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- / ROBE LIGHTS EQUITANA
- / MARTIN MAC 101
- / ASTERA TITANS IN BAYREUTH OPERA FESTIVAL
- / NORTHCOTE THEATRE REVIVAL

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- / Jenny Barrett covers NZ
- / Tech Talk
- / John O'Brien's Backstage
- / Brian Coleman: The Gaffa Tapes



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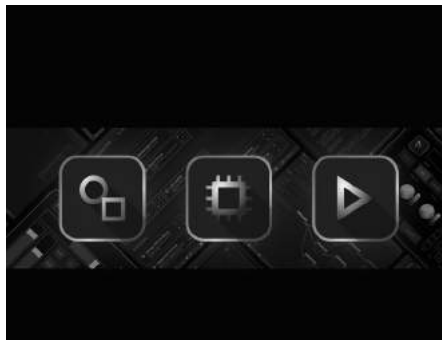
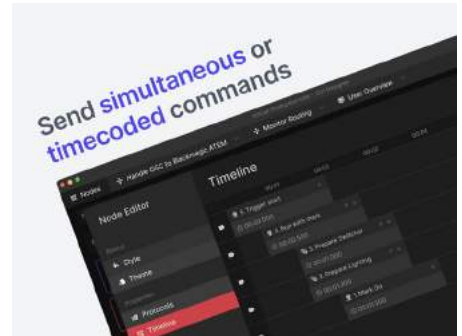
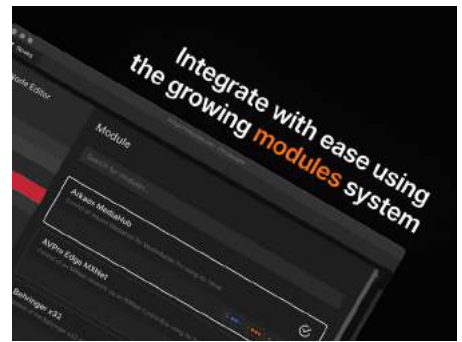


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ON LX Limited unveils Ctrl Suite

Ctrl Suite is a new control platform focused on fitness, live production and hospitality. The suite features all the necessary tools for building the ultimate unified control system designed with scalability at its core.

The suite breaks down the components of a control system into key areas such as data handling, user interfacing and event processing.

The data handling element of Ctrl Suite utilises standard protocols and pre-built modules to provide integrators flexibility when building their systems. This adaptive design allows for everything from basic protocol conversion to complex device state monitoring.

The interface element allows for interactive experiences to be created using components such as buttons, sliders, colour pickers and playback controls. When combined with

processes and modules, integrators can effortlessly provide for scenarios such as venue control, camera management or a fitness instructor station.

Processing data is at the core of integration and of key importance when building control systems. Ctrl Suite includes an interchangeable visual and code-based approach to processing, utilising JavaScript with an extensive API for complete access.

This system makes use cases such as 'Displaying warning messages on digital signage systems and recalling lighting states in the event of a fire alarm' or 'Providing directors and technicians in the gallery of a virtual film shoot with simple interfaces to recall video and lighting states at the touch of a button' easy to test and build.

Support is an integral part in the initial and continued stages of development and ON LX's Knowledge Base and online tutorials make it easy for anyone to start learning the system. Additionally, Ctrl Suite features a free Starter tier that provides access to one protocol input

and one protocol output, allowing technicians and designers to learn the system through real-world use.

Ctrl Suite is comprised of three key components:

Designer – Create and author workspaces with an intuitive UI. Sync workspaces to Ctrl Engine running on a computer in the main control rack to make changes quickly and efficiently.

Engine – A powerful process responsible for running the workspace. (Run on an exclusive computer or alongside your existing applications).

Player – Display User Interfaces over the network on purpose-built applications for macOS/Windows/iPad OS (Android support coming 2023). Ideal for projects that require frequent user interaction.

The Early Access version of Ctrl Suite is available for download and purchase now at the ON LX website <https://onlx.ltd/ctrl-suite>



RE-WRITING THE RULE BOOK

Favoured by multitudes of sound engineers all over the world, the S-Series brings DiGiCo console ownership within easy reach, with DiGiCo's flagship audio quality, power and flexibility condensed into compact frames. Featuring much of the same functionality as DiGiCo's full size consoles at a dramatically lower price point, the S-Series opens new doors to immense mixing capabilities.

Based on the same pioneering design approach as the industry-leading SD-Range, the S-Series boasts the same proprietary audio algorithms, plus a new ARM QuadCore RISC processor which runs in harmony with the FPGA core. The result is faster processing, with lower power consumption, all packaged in the workflow that the industry's most respected engineers rely upon.

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AVE at Integrate

AVE TAKE ON PROEL

Proel has announced a distribution deal with AVE, which will see the two companies collaborating to introduce the Italian-manufactured products into the Australian market. The agreement, which took place in the second quarter of 2022, was made possible by M-Global, the consultancy company initially bridging the two together.

Chandan Mahtani of M-Global said: "It brings me great joy to connect two companies who appreciate each other's capabilities and expertise. When we all met together at AVE's headquarters in Melbourne, it was amazing to see both companies hit the ground running."

AVE quickly invested in Proel demo equipment which then went out to its dealers, proving to be a great advantage for Proel. The distributor is said to be well-versed in the products and actively participates in industry tradeshows and publications throughout Australia.

Luca Pasquinelli, Proel International sales manager, said of the agreement: "Working with AVE is a huge pleasure and an honour at the same time. AVE is one of the largest and

fastest growing companies in Australia and we are confident that what we have with AVE will be a long and profitable partnership. From our side, we'll give them the maximum support to consolidate the brands presence in Australia."

Ben Rawnsley of AVE echoed this enthusiasm: "We are excited for the opportunity to bring Proel Stage Equipment, Die Hard, and the Italian made Axiom Pro Audio brands to Australia. The brands offer unique solutions that not only complement our existing lines but also offer intelligent solutions for our dealers and the Australian market. The service and support we have received from the Proel team has been amazing and we are looking forward to working together."

Reflections on the past year...

If a day can make a difference, then what can be done in a year? It is fair to say that the times preceding 2022 have been some of the toughest we have all faced. As we near the end of 2022, we look back at a year filled with positive news and updates from customers, and the many milestones achieved by AVE.

No one can deny how good it was to be able to attend industry events again - the lights, the sounds, and the ability to meet (responsibly) face-to-face. This year, AVE was able to attend the NAMM and Pro Light & Sound International trade shows, as well as exhibit at the local ENTECH Roadshow and the Integrate Expo, each one responsible for some key events.

- NAMM – the launch of the new Chauvet DJ ILS system
- Pro Light & Sound – the global launch of MAILA modular line array (coming to Australia very soon) and acquisition of Cameo
- Integrate – where AVE was able to showcase our integration lines
- ENTECH – that helped us launch our most recent laser presentation

But 2022 was not just about attending key events. We were able to accommodate our own Laser Industry Night with special guests Norbert Stangl and Denis Phoenix from Laserworld Europe, where we provided



L to R - AVE's Robert Szabo, M-Global's Chandan Mahtani, Axiom Pro Audio's Elio Caia, AVE's Ben Rawnsley and Steve Szabo, and Proel's Luca Pasquinelli

specialist training on high-end laser display systems, custom laser shows, and an introduction to laser safety.

Excitingly, this year has also seen AVE grow our customer offering with four brands being added to our already revered customer list; ChamSys (Quick Q), Cameo, Axiom, and Proel Stage Systems.

Our dedication to offering the best brands is only matched by our dedication to providing

market-leading services and support. As part of that, we are proud to announce that we have also grown as a team and welcomed three new sales reps across NSW, WA, and QLD, and two new head office team members.

Thank you to all who have joined us on this journey. We look forward to continuing to have you as part of the AVE family. So here's to 2023. May it continue to be successful and prosperous for all.

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Green-GO celebrates golden milestone for WBPX

Award-winning event and broadcast comms specialist Green-GO is celebrating sales of its Wireless Belt-Pack X (WBPX) reaching the golden number of 10,000, just as its wired counterpart, the BPX, had already done. To mark this milestone, the manufacturer, ELC, kept aside the WBPX unit with serial number 10000, had it gold-plated, just as it had done with the 10,000th BPX, and presented it to ELC founder and Green-GO inventor, Joost van Eenbergen.

The WBPX units with serial numbers either side of 10000 were dispatched as usual to Green-GO's global customer network. As chance would have it, the shipment went about as far as it could go, to Green-GO's distributor for Australia and New Zealand, Sydney-based Event Communications Australia.

Opening the package was sales and marketing manager Rod McKinnon. "With that particular shipment," he recalls, "We had a backorder, so I feverishly started looking for the WBPX because I wanted to get them out to customers as quickly as possible. As I ripped into the boxes, I saw the '9' serial numbers and then '10', so I think 'I'm gonna have '10,000' in there somewhere!' And then I thought, 'Hang on a minute - if I was in the factory shipping those numbers, I wouldn't have let it go in the box!'"

Event Communications sells Green-GO systems to a broad range of markets, as McKinnon explains. "We're all about infrastructure and safety – without good communication, you have an unsafe environment. So it's a broad spectrum – everyone needs to talk. We cover every need

from audio, lighting, front of house, box office, house of worship, schools and high schools and, increasingly, security."

McKinnon is full of praise for the product itself. He believes it is so successful because it offers an unbeatable price-performance ratio. "It's easy to use, versatile, and cost-effective," he says. "They're the three main selling points for our customers."

On its launch in 2011, the Green-GO digital comms system won a prestigious PLASA Award for Innovation, the impressed judges commenting, "The ELC Green-GO digital show communications system brings affordable show communications into the digital realm..."

The arrival of Green-GO was welcomed because it took a new, innovative approach



Green-GO founder Joost Van Eenbergen with the golden WBPX and BPX beltpacks



The WBPX unit with serial number 10000 was kept aside and gold-plated.

McKinnon, however, is far from annoyed at missing out on the 10,000th WBPX: "I'm really grateful to be involved," he says with a smile. "The Green-GO guys have supported us really well, and in times of great stress. Even with what I call the 'chip fight', which affected the whole world, Green-GO redesigned the product with new chips. The speed at which they turned that around was amazing. I don't think any other manufacturer was able to move as quickly. And their Control 5 software is outstanding. To do that at the same time, it's talent-plus from a manufacturer!"

He adds, "And without Green-GO being able to do that and continue shipping product, it would have been very difficult for Event Communications. I'm very grateful for the relationship that we've got."

ELC and Green-GO's Silvio Cibien says, "It's a very special achievement, reaching these figures. Since day one, we were quite confident we would get there! I think about the users: there are over 10,000 Green-GO wired beltpack and 10,000 wireless beltpack users in the world, even more if we count the numerous rental company customers, yet we have such a low rate of demand for service. Green-GO has a real footprint in the comms market, and our R&D team is working hard for the next step."

www.greengodigital.com

to crew communications. The Ethernet network-based digital intercom system has the advantage of having no single point of failure, because it is not dependant on a central matrix. In fact, the matrix and the configuration file is stored in each unit processor, whether

wired or wireless beltpack, outstation or multi-channel desk, all of which are powered via PoE (Power over Ethernet). What's more, as we have seen, it delivers these advantages at a price-point that makes it attractive to users worldwide.



*We wish
you a Merry
Christmas
& a Happy
New Year!*

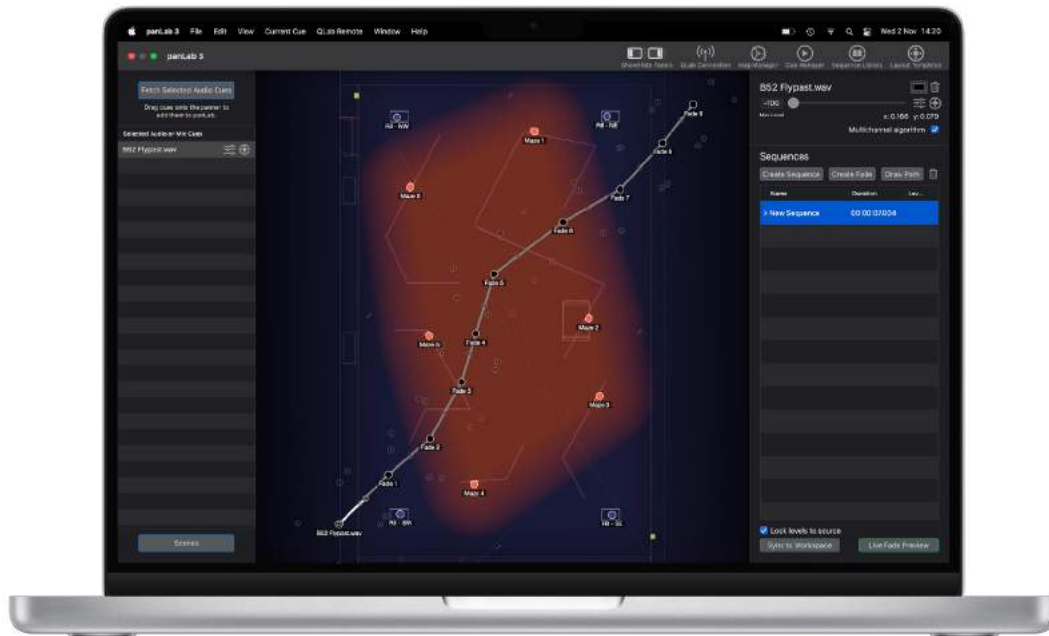
To all the production people and their families, may you have a safe and happy festive season.



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PANLAB 3 ADDS MAJOR NEW FEATURES



Innovate Audio have announced panLab 3, a major update to their spatial sound design and mixing tool. Available immediately as a macOS app, panLab 3 is an intuitive and user-friendly spatial audio tool, designed to integrate seamlessly with QLab.

Using panLab 3, users can intuitively mix QLab audio and mic cues by positioning them on a virtual map of their sound system. Using a bespoke algorithm designed exclusively for the software, panLab 3 takes care of much of the setup process required when configuring a spatial audio environment. As a result of this technological development, users should be up and running with panLab 3 in under 5 minutes.

New Features

Multichannel Algorithm

Unlike traditional spatial audio mixing solutions, panLab 3 can now seamlessly process multichannel audio inputs, with each channel of a multichannel audio file represented by its own position on the panner. This means it is now possible to render almost any multichannel audio format onto any custom loudspeaker layout. The new multichannel algorithm also allows users to easily adjust the width and angle of any multichannel audio file on the panner.

Fancy Paste, QLab 5 support and more...

- panLab 3 now offers the user granular control when pasting parameters from one cue to another, so it is possible to either completely

match the position and output level parameters of a cue, or just paste certain characteristics from one cue to another

- panLab 3 adds support for QLab 5, whilst maintaining backwards compatibility with QLab 4
- panLab 3 now autosaves documents in the background and includes support for reverting to previously saved versions of the document

Testimonials

"We used panLab 3 for mixing music and SFX stems in Frameless Galleries 'The Art of Abstraction' and 'Colour in Motion'. It is a hugely intuitive and creative tool, making the deployment of the composed music into the designed space a whole other layer of imaginative engagement with the project. The fact it now handles stereo and surround files meant we could use the movement of surround reverbs to really explode solo instruments into the spatial environment. It was a thrill to use panLab 3 and feel the music I'd written expand in the space." - Nick Powell, Sound Designer and Composer

"panLab has completely revolutionised the way I create work. The speed at which I can create complex audio sequences, from

surround sound transitions to the placement of music stems, has made my workflow much simpler. I can do things that would've otherwise been impossible when strapped for time. I have even found myself beginning my sound design and even compositional process with the reassurance and understanding of what I can achieve with my design because of panLab – like picking speaker plans based on the knowledge that I have the freedom of immersive and moving sound designs!" - Beth Duke, Sound Designer

About panLab 3

panLab 3 has been developed by Innovate Audio LTD and their directors Daniel Higgott and Oscar Higgott. Oscar Higgott is a physicist, specialising in quantum computing, whilst Daniel Higgott is a software developer and live sound engineer. They have combined their skills to create a product that completely reimagines how sound designers can create content in the live audio environment.

The software has been in beta since early 2022 and has already been used on a number of major productions including Secret Cinema presents Bridgerton, Secret Cinema presents Guardians of the Galaxy, Frameless Immersive Art Gallery and Identical, a new musical based on the novel 'The Parent Trap'.



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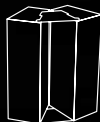
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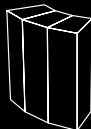
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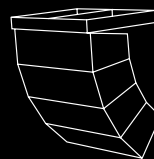
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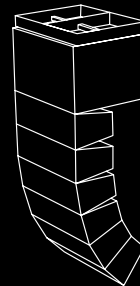
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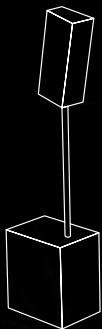
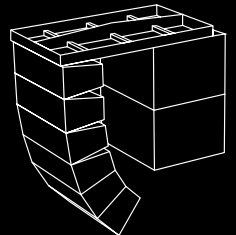
VERTICAL ARRAY



VERTICAL ARRAY WITH VIO S115



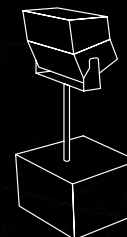
DOUBLE VERTICAL ARRAY



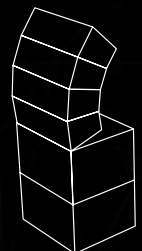
POLE MOUNTING

VIO X206 2-WAY ACTIVE SPEAKER

Max SPL.....	131 dB
VIO X206 Frequency Response [-6dB].....	70 - 18,000 Hz
VIO X206-100 Frequency Response [-6dB].....	70 - 17,500 Hz
HF.....	1x 1", 1.75" v.c
LF.....	2x 6.5", 1.75" v.c
VIO X206 Directivity.....	60° x 90° [rotatable horn]
VIO X206-100 Directivity.....	100° x 15° [H x V]
Amplifier.....	900 W RMS
Processing.....	FIR Linear Phase Filters
Width.....	210 mm [8.3 in]
Height.....	650 mm [25.6 in]
Depth.....	270 mm [10.6 in]
Weight.....	17.3 Kg [38.14 lbs]

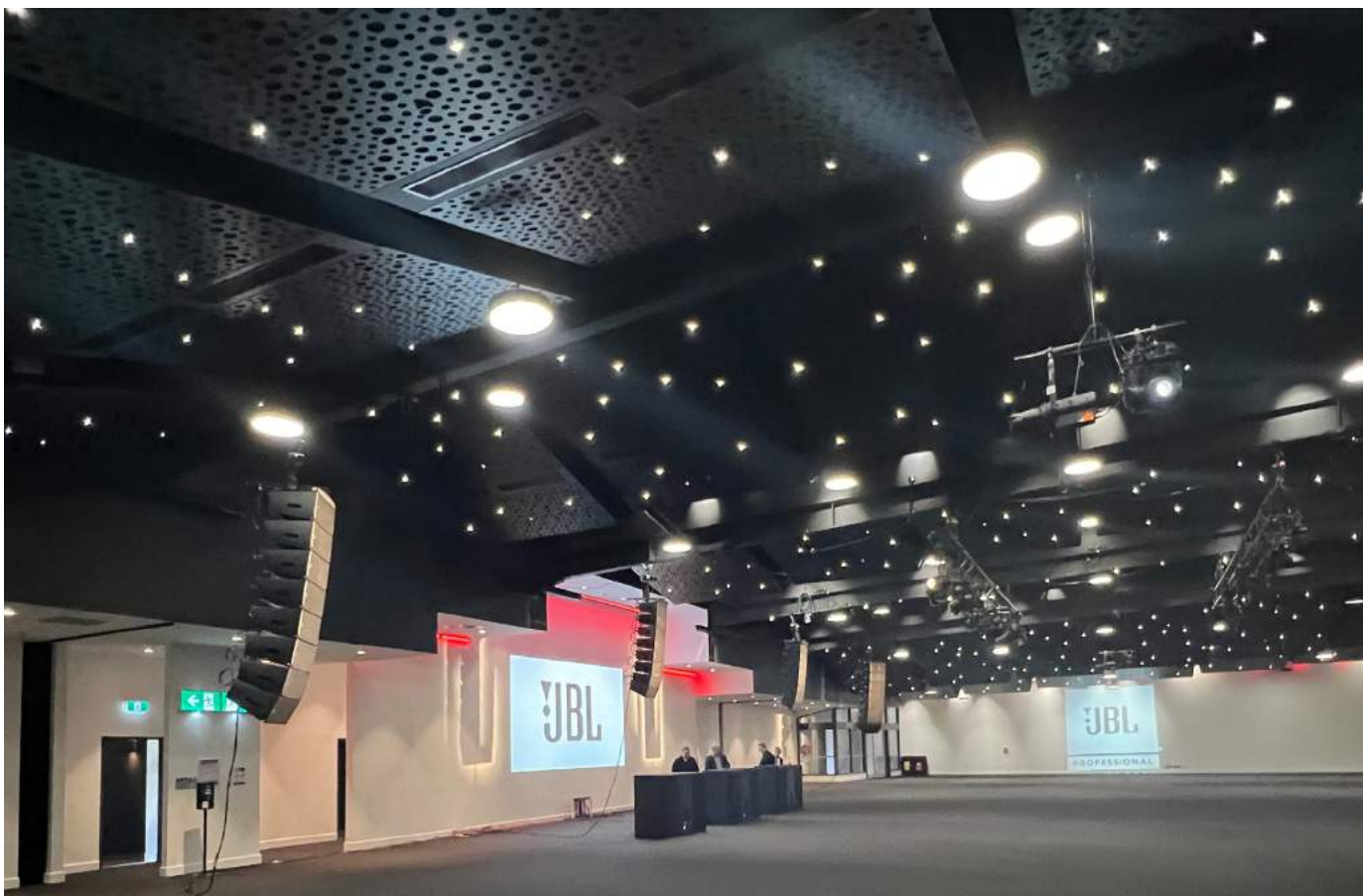


POLE-MOUNTED ARRAY



GROUND-STACKED ARRAY

dBTechnologies



JBL SRX900 APAC Launch

“THIS is the kind of space you need to demo two line arrays.”

Over three massive days at Melbourne's Showgrounds hosted by CMI Music & Audio, top brass from Harman, major distributors and customers from across APAC, and the audio professionals of Australia and New Zealand were treated to the regional launch of JBL's new powered line array, the SRX900.

CMI's organisation and presentation were extremely slick. Small groups were allotted times to tour through, with lots of personal time with both CMI and Harman staff. A polished JBL history lesson was the first stop, followed by a demo from Harman staff of the

new Performance software that controls and monitors SRX900, before stepping into the pavilion for the main listening event.

Harman's very own George Georgallis, Director, Product Management, Line Array Systems had set-up and tuned his babies personally. He walked the room with Performance running on an iPad, and showed me the tiniest sniff of an EQ (a miniscule cut around 1kHz) running on the system.

I had heard the SRX900 in Harman's demo room at InfoComm in June, but it was such a small space that they couldn't do it justice. Hanging in a cavernous major pavilion at Showgrounds was the perfect environment; it is the ideal tool to cover a space that size. Left-right hangs of both SRX906LA (dual 6.5" and 1.5" compression driver) and SRX910LA (dual 10" and 1.5" compression driver) were demoed with and without subs (SRX918S single 18"

and SRX928S dual 18") and the results were exceptional.

I've been banging on for a couple of years now about the major changes at JBL in terms of their drivers and voicing. It started with A Series, then the new VTX, and now it's in SRX. This is a completely new sound for JBL – flat, honest, clean, and European. This is not the old boom, tizz, and nastiness at 2kHz. It's beautiful.

I am extremely pleased to report that both models of the SRX900 are among the finest PAs I've heard in recent years. The fact that JBL have delivered a powered line array that performs this well at what is an extremely competitive price point is testament to the deep resources they have at their disposal in R&D and manufacturing. I can see no reason that SRX900 shouldn't be a huge success in both rental and install.

EOS APEX



The flagship Eos family console provides ultimate control at your fingertips, with a backlit programming surface, dedicated Target Keys, integrated 4K multi-touch monitors, 6+9 encoders and 5, 10, or 20 motorized faders, expanded playbacks, plus a master fader pair.

Large intelligent rigs, media servers, LEDs, timecode programming, busking – Apex handles it all with style.





Harman's Nick Screen and George Georgallis, with CMI's Billy Mak

It's also really versatile; you can run two elements on a pole on a sub, ground stack it, or fly it. The rigging is beautifully simple, and the voicing is neutral enough to handle corporate, theatre, rock, or EDM.

Nick Screen, Channel Sales and Audio Solutions Director, APAC, for Harman dropped in from his base in Singapore, where the UK national has been living since August last year. Being responsible for Australia as part of his portfolio, this launch event is one of the first times he'd had a chance, post-COVID restrictions, to get amongst the Australian market.

"The SRX900 being a powered line array at this price is a new category for us, and we're really excited about it," he enthused, "We're excited by the potential, especially here in Australia."

With Nick and I sharing a background in theatre, a European ear, and a snobbishness about JBL that dates back to the rock'n'roll days of the 1990s, we are both incredibly impressed by JBL's new direction and the quality of the results.

"It's because George is European!" quips Nick. "But it's definitely true of the premium lines. It's very much a more transparent, smoother sound than people have heard from JBL in the past. It's a result of all the new technology we're deploying. We've created new drivers and waveguides, and that's aided by the new simulation tools that are available now to develop and test prototypes. It even helps us engineer the ports so there's less noise. It all comes together to create a great solution."

Perhaps even more impressively, considering the current global situation, SRX900 is in stock and shipping now!

For full specs, see jblpro.com/product_families/srx900-series

Distributor: cmi.com.au



Sneaky bonus - We got to listen to JBL's new PRX900 on the way out courtesy CMI's Tom Kunz



Proud line array Dad George Georgallis with SRX900 and Performance software in hand



TOUR READY FOR SUMMER

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MicroLED, xR, and Market Growth

A Q&A with Absen's Regional Director of Oceania Tammy Yan

Chinese LED manufacturer Absen has been expanding in multiple vertical and horizontal markets in Australia and New Zealand over the last year. In August they showcased multiple new product releases including their remarkable new Clear Cobalt MicroLED series, in which tiny pixel pitches are achieved by mounting LEDs directly in resin. Regional Director of Oceania Tammy Yan was in Sydney for the event, and sat down for this Q&A with CX.

The Absen Global Partnership Network recently hit the milestone of 1000 partners. Who are your partners in Australia and New Zealand, and what markets do they service?

We have many partners across Australia and NZ who have now invested in Absen LED screens. They range from major rental and touring companies to well respected international system integrators.

What applications and markets does Absen see have potential for growth in Australia and New Zealand?

Film and TV is a growth market for Absen, also the staging and rental applications. The Absen brand is becoming a preferred choice for many

staging and rental clients due to its high quality and excellent local support.

LED panels are now often seen as a commodity, with only price distinguishing them from each other. How does Absen distinguish itself in the market?

Again people see the value in having a reliable product that is well supported across the globe. Many clients would prefer to pay a little more to know they have a reliable product from a trusted company with local supply partners.

While looking at Absen Aurora here at Integrate, distributor AVD explained that the versions sold here in Australia have been specially weatherproofed for the Australian market. What modifications have been made for Australia, and why?

Absen considers the environment that their LED screens are installed very carefully. As 90% of all outdoor screen deployments in Australia are within 15km of the ocean, it is very important to implement some safeguards in the manufacturing process to ensure the best performance of the product possible.

Absen coat all the electrical components in the Aurora series with anti corrosive sealant. Also



Tammy Yan

the frame of the LED screen is painted white to reflect the strong sunlight rather than absorb it. We also over-rate the power supplies so they are not running at full capacity to reduce heat inside the LED cabinet.

Absen's MicroLED Clear Cobalt is beautiful! What markets are you targeting initially with this premium product?

The Clear Cobalt product is aimed at the corporate commercial market and high end residential. Both of these sectors demand high quality and the Cobalt series delivers this.





NX Series

Unparalleled Visual Experience



The new Absen NX series adopts a native 16:9 aspect ratio design in a variety of pixel pitches. Dual brightness configuration allows customers to choose the appropriate brightness for their application. Available in two sizes, the small 45° panels provide more possibilities for creativity.

- 16:9**
Aspect Ratio
- HDR10**
Image Processing Technology
- 800/1500nits**
Dual Brightness Configuration
- 45° small panel**
Creative Shape
- 20kg/m2**
Ultra Lightweight
- 43.5mm**
Ultra Thin Design



Absen contact:

tammy.yan@absen.com
www.absen.com

AVD contact:

sales@avdistributors.com.au
+61 7 5561 7530
www.avdistributors.com.au





How does Absen see the future of MicroLED? In particular, it is currently very expensive - how long until the technology matures and the price reduces?

As you can imagine, the improvements and advantages we've spoken about offer a very attractive proposition and a lot of companies in the market, and our industry, are keen to jump onto the bandwagon.

However, timing is everything and whilst it would be great to be the early and potentially first adopter of new technologies, there are other considerations. For example, there's a need for production capabilities to further mature before we enter further into the market.

The MicroLED technology market of course, is vast. In addition to LED displays and screens for business applications, MicroLED will enter the consumer market. MicroLED technology opens up the mass-production of smaller pixel pitch LED products where smaller screen sizes accommodated by higher resolution will follow the needs of 4K and 8K.

xR and in-camera FX have been getting a lot of attention recently. What has the actual rate of take-up been among traditional broadcast and film customers such as TV stations and film studios?

All types of production companies are looking into virtual production as an alternative to traditional content making. Understanding where virtual production creates an advantage regarding project cost or environmental impact is critical for companies looking to adopt virtual production. While we don't know the exact percentage rate for traditional broadcast companies to look at Xr and ICVFX, we do know that there is a huge interest in the market

for companies who are digging into answering the above question and determining if their projects could benefit from virtual production. VP is a tool in content creation that needs to be used efficiently and for the correct type of project. The industry is in a learning mode regarding answering these questions.

What product specs and factors should a video production company who is looking to get into xR be aware of before they make a decision to buy a LED volume?

LED for virtual production, whether it be xR or ICVFX requires the LED wall to look amazing on camera systems. There are many different types of camera systems, and they all behave differently with LED. Using a cell phone camera to look at a LED wall will not produce the same results as looking at an LED with a cinema camera. Technology features such as LED refresh rates, driver-to-pixel ratios, LED pixel types, LED processing, and how well the LED supports wide color gamuts are all important features when choosing LED for virtual production. However, at the end of the day, you really need to talk with experienced people and look at real-world testing results to know how the LED will look on camera. Data sheets are a good starting point, however there is no replacement for having a deep understanding of camera technology, and how to test LED is critical. Working with a LED vendor who understands this level of testing and technology is key.

A lot of live production companies bought LED screens as they pivoted to producing virtual events during COVID shutdowns. With virtual events scaling back, how are these companies deploying their LED screens now?

LED is a versatile and powerful canvas of pixels that can be used in many ways, for many different types of applications. LED originally designed for virtual production can be used in a huge variety of solutions requiring amazing-looking display technology. Many companies are taking the LED that was once used for virtual events and now renting the LED to live events or short-term virtual production projects. LED has so many uses that there is a large market for potential use that goes way beyond the original design intent.

Do you still view the virtual and hybrid event market as a growth area as COVID restrictions recede in most of the world?

The popularity of and demand for Virtual Production is not directly tied to COVID. COVID absolutely pushed content creation into using virtual production almost exclusively when the world was not able to travel. However, virtual production (in different forms) has been around for almost 80 years. Virtual Production can help reduce costs in some circumstances, and can greatly reduce the carbon footprint of content creation while also creating changes in the workflow for the directors and talent for the better. Virtual Production also expands the possibilities with creative TV and filmmaking. Even if COVID was to disappear completely, virtual production is here to stay. So while COVID jumpstarted the use of LED volumes for virtual production, it was not the cause for the creation of the technology. Because of the jump-start, I think that the market for virtual production is in a growth state. Especially in a growth state for talented individuals who need the training to learn how to work in this new technology environment.

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EXHIBITOR PROSPECTUS 2023

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CENTRE THURSDAY 12

BRISBANE

SHOWGROUNDS
MONDAY 16

ADELAIDE

SHOWGROUNDS
THURSDAY 19

PERTH

SHOWGROUNDS
TUESDAY 24



PRM Hits a 6 at ICC Men's T20 World Cup

In May this year, PRM were approached by the local organising committee of the ICC Men's T20 World Cup Australia 2022 to provide management of the RF spectrum for the Super 12 rounds and finals series of tournaments, which was held throughout October and November.

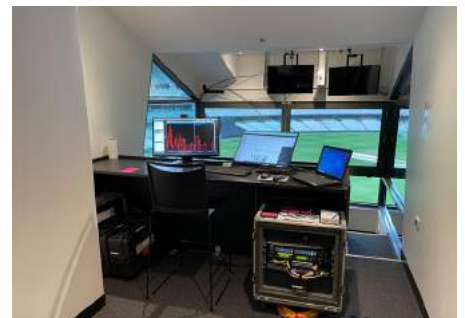
T20 Cricket is a fast and engaging game and the compressed timetable of matches around the country required some complex planning and preparation ahead of the tournament by Susan and Peter Twartz, owners of PRM. The opening weekend of the Super 12 rounds had matches running in three stadiums, including the now legendary India v Pakistan opener at the MCG. To achieve this, Susan and Peter engaged their team of local spectrum coordinators at each venue to assist them with the individual venue coordination as they flew between venues to manage any spectrum issues that came up.

Each venue had PRM's proprietary ScanTower system installed to monitor the RF environment prior to play and then throughout each match. The ScanTower system is a series of

RF monitors that are placed at discrete but strategic points throughout the stadium and feed data back to the event Spectrum Manager onsite or remotely if necessary. This was coupled with spectrum coordinators on the ground that physically monitor RF usage at the ground and police for rogue users that may effect the broadcast.

Since the summer of 2019/2020 PRM have provided RF spectrum management services for Test Cricket in Australia. The T20 tournament was different in that the Test season is a series of consecutive matches whereas the T20 tournament had multiple stadiums running concurrently.

Underpinning all this activity was the deployment of FreqCoord spectrum management software. Each venue was set



up as a separate event in the software and within each event, timeslots were created to cover different requirements, usually triggered by different broadcast unilats for each match at the venue. This was particularly pertinent for the grand final at the MCG as additional entertainment was added to the spectrum plot.

A tournament of this size has many stakeholders. The communication engine within FreqCoord assisted enormously managing the data and keeping relevant people updated on changes to the spectrum plan. Typical stakeholders for a tournament such as this include host broadcasters, sports presentation, hospitality, security, live entertainment, the venue owners with devices such as wireless mics, IFBs, RF cameras, drones, two-way radios and many, many more.

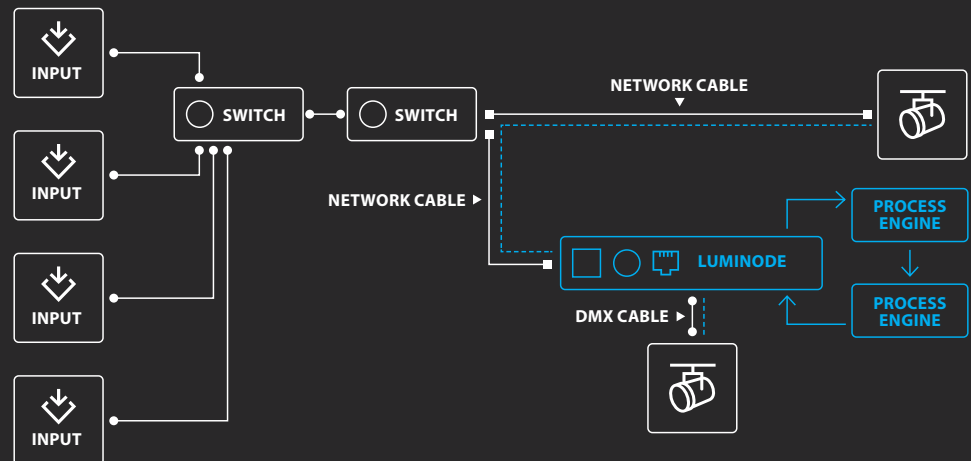
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LumiCore allows you to merge and route up to 64 x 4 input sources toward 64 newly defined universes.

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LUMINODE 12

- DMX redundancy
- LumiNode 12 is the ideal full 19" rack unit that offers you the highest density of DMX/RDM ports on the market
- 16 processing engines & 12 DMX ports



ShowPRO Pluto 550 Hybrid

The Pluto 550 is a Hybrid LED Spot moving head, with incredible strong output from high-efficient optics and 3-30° wide and precise zoom range. Its subtle design creates a compact and lightweight fixture, fast and silent X/Y movement, and quick and smooth CMY system matched with a 6 colour wheel. Other features include animation wheel, 10 gobo fixed wheel and 8 gobo rotating wheel, frost and prism effects. Added to that 16bit dimming to simulate the classic halogen dimmer curve. The Pluto 550 Hybrid is ideal for function centres, nightclubs, schools, and rental companies.

Australia: Show Technology Australia www.showtech.com.au (02) 9748 1122. New Zealand: Show Technology New Zealand www.showtech.nz (09) 869 3293

Highlite Showtec Spectral Revo UV

The Showtec Spectral Revo UV is a compact 100 watt UV LED spot fixture offering strong homogenous UV output. It's dust and water resistant, with an IP65 rating, making it a versatile option for indoor or outdoor use. The Spectral Revo UV projects a soft field of light with a 45 degree fixed beam angle. The light comes with a floor stand and is compatible with a quick-lock bracket for hanging applications. Its aluminium die-cast housing makes it a rugged fixture that is built to last and only weighing in at 6.5kgs. Optional accessories include a Top Hat and Barndoor.



*Australia: Clearlight Shows www.clearlight.com.au or (03) 9553 1688
New Zealand: Kenderdine kelps.co.nz or (09) 302 4100*



PROLiGHTS Smart BatWash

The Smart BatWash is a high-powered, compact LED Wash light that can be operated wirelessly or wired. The Smart BatWash has 15x 20W RGB + Warm White LED emitters, outputting a powerful 6,300 lm light in a fully IP65 body. Its long-lasting battery has a selectable range from 3h mode on full output up to 18h mode on a reduced brightness level. The Smart BatWash has Wireless DMX (W-DMX and CRMX), a PowerCon True in and out connectors and DMX in and through.

Australia: Show Technology Australia www.showtech.com.au (02) 9748 1122. New Zealand: Show Technology New Zealand www.showtech.nz (09) 869 3293

IsoAcoustics V120

IsoAcoustics new V120 system provides an aesthetically pleasing and cost-effective means to markedly enhance the sound clarity and transparency of wall or ceiling-mounted professional audio speakers. The IsoAcoustics V120 features a unique, low-profile isolation module that adapts to wall and ceiling applications. With a weight capacity of up to 18.1kg and adapters available for most popular speakers, this assembly provides 360 degrees of horizontal rotation as well as 90 degrees of vertical tilt adjustment.

*Australia: NAS nas.solutions or 1800 441 440
New Zealand: Music Link www.musiclinknz.co.nz or (09) 250 0068*



Renkus-Heinz PCX

Renkus-Heinz PCX Series loudspeakers are now available in a passive column array. All three sizes in the PCX Series are IP64 weather resistant with an included gland nut protected input cover. Each model also features high-quality audio transformers for 70V/100V constant voltage operation in large, distributed audio systems. New to the PCX Series, the columns include the innovative passive crossover network with Passive Unibeam Technology, designed to address each transducer with specific all-pass filter networks, gain shading and additional frequency filtering to achieve asymmetrical dispersion on the vertical plane and an extremely consistent coverage pattern.

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



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For Sales Enquiry: Sales_APAC@rossvideo.com

rossvideo.com/ultrix

ROSS

Astera RuntimeExtender

The RuntimeExtender is an invaluable 'battery plate' tool for lighting techs working with Astera products. RuntimeExtender is compatible with most Astera products – Titan, Helios and Hyperion Tubes, HydraPanel, PixelBrick – and allows connection to an external battery so spare camera batteries can be used to power the Astera units in situations where the internal batteries might run out e.g. protracted shoots, and longer running events where longer than standard run times are required for the lights. When the connected lights are running at low level or switched off, the internal battery will also be recharging from this connection, allowing batteries to be swapped during the shoot so the lights can be used indefinitely.

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



AMX Jetpack

AMX Jetpack is a new, affordable 3x1 switching, transport, and control solution for K12 classrooms and meeting spaces. The kit features simple to operate room controls, multiple 4K60 video inputs, and enables voice lift for clear communication. Jetpack combines 4K60 4:2:0 HDMI and USB-C video switching and distance transport, room control, wallplate accessibility, and audio amplification in a kit that requires zero programming. The kit is fully loaded to support a wide range of classroom and meeting space applications and can be controlled through panel buttons, IR, RS-232, TCP/IP, a REST API, a Web GUI, and the Jetpack Management PC tool.

Australia: MadisonAV
madisonav.com.au or 1800 00 77 80
New Zealand: JPRO jpro.co.nz
 or (09) 275 8710

ETC ColorSource V

Building on the popular ColorSource line that is lighting schools, houses of worship, hotels, and theme parks around the world, this trio of fixtures includes ColorSource Spot V, ColorSource Fresnel V, and ColorSource Spot VXT.

ColorSource V's five-colour array of red, green, blue, indigo, and lime makes it possible to produce the softest pastels and bold, punchy colours from the same fixture. In addition to the array, all ColorSource V fixtures include Multiverse wireless DMX/RDM, NFC for remote fixture configuration when used in collaboration with ETC's free Set Light app, and increased brightness from the past ColorSource line.

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



NEW GEAR

Meyer Sound Nebra Software Platform

Meyer Sound's Nebra software platform brings together multiple tools for specific tasks into a single integrated solution. The initial release is focused on fast and intuitive connectivity for endpoints in Milan AVB networks, including Meyer Sound's PANTHER large-format linear line array loudspeaker, three ULTRA-X series point source loudspeakers, and the USW-112P compact subwoofer. Nebra also provides comprehensive system monitoring directly via the AVB network or, for other Meyer Sound products, through the existing RMS network via the RMServer. Nebra also will provide connectivity for Meyer Sound's Galileo GALAXY Network Platform and for third-party network devices using the Milan protocol.

Australia and New Zealand: meyersound.com



Quest QX Series

Following the release of Quest Engineering's unique modular power amplifier, the QX-300A, Quest has expanded the QX Series, introducing four new power amplifiers. The QX4150, QX4300, QX4750 and QX41500 are designed around exceptional Class D amplifier performance, providing 4 x 150W, 4 x 300W, 4 x 750W and 4 x 1500W respectively. Perfect for permanent audio installations requiring small to medium power amplification, the new additions offer multi-channel options across each model, auto load matching LoZ and HiZ (70V or 100V) and standby functionality. Individual High-Pass and Low-Pass filters available on any channel allow for rapid installation.

Australia: Group Technologies grouptechnologies.com.au or (03) 9354 9133
New Zealand: Live Sound www.livesound.co.nz or (09) 378 9863



UMBRELLAS AT SUNSHINE

Soho Sound Design install Meyer Sound in James St, Brisbane



MM-4XPs in the garden



MM-4XPs on the umbrellas

Once renowned as part of the seedy Fortitude Valley, James St Brisbane is now a pretty funky space. Long gone is the underbelly and high end is all the rage there. So much so that the street even has its own website www.jamesst.com.au. Fashion, health and eateries feature in a very glamorous and busy area.

The outfit behind this restaurant didn't spare much expense. According to AV installer Jason Roesler of Soho Sound Design, "They spent a fortune on the fitout, including the foyer. They wanted a lot of umbrellas out in an open area immediately beside the street. We had to do a fairly complicated install where we installed all the speakers and light fixtures on these umbrella poles."

Installation into features like these is not some easy retrofit. Jason was fortunate that, "these guys do it properly. They had an architectural firm who we worked with from the ground up. All those umbrellas were rendered in 3D with the speakers and the lights. We already knew

exactly what it would look like and exactly where everything would go. That meant we could plan our conduit and cabling properly."

Jason chose Meyer Sound for the speakers. "It's hands down my preference for every job. Because the 48V stuff is really key. I much prefer a self-powered loudspeaker, for all the obvious advantages, being able to wire them with low voltage wiring means that it's pretty cheap and easy. And then you don't end up with a rack full of amplifiers for multiple channels."

Soho Sound Design security bolted an MM-4XP to each of six umbrellas, two more

to custom poles, and a further five inside the venue. Each is individually addressable, IP rated as required, and hued to suit its location in the venue. These latter options are requestable features for all Meyer Sound speakers. Four MM-10 subs give some bottom end, with two located under outdoor benches, one in the wait station, and one inside at the serving table.

For customers like Soho, "The outdoor durability of the products is amazing. The colour matching is fantastic and, size for performance, those MM-4XPs and MM-10 s are just unbelievable. For anything short of a dancefloor, those products are all you need."

To make it all work well, Jason designed a system with a BSS Soundweb for DSP and signal distribution, Dynalite for easy DALI lighting control and RTI as the overarching layer to tie it all together. The Dynalite also controls a couple of Epson EV 110 digital signage projectors that display drinks menus on the walls. To make it easy for the venue to operate, a custom interface is provided on iPads and iPhones using RTI Panel. Further control options are one touch macros triggered from Dynalite button plates.

This top layer is very important for Jason. "That interface is big part of our offering. There's no point selling someone a really nice Meyer Sound system if it's not user friendly."





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Hidden MM-10 subwoofer

Programmed and laid out by Ash Bennett of Benno Technology Solutions, “the interface that we put in is so user friendly - we don’t even need to show the staff how to use it.”

Sunshine Eatery is but one project for Jason and Soho in James St. Having fitted extensive AV systems into the 5-star Calile Hotel directly across the road, he is also in planning with the trader’s group to install and wire up audio along the whole avenue. “The main drivers for wanting to do this is that they do three or four big festivals in the street each year. And there are 10s of 1000s of people in that street at that time. It’s mayhem. As the street has grown so much in the last few years, the reality is that a permanent audio system with distribution is required to keep up with the scale and complexity of events.”

Current goals look at covering about 300m of the road with a networked series of Meyer Sound ULTRA-X20XP point source self-powered speakers. They’ve started with five of these mounted outside the Calile and plan to add up to 50 along several blocks.

Wiring between different tenancies is a tricky proposition but Jason specifically chose the ULTRA-X20XP to tackle this problem. Linked between buildings with 48VDC (class 2 ELV) wiring, multiple; “legal or safety issues associated with higher voltage cable or connections are avoided”. Further, integrated M8 rigging points and multiple mounting options for the ULTRA-X series will help allow easy installation across the many different facades and street frontages involved.

Soho Sound Design do all their own design work, commissioning, and tuning. “We do explain our methods to Meyer Sound, and they are pretty happy about them.” Jason continues: “They will help every time I ask, but we don’t need to ask that much. They’ve been good with spare parts and always come to the party. If we have a problem, they are always very helpful.”

This helpfulness leads Jason to state; “We only use Meyer Sound these days. Especially with being able to deal with them directly. It’s so much better to speak direct to the manufacturer and get the info straight away, get help when you need it. It’s a good relationship.”

As James St continues its expansion plans, and Jason’s Soho Sound Design picks up even more customers, this relationship with Meyer Sound will only get stronger.

www.sohosound.com.au

www.bennotech.com.au

meyersound.com



Epson EV 110 digital signage projectors





The Geode Centre

Melbourne's St Peter's College builds pro-level PAC

Down in Clyde North, at the edge of south-eastern Melbourne, a remarkable new venue opened in October at the campus of Catholic secondary college St Peter's. Named for the geological phenomenon of the geode – hollow rocks filled with spectacular crystals – The Geode Centre is a professional-grade performing arts centre seating 450, designed by none other than expert international theatre consultancy Schuler Shook.

On entering the venue, it's immediately obvious everything has been designed by a team that know theatre and multi-purpose venues intimately. The loading dock is level and goes straight to the stage, there's patching for everything everywhere, and amazingly, above the stage and auditorium, the most beautiful, spacious, and practical catwalks I have ever seen in a theatre. As an old theatre tech, I immediately felt like I was back at work. Except it was much cleaner and better organised!

So how did such a profoundly well-delivered project come to be, especially where so many schools who go down this route end up with a hybrid compromise that's not particularly great for anything? The impetus started with St Peter's Principal, Chris Black.

"I see the value of the performing arts and what they can do for our students," explains Chris.

"Our school motto is 'Be Not Afraid' and that suggests we should get outside our comfort zones to build capacity within ourselves. And there's no better environment for students to get outside their comfort zones than performing on a stage to an audience of 450."

So where does the name Geode Centre come from? "A geode is a spherical rock structure which has a durable outer wall with the inner layers revealing the beauty of a cavernous core," elucidates Chris. "In our context, the rock is synonymous with our patron St. Peter, with the full beauty of the central space only to be realised in the performances which will be presented within it."

The Geode Centre is the second part of Chris's three-part development plan for St Peter's. The first part is the adjoining building known as 6A; it houses music, drama, dance, and hospitality

facilities, all designed to integrate with the theatre. Music rehearsal rooms and band rooms can tie via Dante to the theatre as remote orchestra spaces, and 6A's recording studio is networked to the entire facility. Hospitality students can cater events, directly connected from their kitchen to function spaces. The third part of the project will see a three-court basketball stadium added to the school.

"There was an element of 'build it and they will come' and we are starting to see significant numbers of students enrolling in our music, dance and drama programmes," explains Chris. "We also intended this centre to be a space catering to the broader community; we have a facilities manager coming on board and we have strong external bookings for drama, dance, and calisthenics through 2023 and 2024."



Bio box



Lectern View



The Geode Centre



St Peter's Principal Chris Black

shooting out a dry tender. Schuler Shook managed the theatre design – sightlines, doors, access, catwalks - and worked closely with the architects and other consultants to make the case for the building to be friendly from a theatre and stage perspective. It's good having specialist theatre designers advocating for the needs of performers and technicians in the early stage, architect-driven meetings."

"We took this building design, then worked directly with the school to evolve a technical fitout which serves the school's intentions for the space whilst ensuring budgets were always under consideration," continues Jonathan. "This includes all nomination of technical equipment, system design, and documentation. We were able to take feedback from the school as to how they would like to automate as much of the space as they can, and provide drafts, briefs, and mock-ups of the control system for them to see, long before construction. Working directly for the school over the 18 months prior to construction meant many of the pitfalls which occur when tech is considered 'just another trade' and pushed underneath the bastion of electrical contractors were avoided entirely."

Delivering on the full technical design and fitout of both The Geode Centre and neighbouring 6A are Melbourne stalwarts Factory Sound, with the project team headed up by Projects Manager Jonathan Sinclair.

"St Peter's College has been a long-term customer of ours," states Jonathan. "We were able to work with them from very early in the D&D stage of The Geode Centre which has created a much better end-result than simply

PROJECT CREDITS

Building Design – Hayball Architecture

Theatre Design – Schuler Shook

Equipment Design – Factory Sound (Jonathan Sinclair)

Equipment Install – Factory Sound

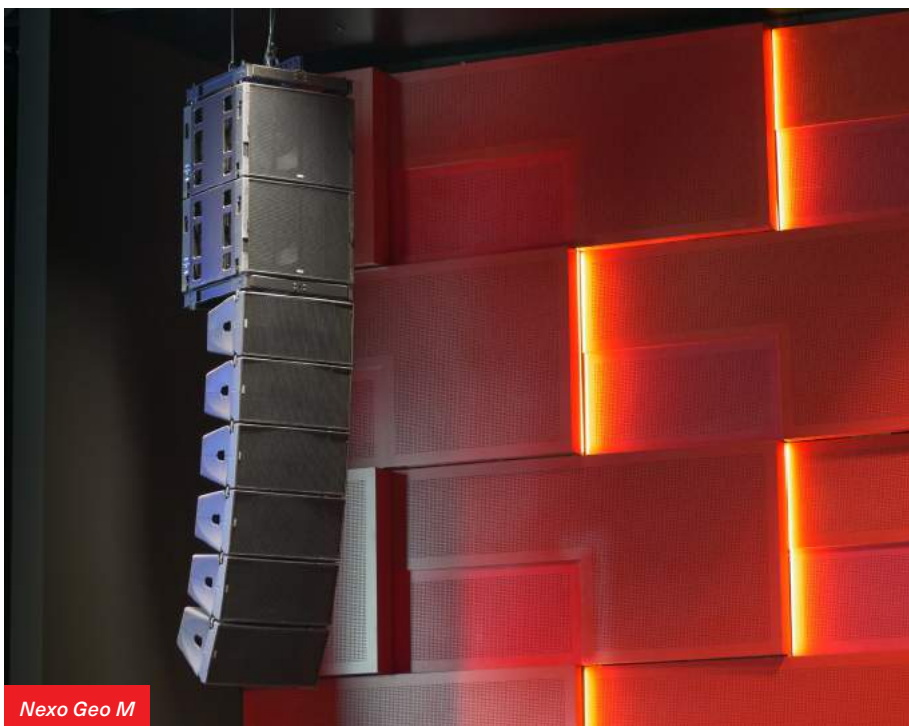
Equipment Programming – Factory Sound

Curtains/Draping – TSA (Anthony Milicia)

Stage Management Desk – FusionStudio Works (Leigh Evans)

Acoustics Design – Octave Acoustics (Andrew Lloyd)

Builder – Harris HMC



Nexo Geo M

Audio

The highlight of the acoustically excellent theatre space is a generously specified Nexo Geo M line array flown in left-right configuration, comprising six mid-high elements and two subwoofers per side. I got Jonathan to fire it up and blast music at a completely unreasonable volume, and it still had headroom for days. Gain before feedback with live lapel mics is not an issue, and neither is the traditionally difficult gooseneck lectern mic. Front fill is via four removeable and ultra-compact Nexo ID24-T dual 4”s with horn. Stage foldback is handled by eight RCF HD32A 12” powered speakers. This room is ready for anything, musically speaking, and will handle the highest SPL rock’n’roll.

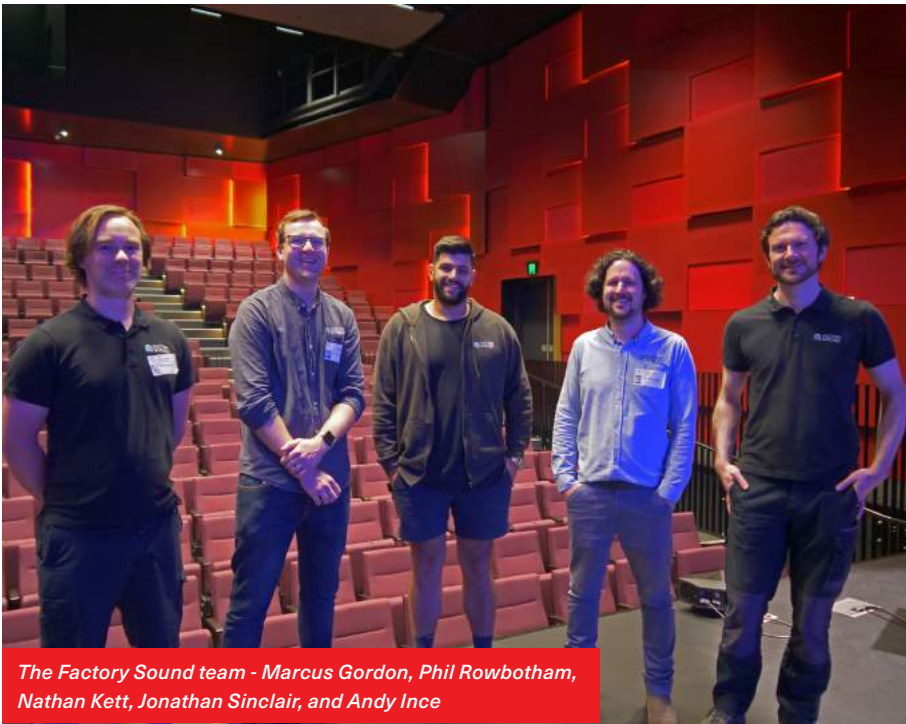
An Allen & Heath dLive C3500 digital mixer interfaces to its CDM48 stage box racked up side stage, with the whole mixing system and Dante network running at 96k, through to analogue output to the Nexo NXAMPs running the PA. Two Allen & Heath DX168 Dante stageboxes can be dropped anywhere they’re needed. Out in the foyers, 16 Quest MX801 surface mount speakers service the main spaces, and 32 Audac CIRA824 ceiling speakers cover the rest. A comprehensive mic kit includes 16 channels of Shure QLX-D wireless with RF Venue antenna management, 12 DPA headsets and Shure BETA58a, BETA87a, and lapel mics. There are six Shure PSM300 dual channel IEMs on hand for monitoring.



Quest MX801



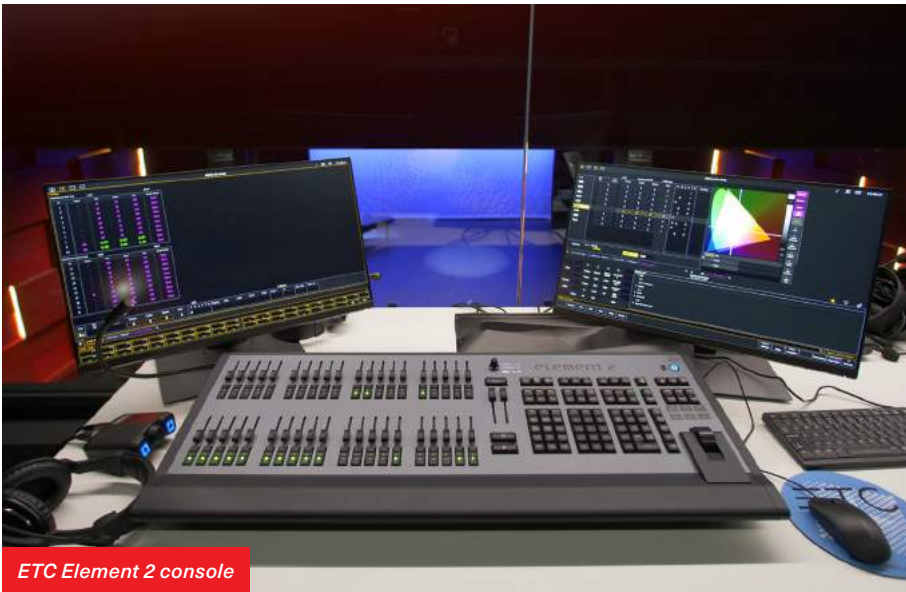
Allen & Heath dLive C3500



The Factory Sound team - Marcus Gordon, Phil Rowbotham, Nathan Kett, Jonathan Sinclair, and Andy Ince



Blackmagic TV Studio Pro 4K Switcher



ETC Element 2 console



TECH SUPPLIERS

Nexo, RCF, Quest: Group Technologies
grouptechnologies.com.au

Allen & Heath, QSC Q-SYS: TAG
www.tag.com.au

DPA: Amber Technology
www.ambertech.com.au

AUDAC: Audio Logistics
www.audiologistics.com.au

ETC, Robe, Ushio, Pathway, Jands, Shure:
 Jands www.jands.com.au

ShowPro: Show Technology
www.showtech.com.au

LSC: LSC Control Systems
www.lsccontrol.com.au

Pliant: NAS nas.solutions

Visionary Solutions: PAVT
www.pavt.com.au

Panasonic: business.panasonic.com.au

Epson: www.epson.com.au

Sony: pro.sony

Blackmagic Design:
www.blackmagicdesign.com

Marshall: Corsair
www.corsairsolutions.com.au

AJA: Blonde Robot
www.blonde-robot.com.au

Lighting

The lighting system features an ETC Element 2 console with dual Dell touch screens up in the beautifully appointed bio box. The entire lighting system is networked and addressed via sACN, with eight Pathway Pathport UNO sACN-DMX Nodes installed on lighting bars and the stage floor, making each node its own Universe. As you'd expect for a theatre with input from Schuler Shook, there's a lot of ETC fixtures in the lighting rig, along with Robe and ShowPro, plus two Ushio SAI500CB LED followspots up in the bio box. Power distro is courtesy LSC Control Systems APS 12/10a switchpacks, with a master on/off controlled via QSC Q-SYS via iPad.

Video

The venue's main projector is a Panasonic RQ22KE 20,000 Lumens True 4K 3 Chip DLP Laser that can project to a 350" 16:10 motorised Grandview screen that drops mid-stage. Through great design and lens choice, the projector can also hit the rear cyc without any adjustments. Two Epson PU2010B 10,000 Lumens Laser projectors with LU04 Ultra Short Lenses are hung on the rear bar to project onto the cyc during performances. Video distribution by 12 endpoints of Visionary Solutions Duet D2 and Duet E2 USB-C and HDMI Encoders and Decoders not only allow video to route anywhere it needs to go, but also enable live video previews to appear on the venue's control GUI on iPads. Two Sony FX-6 Cinema Line Cameras can capture productions, and three Marshall CV420 bullet cams handle show relay. Video switching and mixing is via a Blackmagic Design TV Studio Pro 4K Switcher and Smart Hub 20/20 Matrix. An AJA HELO streamer and recorder, which can be fully automated, sits in the bio box rack and can record directly to a USB flash drive inserted into its front panel.

Control and Comms

QSC's Q-SYS running on a Core110f has been expertly deployed by Factory Sound to make the day-to-day running of the venue as simple and seamless as possible. iPads at the six ops positions (bio box, audio FOH, stage management, lectern, box office, and roaming) have custom GUIs made especially for that location. The lectern position controls allow triggering of simple lighting and audio states, while the stage management and bio box GUIs allow deep and total control of everything. Lighting automation from Q-SYS via sACN allows recall of simple cyc backdrops, lectern spots and other scenes to be recalled without even needing the lighting desk turned on. Dynalite integration into Q-SYS allows easy house light control from the iPads. Wired comms are via a Jands Ezicom with eight packs, and wireless comms via a Pliant Crewcom CCU22 with six radio packs.

Bringing it All Together

Factory Sound's fit-for-purpose technical design and deft hand in project management has delivered the most polished school PAC I've ever encountered, and would be the envy of many professional or government-run facilities. "Schools often pay way more money for gear that's not entirely suitable, installed by a faceless subcontractor under a sparky, all working for a builder through which all ongoing service must pass through; it can be a nightmare," notes Jonathan. "We have had numerous builders say 'we really don't have a clue what you guys even do' which can make fit-outs reach predictable pain points, especially regarding the right time to install very expensive and delicate tech, which is clearly not before other trades are done making mess and dust."

"Many projects suffer when the pressure from builders, the exploding builder's margins, and the various subcontractor soup all combine to devalue otherwise decent designs for school performing arts facilities," concludes Jonathan. "We have found many clients want ongoing discussions, consultation, and the ability to change their minds mid-project directly with the actual person providing and commissioning the gear. As a D&C integrator we strongly follow the principle: "design systems which you would be happy to own and operate yourself."

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OUR BRANDS:



The TWO-FOR-ONE Ordeal

by Andy Stewart

Are you the sort of engineer whose mixes are the sum of their well-conceived recorded parts, or someone for whom the mix itself is all that matters? Sometimes it's hard to separate yourself from the countless faders in front of you, to reimagine a piece of music as a left and right channel only, especially if you've also recorded it! For some engineers and musicians, hearing a final mix sound too divergent from its in-progress origins constitutes a bridge too far.

There are lots of ways to mix, countless mountains of advice out there about technique (only some of which is offered first-hand), and endless examples of successful songs that play on your phone, radio and telly that influence your perspective day in and day out.

Working out the best way to achieve awesome results to your ear, however, and those of your clients for that matter, is the real trick. There's not much point trying to mix like some other well-known dude if, by doing so, you go against every instinct and musical preference along the way. Life's too short, and besides, most of the successful mix engineers have followed their own path, not someone else's.

One of the most interesting things to discover about yourself and your mixing journey is recognising the type of mixes you like to create. You might be a super clean, clear and deep mix engineer who prefers fidelity over crunchy tones, dynamics over in-your-face aggression. If so, cool! Or you might be a big, wet, mysterious stylee mixer, whose final mixes barely resemble the musical sources printed on the multitrack. That's cool too! Or you might be a 'Democratic Mixer' who likes everyone represented equally in the mix – one instrument, one vote – a style of which I'm generally not a fan.

But there's another type of mix engineer out there – and you might be one of them without even realising it.



The Two-For-One Combo

This group forms the largest category of all: the engineer that is both recording and mix engineer combined. For many in this substantial group, and let's face it, we're all a member of this club at one time or another, there's a hurdle we sometimes find exceedingly hard to jump: being able to imagine (or reimagine) a final mix that is significantly different somehow from the countless tracking and 'in-progress' mixes we've made during the often-times exhausting recording process.

We effectively become entrapped by our own production process, having heard the music repeatedly in its various tracking and overdubbing phases over and over again. This can lock us in to a certain way of hearing our music, smothering our ability to imagine the mix afresh right at the end when it matters most.

When this happens, our final master mix choices are no longer driven by a purely creative, impartial perspective, the focus of which should only be the final mix outcome. We become enamoured (and possibly exhausted) by the details of our own tracking and demand of ourselves that the mix pays reverence to all our hard work! But, of course, it can't, nor should it.

The 'in-progress' mixes made along the way can be hugely influential over a final mix, affecting the perspective of both the mix

engineer and the clients, sometimes without anyone involved being remotely aware of it. In-progress mixes can be a rod for your back; an impediment to realising the best outcome for your precious project.

It doesn't always matter of course. Sometimes a final mix differs very little in the grand scheme of things. Problems mainly arise when you can no longer imagine a piece of audio any other way, even though you might be aware (intellectually, at least) of the need for it to sound different somehow. You might have sailed into the dreaded waters of 'Demo Mixitis,' discovering when you languish there that you and your clients can no longer imagine a final mix that's different from its tracking derivations.

The common cause here for most engineers and artists alike, is familiarity in extrema. For recording engineers, in particular, the double-edged sword here is that they know every nut and bolt, every shortcoming and highlight of every channel of audio they ever record, the negative impact of which is that, when it comes time to mix, all that hard work, all those great takes, all that nuance and detail in every sound, is deemed worthy of highlighting, either consciously, or subconsciously. But, as we all know, you can't highlight everything, certainly not the detail in 100 instruments all playing at once! It's folly to attempt it and yet many of us repeatedly try, thinking we can somehow have our cake and hear it too. We can't.



the arrangement plus the vocal? Sounds controversial? Good.

Either way, break up your own thinking. Force yourself into an experimental corner from which only deep listening can extricate you. You might be surprised by the results. Think outside the box, let the music rather than the memory of the production process, guide you. If something inconsequential or 'secondary' to the central arrangement catches your ear, follow that instinct. Don't intellectualise yourself out of it by thinking it should remain subdued in the mix. Listen and react.

Finally, put an embargo on people listening to old rough mixes if possible, especially people outside the artists themselves. This includes partners, managers, publicists; everyone. Indeed, do that as early as you can, lest these files corrupt the ear of anyone who puts them on high rotation. Old demos can really make a mess of a production's final lunge for the finish line.

And one last thing: if your mixing tends to be conservative, plain or subdued but the kind of engineer you really want to be is more dramatic, explosive and captivating, try mixing something you didn't track yourself. You might find it energises and liberates you to some degree, allowing your imagination to present music that's fresh to your ear with a confidence and fearlessness you didn't know you possessed. Recognise then how different it feels when you work on other people's music and try to apply that vibe to the recordings you make yourself.

Good luck!

Andy Stewart owns and operates The Mill studio in Victoria, a world-class production, mixing and mastering facility. He's happy to respond to any pleas for pro audio help... contact him at: andy@themill.net.au or visit: www.themillstudio.com.au

I Want To Break Free

The only way out of this bind is to recognise the problem and make a concerted effort to find a solution. Here are a few.

The first is to consider handing the song (or project) you're working on over to a collaborator for whom you have respect and trust. If you can find someone like that; someone's who's like-minded and gets your perspective on the work you've created, then you're probably better off in the long run. Sure, you might lose a few paid days' work, but hopefully that handpass simply allows you to focus on the next job. And sure, you mightn't think the mix outcomes are perfect, and you may hold reservations about some of the mix choices that were made, but part of that feeling will always be for the very same reason you handed it off in the first place! You might even discover that collaboration benefits you directly by making your work sound better than it might otherwise have.

If, however, you're not prepared to let the project out of your clutches quite yet (and you're convinced there's no-one on earth who'd be better at mixing it than you), then at least try and separate yourself from it with the passage of time.

Give yourself a break, allow time to disconnect you from the nitty gritty of some of the tracking, the politics of the band (if a band exists), and the variables in some of the arrangements. Nothing quite beats a fresh perspective on a project, and nothing inspires decisive decision making about a mix more than space from the tracking process and the fine detail therein. It's literally a chance to step back from the music and hear it macroscopically. Indeed, this is precisely the perspective of a mix engineer; someone who has never heard the countless headphone overdub mixes or the in-progress stereo files, but sees the whole as a new single entity, not merely a collection of parts all vying for political supremacy... "Yeah, the singer's boyfriend plays the bass so we really need to turn that up, otherwise he'll get jealous of how loud her voice is..."

That is an actual quote, by the way...

And as I've mentioned in previous articles, if you start back onto a project with mixing squarely in mind, try avoiding old mix habits: left-to-right mixing, standard groups and effects channels, drums first, vocals last, listening over and over with no specific aim in mind, the overuse of generic templates (even if you made them yourself). How about mixing just two of your favourite sounds in



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2020 – Robe at Parrtjima Festival of Light



In the midst of rolling national lockdowns, border closures, and COVID anxiety, the iconic 10-day 2020 Parrtjima Festival of Light at Alice Springs managed to go ahead against all odds on its rescheduled September dates.

Featuring a carefully picked collection of amazing and fun light artworks, together with a spectacular nightly lightshow designed by Richard Neville from Mandylights delivered to a locally produced soundtrack, 80 Robe MegaPoints were used to throw lighting and effects onto a section of the West MacDonnell mountain range.

The lighting equipment was supplied by Melbourne-based MPH Australia, who've been involved with Parrtjima as event suppliers for moving lights, LED, and other specialist fixtures in conjunction with Mandylights since the festival's inception in 2016.

When the new Parrtjima 2020 dates were confirmed as going ahead, MPH's founder and MD Matt Hansen and his team re-prepped everything in their Melbourne HQ. It had been two days away from loading for the original dates when lockdown was imposed, and the kit journeyed from Victoria by rail, while Matt and MPH's production manager Michael Parsons flew to Darwin.

There they did the mandatory 14 day's quarantine required for interstate travel at Howard Springs Accommodation Village, a 3,500 capacity compound originally built in 2012 for construction workers building the gas processing facilities at Blaydin Point. Despite some dodgy internet connections and food, Matt was generally impressed with the experience. After their 14 days was up, they flew from Darwin down to Alice Springs and started rigging for the Festival.

Robe MegaPoints were positioned on four scaffolding structures, 20 fixtures each, distanced 1 to 1.5km apart, and between 250 and 400 metres away from the base of the mountains. Width-wise, their light covered an area of around 2.5 kilometres along the mountain range.

The nearby ground areas involved in the lightshow including the Festival site are traditionally covered by projected images plus some additional light sources, which in 2020 included 12 BMFL Spots focussed on the park area and fairground. MPH also supplied around 200 other luminaires for the event, including some Robe LEDWash 600s

which were used inside a giant inflatable sphere projection surface.

Data to the fixtures site-wide was run via Art-Net and sACN. The MegaPoints used a Ubiquiti point-to-point wireless Ethernet (Art-Net over Ethernet) network comprising a central omnidirectional antenna located in the main desert park site, and smaller nanobeams at each MegaPointe scaffold tower.

Parrtjima's 2020 lightshow was programmed and run on a grandMA 2 console operated by Mandylights' Richard Neville.

In the midst of COVID chaos, Parrtjima 2020 was a rare reminder of the community, camaraderie, magic, and imagination evoked by lighting art.

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Famed design lab Studio Roosegaarde brings SPARK to the Southern Hemisphere

Biodegradable Lighting

Four years ago, Professor of Design – and artist – Daan Roosegaarde was challenged to transform traditional and polluting methods of celebration such as fireworks, balloons, drones, and confetti, into a new sustainable means of celebrating good times, “One of my students said to me ‘Our future is frozen’. His generation is banned from doing so much and no one is providing them with any alternatives. It really made me think about keeping our traditions but modernising them.” The result was SPARK, a poetic performance of thousands of biodegradable light sparks which organically float through the air, creating a stunning sustainable alternative for traditional community celebrations.

New Zealand debut at Auckland Arts Festival 2023

To date, SPARK has exhibited in Bilbao and London and it is now coming to the Auckland Arts Festival. Festival curator Shona McCullagh witnessed the London exhibition attract six times the numbers of visitors expected, with queues lining the streets. Daan explains what drew him to

Auckland, “SPARK is our baby and we are very selective about where we take it. We want to exhibit SPARK at art and lighting festivals that showcase innovation, that are freely open to the public, and that encourage a collective experience. Talking with Shona, we felt that the first Auckland Arts Festival since COVID was a good fit. The desire to celebrate at this experimental festival is back, but perhaps in a more sustainable and reflective way after the pandemic.”

Daan sees himself not as an artist but as an activator, “We rarely talk seriously about the future, about what we are going to do about climate change. I want to encourage people to think about how we can preserve our traditions and our celebrations that are so important to us but in a sustainable way. I hope that by being at the Auckland Arts Festival we can start those conversations in New Zealand.”

Inside SPARK

SPARK works through a combination of design and technology with a 50 x 30 x 50 metre cloud of light sparks made of biodegradable materials moving across the sky, "After many prototypes and a lot of hard work by the team at Studio Roosegaarde, we created floatables that reflect and absorb light and are transported by a combination of nature and wind machines, about fifty-fifty depending on the conditions. It is a silent display, contemplative, more like watching a campfire than the big bangs and explosions of a fireworks show."

Daan describes producing SPARK as co-controlling nature. His live team of between five and nine, and himself, assess the space and examine how the wind is likely to behave. He views it like sailing a ship, balancing the power of the wind with technology. It has been tested from minus fifteen to forty degrees and in the rain. Even a windless night works, creating an impressive eerie slow-moving cloud, "Every time is different, showcasing the beauty of the sustainable world, a place of wonder."



SPARK London



SPARK London

Inside Daan

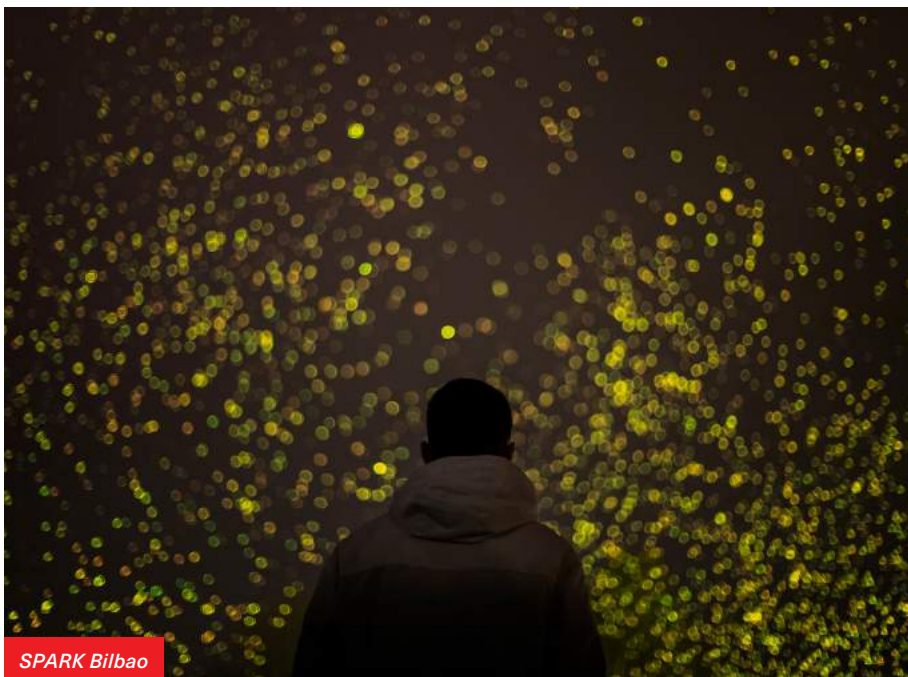
Daan's inspiration for his work is all around him. He is from the Netherlands, a country that sits below sea level and has fought climate change for centuries, using technology. The landscape he grew up in, the rivers and trees, were artificially created but are today beautiful. In future Daan is hoping to place flower seeds in the floatables so SPARK will ultimately feed the city as well as light it up, "I believe that we can learn from nature and replicate it using technology, and that we are going to need to do this to get ourselves out of the situation our planet is in."

Add to his innovative Dutch roots, an obsession with light from an early age, "I have

always seen light as a language. Light triggers an emotional response between yourself and the life around you." His passion has seen him tour the world taking in many natural light and phosphorescence phenomena. He is looking forward to ticking the Waitomo Glow Worm Caves off the list whilst in New Zealand. We'll wait and see what our arachnocampa luminosa inspire Daan to create next.

SPARK Auckland will be transfixing audiences at Pukekawa / Auckland Domain from Friday 24th to Sunday 26th March between 8 and 11pm. Free tickets will be released online in February.

Credit: Daan Roosegaarde
www.studio Roosegaarde.net



SPARK Bilbao



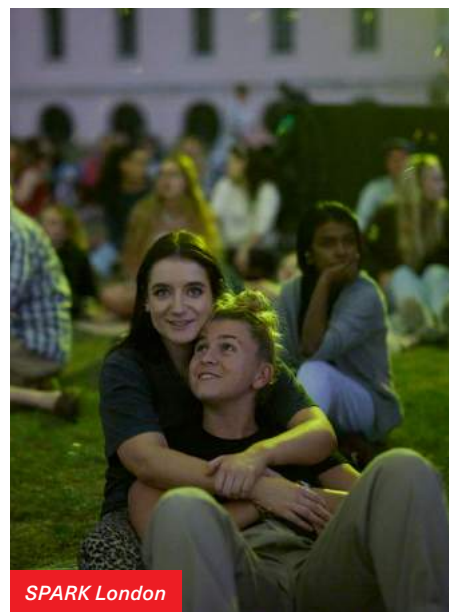
SPARK London



SPARK Bilbao



SPARK Bilbao



SPARK London



SPARK Bilbao

MOUNTAIN: STATE-OF-THE-ART INTERACTIVE TECH OPENING AAF

Auckland Arts Festival's opening weekend will see an out-of-this world aerial theatre performance integrating state-of-the-art interactive technology take over Aotea Square.

Mountain will light up the heart of the festival for four nights only, with dancers performing above the ground and against the vertical surfaces around them, responding to a projected digital environment that organically shifts and flows with their movement.

Get involved with the dynamic infrared tracking and mapping technologies yourself, interacting with the projected

play space and giant wall on stage after performances.

Produced by Stalker Theatre and Box of Birds, Mountain has headlined at a number of Australian events including the Horizon Festival on the Sunshine Coast, GLOW Festival on the Gold Coast in Queensland, and Newcastle's New Annual. Mountain has wowed the crowds with its innovative, physical and visual spectacle.

Mountain will be taking over Aotea Square from Thursday 9th March 9.15pm, Friday 10th and Saturday 11th March 8.15pm and 9.30pm, and Sunday 12th March 8.15pm.



Merivale Group take AV seriously

In-house AV team and d&b audiotechnik deliver on ambience and aesthetics

Merivale is a pioneer of the Australian hospitality industry and its in-house AV department has been an integral part of that journey, with the help of distributor NAS and d&b audiotechnik. We get a look inside the multimillion dollar business with Group Technical Manager Glenn Rayner.

The story starts...

Born of the 1950s and becoming an iconic house of fashion in the 60s and 70s, Merivale pivoted before pivoting was a thing. Founders Merivale and John Hemmes foresaw a shift in the retail sector and building on the success of a few café and restaurant venues, they turned their attention to hospitality. The early 90s saw

the opening of a Merivale restaurant in Potts Point's Macleay Street, Sydney and by 1996 the last Merivale fashion retail store closed.

Under son Justin's leadership as CEO since the late 1990s, Merivale is now a multimillion-dollar hospitality, entertainment and development business with a growing portfolio of more than seventy restaurants, bars, pubs, hotels and function spaces, as well as the hospitality rights for two of Sydney's premier stadia, and over five thousand staff. Renowned venues include Sydney nightclub ivy, and many wonderful and varied restaurants across Sydney's CBD and suburbs, going as far north as Byron Bay where there is a property in the pipeline, as well as the Lorne Hotel on Great Ocean Road, Victoria and a number of venues in coastal Narooma, NSW.

Justin targets the very best in ambience and customer experience, be that lighting or audio, for every seat in a venue no matter the event – dining, live music, speech. AV is such a priority that under the technical leadership of

Glenn Rayner, there has been a shift away from contractors to the formation of an in-house AV team who design, install and service across the company.

Managing AV across seventy-plus venues

Glenn started as a Lighting Operator for Tank nightclub underneath Sydney's spectacular Establishment Bar. When Tank was renovated in 2011 to become Mr Wong's Restaurant, Glenn moved into HQ and began to look after the AV systems across the group, "Back then we used contractors, but we have now taken over a lot of that responsibility, designing, installing and maintaining our own systems. I've been lucky to pioneer it across the Group and it has been a great success."

Glenn was motivated by the way Justin works, "He's very particular about the standard of our installations, very hands-on across every speaker and every light, and he likes lots of

detail. With contractors, we can't afford to have them standing around waiting for directions and instructions, so it made it a lot easier for us to use our own people who know and understand our expectations for a venue."

Justin and Glenn have high standards for maintenance too, "We want real-time support across the business and can't wait on availability. The team jumps on things straight away and the expectation is that everything works at every service, so if a speaker malfunctions one evening, someone is out to get it fixed by the following evening's service."

In terms of workflow, they take a hybrid approach, "Justin doesn't like too much advance planning in lieu of seeing the building, so Justin and I look at the venue's plans and we select speakers based on our experience of venues, knowing what we do about achieving the coverage and quality we need. Then during the build we'll go onsite and look at where the speakers are going and at that point we might add or subtract to make sure that we've got the perfect solution. I guess the methodology we use is that there shouldn't be a seat in a venue that doesn't have an experience attached to it, be it lighting or audio. Our experience of walking around venues and restaurants informs our decisions."

Merivale and d&b audiotechnik – quality and aesthetics

To achieve Justin's high expectations, especially at the higher-end venues, Merivale relies on d&b audiotechnik with a partnership going all the way back to the fitting out of ivy prior to its opening in 2007/8, "Back then, ivy had hundreds of d&b speakers including E0s and Ci80s. After that d&b became our solution for anything higher end so it then went into Papi Chulo in Manly in 2012 and we haven't looked back."

Both Justin and Glenn are d&b enthusiasts, "It is fifty-fifty Justin and I and it's about selecting the right product for the job. I don't want to take away from the other manufacturers, but d&b are a really aesthetically pleasing box. The d&b speakers are beautiful to look at, the sound is great, and you don't have to do a lot to make it work well in a venue. You also get the same voicing across the products, so whether you are using a V-Series line array, V-Series point source, or even the smaller install boxes, when you put it all together it sounds remarkably good."

Back at ivy in 2017, Glenn led a further upgrade of the nightclub experience and installed

d&b's V Point Source range, and in 2021 whilst renovating the club and removing the dining element, they opted for V-Series line arrays and used the V Point Source boxes as the fill around the room, "Now ivy has V-Series line arrays with four V8s either side, eight V-Subs flown and four B22s under the stage. An additional six V7Ps do the fill on the main dance floor with V7Ps, V10Ps, 10S and 8S boxes filling in the VIP booths and bar areas. We operate an Allen & Heath dLive CDM32/ C1500 console for live events with everything else going through Q-SYS."

For signal distribution and amplification they use d&b amps and Q-SYS processing on a Dante backbone. "We just use analogue outputs of the Q-SYS into the d&b amps and generally have a really high channel count with no more than two speakers on a channel of an amp. This provides lots of flexibility in zoning and allows us to create different ambiances and feelings throughout the room."

For the luxurious restaurants, such as Berts at The Newport and Mimis in Coogee Pavilion, they use a lot of d&b 5S, 8S and 12S subs with a few 4S boxes in the bathrooms.

Glenn is mainly catering for BGM but with the capability to plug in a mic or DJ for private



ivy, Sydney



Berts at The Newport



ivy, Sydney. Photo Credit: @them1group



Mimis. Photo credit: Steven Woodburn

events requiring speeches and live music, “You’d be surprised, but even with one event a month we make sure that every space in every venue is flexible and multipurpose. For example, at Mimis we have three spaces, each with stereo local inputs and a Nightlife player for each zone and the processing to support an anything to anywhere approach.”

The BGM is curated by Merivale’s Head of Entertainment, who creates a playlist for each venue, appropriate to the time of day and the ambience. It’s always all about the little things, “As a company we put so much effort into the detail, from the interior design to the atmosphere, and it is our role to support that from the AV side.”

NAS and the supply chain

With so many venues to service, supply is critical, and Glenn relies on NAS Solutions “NAS are our distributor. Shane Bailey (their director) is an incredibly lovely guy, so easy to deal with and helpful. He gets what we need, when we need it, and we’ve worked together for many years.”

The supply chain issues stemming from the pandemic have put a strain on availability, “We struggled a bit to get amps and speakers over the past couple of years, but Shane has really looked after us. It has just been hard getting stuff to Australia. Shane had over a hundred amps on back order at one stage and I’m sure it is still ongoing. I think it will take a few years to get back to pre-pandemic normal.”

Up next for Merivale and d&b

Glenn can’t give too much away about Merivale’s future projects except to say there are plans underway, “Just keep an eye on Tomasetti House in Melbourne. We have recently purchased an old multi story building and are doing a complex redevelopment from top to bottom, and I would imagine it will be d&b that goes in!”



Mimis. Photo credit: Steven Woodburn



Freds. Photo credit: Steven Woodburn



Freds. Photo credit: Steven Woodburn



Mimis. Photo credit: Steven Woodburn



INSTALLATION

The Entire Process

In mid-2021, ENTTEC received a query from Anthony Cairns of Kaplan Homes, an innovative high performance Sydney builder providing luxury and lifestyle living. Anthony's brief was to bring something exciting, visual, and unique to their new display centre at Smeaton Grange that would be like no other, featuring two full-size display homes inside.

Design/Layout

Prior to his new role within Kaplan Homes, Anthony spent 17 years in the live music industry, having worked and travelled extensively with A-list bands worldwide, including 10 years with Kings of Leon as their visual director, living out of Nashville, Tennessee.

With so long spent designing, programming and operating live concerts using LED, projection and camera systems, he was keen to permanently install pixel-mapped features to his new project to create a grand lobby experience, and came prepared with scopes, designs, drawings and annotated photos.



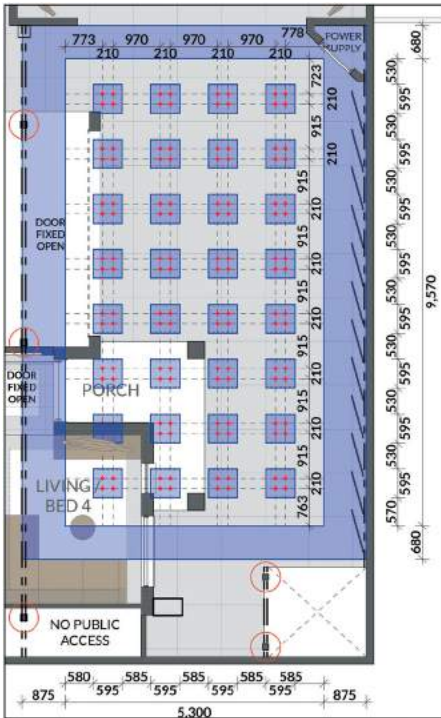
Kaplan Homes' Anthony Cairns



Early vertical LED lines concept

In the past, Anthony had used many high-end LED setups such as Barco, Roe, Winvision, Nocturne, PRG, Lighthouse and other touring systems, but this time sought out the services of ENTTEC to maintain a high standard in the systems he was aiming to commission.

The initial concept was to install vertical LED lines on wall segments, plus an array of 600mm square pods in the ceiling. With assistance from the ENTTEC sales team, this was quickly translated into a workable design featuring repeating pods.



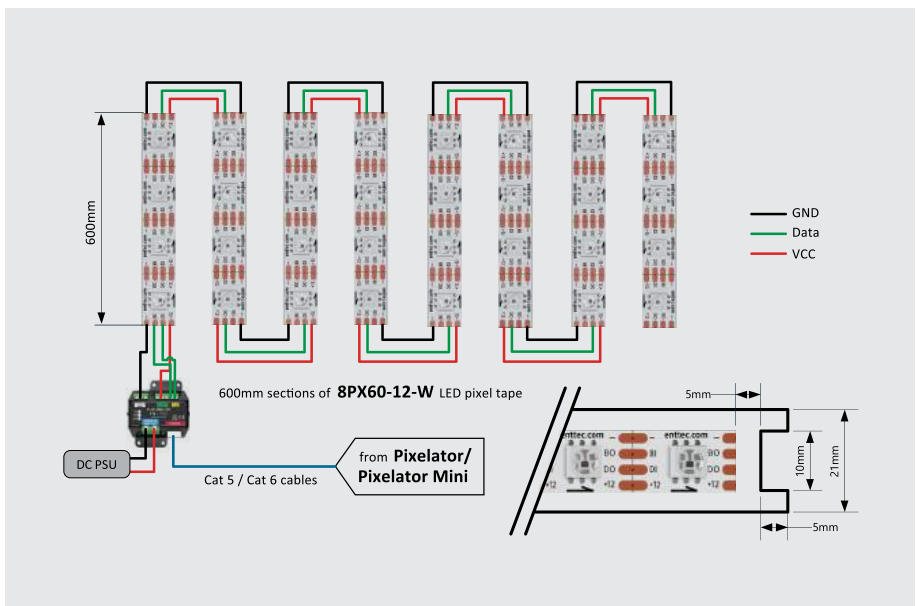
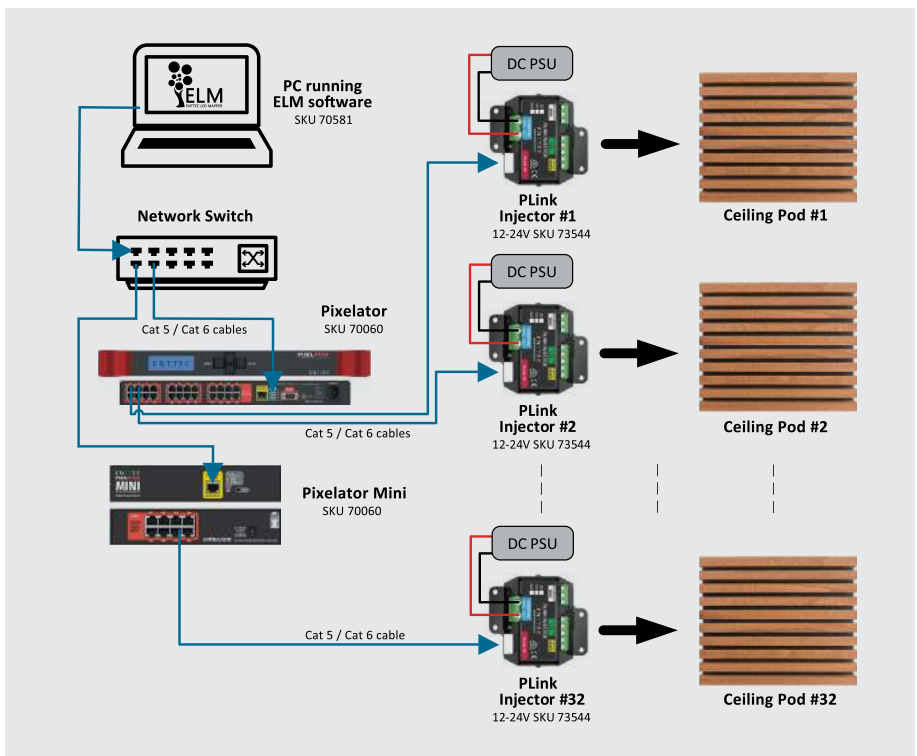
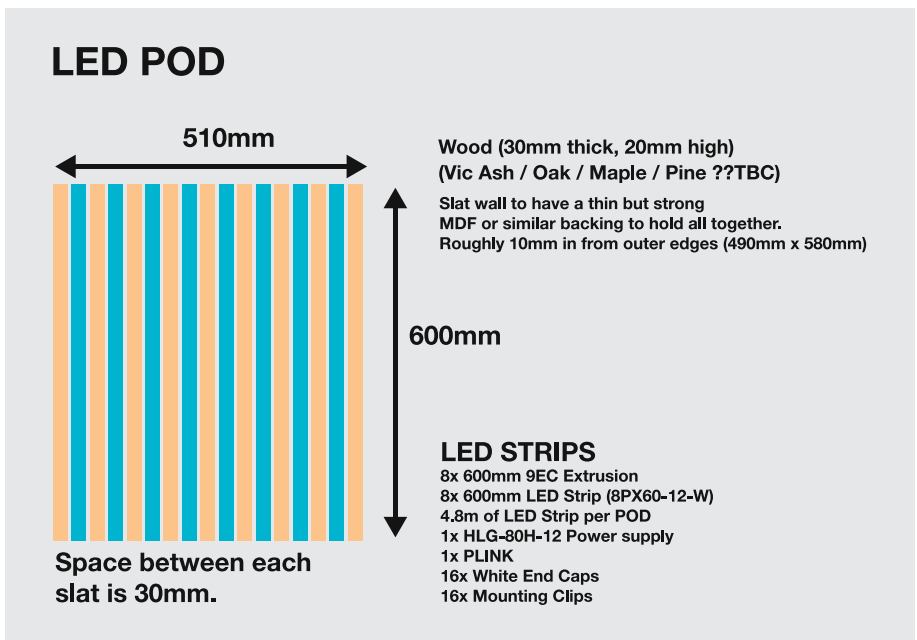
As with most projects, this one involved a consultative approach and lots of back and forth to:

- Learn and understand the systems involved
- Work with physical samples to get practical experience
- Value engineer the quoted options to land on a system that would meet aesthetic requirements while also conforming to budgets

The sales team at ENTTEC were able to work with this information to provide an end-to-end solution. Working with the drawings, the team was able to draw up a control layout (above).

Quoting Options

During the value engineering process, it was decided to remove the wall lines in favour of cove lighting, so that those savings could be diverted towards having a higher resolution pixel strip in the ceiling pods. Going with 12V for the pixel strip ensured that each pod would be a self-contained unit with a simple layout and straightforward wiring. Anthony's goal was not only to achieve something special aesthetically and visually, but also practical in longevity and serviceability.

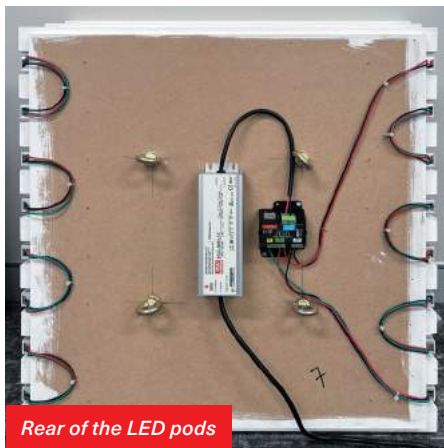


Demo

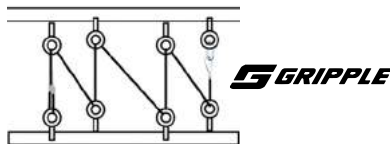
With ENTTEC's experience in making bespoke LED and pixel bars, we were able to advise on notching out the provided extrusion to allow for ease of assembly with rear-entry cabling. Anthony did a great job making the LED pods with four large eye bolts on the rear providing stable mounting points for each panel.

Using fixed ceiling hooks however, could make levelling the panel rather awkward if it was going to be secured using four independent chains and karabiners.

ENTTEC's sales team was able to circumvent this potential issue by recommending and sourcing Gripple hangers with 3m of cabling. This way, the pods could be mounted easily with the hanger looped through each eyelet like a pulley system, with the need for only one cable to be tensioned to raise or lower the entire panel.



Rear of the LED pods



LED testing

Install/Build

Anthony's workmanship with the pixel bars was exemplary for someone so relatively new to pixel lighting. With guidance from ENTTEC's LED Tips & Tricks series on YouTube, as well as seeking advice from the sales team and diligent experimentation, he found the most suitable wire gauge for the wire connections, soldering temperature, and even heat shrunk individual cores to provide additional protection from short circuiting.

Dabs of epoxy along the base of the strip, in addition to the adhesive backing make for a secure connection that will last thousands of hours of thermal cycling.

Commissioning

It was around this time that Anthony engaged the ENTTEC team for a training session on our award-winning LED mapping software package, ELM.

Our mission was to map out the pixel pods, and during the one-hour session we were able to get to a point of mapping out enough pods to replicate and cover the rest of the ceiling that was being constructed.

The training provided allowed Anthony to complete the project file 1:1 with the physical installation and truly map and represent the final project.

What a result!



Testing the LED pods



Troubleshooting

In any given project not everything is guaranteed to run like clockwork. The project faced challenges especially when burn-in tests were done prior to the pods being mounted. Anthony was insistent in soaking these pods with dynamic colour shows to make sure they were performing 100% before being installing in the ceilings.

Most of the pods appeared to run fine but a fraction exhibited a strange phenomenon whereby the pixels at the ends of the string were showing different colours alongside some instances of flickering.

While not ideal, integration issues like this can happen with any project. Fortunately Anthony was able to work with the ENTTEC team to isolate variables and troubleshoot the system.

- By checking the ELM file, it was clear that show programming was not at fault
- Checking network traffic on the pixel controllers confirmed that Art-Net was coming through stably
- Replacing sections of pixel strip seemed to resolve the issue and when ENTTEC picked up a sample pod to test out, the team was able to scope the data streams and determine that some of the chips were showing inconsistency in the data transmission. This was resolved by providing replacement strips and the system now runs stably



Completion

The end-result featured painted wooden battens sandwiching the LED extrusion. This was a great choice by Anthony, to build a resulting pod that can not only display stunning LED pixel visuals but also add a stylish architectural character to the ceiling even if the pods are switched off.

Combining 32 of these pods to create a large array further leverages the control system, and the hi-res strip allows Kaplan Homes to get the most out of their chosen pixel patterns. Opting for simple cove lighting around the periphery gives the space that elegance and

wow-factor, and because the pixels are fully controllable, the system can transition from subtle sophistication to loud and vivid!

And when we say loud, we mean it literally: the showroom facility features an integrated audio system. Another great advantage of using ELM software is that it enables the pixel feature to sync seamlessly to the music with audio-reactive patterns providing a fully immersive experience for the visitor.

ENTTEC and Kaplan Homes worked together throughout the entire process to ensure everything was planned, troubleshooted and executed to perfection resulting in this unique display home.



Photo credit ENTTEC's Jasmine Bibby



Robe Ramps Up the Horsepower for Equitana

Equitana is a four-day equine extravaganza staged every two years at Melbourne Showgrounds, celebrating the spirit and passion of Australian equestrians and the integral place that horses play in Australian hearts, minds, history, culture, and society. The last such event was in 2018 as the 2020 one was canned due to Covid, so this year, organisers GTR Events brought it back bigger, better, and more brilliant than before!

Lighting Designer and Technical Producer for the event Marcus Pugh specified Robe ESPRITES and MegaPointes as primary moving lights on his lighting scheme for this year's 'Mane Event' jaw-dropping entertainment spectacle staged on the Mane Stage of the Grand Pavilion venue.

This all-action night for all horse lovers showcased multiple horse-based and related skills and featured numerous breeds and equine performers. The Mane Event was presented by Australian horseman Guy McLean, known for his magnetic wit and charismatic personality, as well as his almost supernatural connection with horses which delighted the 4,260-capacity sold-out audience.

Marcus also lit this show in 2018 but in a different venue. The Grand Pavilion is a

large 27 metre high 6-pole 'big top' style tensile membrane structure which is the Showgrounds' centrepiece. In this case, a 70 x 30 metre sand arena was created inside to accommodate all the horse activities.

Rigging with 6 poles is a major challenge and creativity is a must, so Marcus and the team from Melbourne based rental specialist Harry the Hirer Productions, who provided all the lighting, audio, vision, staging and rigging equipment, responded with great enthusiasm.

They designed a custom bridling system which has been engineered to take enormous horizontal loads off the King and Queen poles which enabled the installation of trusses spanning the 36 metres between the poles, plus a large central four-sided LED which looked like it was suspended in space!

A diversity of lighting hardware was used including around 150 moving lights of which the 24 Robe ESPRITES and 18 MegaPointes were the 'workhorse' fixtures.

ESPRITES have become a go-to profile moving light for Marcus who thinks that MegaPointes are a perfect combination with them, and both sets of fixtures were rigged prominently in the side trusses between the King and Queen poles.

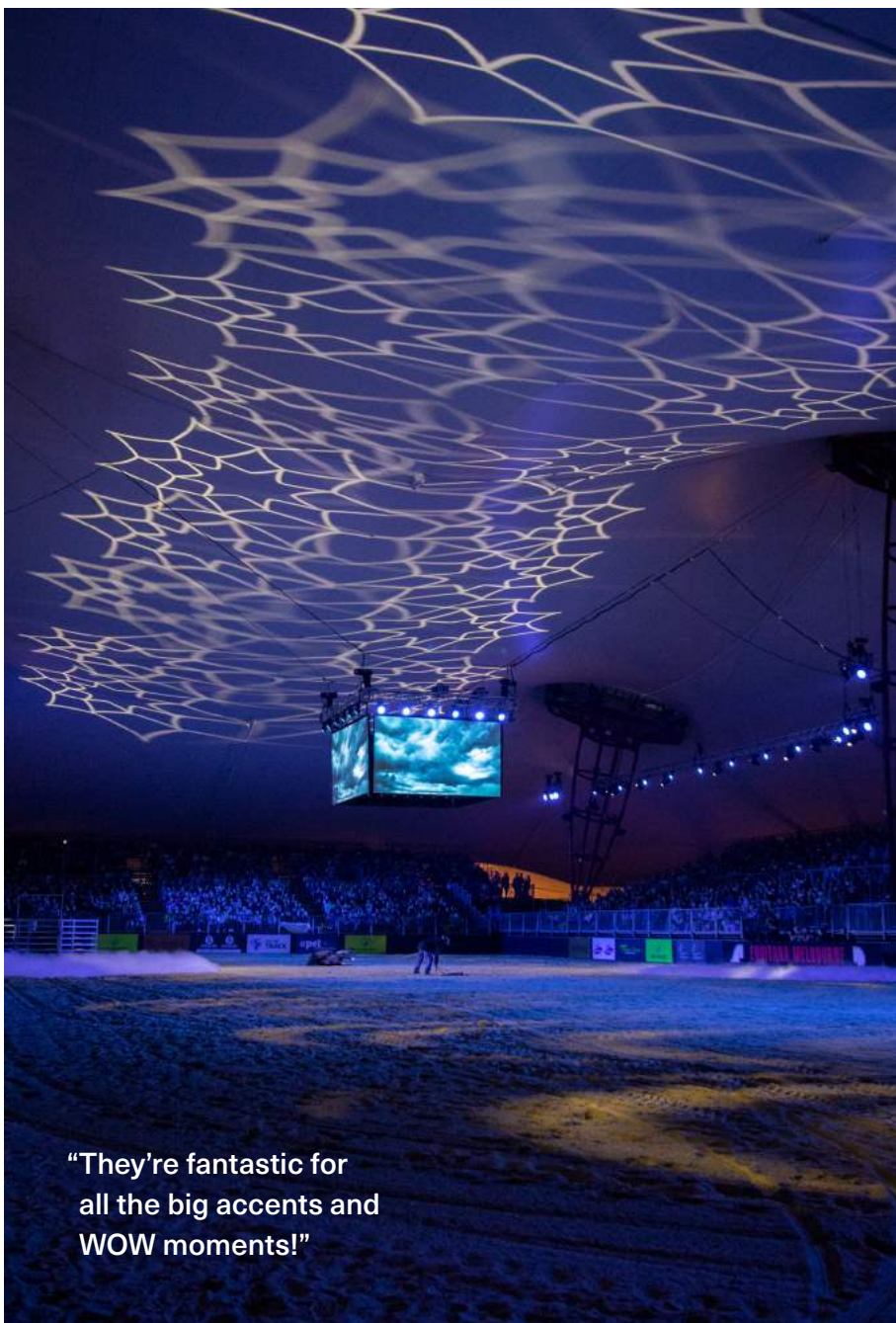
The ESPRITES were used for highlighting and texturing parts of the arena and for throwing projections onto the tent skins which looked impressive.

Marcus thinks the output is "best in class," with a great balance between output and beam quality. The gobo set is usable in almost any application and the animation wheel design

with the 'wave edge' is a stroke of genius and offers a unique look when half inserted. All of these very cool effects were used to transform the roof of the venue into a sea of patterns and colours. He mentions that they are great for lighting and keying faces and producing fantastic skin tones.

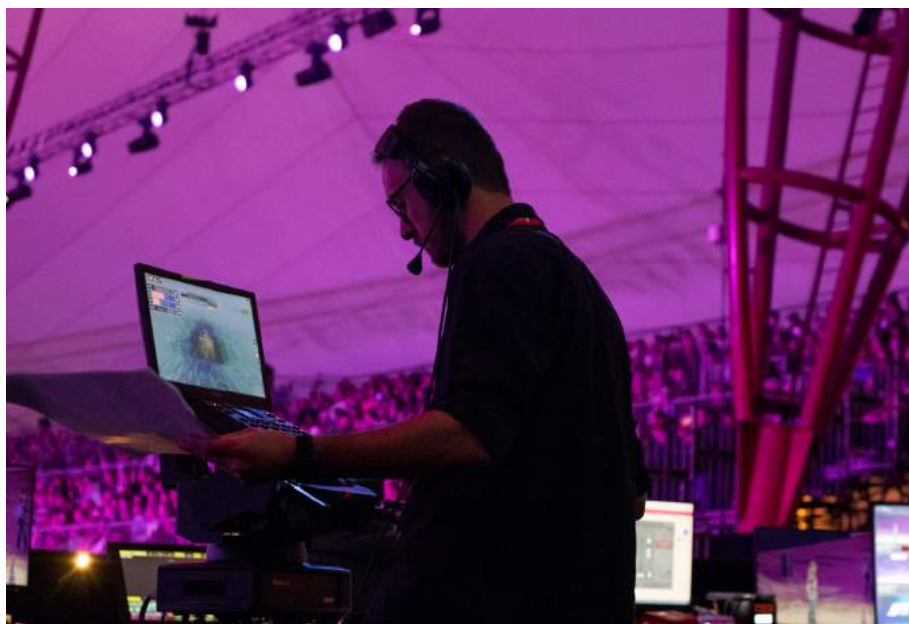
Harry the hirer Productions first bought ESPRITES in 2019, and at the time were one of the first rental companies in Australia to invest in Robe's next generation LED moving light technology. Marcus has been using them solidly ever since.

Four additional ESPRITES were deployed on the two RoboSpot systems, two per BaseStation, offering scope to follow what were often extremely fast-moving targets with horses galloping around the arena. Marcus appreciates the ease of use and flexibility that RoboSpot brings to a show, "You don't have to rig any follow spot towers, so that also saves time on the build," he noted.



"They're fantastic for all the big accents and WOW moments!"





The RoboSpot ESPRITES were rigged on special trusses attached to the main tent poles, and when not being used for following, were repurposed for other tasks while lighting the main show - another very handy feature of running a RoboSpot system. The operators were located backstage.

RoboSpots have been another great value purchase for Harry the hirer Productions, equipment also acquired in 2019 and supplied by Robe's Australian distributor, Jands. They now rarely use conventional follow spots.

MegaPointes are Marcus's first choice of beam moving light and have been for some time. "They're fantastic for all the big accents and WOW moments!" he enthused, adding that 24 MegaPointes is enough to create serious visual impact!

They were all on the side trusses rigged between the big top's King and Queen poles.

In addition to rigging, other galvanising aspects of the event included creating a nice even white wash over the whole performance space for the competition segments of the show, so all could see what they were doing clearly, and everything looked good on camera.

Care had to be taken in directional lighting so as not to spook the horses, and the same went for sudden movements and flashing which had to be judiciously introduced at exactly the right moments to work as a theatrical effect whilst ensuring the horses were comfortable.

Marcus was extremely mindful of all these demands during programming, plus the positioning of lights not to catch any of the priceless equine stars in the eyes.

Mane Event's technical planning also allowed time for the horses to be introduced and acclimatised to the show arena, complete with lighting, sound, and video. Some of the animals were experienced ceremony veterans and a lot

more used to this, while for others it was their first time being part of an epic entertainment show.

Dust from the floor was another issue, both for the lighting aesthetics and the physical toll this took on the moving lights! Only the toughest would survive, including the Robes, which Marcus thinks are robustly engineered with care applied to the design related to how they will be used.

On top of all these challenges was the exacting task of delivering a massive show with all the drama, spectacle, and theatre that thrilled the audience, which involved a huge amount of teamwork from many departments and disciplines.

Marcus designed and managed the lighting, audio, and video systems, with grandMA3 programming by Cam McKaige and Chad Spenser.



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Martin MAC 101

One of the greatest pin spots ever?

The Martin MAC 101 is a compact moving head LED light. In its time it was one of the best-selling moving lights in Australia. While on sale during the early to mid part of last decade, it earned a great reputation as a cheap, reliable, punchy lightweight fixture. It still holds this reputation today.

The Martin MAC 101 debuted at the 2010 MTV Video Music Awards at the Nokia Theatre in Los Angeles. Around 11.4 million people watched the awards show. The show was on September 12th, 2010. 200 MAC 101s were used in a variety of ways including lighting scenery, a wall matrix, as well as in various positions on the floor and overhead to utilise the beam.

There were four MAC 101 models available. The Standard MAC 101, the MAC 101 CT, the MAC 101 WRM and the MAC 101 CLD. By far the most popular model was the Standard MAC 101.



All MAC 101 fixtures feature:

- Onboard control panel and backlit LCD graphic display
- Electronic shutter with strobe and pulse effects
- 540° pan and 240° tilt ranges
- Colour calibration
- Bright and tight beam (13° field angle)
- Smooth, electronic dimming
- Ultra-compact, low weight design
- Length: 241mm across yoke
- Width: 241mm across yoke
- Height: 304mm
- Weight: 3.7kg
- High efficiency, low power consumption, long lifetime
- Maximum total power consumption: 123W

The standard MAC 101 features:

- RGB colour mixing with colour temperature control
- Cree XP-E high-power RGB emitters
- 'Colour wheel' colour-snap feature
- Three DMX control modes: Raw RGB + CTC, Calibrated RGB + CTC, Basic (colour-wheel only, RGB + CTC disabled)
- 2300 lumen output

The MAC 101 CT features:

- Warm/cold white mixing with 2,800 - 6,200K colour temperature control
- Cree XP-E high-power warm and cold white emitters
- 4,000 lumen output

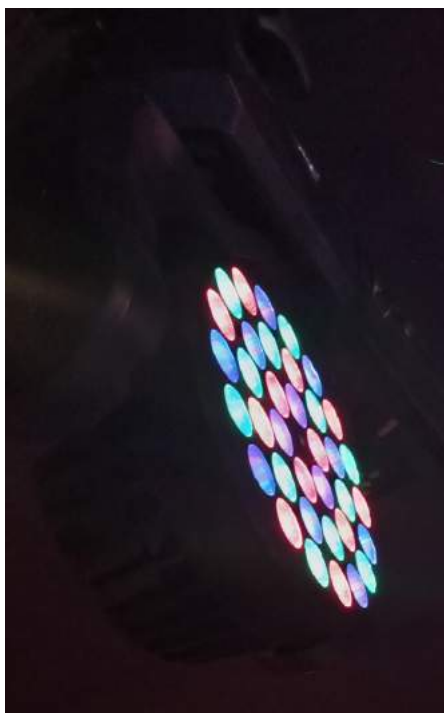
The MAC 101 WRM features

- 2,800K colour temperature
- Cree XP-E high-power warm white emitters
- 3,600 lumen output

The MAC 101 CLD features:

- 6,700K colour temperature
- Cree XP-E high-power cold white emitters
- 4,500 lumen output

RGB colour mixing is available in 'RAW' mode or calibrated 'RGB' mode. Raw RGB mode (RAW) is uncalibrated and allows all LEDs to be operated to their absolute maximum output regardless of colour calibration issues. Calibrated RGB mode (RGB) gives slightly reduced LED power but sets LEDs to their factory calibration output power to give the



best-matched colour and white output across multiple fixtures. Overall colour temperature can be varied from 10,000 - 2,500K. The default colour temperature is 5,600K.

The MAC 101s were known to be cheap, reliable, punchy, and versatile. As they were such a small, light, well balanced fixture, they only needed one clamp. This made them quick and easy to rig in places you couldn't fit other lights. They had a narrow beam, they could be used as table pinspots, but could be used to light a stage if there is enough throw. They could be used as beams behind a band. They drew 123w of power, meaning you could get 19 to a circuit if you had to and commanded a DMX footprint of 12, meaning you could fit dozens on a single data stream. The MAC 101's moving head could be panned through 540° and tilted through 240°.

Although not an IP rated fixture, they were a well-sealed unit. You generally did not need to open them up during servicing to remove and clean modules and lubricate moving parts. The main service component was cleaning the dust and grime out of the fans, which could be done with compressed air and a screwdriver (to stop the fan rotating while being cleaned out). They were a simple and quick fixture to maintain.

The MAC 101 solved a lot of lighting problems. All-too-common scenarios for lighting operators in any field; an expo client bringing a banner that needs to be lit, a corporate client who wants some light for an activation in the room, a concert where a few more band members turn up than are on the rider and are needing their own specials onstage, a speaker who decides on the day they don't want to use the main stage in a venue as it is too high and too far away from their audience so they opt to speak from a small riser stage on the floor. A whole lot of dinner tables get added to a gala dinner an hour before doors. A band wants a few more beams behind them but you don't

have the time, people or power available to do anything too big. A handful of MAC 101s solves all of these last-minute problems.

The main selling points for the MAC 101 were (and arguably still are) that they are cheap, reliable, bright and compact. To achieve this, compromises had to be made. There was no zoom and there was no focus. The beam was a fixed 7 degrees with a soft edge. Frosts and top hats were available as a bolt-on extra, but these could not be turned on and off at the console. There was also no gobo wheel. Adding a zoom, focus and gobo wheel to the lights would have made the lights bigger and not as bright, not to mention more moving parts and therefore more points of failure, potentially creating reliability problems.

The colours did not mix well from close range. In the case of white, if you look at the fixture you will see a series of Red, Blue and Green lights. These will also be visible when projected onto a surface less than about 5m away.

The LED display screens tended to die out, making it that much harder to address the light or access any of the settings at the light.

Another issue with the lights is that they can quickly become economically unviable to repair. A PCB board replacement costs more than the light itself. Starting at a bit over \$1,000, any repair approaching \$400- \$500 becomes questionable, given that a good quality second hand example can set you back about \$500.

Although it did not tick all the boxes, it seemed to tick the right boxes and the compromises were more than tolerable. The Martin MAC 101 is arguably one of the best-selling moving lights we have ever seen in Australia. Although the last batch was sold years ago, they are still in plentiful supply in venues and production houses across the country.

ASTERA TITANS

for Bayreuth Baroque Opera Festival



Astera Titan Tubes provided a great solution for the lighting of a rolling 'small stage' scenic truck which was central to the action for the 2022 Bayreuth Baroque Opera Festival's acclaimed production of "Alessandro Nell'Indie" by Leonardo Vinci, directed by Max Emmanuel Cancic and lit by David Debrinay from Paris and Lyon-based design studio LJOMA.

Three unique performances were staged at the beautiful Margravian Opera House (Markgräflisches Opernhaus), a UNESCO World Heritage site.

David is well acquainted with Astera products, and he initially asked lighting specialist Kai Fischer, the Festival's technical production manager who co-ordinates all the lighting procurement, if he could source Astera AX1s or Titan Tubes for the task of lighting the small stage, which played an integral role in the narrative.

The story is focused on Alexander the Great's Indian campaign and his defeat of King Poros in 326 BCE at the Battle of Hydaspes, and in true Baroque style, a sense of spectacle

and elaborate staging and complex detailed architecture was central to the production.

"I knew using the wireless Astera fixtures was the only way to easily bring light, colour and vibrance to the stage, taking up such a small amount of space," he commented, adding that he also chose this option because they had a short time in which to build the set. "It was a solution that enabled the stage to be built without needing to define in advance where I might need electrical power."

Three Titans were attached above the back of the small stage set, with two in the front and one in the middle all clamped to the set roof, with another vertical unit on the stage left and right sides on their foot stands. They provided

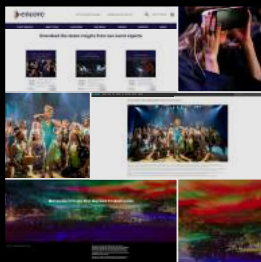
set washing and support key lighting when the actors were on it.

"We needed a neat and handy solution to fit into very tight spaces, and being wireless was essential, both because the stage moves up and downstage throughout the show and to deal with the fast scene changes that take place on it," explained Kai.

Six different scenes within the main show were played out on the small stage, so when the set changed, the Titans were simply un-clipped and then re-clipped into their new positions to illuminate the new and current scenery elements.

Kai also noted that the Titan Tubes were

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extremely quick to move and he was impressed with the battery charge which lasted for two shows ... and then some!

It is the first time he had seen them in action on an opera, but has used various Astera products on several TV productions and events over the last three years.

"Titan Tubes are the best innovation that we could have on this show!" Kai enthused, adding that as well as a great solution for opera and theatre shows generally, the quality of light output and high CRI make them ideal for key lighting and for being squeezed into otherwise inaccessible positions.

He notes that having Titan Tubes as set dressing in this context was extremely expedient on crew power, with all the onstage

set lighting changes throughout the four-hour show handled by one person.

David has been advocating Astera for many years and has used different luminaires on a diverse selection of international shows and performances, including a recent fashion event in New York where no less than 200 Asteras were integral to his design.

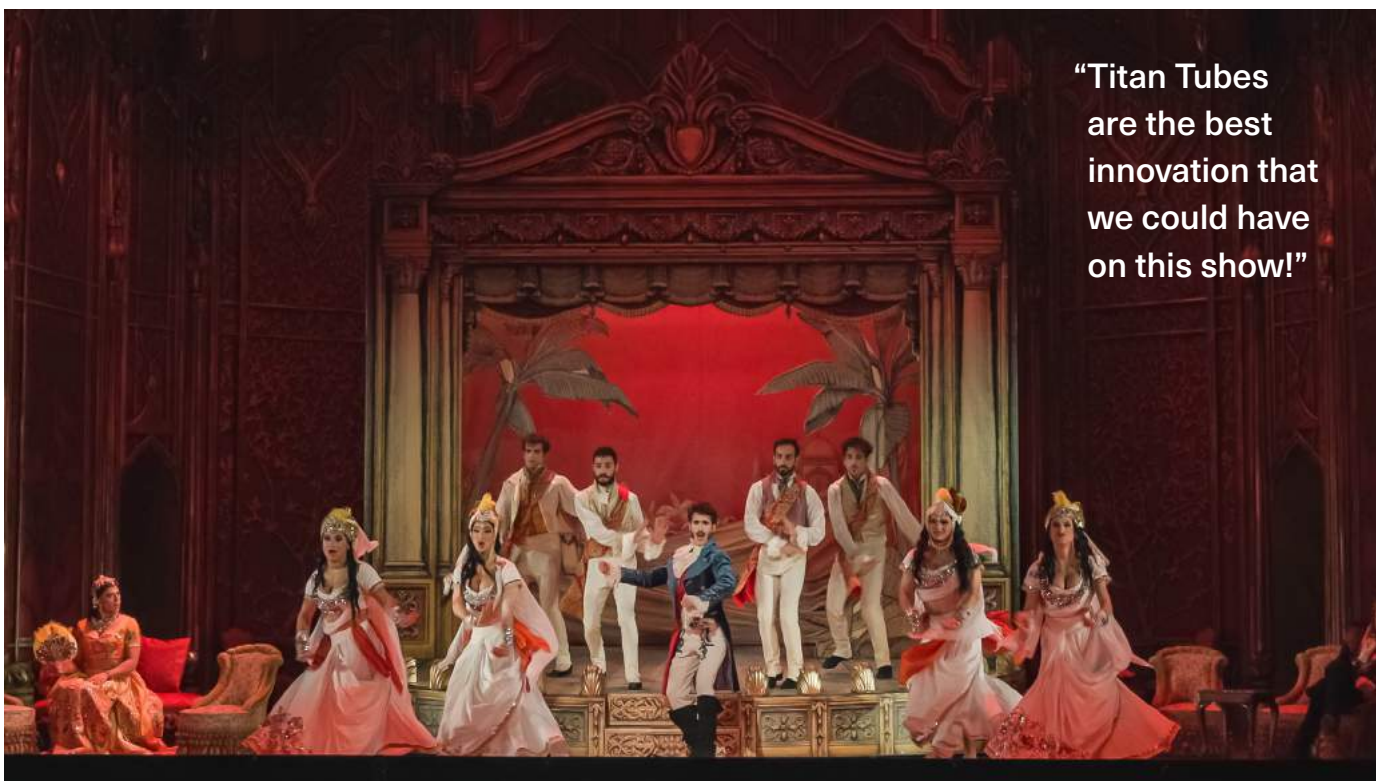
The Astera tech on this production was Frank Brösa who is based in Berlin. He usually works on TV productions and architectural lighting projects but was delighted to be part of the talented team delivering the 2022 Bayreuth Baroque Opera Festival.

Frank has been using Astera products for around six years. "They are extremely good fixtures and great for these scenic

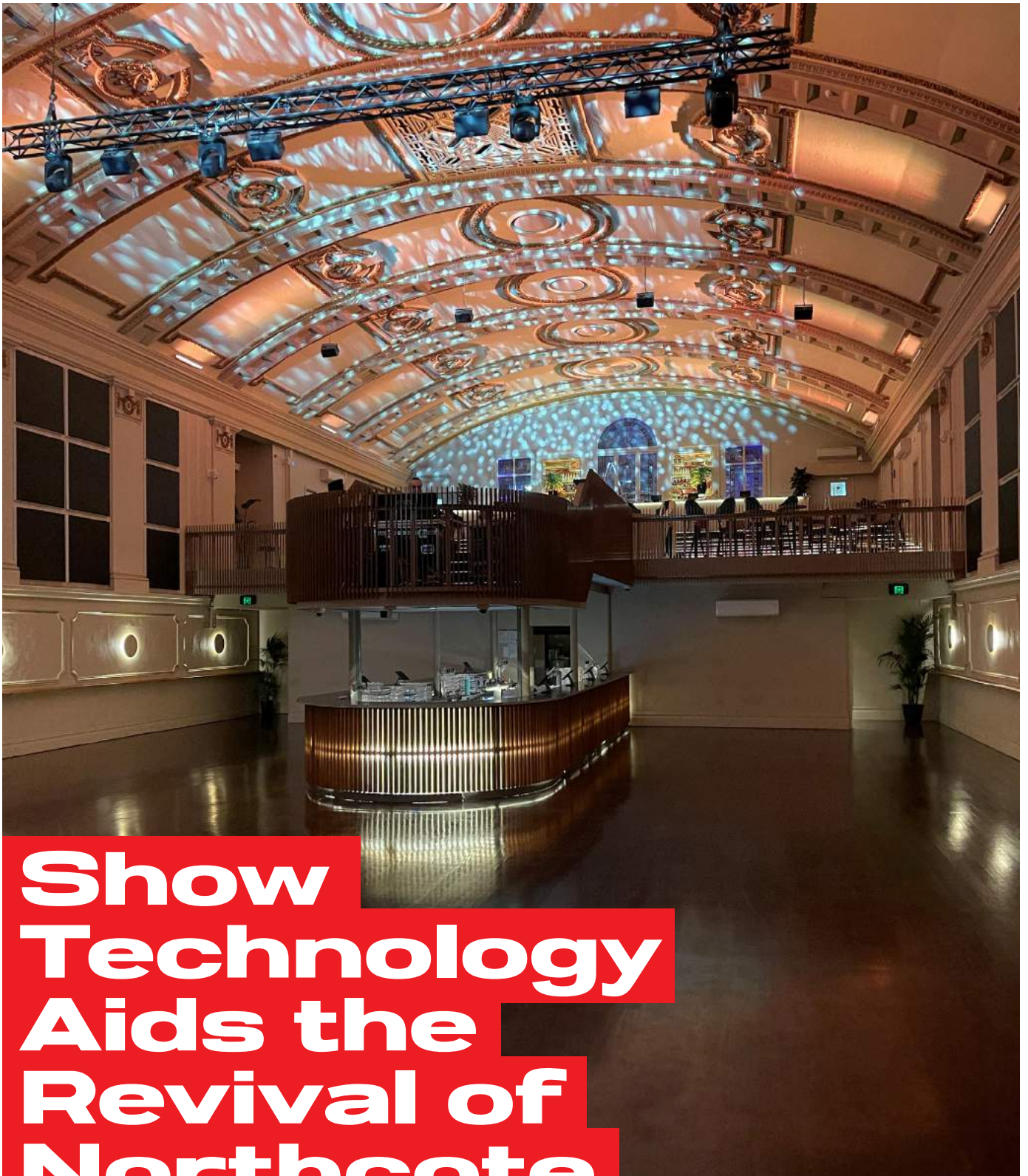
applications," he stated, adding that he also loves all the bracketry and mounting kit that comes supplied with the Titan Tubes.

To illuminate the magnificent front of the Margravia Opera House for the Alessandro Nell'Indie performances which featured music by the {oh!} Orkiestra from Poland, conducted by lead violinist, Martyna Pashuszka, Kai deployed 16 x Astera AX5 TriplePARs which were also ideal for highlighting its ornate facade.

Opened in 1748 and declared a UNESCO World Heritage site in 2012, the venue reopened in 2018 after extensive renovations restoring it to its original Baroque opulence simultaneously updating the backstage facilities to accommodate modern productions. It is also a museum.



"Titan Tubes are the best innovation that we could have on this show!"



Show Technology Aids the Revival of Northcote Theatre

Melbourne's oldest cinema has been transformed into the city's newest live music venue.

The heritage-listed Northcote Theatre, built on High Street in 1912, reopened in July with its Baroque-style auditorium ready to host up to 1500 punters. Its original facade and interior remain mostly intact, including a grand,

high-vaulted ceiling decorated with ornate plaster work. A mezzanine area overlooking the auditorium that had been boarded up since the 1960s has been crafted into a glamorous cocktail bar, in addition to an Italian trattoria

and a wine bar on the ground floor. A rooftop bar will soon top off the venue.

New operator Andrew Mansfield, who also co-founded the Northcote Social Club, worked closely with Show Technology to ensure the venue could offer the best in entertainment lighting technology.

"Show Technology has been amazing," he commented. "It was imperative to have a good lighting rig to ensure shows at this level. Beyond the capacity that entices the promotor, it's often the technical specifications that decide whether or not a venue is suitable for

an act. So it was important to get that right but also to consider how the lighting could highlight the magnificence of the building.”

Along with Andrew, the crew from Show Technology worked out a rig that was comparable to similar venues such as The Forum.

“We didn’t go into this knowing what we wanted in terms of gear, which is the beauty of working with professionals such as Show Technology, who could advise as to the sort of lighting that would be most effective in the space,” said Andrew. “While we were going through the build, they would come out and

rig lighting to show us what it could do in the space. I’ve worked in live music for thirty years but I’m not a lighting expert however, I can certainly see the value in what has been done.”

Experience and requirements led to eight Ayrton Mistral S Spot being chosen as the main spot luminaire along with sixteen ShowPRO R3 Wash and sixteen ShowPRO Pluto Beam.

Static lighting comprises eight ShowPRO LED Profile HP, eight ShowPRO LED Profile 19 Degree Lens, eight ShowPRO LED Blinder II IP and ten ShowPRO LED FusionBAR Q XII.

Control is an MA Lighting grandMA3 Compact XT with an ELC dmXLAN nodeGBx 8 stand-alone and a Theatrelight DB-Panel Distro RCBO with Rackmount.

“Show Technology has been amazing, we have been very lucky to have them on board,” said Andrew. “A project of this size and scope requires a huge amount of passion, commitment and money, and the best way you can deliver projects like this is in consultation, and very much partnership, with professionals whose opinions you can trust and whose passion for their business is comparable to your own.”

Andrew reports that the final lighting rig looks good, operates well and meets the expectation of clients.



POST MALONE'S TWELVE CARAT TOUR

Ayrton MagicPanel FX light the way with LD Dan Norman

Eighty-eight Ayrton MagicPanel FX multi-function luminaires, controlled by a grandMA3 lighting console, played a key role on Post Malone's Twelve Carat Tour. The tour was in support of his new album, Twelve Carat Toothache. The North American tour kicked off on 10th September in Omaha and wrapped up in mid-November with a pair of dates in Los Angeles.

The tour reunited Malone with Dan Norman, owner of LA-based Evolve Lights, Inc., who serves as his lighting designer and technical director. Norman previously designed one-off shows and a festival run for Malone last year, acted as the lighting designer for his Billboard Awards 2020 performance, and assisted on Malone's Runaway Tour in 2019.

Norman has a history of using Ayrton fixtures

having deployed 52 MagicBlade FX units for Malone's festival run and an array of Khamsin, Diablo, Huracan and Intellipix fixtures on other gigs.

MagicPanel FX features a unique optical zoom system and is comprised of a 5 x 5 array of squared lenses; it offers exciting creative possibilities for both 2D graphical effects and, with its powerful beam, extraordinary 3D volumetric effects.

"As Ayrton moves forward with LED sources they've become my go-to product line," says Norman. "I find their colour mixing to be more accurate than a lot of other fixtures; I'm super happy with the colour mixing on their spots and profiles."

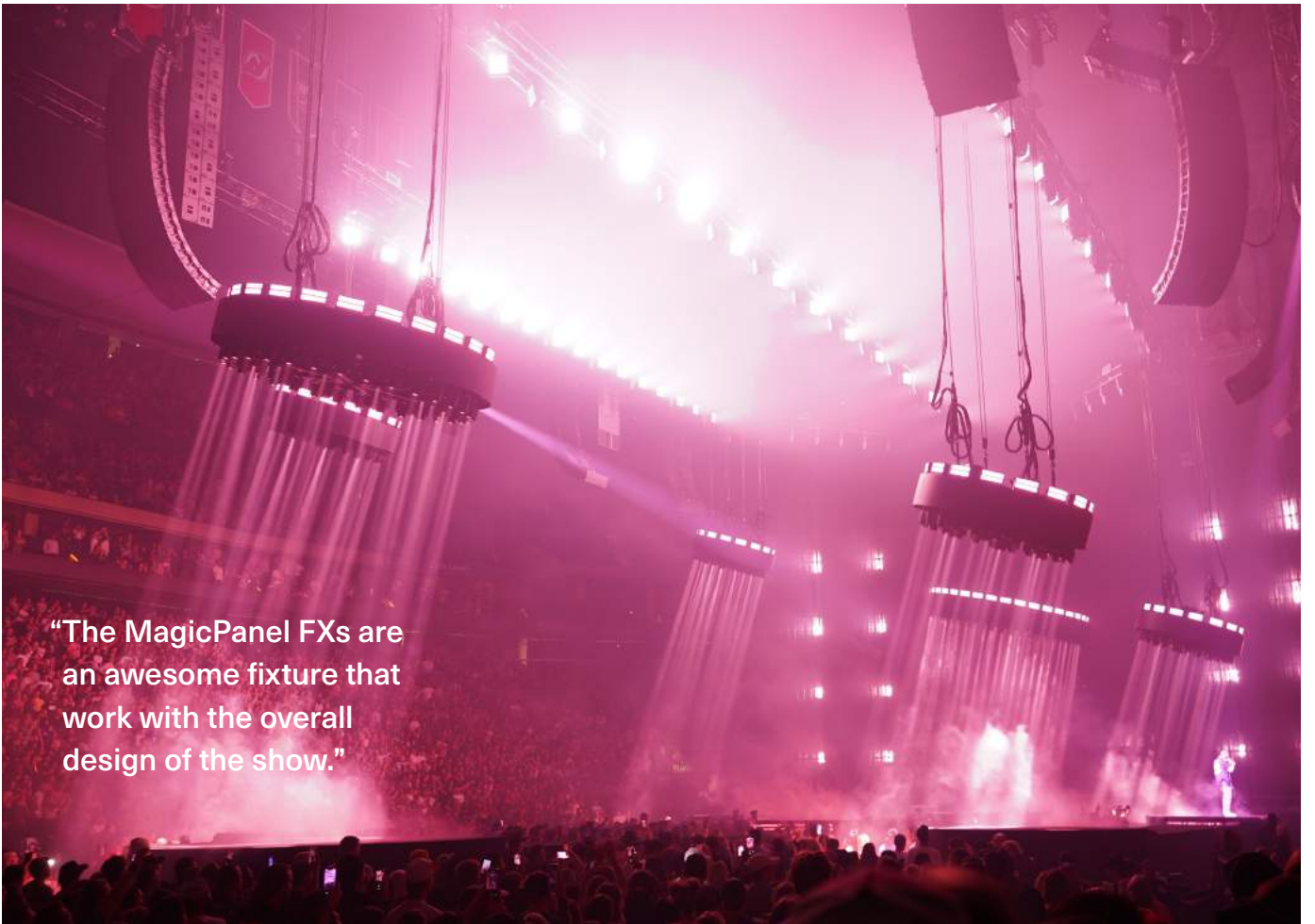
For the Twelve Carat Tour the Post Touring creative team approached Norman with a design of seven circle deck stages connected by runways. "Post Malone enjoys walking around and communicating with the audience, so the individual 12-foot wide stages put him as close as possible to them," Norman explains.

In the same way that the runways connect the stages, Norman was looking for a fixture that would connect the six circular overhead, automated lighting pods to the stages, which

can be as much as 60 feet apart. He chose 56 MagicPanel FX fixtures, supplied by PRG, mounted on Tyler GT truss above the runways, which create a wall of beams that form illuminated pathways from stage to stage. "They act like runway top lights and also create nice streaks of light," says Norman.

"The MagicPanel FXs are an awesome fixture that work with the overall design of the show. We have circle deck stages and long rectangular runways so I didn't want a circular fixture overhead. Since MagicPanel FXs are square-facing fixtures they match up well with the runways. With their pixel flexibility I can create a shape with just the outer ring or cue a few pixels at a time for a small, quite intimate look for specific moments instead of a bright wash. By contrast, used full force the MagicPanels can make our big 750-fixture rig look even more massive."

An additional 32 MagicPanel FX are positioned behind the 76 x 38-foot blow-through LED wall upstage in an 8 x 4 configuration. "They are attached to vertical Tinker ladders spaced every eight feet to make a square grid so they blow light through the LED screen," Norman says.



“The MagicPanel FXs are an awesome fixture that work with the overall design of the show.”



grandMA3 full-size console running grandMA2 software; PRG also provided two more grandMA3 full-size consoles, one as a backup unit and one that served as the tech desk.

Norman is a long-time grandMA user who also owns a full-size grandMA2. “I’m starting to prefer the changes in the grandMA3 hardware, like the screens and buttons,” he reports. “The keyboard is more centrally positioned, and I use a double line of macro buttons all the time. I feel my programming speed has increased with a lot more screen space and the extra macro buttons.”

Production manager Dennis Danneels was the glue that held all the departments together. Eric Christian was the associate lighting programmer and Steven “Six” Schwind was the touring lighting director.

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About half of Post Malone’s songs feature a kind of audio glitch motif in their tracks that the Post Touring creative team wanted to integrate into the design. Norman replicates that with the blow-through fixtures. “We can do quick blips and super-fast strobe hits with a few pixels at a time, very small,” he explains. “They create a very grounding look that carries through the show. Not a lot of other fixtures are able to create those effects.”

He also enjoys the versatility of the zoom system. “I can do single pixel glitches in a wide

zoom to give you that delicate eye candy effect, then zoom down and use all the pixels together to create tight shafts of light that spin around the arena. The MagicPanel FXs are great for crowd interaction too, since we don’t have conventional blinders, the wide zoom lets us get enough coverage to light up the crowd for Post Malone to see them all.”

“I’m super happy with these fixtures,” Norman declares. “They’re great units that do everything we need to do.”

For lighting control Norman was using a

Sometimes it all gets too much...



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UNREAL ENGINE

The future of entertainment rendering and 3D modelling...and more?

Unreal Engine is a 3D computer graphics game engine, written in C++. UE was developed by its parent company, Epic Games. The most current version is Unreal 5, which was released in April 2022.

It was originally created as a game engine to create first person shooter games. Thousands of games continue to be produced and released using various versions of Unreal Engine.

You may be familiar with some of the games produced using Unreal Engine. They include:

- Tekken 8 (Bandai Namco Entertainment)
- The Matrix Awakens (Epic Games)
- Fortnite (Epic Games)
- WWE 2K (2K Sports)
- Tony Hawk Pro Skater 1 and 2 (Activision)
- Street Fighter V (Capcom)
- Spyro Reignited Trilogy (Activision)
- Mortal Kombat (Warner Bros. Interactive Entertainment)

- Deadpool (Activision)
- GoldenEye: Rogue Agent (Electronic Arts)

UE is an open source platform. Anyone can utilise, adapt and develop it, thus making it robust and accessible. As enhancements have been made, it has found other uses. Extensive customisation capabilities and cross platform compatibilities have led to multiple high-end uses across a variety of industries. Although a relatively new technology to the entertainment industry, Unreal Engine has been around since 1998.

Unreal Engine is quickly gaining popularity amongst a number of industries outside of gaming. For almost anything needing a quick and easy visual render, people are turning to Unreal. A few examples include:

- New car websites, where you can select your colour, wheels and accessories and you get a preview in real time of how your car will look
- Construction/ Town planning flyovers showcasing a design yet to be built
- Real Estate/architectural walk throughs

- Modelling financial data
- Animations

As it evolves and grows, the technology becomes more useful for those in entertainment and live events.

One of the growing number of industry professionals turning to Unreal Engine is Sydney-based Lighting Designer Ziggy Zeigler of ZZ Creative. I interviewed Ziggy about his use of the software and how it integrates into live events.

KH: When did you start using UE and what drew you to it as opposed to its competitors?

Ziggy: I first explored some Unreal products in 2018 when I was looking to create faster and better renders for events and shows. CAD programs could do renders, but it was complicated and took a very long time.

I came across the idea of live rendering that was being used in game engines. These engines were capable of not only showing full detail 3D renders in a live mode, meaning you can move around the space fully rendered and make adjustments, they were also capable of



Ziggy Zeigler

You can also create 360 degree panoramic images for clients and upload your scene or videos to the Epic Games cloud servers so that clients can view it on low-spec machines. You can also use the Twinmotion cloud services to render things for you. Twinmotion also allows you to connect VR headsets like Oculus Rift and do full virtual walk-throughs of your scene. You can look at your lighting pre-vis in 3D virtual headsets using Unreal Engine.

KH: What are the biggest areas for improvement from an entertainment/events/lighting perspective?

Ziggy: The biggest areas for making things more efficient and realistic are the addition of more realistic stage haze that is less pixelated so that beams look right. Currently only large areas of haze or fog look good, and beams from narrow angled lights look a bit average. An easier way to create effective gobos and projection in your scene out of the box would be very helpful. There are paid solutions for this you can get from the Unreal Marketplace, like Carbon for Unreal, and there are some virtual video projectors you can buy, but having this direct from Epic Games will be more cost effective.

KH: How do you see the future of Unreal in the entertainment industry?

Ziggy: The entertainment industry is amazing but nowhere near as big as gaming or architecture in terms of money worldwide, so development of software and hardware is slow and costly. I think companies like Epic Games and their Unreal Engine will offer opportunities to develop software and hardware at more reasonable costs. It's already made its way into film, TV, pre-vis and client renders as well as theme park and venue control. I suspect it will be used more or will open avenues for entertainment companies to develop their own software in new ways that are more cost relevant to our industry.

realistic sunlight, light bounce, shadows and weather.

I had also seen the work done on The Mandalorian TV series, and several ads like the new Nissan Skyline where all the sets and sometimes the entire shoot were completed in virtual or semi virtual set ups; no need for onsite shooting any more. At that time, TV studios had discovered the use of Unreal Engine or D3 disguise software to create virtual worlds for their presenters. All of that tied in with the work we had been doing with lighting visualisers like Capture, WYSIWYG, L8 and Dependence 2. No other competitor could come close to UE, and all the others had a high price tag.

KH: What are the most attractive features?

Ziggy: For starters, it's free to use. There is a paid version of Epic Games' Twinmotion visualisation software that only costs around \$400, and the only difference between the free and paid version is that the free version lets you output at 1920 x 1080 full HD resolution for video and stills, where the paid version lets you output at full HD, 4k, 8K or 16K resolution. Other than that, all features, saving, models, animation and exporting are available in both.

There are so many YouTube tutorials and tips and hints videos for UE and Twinmotion that it

makes it easy to learn. Both Epic Games and lots of users post these regularly. It's easy to pick up the software and create stunning looking images and videos pretty quickly.

You can also take a 3D file and import it direct into UE for use in film and TV as LED screen virtual scenes for studios, or to place into the UE event lighting visualisers for pre-programming.

Epic have also developed basic moving lights, LED lights and conventional lights that are free to use, as well as trussing and staging systems.

With the Unreal pre-vis DMX module you can customise your pre-vis set up, pre-vis lights and scenes any way you want with very real looking reflections, shadows and global illumination all in real time, which is great for very large outdoor pre-vis. Sites that are several kilometres in size or whole cities, stadiums, or harbours are easier to pre-vis this way.

With Twinmotion you can also add notes, annotations and combine those notes, images and videos into packaged presentations that clients can virtual walk through on a computer or tablet. For example, you can play a video and stop it then turn around the scene inside the video and walk around or look at things then go back and press play and the video continues.

Are you concerned about your mate's mental health?

FACT: Most Australian tech crew and roadies have attempted or considered suicide¹!

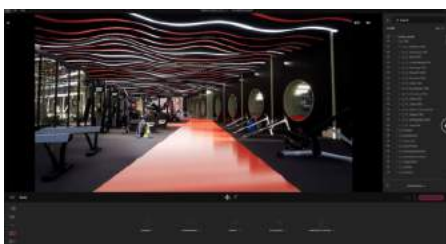
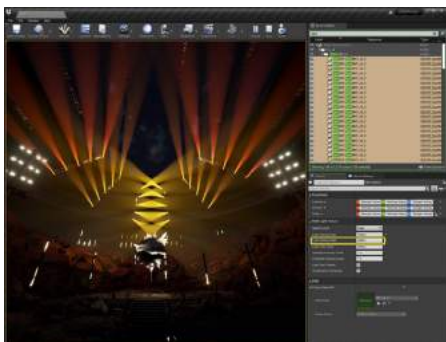
Support those around you and register for free mental health training



¹Passion, Pride, Pitfalls Dec 2014

www.entertainmentassist.org.au

Supporting the mental health of Australian entertainment industry workers



The Future

With the potential UE has, the low barriers to entry, and the speed work can be produced, the hurdles of a steep learning curve and the power of the computer required to run it don't seem like such insurmountable issues. We could be looking at a future where the Unreal Engine could become the industry standard for rendering and 3D modelling.

It wouldn't be too far-fetched to imagine the software becoming the go-to for plans. In March of 2021, Vectorworks announced a partnership with Unreal Engine, effectively making file sharing easier and more compatible between the two software platforms.

This list represents a typical system used at Epic Games, providing a reasonable guideline for developing games with Unreal Engine 5:

- Windows 10 64-bit (Version 20H2)
- 64 GB RAM
- 256 GB SSD (OS Drive)
- 2 TB SSD (Data Drive)
- NVIDIA GeForce RTX 2080 SUPER
- Xoreax Incredibuild (Dev Tools Package)

- Six-Core Xeon E5-2643 @ 3.4GHz

As the technology continues to develop, it is becoming more attuned to the needs of the events and entertainment industry. Of particular interest is the high-end graphic engine and the ultra-fast processing speed. UE is being used to create renders, visualisations and fly-overs to showcase and illustrate concepts.

Studies have shown that up to two thirds of people are visual thinkers. Only about a quarter of people think primarily in words. Chances are, if you are looking to pitch a creative idea to a non- technical person/client/potential client, you will need to be able to supply a 3D render in order to have your concept understood – much less agreed to and paid for.

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BetterCast

Increasing Cultural Inclusion at Multicultural Hybrid Events

It's well known that hybrid and online events are capable of reaching significantly greater audiences. Numbers for in-person events are inevitably limited by the size of the venue, but streaming the event means that it can be viewed by thousands more digital attendees around the world.

And that's the key phrase right there – “around the world”. By broadcasting your event across the internet, it can be attended by audiences from a wide range of countries and cultures. As the world we live in gets seemingly smaller and smaller and international trade gets cheaper and easier, consideration for cultures different to your own becomes more and more important, not least in the events industry.

The Benefits

As ignoble as it may sound, a big advantage that comes from factoring cultural inclusion

into your events is a financial one. The more people who feel welcome to attend, either in person or digitally, the more ticket sales and potential leads that will arise from that event. However, taking a slightly less cynical view, cultural inclusion can also bring alternative perspectives.

“Inclusion and innovation are deeply linked,” said Ruchika Tulshyan, author of *Inclusion on Purpose* and *The Diversity Advantage* in an interview with *The Beautiful Truth*. “If you want to surface new ideas, to bring a growth strategy that hasn't been thought about before,

you cannot do so without new voices, and new perspectives.”

She added, albeit in a different interview: “I find it a waste of time to attend a conference where I won’t learn from a wide variety of expertise, views, and experiences.”

Janet Sperstad, a Certified Meeting Professional with over a quarter of a century’s experience, explained what exactly inclusion and diversity mean very well in an interview with pc/nametag. She said: “We need to raise revenue, we need attendees, but we also need to include people because we bring the world together, even if you have a very vertical market within your industry. Diversity is about honouring the diverse perspectives, honouring the diversity of age, race, and culture. Inclusion means you are welcome and being able to share a different perspective is welcome.”



“It’s Not An Add-On”

Factoring cultural inclusion into event planning is not without its challenges, with budgetary needs being high on the list. “We were on a shoestring budget for our first conference back in 2015,” recalled Melinda Epler of Change Catalyst when interviewed for Eventbrite. The company she runs helps tech companies build inclusive ecosystems. A deaf attendee had asked, back in 2015, if the conference could include a sign language interpreter. “I thought, ‘I can’t afford it’. But that would have been a big mistake.”

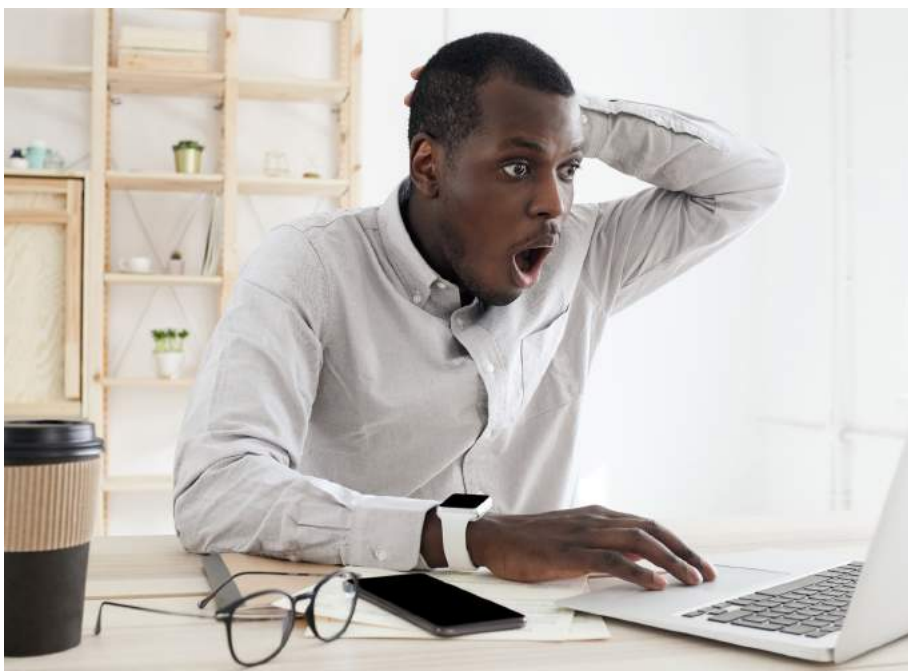
In the end, Melinda managed to get the interpreter. She added: “Inclusivity isn’t something that’s nice to have. It’s not an add-on. It’s got to be a core element of who we are.”

The Right Tools For The Job

Following on from Melinda’s story, it is important to distinguish between something that adds value to a multicultural hybrid event and a gimmick that only adds an extra digit or two to the invoice. Indeed, gimmicks can harm both organisers and attendees as it adds complexity to attending the event digitally.

“Not everyone has great internet bandwidth,” Melinda said, adding that something as simple as deciding whether to use a downloadable app or a web browser as the gateway to your event has an impact on those with limited access to or experience with mobile technology. She even asks if there is a way to attend an event without using video, to help with connection issues.

Stepping back from that extreme, an addition that can be more helpful is something as simple as adding real-time translations and subtitles to presentations. Melinda further



recommends that slideshows should use a sans serif font in high contrast (black text on a white background) at no less than 24-point size in order to make it as accessible as possible. Not only is it easier to read for those with poor eyesight or even just a weak internet connection, but readers for whom English may be a second or third language will find simpler fonts (and simpler words and sentences) easier to follow.

Similarly, it's worth noting that slang and colloquialisms can be real challenges for international audiences. Telling an audience

of native English speakers that you want them to 'throw out some ideas' might work well enough, but trying the same with non-native speakers will probably get you some confused and concerned looks at best.

Mistakes Happen

The example above is an excellent illustration of how diversity and inclusion can create a vast abundance of opportunities to make mistakes, so helping people to avoid them is a bonus. Melinda and her organisation provide a toolkit for inclusive events, which include guides to

inclusive language and how to set a code of conduct. "It's key that you've trained your staff or employees to enforce it," Melinda added. "If something happens in a chat room, how do you handle it?"

It is worth noting, though it wasn't Melinda who did so, that cross-cultural misunderstandings can be both accidental as well as intentional. Knowing how to handle both types with tact is a very important skill.

Multiculturalism Begins At Home

Having a team that is itself multicultural certainly keeps mistakes to a minimum and helps ensure event planning decisions are based on facts and not stereotypes and misconceptions. There are plenty of other benefits, too.

"Studies show that diverse teams are 33 per cent more likely to generate better-than-average profits, 70 per cent more likely to capture new markets, and generate 19 per cent more revenue from innovation than companies with below-average leadership diversity," said Amanda Ma, founder and CEO of Innovate Marketing Group, in a guest blog for BizBash.

"By creating an environment where all are included, we pave the way to allow for mutual success. We have seen some of our clients do this successfully as well. The companies with the most success have leadership that make it a part of their culture and deliverables, then funnel that top-down. Essentially: Do not just talk the talk, but walk the walk."





EUROA MUSIC FESTIVAL 2022

NATURE'S DISRUPTION

She hasn't stopped yet

Production management is mainly about planning and logistics. In March 2021, Euroa staged its inaugural Music Festival. Our planning went as well as the show itself – both great successes. We decided to do it again.

Originally scheduled for March 2022, a mixture of onerous COVID compliance and uncertain punters led to poor initial sales for Euroa Music Festival #2. We opted to postpone until later in the year when attendances might be more certain. As a community based not-for-profit, we cannot afford to fail financially.

November 5th - lock that date. Graciously, all artists and production agreed to bear with the postponement. We reset timelines and chugged along towards show day.

Then, several weeks out, the perfect storm erupted. I shared my personal experience of nature's wildest last month. That storm was just the first of many that ended up flooding much of Northern Victoria. Which is where our beautiful tree covered festival site is located.

We checked on it every day or so and crossed

fingers that it would dry out in time. Just as it was starting to look good, council staff completed a site inspection and declared it a non-starter. 10 days from our big show!

Argggghhhhhhhh! Quick committee meeting rapidly assembled to consider our options. Which boiled down to: a) postpone again; b) find a new site; or c) cancel altogether. Reluctant to go through it all again in a few months and adamant that cancellation was not on the cards, we took a deep collective breath and went with Plan B.

The search for higher ground found the Showgrounds, where we already had camping lined up for attendees making a weekend of it. Several long meetings with site representatives later, that option got nixed too. While dry enough around the edges for tents, it was still too saturated to easily stage a gig.

Further, we didn't want to incur the town's wrath by trashing the joint, nor the cost of reparation works for any damage caused.

Plan Z it is then. As part of the festival, we had already aligned with FReeZA to hold a Battle of the Bands in the main street on Friday night prior to the primary Saturday show. They had organised a small PA and council was OK to block the main street just for that evening.

It didn't seem too big a step to extend that for the whole weekend, so we decided to use our bigger production setup across both events. With our original location under the trees, main stage and production was scheduled to arrive and setup on Friday afternoon for the Saturday show. Setting the stage and PA a few hours earlier was the easy bit. Effectively closing the street for 32 hours was the bigger challenge.



Set up



John and Adam making decisions



View from FoH



Fish tags our festival emoji, Fred

Many fraught and tense negotiations followed. Council, Chamber of Commerce, street traders and more got involved. Our promoter, Adam Palmer pulled out all the diplomatic stops to get everyone on board. One more step towards legend status. Event Manager, Rachelle Watson, was right there with him. Battling an onset of tonsillitis, she forged on ensuring that we got all our ducks lined up.

Meantime, I focussed on what I could control. And that was Production Management. Stage, PA, and LX came as one package from Moon Mother. We'd been regularly in contact and their professionalism and flexibility meant this was the simple bit for me. Big props to Jenny Moon, Heath Mackaay, and their crew for a great job, yet again, as the goalposts moved around like kids on a sugar high.

The tough bit was sourcing all the ancillary site gear. Normally, plant like generators, light towers, temporary fencing, etc are easily procured from a small handful of suppliers. I had our main outlet pencilled in, then a comedy of errors led to me missing their calls while dealing with storms and them totally drowned out when I could get back through to them. They were right in the worst of the floods, unsure if they could supply anything at all.

So, I fired up the spreadsheet, compiled a list of possible alternative sources and started calling around. "Yeh, we got four of those, but all out supporting our local council in flood works. We do have one old 5KVA, but you said 160+, right?" This frustrating procedure went on for days. Some wins, some losses but the surprisingly difficult beast to find was the humble cable tray. For reasons still beyond me, these were like hen's teeth.

Endless calls started bearing fruit. Lock that one in there, this one somewhere else. Juggle those quotes, try to marry the schedules; like normal PM but accelerated. Then throw in

Melbourne Cup shutting down the state the week prior to our show. A few providers were open on the Monday, so I managed to get most things sorted out. Cup Day off to reset and catch up on paid work.

Back at it Wed first light to get rid of the known unknowns. By afternoon, I was looking sweet. Planning done – time to implement it. Our evening committee meeting went well but we all knew there was still a steep climb ahead.

Much of that was political. Euroa is a gorgeous venue, a country town big enough for six cafes but small enough to know most by first name. It is a conservative place - with many who cannot abide change. As the demographic makeup slowly morphs from farmers and agricultural support chains to tree changers, remote workers, and retirees, so too do its cultural expectations.

Blocking off the town's primary trading street for 30+ hours is no small thing. We were very cognisant of that. But bringing 1100+ punters to the strip for that same period is also not to be scoffed at.

This time around, it was creatives in the ascendancy. The show goes on.

Friday I was first onsite at 06:45. Sketched out rough locations with a tape and chalk. Stage truck arrived bang on time at 07:00, and we lined it up in place. Later, I realised I was about 5 degrees offline. No-one else noticed, so I kept mum ... until now.



In the chaotic rush of venue change, our messaging to shopkeepers and residents had suffered. I had to placate many while simultaneously putting a gig together. Somehow it worked.

To top it off, holdups in the office meant that I also became de facto Site Manager until the young bands kicked off at 17:00. A long day of walking, talking, taking deliveries and calls followed. But we stayed on schedule and the evening show went off a treat.

Got home by 21:30, only to be back on site 06:45 next morn. Gates opened at 11:00 but we all had our tasks and stuck to them. I was also looking after lighting for site ambience and quickly scaled my grand visions back to what a local party hire company could do by gates.

We had a series of large-scale sculptures dotted along the street. All by local artists. Local DJs pumped out tunes during changeovers. The show went well. Numbers were good, the bands rocked, and all the punters seemed to have a great time. Initial tallies show us breaking even again.

The shops that stayed open did a roaring trade through the day. We showcased the town, and our ability to do well during adversity to another group of punters. Old school ideals from new school locals.

But - the big but - we know that our festival's real home is back under the gum trees. That is where it looks great, doesn't impede locals or their businesses and lets us pack up at a more leisurely pace. Having to clear the main street for Sunday trading was onerous. A lot of our crew were fading. I sent the delirious or dangerously drunken ones home, marshalled those with a reserve of energy and managed to clear everything bar fencing by 02:30, 20 hours after starting!

First to arrive, last to leave. The gig of a responsible adult, unafraid to adapt a plan on the fly. Who'd be a production manager?

EMF: euroamusicfestival.com/

Production: moonmother.com.au/

Event management: thebackground.com.au/

All photos Connor McCloy: connormccloy.org/





Ian MacRae and the Hon Nick Jones

Radio Days:

The Ian MacRae Tapes

Snippets from the archives of a bygone era

In the early 1970s Ian MacRae's breakfast radio show rocketed Sydney radio station 2SM to the top of the ratings charts, brightening our mornings with music, comedy and stunts that would dominate the air waves throughout the decade and into the next.

For me, the popular music sounds of the 50s and early 60s emanated from the family's HMV Little Nipper radio, religiously referred to as the 'wireless'. My family couldn't afford to buy me a transistor, so to personalise my listening experience I was gifted a crystal set that was so lacking in power output that it could only power an earphone.

I strung metres of copper wire around the backyard, which only delivered a meagre reception coupled with muddled crosstalk between two or more stations. The star of breakfast radio in those days was 2UE's Russ Walkington with Gerald the Talking Grasshopper. He was succeeded by Gary O'Callaghan who then gave us Sammy

Sparrow; although revered, these characters mainly targeted a children's audience.

It wasn't until 1969 when I worked as a junior motor vehicle insurance clerk at NRMA that I happened to serve a customer who listed his occupation as 'Radio Announcer'; and he signed the vehicle insurance proposal form Ian MacRae. As fate would have it, the offices of the NRMA and radio station 2SM were both in Clarence Street. Although largely unknown at the time MacRae would soon become the breakfast announcer for radio 2SM. His show would treat listeners to an avalanche of madcap comedy incorporated with radio-hyped stunts thrown into the music mix, a far cry from Gerald the Talking Grasshopper and Sammy Sparrow.

Ian MacRae launched his radio career at Melbourne's 3AW in the early 60s where as a record librarian, panel operator and general office boy, his only on-air window of opportunity was the one-hour test programs from 5-6am on Sunday mornings. He says it took the austere station six months to wake up to the fact that he was playing what he says was, "The grungiest rock 'n' roll of the time".

MacRae later travelled to the UK becoming one of the pioneer announcers of UK pirate radio stations Radio City and later Radio Caroline. Upon his return to Australia he joined 2SM.

I contacted Ian MacRae in 2004 for an article about those salad days of radio. At the ensuing taped interview he talked me through his career as he turned the pages of a thick scrap book filled with news items and classic pictures. MacRae went on to write the regular

radio column 'Off the Dial' for the broadcast magazine I was editing; and he later wrote 'Right off the Dial' for CX mag.

I contacted MacRae again for this article to test his recollection of those golden days of radio. He surprised me with even more information:

"2SM was first set up in 1931 at St Marks Drummoyne. The station was owned by the Catholic Church, and the SM stood for St Marks," he said.

At 2SM MacRae became Australia's first radio announcer to mix music with a committed comedy breakfast radio show. It was comedy that started with a few bogus telephone calls and built to some of the most absurd stunts that delighted Sydney and later Adelaide audiences for a mammoth 18-year reign of breakfast radio mayhem.

Comedy was the main driver of MacRae's breakfast show mixed with the emerging new music of the post-Beatles era. Then along came the Hon Nick Jones, an eccentric pseudo politician who dressed like Red Skelton's Freddie the Freeloader, and who had started his own zany political party The National Colonialist Party. The Hon Nick became a regular guest on the morning show and he and MacRae scripted comedy skits and stunts. One of their stunts was to run on a Federal Senate ticket promising if elected to declare war on Antarctica and build a piggery in the upper class Sydney suburb of Mosman.

"We gave away hundreds of 'Put A Stinker In The Chamber' car stickers," said MacRae. Such was the popularity of MacRae and the Hon Nick that the voting fell just short of a victory in the Senate.

"We were genuinely concerned that we would have to move to Canberra if elected, which would have meant giving up the breakfast show," said MacRae.

Cackling chickens were regularly heard during



Vintage Arrow Germanium Crystal Radio



Vintage Arrow Germanium Crystal Radio

the madcap morning shows and, as chickens were left out of Earthly animals selected to be saved such as koalas and whales, MacRae started a 'Save the Chook' campaign complete with (of course) car stickers. Sceptics

suggested that the cackling cacophony may not have all been from live chickens in the studio; but not so the chickens that MacRae released into on-air studios on more than one occasion at 3AW and 3CS during his radio

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Ian MacRae Radio School

announcing apprenticeship in Melbourne. He even scattered chicken feed around the studio to augment the frenzy, all during someone else's program of course.

At 2SM the stunts got more and more bizarre: there was a swimming marathon where a swimmer was to swim from Sydney to Adelaide. In reality, he swam in the back of a truck filled with water, but the motion of the truck caused a turbulence that battered the

swimmer against the sides of the truck so badly that the attempt had to be called off. Another stunt fooled listeners into placing their telephones in plastic bags because Telecom (now Telstra) was planning to blow the dust out of their lines.

MacRae's most notorious stunt, however, was to put a 'jumbo' under the Sydney Harbour Bridge. The 747 Jumbo aeroplanes were the most talked about aircraft of that era. Some

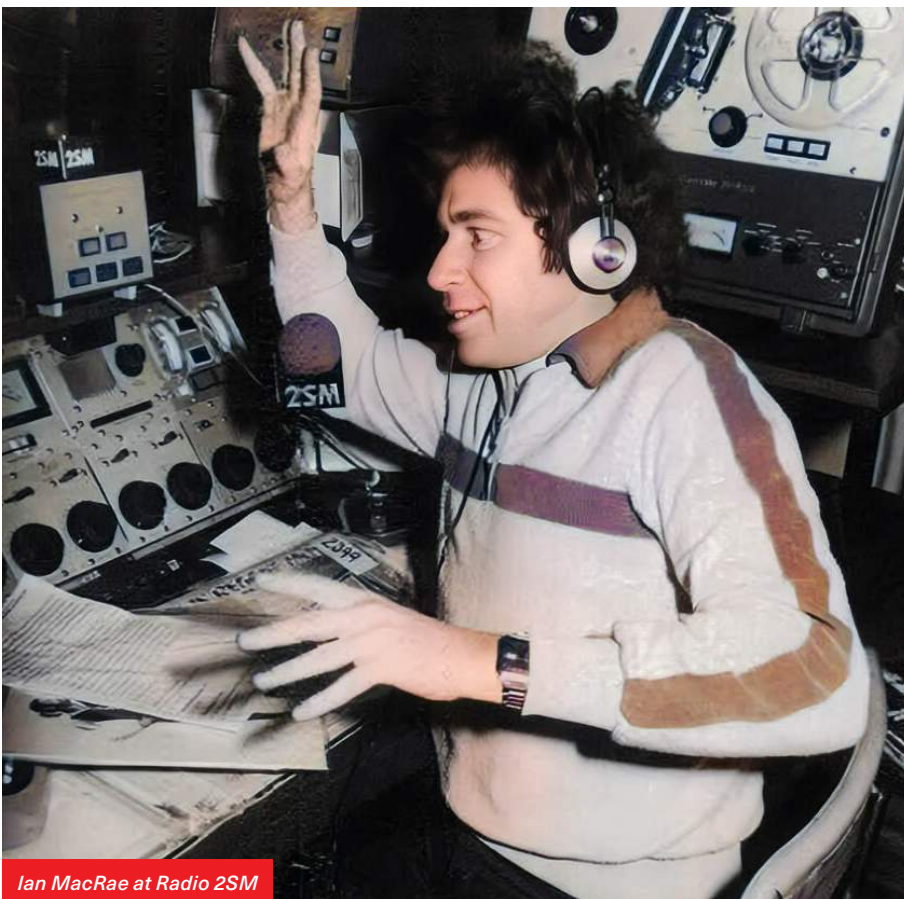
may have guessed the ruse but no so the thousands of spectators that lined the harbour foreshores that historic morning in 1978.

The stunt, which virtually brought the busy harbour district to a standstill was indeed a jumbo, but not of the aircraft variety. Instead, a pacified pachyderm with its trunk swaying, decorated in British Airways paraphernalia, floated under the bridge on a barge adorned by female flight attendants. Steve Liebman, who was 2SM's morning newsreader at the time, described the event.

"It is eight o'clock and this is Steve Liebman, and I don't think that I have ever seen a sight more absurd than an elephant on a barge going under the Sydney Harbour Bridge at this very minute, with a British Airways sign draped over its rump, and a British Airways captain and a Qantas hostie, surrounded by a flotilla of boats."

MacRae was decried at the time as a 'rat and a fink' but accepted those accolades with great humility. The Ian MacRae 2SM breakfast show reigned for thirteen years wherein he was the undisputed king of breakfast radio.

Bitten by the radio bug since childhood and those euphoric days of radio, I found myself in front of the microphone in 2016 at a community radio station trying to emulate that bygone era. As Vladimir Nabokov wrote in his novel Lolita, "The poison was in the wound, and the wound remained ever open." But station management had a different format in mind, and I got tired of hearing the catchphrases, "Oh you can't do that; you can't say that." And it was those criticisms that ushered in my hurried exit. But the wound still hasn't healed, and I've since joined another community station with people of my own ilk who idolise those great days of radio.



Ian MacRae at Radio 2SM



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