studio, even when the money is there.

Perversely, the good news is that having no money to spend rarely stops musicians forging ahead regardless. How is that good news? Because without this determined, stuff-it-let's-do-it-anyway attitude, eventually there would be no music industry left. Most great bands start from humble beginnings.

For many of us, our recording preferences change over time, or in some cases, like the wind... Using yours truly as an example: this month at least, I've preferred to record tambourine overdubs in a big space, using several different mic placements and tambourine types, until I've hit on the one I like best. I've had the same vibe lately with electric guitar overdubs and backing vocals... placing the amp, or singer, at specific distances from the mic, so that when the fader is raised the sound immediately appears to be a certain distance from the listener. But last month I recorded everything close-miked.

The important thing with any good production is that the engineer or producer is mindful of the choice being made. When a mic is placed two inches from 10 separate instruments, right then and there, that's a decision being made about the recording, whether you realise it or not.



Andy Stewart owns and operates The Mill on Victoria's Bass Coast. He's a highly credentialed producer/engineer who's seen it all in studios for over three decades. He's happy to respond to any pleas for recording or mixing help... contact him at: andy@themill.net.au

LETSA GO - IT'S SUPER MARIO TIME!

by Duncan Fry

Unless you're being chauffeured around or on a coach tour, the first thing you need to learn in Japan is how to use the railway system.

Japanese Railway stations are vast edifices, full of people and shops, and can be very hard to navigate for first-timers like my gf and I. The first thing to remember is to work out which entrance to use, and which exit. Using the wrong one will have you walking around the perimeter of the station trying to find the one you want - a distance of a kilometre or more at some of the larger stations!

Top of the line trains are the Shinkansen bullet trains, which can whizz you around in silent comfort from city to city in your pre-booked seat. If you have organised (from outside Japan) a Japan Railpass, you can book your seats on the Shinkansen for no charge, and then change it easily if your travel plans change. Below them in the train hierarchy are the local trains - Thunderbirds and similar, which are like a slower and noisier Shinkansen and stop at a lot more local stations.

Underneath them, both actually and figuratively, is the Subway, an enormous network in Tokyo, and substantial networks in all the other cities. It's the fast way to travel from suburb to suburb and back again, but it does have a bit of a steep learning curve. When you go down into it, it's like a whole new world down there. Jammed with people at all times of the day or night; everyone knows exactly where they are going, except you! But help is always at hand - in Kyoto we wanted to go to the aquarium, a massive nine storey building down near the docks, which had received rave reviews from people we met.

We tried to buy our subway tickets from the bank of ticket machines, but were having no luck with getting tickets for two people, not just one. On the front of the machine was a button marked 'Call for Help'. We pressed it, expecting that a voice would talk to us on a speaker. No. Suddenly a small door opened in the side of the ticket machine and a little man stuck his head out, said "Two tickets? OK," leaned out of the machine, jabbed some buttons on the front and two tickets miraculously appeared for us. He bowed his head, said goodbye, and disappeared back into the machine, while we stood there like stunned mullets!

Back in Tokyo, my gf had booked us into a visit to the Hedgehog cafe. We caught the subway to the nearest station, then wandered around getting totally lost until we asked the concierge at a nearby hotel where it was. He and the hotel manager looked at the address,

then the two of them walked us out into the street, and accompanied us until we found the correct building. We thanked them profusely; they bowed and wished us a happy journey, and then walked back to their hotel. I have to say that everyone in Japan was so helpful whenever we got lost - and that was every time we went out!

Still, back to the Hedgehog cafe. There is nothing the Japanese like more than a cute animal, and these hedgehogs were pretty damn cute. No we didn't eat them; the cafe part consisted of a coffee machine where we could help ourselves to a cup. The place was actually a petting zoo for hedgehogs, which lay around sleeping in cages set up like tiny apartments, with little doll's house furniture for them. We could pick them up, give them some food, tickle their tummies and take photographs with them until our time was up.

The next day my gf had booked herself into a photography workshop on the streets of Tokyo, while I had booked into having the most fun you can have while keeping your clothes on. Yes, even more fun than the train museum! Hard to believe I know, but I was going to be driving around the streets of Tokyo in a Super Mario Brothers Go Kart.

When I first saw this I thought 'Jeez I've gotta try this. It looks like so much fun that it's bound to be made illegal soon.'

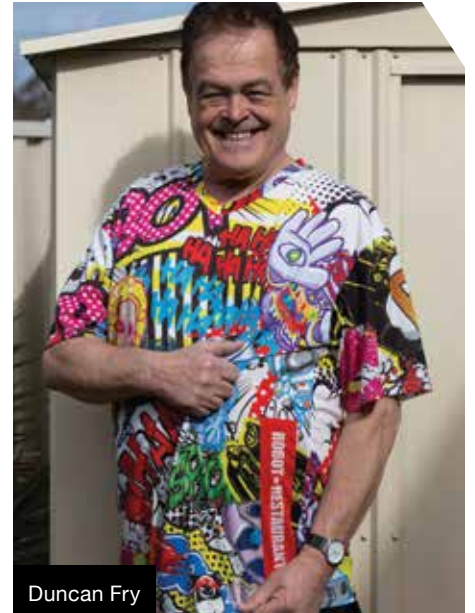
Sadly Nintendo had forbidden them from using any mention of Mario or Nintendo at all, under the threat of a mountain of legal action. Probably they didn't want the Nintendo name to be mentioned when the inevitable baby-boomer 'Tokyo drifted' their way under a bus! So now it was called Asakusa Samurai Kart.

I fronted up at their address at 10 o'clock, along with about ten other people who fancied living their own Mario Go Kart adventure. We all had to supply an International Driver's Permit issued within 12 months ago. Mine was a bit out of date as I had got one back in 1975 for my big trip around the USA. Had anyone ever wanted to see it? Never.

"Would you like to see my International Driver's Permit?" I had asked the car hire people in L.A.

"Nope," the guy at the counter had said, "I just want to see your money. And I'll hang on to your passport too, until you bring the car back!"

Fast forward forty-odd years and the permit was the only thing the Japanese wanted to see, so I went down to the RACV in Melbourne and got one. It looked just like the one I got in 1975 apart from the hair and moustache!



Duncan Fry

We all suited up in fancy dress. I chose a Shogun-type outfit, which was the only thing that fitted me.

"Any helmets?" I asked the mechanic lady who was helping me.

"Sure, lots of helmets." She pointed towards a big box of them, none of which came anywhere near being big enough for my head though. Oh well, at least I tried.

We went downstairs to our appointed Kart, had a quick indoctrination, then climbed in, started them up, and off we went into the side streets of Asakusa, following our team leader. This looks pretty easy, I thought as we wended our way between pedestrians, cabs and cyclists. Then Whammo - all of a sudden we were slap bang in the middle of Tokyo traffic, whizzing up the main streets at up to 60kms per hour, zig-zagging in-between trucks and buses, along overpasses and under bridges, shoulder to shoulder with enormous truck wheels that threatened to crush us if we got in their way!

It was terrific fun, and the two-hour jaunt ended all too soon. I'd recommend it to anyone going to Tokyo. Friendly, happy people running it, zippy little Karts, and you get to see Tokyo from a whole new perspective. Literally!

The other thing I would wholeheartedly recommend seeing is the Robot Restaurant, but sadly I've run out of space here. Look it up online though. It's a totally different experience, and truly a night out to remember. And for those of us in the audio biz, a huge sounding audio system.

Leaders of the NZ Entertainment Industry Acknowledged

An Instigator, a Pioneer, and a Guru

Claiming 170 years' experience between the three of them, Rex Gilfillan, Peter Frater and Chris McKenzie all received achievement awards at the recent ETNZ Conference in Wellington, NZ. With careers spanning six decades, and hurtling towards seven, these unstoppable stalwarts of the industry have had an extraordinary impact on the entertainment industry, not only in terms of technical knowledge but by virtue of their personal commitment to the sector.

The Instigator:

Peter Frater – Industry Achievement Award



Peter is a fixture of the Wellington theatre scene, occasionally on the boards, largely behind the scenes, and for the last fifteen years until very recently on the door of the Wellington Opera House.

His service to the entertainment industry has included instigating the not-for-profit Newtown Music Festival, now the biggest annual street fair and free music festival in New Zealand with 12 stages and 80,000 visitors. Back when it started in the mid-90s, Peter unearthed local Cook Island dancers, Samoan opera singers, rap and folk bands, all reflecting the vibrant, diverse and inclusive nature of Newtown. To this day the festival, and Peter, retain this love for the local community.

Peter also led the campaign to save the St James, an Edwardian theatre, threatened with demolition by a private development corporation. His passion and commitment to

preserving this Wellington icon resulted in the City Council's purchase in 1993, subsequent refurbishment and its place now as a leading venue for the arts.

Grant Gilbert, Live Event Independent Contractor and past president of the ETNZ, recalls Peter calling him up to tell him he'd got the key for the empty theatre, "We went down in the dark and checked it out, played with a few switches and got a few lights going. Then Peter pretty much moved in as tech and got things going."

For Grant, this is the perfect example of the kind of guy Peter is, "He will give up his own time and get something done, rather than wait to get paid for it. He'll provide all his own personal equipment to help get something going, and to make sure it is done safely."

Peter is also willing to take the time to share his knowledge, "He's one of us old school techs and he likes to talk! If someone is smart enough to recognise that Peter has been around a long time, and tap into that knowledge, he is always available. He's well read, well connected, and very approachable."

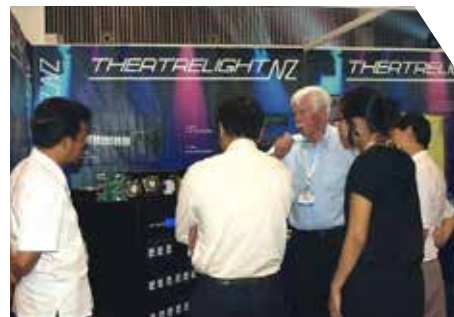
Now 80, Peter has spent his last fifteen years manning the stage door at the Wellington Opera house until his dismissal via email in May of this year as part of a health and safety initiative to move to professional contractors. An outpouring of shock at this heavy handed approach coursed across the nation's capital culminating in a slot on national news and tea with 92 year old Dame Kate Harcourt who thanked Peter on behalf of the city for his service to theatre.

ETNZ joined Dame Kate, adding the

appreciation of all the technical staff who had learned from him over the course of his 59 year career, which is apparently not over yet. Peter has told Grant that he has a few things he wants to do, "I suspect he is beaver away on something. He cares passionately about the working conditions for front of house staff and he likes to stir things up, so we'll see what happens next."

The Pioneer:

Rex Gilfillan – Industry Achievement Award



Another 80 year old who is still making his mark on the industry, Rex Gilfillan was honoured for his leadership in the field of entertainment technology and innovative product development. Rex founded Theatrelight in 1972 to provide a range of electronic lighting control products to the Theatre and Television industry and to launch his first memory lighting desk, the Memory Master. Rex has written and designed the operating software for nearly every product Theatrelight has ever manufactured, utilising his own lighting design and operating experience to innovate to ensure the boards worked quickly and ergonomically.

His own theatre experience began at the age of 14, then taking him overseas to hone his skills as a Lighting Director and Stage Manager in English repertory theatre, the Welsh National Theatre, and in many of London's West End theatres. Returning to New Zealand in 1969 he came to the aid of Downstage Theatre's tour of 'Staircase' to Auckland when they lost their lighting designer. It was a baptism of fire recounted in the annals of the history of the Downstage Theatre, a role that soon saw him at his kitchen bench making tin can lights for the Northern Sky for Ibsen's 'Ghosts'. During the dress rehearsal, the theatre's dimmer board started flickering and he had to operate the show off-the-cuff as the hired replacement arrived ten minutes after curtain call. With the theatre too broke to buy a new dimmer,

Rex convinced his manager to let him spend \$50 on transistors and have the afternoons to design and build a dimmer for the theatre. He had discovered his true calling. He built his first 24 channel dimmer rack. His business was born but he continued to design many shows for Downstage and Circa, until moving the business to Auckland in 1978.

Today as the markets move to LED technology, Rex has created new LED theatre luminaires both white and now colour, from the ground up. He has also embraced the changing need for distribution of power to new and existing theatres and studios employing both LED and tungsten lights. Distribution packs and the first ever off-the-shelf mix and match component patch panel system are but a few of the new ideas that Rex has pioneered. "You hear his latest innovation, and you think Rex, what have you done now? But it always works," explains Grant. "He's like the reverse of Apple who make things and then get people to want them. Rex knows what the industry needs, and then makes that product happen."

Theatrelight is still wholly NZ owned and continues to supply lighting equipment to NZ, Australia, Asia, Europe and the Middle East. And as Rex now reaches age 80 he is still as actively involved with new products as he was when he first started Theatrelight at the age of 33.

The Guru:
Chris McKenzie – Life Member (ETNZ)



Life members are defined in the ETNZ constitution as persons who have rendered outstanding service to ETNZ. A member of ETNZ since the beginning, and an executive member for 10 years, a supporting supplier from the first trade show, Chris ticks every box. Grant expands, "The ETNZ has had a few iterations and this is the strongest by far. Chris played a huge part in its revival and ongoing development, but he doesn't just serve the ETNZ, he gives his time freely across both sectors; theatre, and TV and film."

As such, Chris is a member of the Illuminating Engineering Society of Australia & NZ, a former chair of the New Zealand Film & Video Technicians Guild (Now Screen Industry Guild


New Zealand) and a current member of the Society of Television Lighting Directors in the UK.

Like Peter and Rex, Chris fell in love with the industry through community theatre, initially in Auckland, moving to Masterton in his late teens – and then quickly fleeing the Wairarapa for the bright lights of Christchurch and an electrical engineering degree. This remained unfinished as a career in lighting beckoned. From 1973 he worked at Wellington Opera House, St James, WNTV1, Channel 10 and Channel 7 in Australia. In 1977 he returned to Auckland to Vidcom and was able to learn about film from the greats such as James Bartle. In 1982 he started freelancing, and set up Professional Services Ltd, sister company to Kenderdine, which he continues to manage to this day. He has consistently been a heavy sponsor of community events and will always offer support with lighting equipment, and readily and freely share his knowledge.

Through his businesses, he continues to drive the industry forward, "He has always taken risks and brought new innovations into the country for us to play with, which we otherwise wouldn't have access to. And he just trusts you with it. He's a personable guy, well-liked and a life-long friend to industry people all around the globe."

All of which brings huge benefits to New Zealand live entertainment and to ETNZ.


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DOPE LEMON

by Cat Strom

Photo Credits: Stefan José / Ashley Mar

Angus Stone is so into his own lighting he purchased his own Robe fixtures for his latest tour!

Dope Lemon returned to the stage for their first headline tour in three years and audiences were invited to step into the real world of Angus Stone – a dream zone layered with melty moments, mischief and romance.

Matt Hansen of MPH Australia designed both the set and the lighting for the Big Smooth Australian Tour, and also toured as operator. Angus wanted a Seventies, plush TV set inspired stage and so Matt delivered classic gold velveteen drapes, light-up flooring, and retro looking signage.

Angus was proactive in securing the Seventies rock concert inspired sign and approached Rosemount to construct the timber and LED bulb structure.

The rest of the set - stands, lights, LED flooring and risers - was all built by Aaron Humber at Standby Go! Each band member

had his own podium, five in total, the floors of which are constructed of acrylic tiles that are edge-lit with DMX controlled RGBW LED tape. Each tile is pixel mapped into Matt's Hog4 console for control with the floor generating 15 universes of DMX. Standby Go! also supplied the custom power supplies, proprietary power supplies, looms, cabling and racks that all make the floor happen. Each podium has a curved edge and is ringed in a gold velveteen skirt hiding all of the hardware.

The four floor package racks each hold twelve Robe onePATT retro style fixtures. These 48 fixtures were actually purchased by the artist himself who was adamant in the purchase - although no one seems to know what he'll do with them after the tour!

"They look retro and cool, are RGBW with a nice soft light and ideal eye candy for this

show," said Matt. "The more I've used them, the more I like them."

In fact Angus is so into his production, he also purchased all of the set elements showing a commitment rarely seen by artists. Perhaps his farm up at Byron Bay will get some interesting flooring!

Matt's lighting rig also had Robe Spiiders and MegaPointes, GLP impression X4 Bar 20s, Elation CUEPIX Blinder WW4, and LED PixPars. The lighting rig is fairly simple as a lot of the work is done by the set.

"Angus wanted a dark and moody stage so I subtly coloured it mainly with side and back light," added Matt. "Other than a handful of Spiiders on the front truss which are not used much, the lighting is mostly situated on the upstage two trusses as well as on the floor. On the floor, there are a couple of Spiiders downstage left and right, then basically a Spiider for each band member between the two upstage trusses. There are also twelve Spiiders in the air, six on each truss, again used sparingly."

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Also on the floor are six Robe MegaPointes, three upstage left and three upstage right, with six more in the air.

"They're a relatively compact light for their output and feature set," commented Matt. "Their zoom range is awesome and they've got a bunch of great aerial effects, and gobo morphing effects with prisms, which is cool and unique."

Eight GLP impression X4 Bar 20s act as cyc wash for the upstage drape, occasionally spinning around to back light the band. As the Dope Lemon sign is 150mm deep, they also create interesting shadows to the bottom of the sign.

For control Matt had his Hog4 saying it's the only console he knows how to use! For the first time ever, he relied heavily on the Hog4 to do a lot of pixel mapping.

"As I said, there were 15 universes of pixel mapped LED floor in the set, which is a DMX DP8000 processor worth of stuff, and usually I would use a media server external of the Hog4," he explained. "The Hog handled it really well although setting it up did my head in and I relied on other people to help me."

At FOH, behind an Avid S6L console, was Adam Rhodes who has worked with Angus for the past 11 years. He describes mixing for Dope Lemon as quite a challenge with all of the vocals going through a TC Helicon Voice live distorted compression effect with slap delay at all times.

"It makes the gain before feedback issue much harder than usual," added Adam. "It's a balancing act between keeping the energy level of the band up whilst trying to ensure the vocals are intelligible and on top of the mix - particularly when it's a distorted vocal and both Angus and Louis are playing distorted guitars, Brad has his big muff pedal on the bass and its one big wall of distortion. The



traditional sound guy in me struggles with that!"

Adam doesn't use any Waves with the Avid S6L, preferring to use solely what comes in the console package. He uses the Bomb Factory 1176, Classic Bundle, and Digirack compressors and the standard Revibe and Reverb One reverbs that come with the console.

"I'm enjoying the Pro Multiband compressor too," he added. "The main reason I don't use anything external or use any third party products is that when you're touring around, there's very little support for it. If I'm going into a festival situation and they don't have that equipment, I don't want to be having to load and install things to make my show work in the 20 minutes I have to get everything running."

When it comes to reverbs, delays and effects, Adam says that he has always sculpted and created his own sounds rather than use presets from the pull-down lists.

"I'll always create my own patches and all this is easily done on the console's proprietary system," he said. "I don't use any feedback on the plugins, I do it all on the console. I do it old-school where I feed the delay back on itself and if I want it to be a little crunchy, I'll put a Sansamp in front of it or whatever I need to do to make the sounds I want to create."

Adam admits he sees other engineers use plugins and achieve the same results but he suspects a lot of people just flick through presets until they find one they like. Adam will have a sound in mind and then work out how to make it.

"I'm never really happy with presets anyway so if I'm going to change them, I might as well do it from scratch," he continued. "Plus Angus is quite particular about those sounds."

JPJ Audio supplied the touring control



package, and in-house PA systems were utilised, with Adam commenting that he loves the Nexo Alpha at The Tivoli as well as the d&b J Series at The Palais.

"The Nexo GEO-D at The Enmore is a challenge to deal with, particularly with my gain issues," Adam elaborated. "It was one of the early attempts at cardioid PAs and without a proscenium arch I get a lot of mid-range honk out of the side of the boxes, heading straight towards Angus' microphone and I struggle to get Angus' vocals up against that."

Everyone was on Shure PSM1000 IEMs, and there were wedges on the back of the keyboard riser to provide stage vibe for Angus, who doesn't like the fact that the keyboards are DI'ed and there's no sound coming out of them on stage. When he pulls an IEM out, he wants to be able to hear it acoustically on stage. Whilst all the guitars and bass have output through their amplifiers, the keyboard is silent which leaves Angus feeling disconnected. The drummer doesn't use a drum sub so Angus has a d&b V Sub right behind him to get that drum sub feel onstage.

Most microphones are fairly standard Shure models; 57s on guitar amps and snares, Beta 98s on toms and congas, KSM32s as overheads, however it's the KSM8 that excites Adam. All vocals use a KSM8 microphone with Angus recently acquiring two new nickel versions for this tour. Adam says that the KSM8 has changed his life with both Angus as a solo artist and Angus & Julia Stone.

"I could wax lyrical about that microphone for hours if you want!" he laughed. "The amount of gain before feedback I can get out of it is incredible plus the lack of proximally effect is fabulous. It's the microphone I've always wanted."

Eric Coelho mixed monitors on an Avid Profile monitor console.

THE FINE ART (-NET) OF LIGHTING NETWORK NODE SELECTION

by Alex Hughes

Selecting core equipment in any area of the entertainment industry can be a difficult process for any business, big or small. The world of transmitting and receiving basic DMX universes shouldn't be that tough, but the plethora of devices range in price from suspiciously cheap to those that must be dipped in gold, but only on the inside where it's not visible.

Recently I worked with a company that had just invested in a replacement for a brand-name node that had bitten the dust after many years of service. The node they selected was only purchased as it suited the limited budget

and ticked the basic requirements to replace the original one. When the replacement arrived, due to the lead time in acquisition, the node had to go out with very little in shop-testing, which involved checking that

all outputs were functional. Upon arriving on site the node performed without issue during initial setup, however, while addressing and testing some hazers an issue was discovered. Suddenly output would stop whenever the hazer was activated. After about an hour of troubleshooting with two technicians it was discovered the node would disable the output any time channel 512 was triggered. As a result, with rough mathematics, this node has already cost the company two hours of crew labour just at its first event.

The hidden cost of lost crew hours is one that is hard to quantify when considering equipment purchase and ongoing maintenance, not to mention product support and training. With any hardware that is purchased, training, and the utilisation of demo units, is a vital part of the hardware deployment. These devices normally form the core of your show output network and if there



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were to be a failure in their operation it could be crippling to your show or production. Most of the represented lighting manufacturers and distributors located in Australia and indeed other markets have offerings to suit a range of budgets. Getting out and talking to those companies should be a high priority especially when you consider the previous tale of horror. It is very important to take your time and review the product offerings. Some of the console manufacturers also have their own hardware as well that adds some extra functionality for users of their consoles in combination with their nodes.

MA Lighting, makers of the grandMA lighting desk range have an extensive range of nodes that vary from two output to eight output units, as well as a recent addition, the DIN rail variety (pictured) that are great for the installation market as they allow easy installation within an existing architectural system. Other than the various form factors, the MA nodes also come in two distinct variations.

The onPC MA Node range gives you output via MAnet, sACN, and Art-Net, and expands your parameter count, meaning if you have a computer running MAonPC you can use these nodes without any other MA hardware to output DMX. The lower price nodes are simply known as MA nodes which give you output via MAnet, sACN and Art-Net, but will not expand your parameter count without an MA desk or onPC node. These nodes are perfect for situations where you already have an MA console running but just need some more output locations. The MA range of nodes can be configured from either the front panel of the device or from a grandMA2/3 console or onPC system. We can also monitor their status using the same system. These nodes can however be used with consoles other than grandMA where required and support Art-Net v4.

This is just two examples of the hardware available from console manufacturers. There are many more available on the market as well as the even wider range available from other organisations. One such range of nodes are the well-known and respected Swisson range.

The current offerings from Swisson come in four and eight port variants and offer fantastic on-board configuration and management as well as via Art-Net v4.

There is a world of different options out there from hundreds of companies that cater to many budgets. It is very important to take the time to carefully consider all the options and make sure that you are getting the right hardware for the event or organisation. Get in contact with your local distributors and request a demo to use and evaluate where you will use your systems. Also ask them about Art-Net 4, which will allow you to configure nodes from Chamsys and MA. We are on the edge of something revolutionary.

A low price doesn't mean there won't be a high cost.



Chamsys SnakeSys B4 4 Port Node



grandMA3 DIN Node

Chamsys, who make the MagicQ range of consoles, have their own node products known as the SnakeSys range. Coming in two and four port offerings, both can be configured from a Chamsys console or PC system as required via the Chamnet protocol. Like the MAnodes, the Snakesys nodes support sACN as well as Art-Net and work with any console that outputs those protocols.



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ACME DOTLINE 360

by Adam Volz and Darren Russell

Dotline 360

Darren Russell

Darren Russell is the owner and Managing Director of Canberra's Elite Event Technology, one of the foremost production companies on Australia's East coast. Elite supply venues, large scale touring, and events, with a comprehensive and top-shelf inventory of hire stock.

The Acme Dotline 360 is a LED batten in two moving halves that have independent zoom, slightly reminiscent of a GLP X4. Elite Event Technology have installed them in FCTN Nightclub in Canberra (*profiled on page 32 of this magazine – Ed.*). As the club was taken over by new proprietors, we had the opportunity to install an entirely new lighting rig, which includes 86 Acme fixtures, with 24 Dotline 360s.

At FCTN, the Dotlines are hung vertically in rows of four, in continuous strips six fixtures tall, going floor to ceiling. They sit either side of a big LED screen, with moving head fixtures between the screen and the Dotline columns.

On the Gig

The Dotlines have been in the club for six months now, working five nights a week with zero failures and zero issues. The lighting operators love them; the Dotline's independent zoom and big zoom range means they can create a lot of interesting air effects. The techs have been using them for lots of point beams, and creating blades of light; air effects and eye-candy. The Dotlines have individual pixel control in terms of colour, and zoom is controlled per block of six LEDs. You can have one half zoomed in creating six individual beams, and the other half zoomed out creating a blade, which is quite cool. The response of the movement in the fixture is very fast for this type of design.

Control

We're running the Dotlines in full extended mode, taking up 57 channels of DMX each.

As a whole, the club is running a gazillion universes of DMX (technical, I know) because of it. Control is via a ChamSys Magic Q desk, working with Arkaos MediaMaster Pro media software. Running off the internal network from a Mac, lighting techs can pixel map from the Arkaos server, or use the Magic Q to control Arkaos. The system is set-up to take Art-Net, sACN, or KlingNet.

Design and Performance

I've been impressed by the performance of the Dotline 360 since I first saw a prototype in the Acme factory at the end of 2017. Surprisingly for this price point, Acme are now using Osram LED chips, which means we're getting good quality output, and great colour rendering. It also means you can trust the spec sheet; they are indeed as bright as they say they are.

Manual Handling

Manually, the Dotline 360s are very easy to work with. The design is well thought-out, with useful mounting points. They can stand freely, or you can run them along the floor. There's also the ability to attach an Omega-style clamp on the back. The FCTN install was done on a very tight schedule, after some unavoidable delays. The speed with which they went in, and the fact my staff didn't have anything bad to say about installing them, indicates to me that they've got the industrial design spot-on!

Adam Volz

Adam Volz is the Creative Director of TLD Creative; event concept, lighting design, programming, and operation specialists based between Brisbane and the Gold Coast. Operating largely on high-end corporate events, TLD work on unique events around Australia. Adam's background in the industry includes global experience with the Walt Disney Company, Broadway theatre, and lighting headliners at major festivals.

TLD Creative have invested in 16 units of the Dotline 360s. We were sold on the zoom range, and the options that other similar fixtures don't have. Where most batten fixtures have one zoom, the Dotline 360 has two. This means you're working with a resolution of half a metre, rather than a metre, so when you've got a lot of fixtures in a line and want to create a wave or curtain, the effect is better.

As far as I know, it's the first fixture on the market with a dual zooming module in one housing. Some LDs told us they'd never use that capability, but we've hired it to them, and lo and behold, they used it, in full 57 channel mode, fully pixel mappable.

Applications

We've been running the Dotline 360s for 12 months, and we've used them on everything, from corporate, to festivals, and touring. Our customers will ask for LED strips, so we show them moving LED strips, and they're blown away. We have them spec'ed on a tour this month, pixel mapped into a set flanking a big LED screen.

Colour and Zoom

The zoom range – from 3.5 degrees, up to 38 – produces a tight, hard beam when narrow. All of the other similar fixtures I've tried tend to create a soft edge when zoomed in hard, so that alone won me over. There's no haloing on the colours, and the 30W RGBW chips that are used in the Dotline are producing great colours. I've found that across the entire Acme range, even in their CMY fixtures.

Versatility

There's a lot of versatility out-of-the-box with the built-in macros. Even in Basic mode, you can run the Dotlines together in a line, trigger the macro, and it runs through the fixtures, which makes it really easy to create some cool effects. There's also a neat feature that Acme R&D developed – background and foreground colours. You flick a macro channel on, pick a macro that's already built-in, and



The Specs

Light Source: 12 x 30W RGBW LED

LED life expectancy: 30,000 hours

Zoom range: 3.5° – 38°. Zoom angle of the right and left modules can be individually controlled

RGBW colour mixing

Linear motorized zoom

Tilt movement range: 220°

4-button touch panel, OLED display with battery backup

Protocols: DMX512, RDM, Art-Net

DMX Protocol modes: 2

Control channels: 14, 57

Input voltage range: AC 100–240 V, 50/60 Hz

Power consumption: 450 W

Data in/out: 3-pin & 5-pin XLR

Height: 113 mm

Width: 278 mm

Depth: 1000 mm

Weight: 17 kg

create a new colour. You've now got two from the same fixture, which is great for when you need to make it look fancy quickly at corporate gigs and the like. For EDM and similar events, capabilities like this mean you're programming quickly, and looking effective.

Manual Handling

In terms of transport, we get four to a case, weighing in at 117 kg. While some batten fixtures have their power and I/O on the back,

the Dotlines have them on the bottom, which can be a little painful when you have to run them on the floor. To solve this, we've made power and data adapters. This isn't an issue when you're mounting on truss uprights though, and if the cables were on the back when on the floor, people would kick them, so there's pros and cons.

Build Quality

The Acme Pro range is well-built and feels sturdy. The Dotline 360, while bulky, is a

nice-looking fixture that doesn't look like it was built in a day. All of the R&D was done in-house by Acme, so this is not a copy of someone else's fixture. Acme have certainly put a lot of effort into the design.

Brand: Acme

Model: Dotline 360

Product Info: en.acme.com.cn

Australia and New Zealand:
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CLEAR-COM FREESPEAK II



Anthony Skerman

Anthony Skerman is a Technical Director at CMS Australasia, a customer-driven, bespoke event production company with offices in Melbourne and Brisbane, and presence in Sydney and Perth. CMS provide services in media and content creation, theming, live streaming, and sports pres, in addition to the core technical backbone of AV and staging.

CMS have invested in three Clear-Com FreeSpeak II base stations, each paired with 10 belt packs, five antennas, and two splitters. We went with the 1.9 GHz DECT operating range, and we've custom road cased each system with power, drawers, and a laptop for control.

Application

We deploy our FreeSpeak II systems on just about everything we do, but one of the biggest tests of their capabilities is when we provide production for National Basketball League and Suncorp SuperNetball games at Melbourne Arena. We have to provide comms coverage to the entire arena, including underground tunnels, with dedicated comms lines to the client, show callers, broadcasters, and some private users. We have finessed the system to the point where we can run the whole arena on FreeSpeak II with four antennas around the bowl and one or two in the underground tunnels.

Before we moved to FreeSpeak II, we ran a combination of wired and wireless comms,

which involved running a lot of long XLR lines, and then pulling them out again after the gig. Because of all of the steel in the stadium, the curve of the roof, and out-of-the-way places like the tunnels, we had constant drop-out problems on our old wireless belt packs. FreeSpeak II has totally changed that, and our entire workflow. It has made every aspect of our work in Melbourne Arena easier.

For bigger events, we often add an extra FreeSpeak II base station, as each can handle 25 connections. Occasionally we have to integrate in two-way radios. It's pretty straightforward to get two-ways into FreeSpeak II, and the belt packs have call buttons enabling talk from FreeSpeak II to the two-way system. If we need to scale up even further, we can use the two-wire or four-wire ports to get to regular wired comms.

Cabling between FreeSpeak II's antennas and receivers is Cat5, and the antennas run on PoE. Each base station can power five antennas. Getting your antenna placement right involves adopting recommendations from Clear-Com via the configuration software, and applying your common sense and training. FreeSpeak II handles reflections from roofs and walkways really well, and the omni-directional antennas are user-friendly and very forgiving. You get great coverage even if you put them next to a wall.

Audio Clarity

The audio clarity on the wireless packs is comparable to a wired system. There's no clicks, pops, or digital distortion. The new Clear-Com headsets for FreeSpeak II have

increased intelligibility, both in the capture of the mic and the response of the cans. The fact we can all hear each other perfectly above the roar of 10,000 sports fans is impressive. We love the feature that mutes the mic when you tilt the mic arm up to 12 o'clock – it helps a lot with muting coughs and such. Another thing that impresses me is the completely seamless movement between antennas; when your belt pack moves from one antenna's coverage zone to another, the change is undetectable.

System Configuration

We do all of the pre-show configuration at our warehouse. I'd like to see Clear-Com develop an offline configuration tool, as at the moment, you need to connect to a master station. Once connected, it's a simple process to name antennas and set their locations, name every user and belt pack and assign every talk and listen role. This level of prep makes life very easy once you get on site. We have a base show profile as a default that we can load from the laptop to the master station.

If changes need to be made on-site, they can be updated over the air without anyone on comms knowing anything about it. Sometimes it's faster to make changes via the front panel of the master station instead of the laptop, and it's pretty easy; all of the functions are broken down into menus, and the subfolders spill across the OLED screens left to right.

Belt packs

There are four channels per pack with discrete lines, and the reply function can



FreeSpeak II Base Station

Base-to-Beltpack Frequency Response: 100Hz - 7.1kHz

No. of Beltpacks per Base Station: 25

No. of Transceiver/Antennas Supported by Base: 10

No. of Active Transceiver Ports: 2, one port can remotely power up to 1 FSII splitter or 1 FSII transceiver

PC Programming Port: 2 LAN RJ45

Partyline A,B,C,D (each): XLR-3F, on/off termination switch, Clear-Com and RTS compatible

4-Wire/Matrix Connection: 4 RJ-45

Program Input: XLR-3F, transformer isolated, line-level input

Stage Announce Output: XLR-3M, transformer isolated, line-level output

Dimensions: (HxWxD) 44 x 483 x 259 mm, Weight: 2.5 kg

FreeSpeak II 1.9GHz Beltpack

Audio Bandwidth: 200Hz-7.5KHz

No. of Full-Duplex Audio Paths: Up to 5 with individual level control (2 dedicated rotaries, 3 with menu), 2 controls and a main volume

Level/Talk Controls: 4 pushbuttons, a reply button and 2 rotary controls

Enter/Answer-Back Button: 1

Range: Typical indoor range 90m, outdoor range 240m

IP-53 water and dust resistance

Dimensions: (HxWxD) 97 x 130 x 45mm, Weight 0.25 kg including batteries

push out to groups, via the base station. The charge time for the batteries is great; I once gave them an hour of charge time and got 18 hours of operation! That blows just about everything else on the market away; I like these beltacks a lot!

Support

Clear-Com distributor Jands keep us up-to-date with firmware changes, new features as they come online, and any integration

issues. The actual firmware update process is straightforward; we choose to do it item by item. You can update the entire system and all components at once over the network, but I just feel safer going one-by-one via USB.

Conclusion

I now completely preference FreeSpeak II over using wired comms. The flexibility, and the speed of deployment and pack-down just saves so much time. It wins hands down

for scalability, integration with multiple base stations and other comms, and the sheer channel count it can support over large areas.

Brand: Clear-Com

Model: FreeSpeak II

Product Info: www.clearcom.com

Australia and New Zealand: www.jands.com.au

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AVID S6L 32D AND E6L-192

Tony Bryan

Tony Bryan is a prominent Australian FOH audio engineer. Over 20 years of live touring, Tony has pushed faders for Grinspoon, Hoodoo Gurus, Jimmy Barnes, and Parkway Drive, among others. When not on tour, Tony can be found working for WA production company Audio Technik as an Account Manager canvassing clients and expanding Audio Technik's customer base.

Back in the day, I was a die-hard analogue mixer. I loved Midas XL4s, XL3s, and Heritage. Going to digital was a big change for me, and the rest of the audio industry. The first digital board I used on shows was a Yamaha PM5D, then I moved onto an Avid D-Show, and DiGiCo D5 and D1. I then settled on an Avid Profile while touring with Grinspoon, as it became easy to get a Profile anywhere in the world. Soon the whole industry had moved in that direction, and I had to admit it was faster and easier to do my job without all those patch cables in my hands.

So, having been a Profile user for years, moving to the new S6L has changed my whole outlook on mixing. You can really hear the difference compared to the older product; the preamps and converters have so much air in them. The high end is better than it ever has been. It's nothing less than a 100% improvement in the sonic performance compared to the older platform.

Channel Strip

I predominantly mix rock'n'roll, and I'm most often in front of 40 inputs or less. I'm also not a big plugin user. As I'm happy to stay pretty basic, I've been really impressed by the on-board dynamic strips on the S6L. The compressor is smooth, with no popping or clicking. It warms up the signal and adds colour, in a good way. The

whole channel strip has that characteristic, and in that way, it's similar to analogue. I don't think it's too much of a stretch to say that it's providing analogue warmth on a digital platform.

Effects and Other Processing

I have been using the included multiband compressor on some vocals, and to add some 'smack' on drums and bass; it's warm, and it works. The rest of the included effects are fantastic; I like the Re-Vibe, the included stock standard delay, and H-Delay (Waves). My setup sees me typically using three revs and two delays in the mix. For those engineers that want to, it's also really easy to incorporate your AAX or McDSP plugins. The S6L runs at 96kHz. Now, I don't want to open that tired old can of worms, but I don't know if I hear a massive difference between 48 kHz and 96 kHz, but I can confirm that everything works faster and feels more in control. The systems I've been mixing on connect from the engine to the amps via AVB at 96kHz, and it just sounds great when you keep everything in the digital realm at a high sample rate.

Surface

I like the one-touch operation of the mixing surface; one touch on the screen, and there's all your encoders for that channel strip. It's fast and responsive, and the workflow is quick, which is what you want as a live engineer. And that's how I use the screens; basically as channel strips, while the master screen I use for changing between metering, to groups to auxiliaries, and scene management, as I need it. I like the fact you can work on multiple screens at the same time. With the huge buss structure the E6L-192 has, you could easily use it for a massive monitor mix with two operators.

Hardware Controls

Unlike some, I really rely on my hands touching hardware controls; I'm a braille mixer! The

encoders are laid out well across the work surface. Ergonomically, both the encoders and faders feel safe and friendly, with a reassuring way of resisting and moving. Sometimes I feel like I'm mixing on an analogue board again. The ease of being able to get your hands to everything you need without having to move is fantastic. Customising soft buttons to suit is still the same as it was in the Profile - go to the Events page, and assign your buttons.

There's a couple of things I might like to change about the layout of the controls in the centre of the console; the buttons for changing layers are a little too close together for my taste, but that's my only negative. A single 'select' button on the channel strip would also suit me, instead of the S6L's design using different buttons to call up different functions.

Operating System

Even in touring these days when everyone is bringing their own digital desk, I wouldn't be worried about taking my file and loading it in to any S6L at any festival. I am extremely confident in the platform, and I know that no matter where I take my showfile, it'll work.

I love the Avid approach in that there's entry-level consoles, and right on through to the big boards, they all run on the same platform. It doesn't matter if you're starting out or a seasoned pro, you get to learn and keep using the same tools while you polish your craft.

The market seems to agree, and we need to buy more S6Ls for our hire stock at Audio Technik - they're going out on jobs more than any other desk at the moment.

Brand: Avid

Model: S6L 32D and E6L-192

Product Info: www.avid.com/s6l

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Headphone outputs: 2 independent 1/4" TRS stereo headphone jacks

Ancillary I/O: DVI-D video out, 5 USB 2.0 (2 rear, 2 front, 1 internal), ECx Ethernet port for wired/wireless remote control, GPIO (8 in/8 out), 2 footswitch, Linear Time Code input, MIDI I/O

Ethernet AVB ports: 2 etherCON (copper), 2 selectable as etherCON (copper) or SFP (fiber); redundant ring topology

Power supply: Dual redundant, internal hot-swappable PSUs

Dimensions (H x W x D): 91,388 x 1,304 x 787mm

Weight: 70kg



E6L-192

E6L-192

Sample rates: 96 kHz

Input channels: 192

Input processing: HPF, LPF, 4-band PEQ, Expander/Gate, Compressor/Limiter, Delay, 4 plugin inserts, hardware insert

Mix busses: 96 + LCR

Output processing: 7-band PEQ, Compressor/Limiter, Delay, 4 plugin inserts, hardware insert

Matrix: 24 x 24

VCAs: 32

Stereo solo busses: 2, with independent control

Graphic EQs (31-band): 32

Digital signal processing: Supports up to four HDX-192 DSP Expansion Cards for plugin processing; includes one card

Plugin support: 64-bit AAX DSP; also supports Waves SoundGrid systems through the WSG-HD Option Card for full integration with S6L, or over MADI

Plugin slots: 200

Pro Tools integration: Record/play back up to 128 audio tracks via Ethernet AVB

Expansion Option Card slots: 4 max

Ethernet AVB ports: Includes two AVB-192 Ethernet AVB Network Cards with two ports (up to two AVB cards supported), selectable as etherCON (copper) or SFP (fiber), with redundant ring topology

I/O sharing: Supports up to three Stage 64 and four Stage 16 racks, up to 192 inputs total (requires two AVB-192 Ethernet AVB Network Cards to share I/O)

Word Clock I/O: Clock I/O BNC, 75 Ohm coaxial

USB ports: 5 USB 2.0 ports (2 front, 2 back, 1 internal)

Power supply: N+1 redundant, internal hot-swappable PSUs

Dimensions (H x W x D): 218 x 430 x 483 mm

Rack spaces: 5U

Weight: 33 kg

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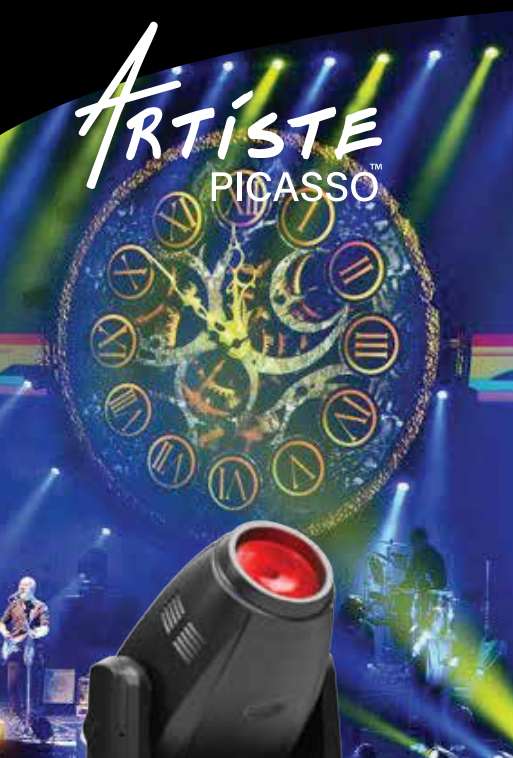
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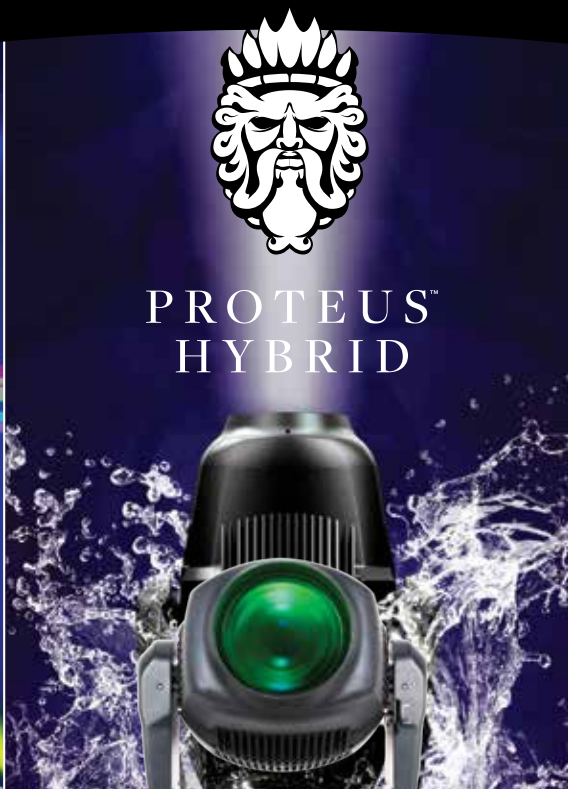
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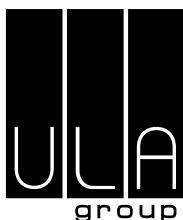
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