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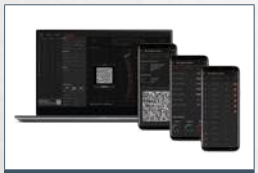
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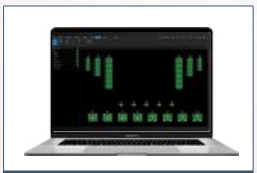
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CXNETWORK
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Over 1,300 ACME Fixtures Dominate the Stage at Eurovision 2025

The Eurovision Song Contest 2025 delivered a spectacular fusion of design, technology and performance at the St. Jakobshalle arena in Basel, Switzerland. Hosted by Swiss broadcaster SRG SSR and co-ordinated by the European Broadcasting Union (EBU), Eurovision is one of the world's largest live music broadcast events.

As one of the official technical suppliers, ACME Lighting proudly powered the event with over 1,300 fixtures, helping shape the breathtaking, immersive stage world by set designer Florian Wieder and brought to life in collaboration with lighting designer Tim Routledge.

When Florian and his team developed the stage concept, they built the creative foundation on three elements: the Swiss Grid for clean, structured layout; the letterbox to reflect Switzerland's linguistic and cultural diversity; and the two layers of mountains to add theatrical presence and visual depth.

To enhance spatial depth and create a layered visual experience, the lighting design team constructed a multilayered 3D grid structure behind the transparent 750m^2 LED wall, creating the illusion of an open backstage. Recognizing the potential of this unique setup, Tim chose the ACME PIXEL LINE IP attached to the grid, delivering clean looks, bold graphical effects and powerful strobe effects.

The massive frame was embedded with the same PIXEL LINE IP fixtures used in the 3D grid. These vertical pixel lights lit up the frame with vibrant colour transitions and cool dynamic effects, adding the visual flair to the entire setup. Designed to do more than just frame the stage, the structure was also intended to let the TV audience experience the show through it. For Tim, having the scenic video panels in the frame wasn't enough; he wanted the structure to emit light itself.

When Tim drew the perspective trusses and the frame, the ACME TORNADO fixtures stood out as the perfect addition to provide clean looks with strong visual presence. Tim said, "I had used them on a few recent shows and knew what they could do, but I wanted to try more tricks with them in huge quantity."

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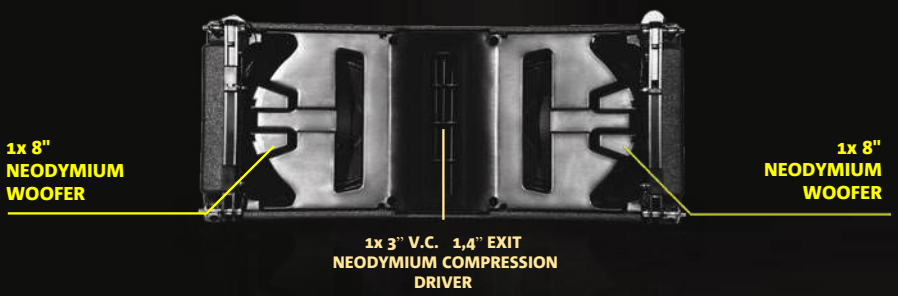

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Tim used the TORNADO to visually dress the entire light tunnel, positioning them along the front and back edges to create a stunning 'Portal of Light'. Beyond the frame, the TORNADO fixtures were also mounted on three backward-running trusses on each side above the main stage. Each unit features five individually controlled heads, delivering sharp beams, wave-like motion and dynamic effects. Tim enthused, "we were all blown away by the brightness of the TORNADO and it really did work against the huge video screen."

In addition to the PIXEL LINE IP and TORNADO fixtures, ACME Lighting also provided 40 SUPER DOTLINE fixtures, positioned above all the arena entrances. These served as simple audience-facing eye candy, creating visual effects that extended the show's energy deep into the crowd.

ACME's participation at Eurovision 2025 marks a significant milestone for the brand's international journey. With over 1,300 ACME fixtures powering the spectacle, the event isn't just a celebration of music and culture, it's a dazzling showcase of cutting-edge stage technology!

ACME Gear List:

1022 PIXEL LINE IP/PIXEL LINE IP 500

269 TORNADO

40 SUPER DOTLINE

Special Thanks To:

Lighting Designer: Tim Routledge

Associate LD: James Scott

Associate LD and Previs: Morgan Evan

Programming Team: Alex Mildenhall, Tom Young, Marc Nicholson

Overnight Programmers: Martin Higgins, Alex Passmore

Lighting Supplier: Neg Earth Lights

Introducing the world's most portable all-in-one television studio!

ATEM Television Studio 4K8 is a professional live production switcher built into a broadcast control panel so it can be used for high end work while being extremely portable. You get a powerful switcher with 8 x 12G-SDI standards converted inputs, 10 x 12G-SDI aux outputs, 4 chroma keyers, 2 downstream keyers, SuperSource, 2 media players and lots of transitions!

Easy to Use and Fast to Learn!

There's never been a switcher that's easier to use, as you simply press any of the program row buttons on the front panel to cut between video sources. You can select from exciting transitions such as dissolve, or more dramatic effects such as dip to color, DVE squeeze and DVE push. You can even add a DVE for picture in picture effects with customized graphics. Then you can live stream the results!

Self Contained Broadcast Quality Switcher

The ATEM Television Studio 4K8 combines a switcher and control panel into the same unit, so it's extremely portable. The front panel includes buttons for selecting sources, triggering transitions and setting up video effects. You also get a built in t-bar for manual transition control! The front panel even has an innovative audio mixer control area with live metering on a dedicated LCD.

Powerful SuperSource Processing!

In addition to the DVE in the ATEM Television Studio 4K8, there is also a powerful SuperSource multi layer processor! Any video input can be used as sources for each DVE, then it's all layered together over a media pool custom background or live video. SuperSource is perfect for interviews because you can set up the effect so the viewer can see each person being interviewed all within a stylish graphic.

Built In Fairlight Audio Mixer

With a built in Fairlight audio mixer, ATEM Television Studio 4K8 makes it possible to do complex live sound mixing. The internal mixer features enough channels for all SDI inputs, as well as extra channels for the XLR, RCA and MADI inputs! Each input channel features the highest quality 6 band parametric EQ, compressor, limiter, expander and noise gate as well as level and pan controls.

ATEM Television Studio 4K8
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The Scots College Tattoo 2025

Turning a School Oval into a World-Class Outdoor Arena

To mark 125 years of its storied Pipes and Drums program, and the official opening of the new John Cunningham Student Centre, The Scots College in Sydney hosted The Scots College Tattoo 2025, a large-scale outdoor event that paid homage to its Scottish heritage and longstanding performance traditions.

Drawing clear inspiration from the Royal Edinburgh Military Tattoo, the show brought together massed pipe bands, highland dancers, fireworks, cinematic visuals, and broadcast-grade production across a sprawling temporary venue built on the school's Bellevue Hill campus.

At the heart of the production and working closely with Bandmaster Paul Hughes from Scots was The Media Joint, engaged as principal technical producer. Their end-to-end scope included lighting, audio, video, special FX, staging, power, event communications, and post-show media. The result: in collaboration with Paul, a show that felt more like a stadium spectacular than a school concert with over 500 performers.

Technical Direction and Delivery

From the outset, the vision was clear; create a professional-grade event that showcased the College's entire student body, from ELC to Year 12, across all campuses, and even alumni. The Media Joint approached this with some key 'pillars' they wanted to achieve.

The lighting was a selling point on the tickets for the show, so they needed to deliver. Vivid was mentioned in a number of the early planning meetings. The sound system needed to be able to provide enough punch to the audience, similar to larger festivals. 'Feeling the audio' was something they wanted to be able to give the audience. The video needed to have the large sensor look, and be as 'cinematic' as possible, ideally also in 4K.

Lets give the kids a go! At the end of the day, it's a school, and having a project this large gives incredible opportunities for students to get on the tools.

Lighting

Lighting played a critical creative and architectural role, not only illuminating the 60m x 40m parade ground, but also treating the new five storey student centre as a centrepiece canvas.

Partnered with Latarka, the team deployed over 200 fixtures, with key units including:

- Elation Lighting Proteus Radius
- ACME GEIST BSWF hybrids
- Claypaky Mini-B LED wash
- ShowPRO LED Blinder II IP, FusionBAR Q XV, and FusionPAR Q XV
- Four 13m scaff towers provided front and side coverage
- Architectural control integrated via C-Bus/DALI to DMX using a Visual Productions IO Core
- Control was handled via MA Lighting grandMA3 light and compact consoles

Audio

While much of the performance wasn't amplified (notably the massed pipes), reinforcement was essential for narration, playback, and show cues, particularly the finale. Focused Productions supplied key PA infrastructure.

System overview:

- 13 dB Technologies VIO ground stacks + subs for site-wide coverage
- Four Opera 10s for foldback
- Allen & Heath dLive C3500 at FOH
- Three Dante-enabled stage boxes for distributed I/O
- Shure ULXD wireless mics and Sennheiser EW G4 IEMs
- All major cues and SFX were timecoded via QLab, tightly syncing music, narration, fireworks, and LX

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Video

Video served three roles: real-time IMAG for the 3,000+ attendees, a broadcast-style archive of the event, and interactive live cross moments inside the new student centre.

Capture setup included:

- Four Blackmagic URSA Broadcast G2s
- Three URSA w/ 90x box lenses
- An URSA on 12m jib (via Cinemotion)
- Two Pocket Cinema 6K w/ DJI Ronins and Teradek Bolts
- DJI Inspire 3 drone for aerials

Mixing and distribution:

- Blackmagic ATEM Constellation 2ME switcher
- 30sqm Lampro LSK 3.9mm LED screen
- Back of house live stream routed via Vivi media players to classrooms that acted as green rooms for the 500+ performers
- 10 Scots students operated cameras and assisted in live switching as part of a mentorship initiative

Staging and Infrastructure

The show was designed with the new student centre as a backdrop, but the school oval lacked any production infrastructure. Clifton Productions provided core engineering and infrastructure, which expanded significantly as ticket demand grew.

Site infrastructure included:

- Tiered grandstands for 2,600 guests + 500 school bleacher seats
- Covered 9m FOH tower, four 13m LX/FX towers, and a custom LED screen scaffold
- All structures designed for minimal oval impact
- Powering the event was three diesel gensets to seven 32A 3-phase distros

Special FX

With fireworks a critical creative requirement from Scots, Foti Fireworks provided a custom solution to safely deploy high-impact FX in close proximity to audience, building, and performers.

FX & atmospheric systems:

- Eight G-Flame units (on 2.5m truss)
- Four pyro launch points
- Finale sequences were fully timecoded with QLab and lighting control

Comms and Control

With over 500 student and professional performers and a large technical crew, site-wide communications were a non-negotiable.

System backbone:

- 30 Riedel Bolero packs, 10 Hytera radios
- Three Riedel Artist SmartPanels
- Gigabit VLAN-separated Dante/IP network running over copper and fibre, extended using the school's patch infrastructure

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Challenges and Logistics

There were tight bump-in windows due to school operations (during the day it still had to operate like a school), and there was no existing infrastructure on the oval. It was also the first time the school had attempted anything on this scale. Being outdoors, wind interference had to be factored in to the haze and atmosphere effects. Despite these challenges, the production stayed on schedule and delivered without compromise.

The Result

The Scots College Tattoo 2025 was hailed as a resounding success, with over 3,000 attendees and high praise from the College's leadership team. Dr. Ian PM Lambert, Principal, said: "The Media Joint's calm, considered nature under pressure was nothing short of phenomenal. You truly set the standard for how to manage an event of this magnitude."

For The Media Joint, this event represents a benchmark in outdoor events and community, driven large-scale production, where storytelling, mentorship, and broadcast-quality technical execution aligned in a single unforgettable night.

LIME CORDIALE'S 2025 WORLD TOUR MAKES WAVES

Front-of-house engineer Billy Psarologos relies on the Waves eMotion LV1 console for Lime Cordiale's 2025 World Tour

Live sound engineer Billy Psarologos has chosen the Waves eMotion LV1 Classic live mixing console and Waves eMo IEM plugin for immersive in-ear monitor mixing, to mix FOH and monitors on Australian band Lime Cordiale's 2025 world tour.

The indie pop-rock band has gained international recognition with albums like Permanent Vacation and 14 Steps to a Better You, and have earned multiple accolades, including two ARIA Awards for Breakthrough Artist and Best Live Act.

Psarologos, whose credits include hip hop artist Illy and his previous role as Head of Audio Production at Melbourne-based Deluxe Audio, comments, "The LV1 Classic offers far superior summing compared to any console I've worked with, and its mix engine is exceptional! The headroom is unmatched in any price bracket, ensuring mixes never feel choked. My mixes are noticeably more nuanced with the LV1 Classic than with other brands I've experienced. This console enables me to replicate studio producer techniques in

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a live environment, allowing fans to experience effects exactly as created on the record, live and on the fly – a much purer way to honour the producer's vision without relying on playback tracks."

Psarologos also praises the Waves eMo IEM plugin for immersive in-ear mixing - a software-only add-on to the LV1 console: "It's great to have an immersive in-ear mixing solution that's purely a software upgrade, without having to rely on any additional hardware," he says. "We can now give the band a very comfortable in-ear sound that's spacious and uncluttered. With a 360-degree panning scope, centred instruments are noticeably easier to distinguish. Previously, I relied heavily on side-chain dynamics to clear space in the centre image, but now the monitor mix achieves a beautiful balance effortlessly. Additionally, Link Groups in the eMotion software streamline workflows, allowing for quick IEM re-balancing and synchronized EQ adjustments across multiple vocal microphones, particularly useful for managing resonances in live performances."

Psarologos credits Waves plugins running on the LV1 Classic for helping shape Lime Cordiale's unique live sound:

"I adapted to the LV1 Classic instantly; the UI just makes sense. Waves plugins feel familiar since most of us learn sound in DAWs before ever doing a gig, so using the same tools live is a huge advantage. When I have a sound in mind, I know exactly which Waves plugin will get me there, and that kind of confidence is invaluable when proving yourself to a band."

"I added Curves AQ to my showfile a few weeks ago, and I haven't looked back since. It's one of those plugins that instantly elevates every input, a true 'better-maker.' When building a mix quickly, it serves as an excellent starting point for any instrument. I simply apply it, let it analyse the source, and choose a preset that catches my ear. Having a plugin this intuitive, operating at zero latency on the LV1 Classic interface, is a next-level innovation."

He adds, "I rely on essential effects like time-based modulation, saturation, filters, flangers, and infinite delays with Waves H-Delay Hybrid Delay for dynamic vocal effects. They are key to building excitement by creating explosive transitions into choruses and filtering the mix right before the drop. The LV1's responsive console interface allows for bold techniques like mix filtering and DJ-style scratching, enhancing live performances. I use the H-Delay on a bus, sending vocals to it with infinite delay and controlling the return fader as I manipulate the time signature on the plugin.

Similarly, I often apply OneKnob Filter and MetaFlanger on my mix bus to craft DJ-style effects before building up to an explosive chorus."

"I lean heavily on the Primary Source Expander (PSE) and think live engineers have yet to fully explore its potential," he adds. "My approach involves creating a 'PSE Ducker' bus with bleed-prone instruments like snares, hats, toms, and overheads. This bus is routed to the PSE's sidechain input on vocal mics, where I enable ducking, measure the mic-snare distance, and fine-tune the gain to eliminate drum hits from the threshold. This significantly reduces bleed while maintaining maximum vocal sensitivity, even for whispers. With DPA d:facto condenser mics near drums and zero spill in FOH, PSE ducking consistently delivers amazing results, making it an essential tool for creating live sound magic."

"Another indispensable plugin," he remarks, "is the Waves TRACT System Calibration plugin. I rely entirely on TRACT to tune and align every P.A. system I work on. Its automatic FIR correction is incredibly convenient in small theatres and clubs, allowing me to tune and optimise any room in under five minutes. If the system isn't properly set, even the best console mix won't sound right in the room, so ensuring the room is tuned correctly is always my starting point."

He goes on: "My current favorite is the Curves Equator. I use it on my drum/band groups with the vocal group as the side-chain key, to ensure vocals always sit prominently in the mix. Its ability to carve space for vocals with unmatched precision is unparalleled. While similar results could be achieved with regular EQs, the Curves Equator operates in linear phase and its auto-makeup feature ensures instruments retain their power. It's almost magical how the mix maintains energy yet the vocal sits on the top easily."

"I turn to the IDX Intelligent Dynamics for drums and bass because of its intelligent processing, which provides a punchy, aggressive sound that highlights transient-heavy instruments with minimal EQ."

Silk Vocal is an essential part of my vocal chain, intelligently removing resonances to create full, open vocals. It's also an outstanding de-esser for acoustic guitars and brass, showcasing its smart dynamics handling. The InPhase plugin is vital for drum alignment, outperforming traditional phase inversion techniques. It enables precise delay adjustments to align the closest and furthest sources, achieving flawless phase coherence. By aligning everything to the overheads for FOH mixing, it delivers a cohesive and well-glued drum sound."

He continues, "I use the Scheps Omni Channel 2 on basically every input in my LV1 Classic session," he remarks. "This plugin has everything needed to make any source sound amazing, and for finer EQ accuracy, inserting an F6 Floating-Band Dynamic EQ within the Omni plugin is an incredible feature. I also love the flexibility of re-ordering the channel strip to suit any workflow. The saturation in this plugin is a secret weapon for live vocals, and the crush effect works brilliantly on a parallel drum bus."

Remarking on the LV1 Classic's workflow, he notes, "After five years with the LV1 Software mixer, the Classic has completely transformed my mix template. The GUI customization lets me align the interface to my workflow, keeping essential key controls front and center. The biggest change has been group-to-group routing, unlocking countless side-chain tricks for a cleaner mix. Another standout is the ability to send FX returns into groups, especially useful for vocal groups when reverb causes resonances and feedback."

"I love the LV1 Classic's screen size," he notes, "and its viewing angle is perfect."

It naturally keeps my head higher, so I focus more on the stage than I would with other consoles that have a screen almost flat to the table. Because the faders align seamlessly, speeding up adjustments without second-guessing. Also, the additional meters on the scribble strip are a fantastic feature, offering visibility of fader levels regardless of the screen page. The rear screen brightness adjustment is handy during dark show moments, preventing distraction for nearby fans. Layers snap quickly and accurately. Another standout feature is the internal media player, which eliminates the need for a separate playback device, and the on-board recorder provides video operators with stable mixdowns immediately after shows."

Highlighting the LV1 Classic's smooth performance during a six-week tour across the USA and Canada, he reflects, "The UI was crucial for mixing FOH and monitors simultaneously, with dual mixer windows enabling control and flexible layouts. Mixer 2 layers include band members and stage sections linked to spills, optimising space. The MixTwin app and TRACT make room tuning effortless, allowing quick measurement captures via iPad without returning to FOH."

Psarologos concludes, "Other consoles now feel clunky and frustratingly slow, even for basic adjustments. The LV1 Classic has re-defined my expectations in respect to how intuitive a console must be. With the Classic, everything is just one click away, allowing you as the engineer to work with precision and speed. That seamless access keeps you in control and gives artists the confidence to perform at their best. This console is just so tourable with its form factor and flexibility. I have yet to reach the limits of what this console can do. If you're a touring engineer seeking big-desk power in a compact format, nothing rivals the eMotion LV1 Classic."

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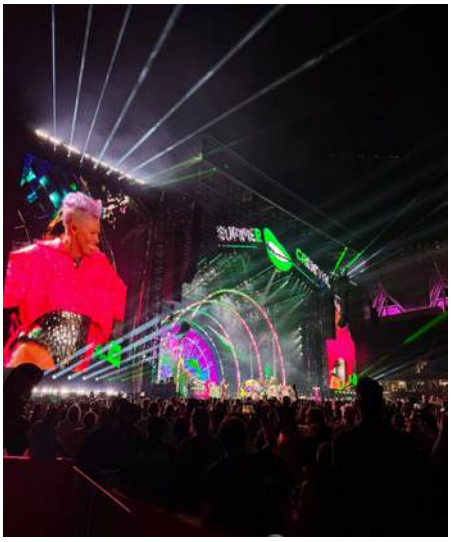

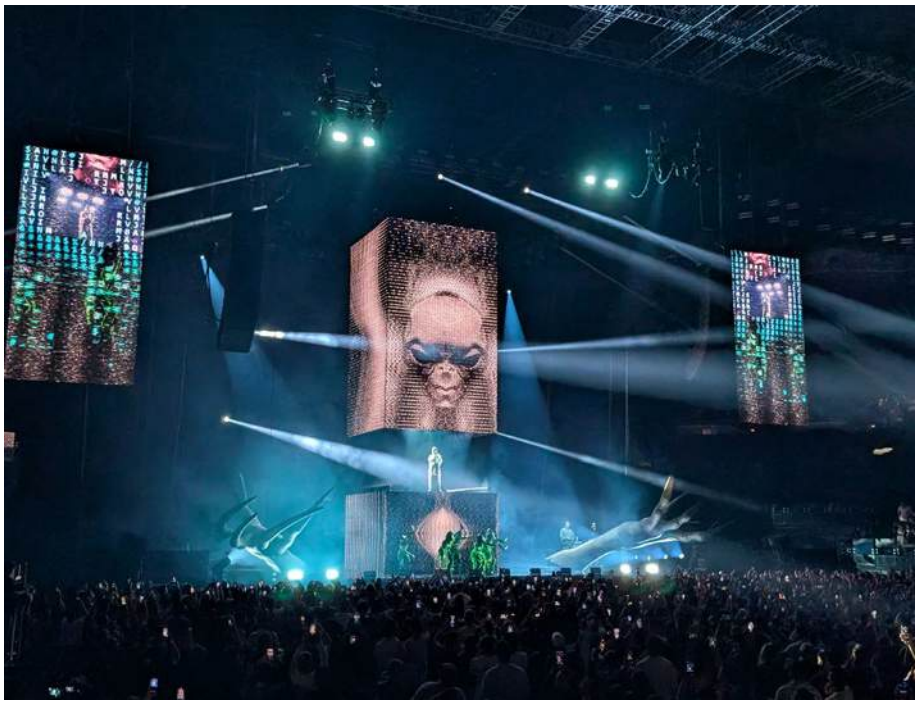

Big Picture and Spotlight to Rebrand as Creative Technology

NEP Live Events has announced that, effective July 1st, 2025, its Australian and New Zealand brands of Big Picture and Spotlight will officially rebrand as Creative Technology (CT). This change is part of a global initiative to unify under one name; bringing it all together into a single, powerful brand identity.

For years, NEP Live Events has operated in the region as a unified business under three trusted brands; Big Picture, Spotlight, and Creative Technology. This rebrand simply reflects what has already been true operationally: one team, one company, now under one name.

Creative Technology is a global leader in audiovisual and live event solutions, operating from 32 offices across 17 countries. The rebrand reflects a strategic evolution that simplifies the company's identity while preserving everything you trust; the people, the service, and the commitment to excellence.

"This is not about erasing our past, it's about building on it," commented Owen Davison, President of NEP Live Events. "Big Picture and Spotlight have been instrumental in shaping our identity and reputation. Now, under the Creative Technology name, we're better positioned to grow, innovate, and serve our clients on a global scale."

"Our clients can rest assured, this is a brand change, not a business change," added Brett Hawkins, Vice President of NEP Live Events. "They'll continue working with the same trusted teams, receiving the same high-quality service and support they've always known. We're simply making it easier to understand who we are and what we stand for, just now under one name."

The rebrand follows a broader trend across NEP Group's global network, with sister companies such as Faber Audiovisuals in Europe already operating under the Creative Technology banner. The transition will be visible through updated branding across emails, uniforms, and paperwork, but the core of the business remains unchanged.

This rebrand marks a new chapter, to one unified brand, that honors the legacy of Big Picture and Spotlight while embracing a future of global collaboration and innovation.

by Jason Allen

Novatech Innovating ***in Staff Wellbeing***

Adelaide's Novatech Creative Event Technology continue to lead the way in staff wellbeing and recognition in the production industry, capitalising on their location in Australia's 'lifestyle superpower' capital city.

Acknowledging that even Adelaide has been hit with rising house prices, going up more than 12% in the last year alone, and increased living costs, Novatech's new employee initiatives are a commitment to supporting staff through this difficult time. The business intends to pay forward significant efficiencies expected to be achieved from the roll out of their marquee Digital Transformation Strategy, internally referred to as Project Novaflow – Standardise, Automate, Collaborate, Inform. Rather than adjusting client facing costs, Novatech is committed to funding these initiatives through digital business improvement projects and via normal business operating funds.

New key highlights for FY26:

Initiative 1:
Private Health Insurance

In an initiative driven by Novatech's 'Employer of Choice' goal and continued Health and Wellbeing commitment, all Permanent staff will be offered private health insurance through a corporate provider after three years of service. These will be full comprehensive policies inclusive of hospital and extras cover. Eligible staff will be offered single or family cover depending on their personal circumstance. Coverage will increase from Bronze, to Silver and then Gold cover depending on years of service to Novatech. Eligible employees will have the choice to top up with additional cover should the approved benefit not meet the staff needs.

Initiative 2:
Service Recognition Gold Card

An employee with 10 years of service or more will receive a 'Service Recognition Gold Card'. Eligible employees will receive an annual monetary benefit on this card with varying amounts allocated as their years of service increases. This is an ongoing benefit increasing over time until the employee ends their employment.

Initiative 3:
Above award wage raises and allowances

All staff will be provided a 4% increase to their base rate, following 3.75% last year, and previous consecutive years of 5% increases. Other worthy mentions from prior years that align with this package are 15% production shift allowances for crew, 20% team leader allowance, 35% project manager allowance, and improvements to overtime provisions.

Novatech continues to deliver some of Australia's leading events across the country and into Asia Pacific all from their home in Adelaide. The aim of reviewing overall remuneration and staff benefits whilst innovating yearly is to ensure that Novatech is helping their staff where needed both at work and at home.

NEXO AMPLIFIES THE ACTION AT AUSTRALIAN INSTITUTE OF SPORT ARENA

For over four decades, Canberra's AIS Arena has been a fundamental part of Australia's sports and entertainment landscape. Built in 1981 as part of a government initiative founding the Australian Institute of Sport, the Arena is a multi-purpose indoor facility and was originally known as the 'National Indoor Sports Centre'. Often referred to as 'the strategic heart of high-performance sport in Australia,' AIS Arena takes pride of place within the institute's 66-hectare headquarters.

With a total capacity of 6,000, the AIS Arena hosts a myriad of sport, entertainment and community events each year. Following extensive renovations in 2023, the venue recently re-opened its doors to the public, equipped with enhanced facilities and modernized features.

Among the upgrades were new LED screens, digital signage, scoreboards, and PA system, which were installed by Audio Visual Integration specialists Diversified. Solutions from NEXO's P+ Series were chosen for the system, including 40 P12 loudspeakers and 12 L18 subwoofers. Powered by 9 NEXO NXAMPMk2 TD Controllers for amplification and processing, the system is highly capable, excelling in both the speech reinforcement and dynamic music playback requirements of the venue.

Ben Wynn, Operations Manager (ACT) at Diversified, explains why the P+ Series was well-suited as the Arena's primary sound system; "The audio-visual component is essential in an arena like this, ensuring athletes, operators, and visitors receive perfect coverage and an unforgettable experience for all parties involved. The audio system within the venue needed to achieve a high level of speech intelligibility, along with high SPLs in all areas. This equates to a clear and crisp sound in all areas of the arena. Diversified chose NEXO because we knew we could get these results. The P+ Series was perfect for this system."

As is common with projects of this scope, tailored adjustments were essential in maximising the system's efficiency. This process included precise installation and verification against all necessary performance standards, including specialised mounting solutions, as Ben describes; "Diversified worked closely with Group Technologies

to design and engineer custom brackets to deploy the P+ Series across the Arena roof. The NEXO system's compact design, ease of rigging, and weight made deployment of the system exceptionally easy."

"A venue of this nature, ultimately, is a large concrete box [and this] presents inherent acoustic challenges," explains Jared Gill from WSP, who were pivotal AV consultants on the project. "In order to deal with such challenges, we worked with Group Technologies to undertake acoustic modelling, to ultimately ensure that the performance of the loudspeaker solution was to the standard required of such a venue. This enabled Diversified, in deploying the system, to get the optimal performance out of the solution."

Roy Cressey, Director of ElectroAcoustic, worked alongside the Diversified team during the commissioning period to ensure that the NEXO system was calibrated for optimal results. The French-engineered loudspeakers have historically been a trusted solution for venues in line with the scale and demands of the AIS Arena, frequently chosen for their compelling balance of physical footprint, weight, and crucially, their pristine sonic performance, as Roy notes:

"The results were impressive - the distributed NEXO P12 system gave effective coverage to all the audience areas, and the voicing of the P12 was very well-suited to this application. The L18 subwoofers provided the required bandwidth for the dynamic musical requirements."

With the Arena now once again open to events, Michael Singh, AIS Arena Project Manager at the Australian Sports Commission, sums up the results achieved by the venue upgrade initiative:

"We're really pleased with the outcomes that we've received from the refurbishment program, part of [which] was to enhance our lighting and our audio-visual capabilities - which overall enhances the customer experience. The sound system that has been installed as part of the arena project is significantly more advanced to what was here previously. The feedback that we've received from athletes and entertainers that have used the space has been very complimentary of the lighting and visual enhancements that have been installed into the arena."

"The arena has only been in operation for a few months, and we've already received positive feedback [regarding] ease of operation, audio coverage and user experience," notes Ben. "Here at the AIS Arena, the future looks bright. It was a great project to work on and all parties brought their A-game."

HARMAN Professional Solutions Consolidates Audio, Video, and Control Distribution in Australia

HARMAN has announced the consolidation of its audio, video, and control distribution in Australia. Effective 1 August 2025, MadisonAV will become the exclusive distributor for the complete HARMAN Professional audio and video portfolio across the region. Distribution of the Martin Professional lighting portfolio will continue with Show Technology.

Consolidation of distribution in the region reflects HARMAN Professional's heavy investment in software platforms including JBL Venue Synthesis (3D acoustic simulation software) and FLUX:: which enables the delivery of outstanding immersive experiences for a wide variety of applications including content creation, live production, installed sound and post-production. In addition, HARMAN continues to invest and innovate in its install portfolio with new products and platforms including AMX MUSE, BSS Soundweb OMNI, AVX software suite and refreshes of the JBL Control Contractor range.

"The HARMAN Professional portfolio is evolving in a way that R&D investments in new hardware and software platforms are reshaping the portfolio and our business," said Amar Subash, Vice President and General Manager, HARMAN Professional APAC. "As we look to the future there are great benefits in consolidating distribution as it will allow us to leverage the full potential of the investments made to the portfolio and I'm pleased that MadisonAV will carry us forward."

Furthermore, as a part of its commitment to customer engagement and channel support, MadisonAV is investing in a national HARMAN Experience Centre, a purpose-built space where dealers and their customers can explore and evaluate the full spectrum of HARMAN Professional audio solutions. From the portable JBL EON, PRX and IRX PA systems, through to the SRX900 series and the premium JBL VTX line array system, the Experience Centre will allow visitors to experience these products in a controlled, acoustically optimised environment. The facility will also feature a FLUX:: immersive audio space, enabling customers to engage with advanced spatial audio production and live mixing workflows in real-time. Serving as both a demonstration hub and a training resource, the Experience Centre will support resellers, installers, consultants and end-users with hands-on learning, system comparisons, and application-based sessions that span music, performance, AV integration and broadcast.

"We're proud to deepen our relationship with HARMAN and deliver even more value to the Australian market," said Ken Kyle, CEO of MadisonAV. "We've enjoyed five strong years supporting the growth of HARMAN's install AV and tour products, so it's rewarding for our team to be entrusted with this expanded portfolio. We'll provide consistent access to the full HARMAN Professional portfolio, backed by expert technical support, local stock, a national repair centre, and responsive customer service. Our investment and recruitment of a specialised retail team will complement our well-established capabilities, ensuring that whether you're fitting out a venue or supplying a portable PA system, you'll get the same trusted experience and support from MadisonAV."

Subash goes on to acknowledge CMI Music & Audio's work they have done on behalf of the HARMAN brands over the years.

"Initially starting as the distributor for AKG, CMI went on to represent our full retail portfolio, powered line arrays and tunnel solutions," he said. "The CMI team have ensured that a wide variety of customers from musicians, content creators, rental companies, venues and even road tunnels have benefited from investing in our iconic brands and technologies. We would like to express our thanks and gratitude to the entire CMI team for all their contributions and for the mutual success that we shared together."

"Our association with HARMAN over the last few years has been a significant driver in the success of the CMI Music & Audio distribution business," said Fiona Brown, Managing Director, CMI Music & Audio. "Synergistically our businesses are evolving towards differing paths, and we were glad to be part of HARMAN brands journey up to this point. The consolidation to MadisonAV is one that aligns with our long term business strategy, and we are confident in MadisonAV's ability to take the brands forward in our market. We would like to emphatically thank all HARMAN customers and dealers for their support and to HARMAN for the honour of representing their leading brands in Australia."

HARMAN, CMI Music and Audio and MadisonAV are working together to ensure a smooth transition and to ensure that customers can continue to excite audiences and elevate experiences with HARMAN's iconic brands. At the upcoming Integrate show in Sydney, HARMAN Professional will be showcasing the latest additions to their install portfolio as well as presenting an immersive experience powered by JBL Professional and FLUX:: Spat Revolution.

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ADJ DMX FX512 Standalone Lighting Controller

DMX FX512 from ADJ is a hardware DMX controller designed for use in small bars, nightclubs, churches, and entertainment venues. It controls a full universe of DMX and can control up to 32 separate lighting fixtures, using up to 18 channels each (maximum total channels: 512). A built-in effects generator offers easy presets and soft patchable controls allow configuration of the controls to the relevant channels for each fixture. Integrated RDM gives ability to address each DMX fixture remotely. DMX FX512 has a digital display, 16 channel control faders, dedicated Pan/Tilt wheels, and 16 Effect/Fixture selection buttons.

Australia: ULA Group ulagroup.com 1300 852 476
New Zealand: ULA Group ulagroup.com 09 218 6532

NEW GEAR

tarm Blaze Laser Source Luminaire

Blaze from tarm is a beam moving head fixture using a 100W white laser source. This IP66 rated unit is designed to be out in the elements, with a high-density foam shell coating the alloy chassis. The laser engine requires fewer lenses than conventional movers and outputs 170,000lx at 20m. Blaze features CMY mixing and additional colour wheel includes CTO tones. Gobos, prisms, rotating glass gobos and frost filter complete the effects. Theatre mode is less than 40dB and Blaze has three different DMX profiles. Connections via DMX512, Art-Net, RDM, and sACN.

Australia: AVE Corp
avecorp.com.au
03 9706 5325

Crown ComTech D Series Power Sharing Amplifier

Crown's ComTech D Series is a new line of power sharing amplifiers designed for installed audio applications. They use Dante inputs and outputs, built-in DSP, Lo-Z/Hi-Z switching, and a web configuration interface. Available in 2-, 4-, and 8-channel configurations, each model can deliver 125W per channel. Multiple GPI ports are included to provide volume control, mute functions, source selection, and connection with other UI interfaces. Power sharing enables individual output channels to scale up or down in power, distributing the total output power of the amplifier to meet the needs of the attached speaker. 2 and 4 channel models are housed in a 1RU, ½ rack width chassis, and the 8 channel model features a 1RU chassis with fixed rack mounts.

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

Digital Projection E-Vision 10000i 4K+ RGB pure laser projector

Digital Projection have a single chip DLP projector titled E-Vision 10000i 4K+ RGB. This RGB pure laser projector uses a High-Efficiency Pixel (HEP) DMD (a 0.8" micromirror device) to deliver the complete REC 2020 colour space at true 4K+ resolution. E-Vision 10000i 4K+ RGB has 10,000 lumens of brightness, HDR support, and contrast ratio of 10,000:1.

Australia: Amber Technology ambertech.com.au 1800 251 367
New Zealand: Amber Technology amber.co.nz 0800 4 AMBER

DPA 4099 CORE+ Instrument Microphone

The classic 4099 instrument microphone has been upgraded by DPA to the 4099 CORE+. This new unit adds 10dB of dynamic range and a higher clipping point than its predecessor. CORE+ also addresses the non-linearities typically generated by the membrane and electronic components of a microphone. A range of clips and mounting systems starts with a new gooseneck mount (G-MOUNT) and clips designed for specific instruments, such as cello, piano or microphone stands.

Australia: Amber Technology ambertech.com.au 1800 251 367
New Zealand: Direct Imports directimports.co.nz 06 873 0129

NEW AV

EAW UXA4807D Fixed Installation Amplifier

UXA installation amplifiers offer onboard processing that includes FIR and limiter settings called Greyboxes that come preloaded and can be assigned to each output from a pull-down menu. User-adjustable EQ, limiter/compressor and delay settings are available. Dante, four analog and SPDIF signals are available in the UXA4807D's input matrix. To eliminate tampering, there are no front panel controls. All amplifier control is done via a web browser connected to the integrated Wi-Fi access point or hardwired TCP/IP connection. For larger systems, multiple UXA amplifiers can be monitored and controlled with EAW's Resolution 2 software. Four inputs and eight outputs can be configured at 2.7, 4 or 8 ohms, 70v or 100v and can deliver up to 10,000W total from a 15A circuit.

Australia: PAVT pavt.com.au 03 9264 8000. New Zealand: PAVT pavt.com.au 09 272 8041.

Symetrix Server D100

Server D100 from Symetrix offers enterprise level, large scale centralised processing to manage and control high counts of networked audio devices. It features 256 × 256 Dante I/O channels, with an option to add 128 × 128 Dante I/O channels for a total of 384 x 384. 64 channels of acoustic echo cancellation (AEC) can be expanded to 96. There are from 32 to 128 media playback channels and 8 media record channels. Server D100 supports multiple control options, from Symetrix or third parties and has Lua scripting support standard.

Australia: PAVT pavt.com.au 03 9264 8000. New Zealand: PAVT pavt.com.au 09 272 8041.

Televic uniCOS CORE

Televic's uniCOS CORE is an all-in-one video conferencing solution that enables Teams & Zoom integration. Each station has a 10" tiltable touchscreen with built-in camera and microphone. Content is easily shared with video in/out boxes and up to six streams are supported. Multiple active speakers can be simultaneously displayed with automatic switching between active speakers. Bi-directional visibility allows remote participants see in-room participants clearly and in-room participants see remote attendees on their personal screens.

Australia: PAVT pavt.com.au 03 9264 8000
New Zealand: PAVT pavt.com.au 09 272 8041

ETC Foundation 1.63 Rigging Control

ETC have released version 1.63 of their rigging control platform. The Foundation and QuickTouch controllers can now add advanced presets with a series of steps, like a cue stack. Foundation 1.63 offers the ability to run a preset in the background while performing other moves, such as cues, presets, targeted, or manual moves. Users can also import an advanced preset into a cue, creating a cue with a subset of cues. Other features include lineset position reporting, rope lock status, instant error reporting, the ability to modify lineset light properties (including their state, color, and intensity) and the ability to lock and unlock linesets individually or all at once.

Australia: Jands jands.com.au 02 9582 0909.
New Zealand: Jands Jands.co.nz 09 941 9780

NEW GEAR

ETC Eos Family TK 10 Button Accessory and v3.2.11 software

TK 10 Button Accessory from ETC houses 10 built-in display buttons powered and connected via a single USB C cable. Designed to be compatible with all Eos Family devices running Eos v3.2.11 or later, this add-on module can also be rack mounted or tucked into a carry-on for an ETCnomad gig on the laptop. Support for this new unit is included in v3.2.11 software, along with enhancements to Eos Magic Sheets, object parameter and category selections. Multi-console synchronization and stability are also improved.

Australia: Jands jands.com.au 02 9582 0909
New Zealand: Jands Jands.co.nz 09 941 9780

Elation Outdoor Permanent Specification (OPS) Series

The OPS series from Elation's ruggedises some of their IP65/66-rated lighting fixtures. Hardened for permanent outdoor installations, on both land and sea, the OPS range starts with PROTEUS LUCIUS OPS, a compact IP66 Framing Profile Fixture with CMY. The PROTEUS RAYZOR 760 OPS is a RGBW LED IP65 Wash Fixture. The SIX+ PAR S OPS, a 20W RGBLA+UV LED Par, and SIX+ PAR L OPS, a 20W RGBMA+UV LED Par, also get the OPS treatment. There will be more ruggedised fixtures added to the OPS range soon.

Australia: ULA Group ulagroup.com 1300 852 476
New Zealand: ULA Group ulagroup.com 09 218 6532

RCF XPS 4K amplifier

RCF's passive install line now includes the XPS 4K amplifier, a compact four-channel, 4 x 1000W continuous power solution with an optional Dante-enabled version. It offers enhanced system status monitoring, GPIOs for extended capabilities, flexible routing, and easy integration with RCF's RDNet management platform.

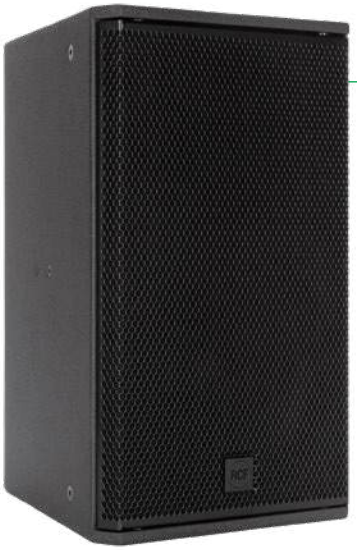
Australia: Group Technologies
grouptechnologies.com.au
03 9354 9133
New Zealand: Direct Imports
directimports.co.nz 06 873 0129

NEW GEAR

TT+ Audio product line

TT+ Audio is the flagship brand from RCF. They have added two new models to their range. The GTX 7C compact cardioid line array module features independently powered front and rear transducers, achieving an average of 22dB rear attenuation up to 600Hz and delivering 140dB max SPL. It has active DSP optimization via the XPS 16K amplifier platform. A passive phase-optimised crossover and multiple processing circuits control the sound. Also released is the new XPS 4K amplifier – a compact four-channel, 4 x 1000W continuous power solution with an optional Dante-enabled version.

Australia: Group Technologies
grouptechnologies.com.au 03 9354 9133
New Zealand: Direct Imports
directimports.co.nz 06 873 0129



RCF Compact C-WP Series speakers

RCF's Compact C-WP Series speakers are multipurpose two-way point source speakers designed for near- and mid-distance applications. Both Compact C 45 and Compact C 32 feature a neodymium compression driver (4" in the C 45, 3" in the C 32), paired with a neodymium woofer (15" in the C 45, 12" in the C 32). Both feature a constant directivity rotatable waveguide to deliver 100° x 50° coverage with distortion-free high SPL.

Australia: Group Technologies
grouptechnologies.com.au 03 9354 9133
New Zealand: Direct Imports
directimports.co.nz 06 873 0129

RCF X Series speakers

X Series from RCF is a range of high-power speakers housed in IP55-rated, UV-protected enclosures – ideal for stadiums and large outdoor venues. Initial models include X 08, X 28L and X 40.

Australia: Group Technologies
grouptechnologies.com.au 03 9354 9133
New Zealand: Direct Imports
directimports.co.nz 06 873 0129

NEW GEAR

RCF CMR 30 two-way ceiling speaker

RCF's CMR 30 is a compact, full-range in-ceiling speaker. It features a 2.5-inch full-range transducer coupled with a passive radiator to enhance low-frequency response. CMR-30 can output up to 104dB, from 70Hz to 20,000Hz. Push-type terminals and robust clamps ensure efficient installation. Magnetic stainless steel grilles are available in both white and black finishes.

Australia: Group Technologies grouptechnologies.com.au 03 9354 9133
New Zealand: Direct Imports directimports.co.nz 06 873 0129

Astera QuikPunch Fresnel

QuikPunch from Astera is an LED Fresnel wash with 13º – 60º zoom. This battery-driven luminaire claims 4.5 hours of runtime at full intensity and is charged via inbuilt PrepBox and ChargingPlate. The high-colour-rendering RGBMA Titan LED Engine consumes 75 Watts of power, with an output equivalent to a 200-watt LED PAR - 8,000 lux at 3 meters. A set of 8-way barndoors complements multiple filters and accessories.

Australia: ULA Group
ulagroup.com 1300 852 476
New Zealand: ULA Group
ulagroup.com 09 218 6532

NZ's Creatives Embed Ethics into AI Adoption

AI AND THE CREATIVE SECTOR IN NZ

by Jenny Barrett

The global uptake of generative AI has been fast. For those just joining the AI tidal wave, generative AI (Gen AI) refers to artificial intelligence systems capable of creating new content such as images, music, video, text, or code based on patterns learned from large datasets. Tools like ChatGPT, DALL·E, Sora and Runway are examples, enabling creatives to prototype and produce at speed.

Across the globe, AI is reshaping live entertainment in both front-of-house spectacle and behind-the-scenes production. Venues like Las Vegas' Sphere and Cosm are leading the charge using AI to deliver real-time visual and acoustic adjustments based on audience reactions, creating dynamic, responsive performances where lighting, sound, and visuals stay in perfect sync.

Shows like 'ABBA Voyage' in London use motion capture and machine learning to bring digital 'ABBAtars' to life alongside a live band, with AI tools deployed to enhance sound clarity across the complex venue and balance the audio in coordination with the virtual avatars.

In New Zealand, HyperCinema, the brainchild of Pop-up Globe's Miles Gregory, used AI to personalise immersive theatre, allowing audiences to interact with bespoke storylines and visuals based on their responses to a personality quiz. Leveraging the same core tech, HyperCinema has since partnered with Creative Principals on the College Football Hall of Fame's GAME ON! experience in Atlanta, where visitors have their faces scanned and preferences collected before being woven into fourteen AI-generated scenarios throughout the exhibit.

As AI gains traction across the live events sector, a coalition of Kiwi agencies, studios and innovators are looking to write the rules, with transparency, tikanga and creative integrity at the core.

Predicted Impact of AI on Creative Industries

Australasian music licencing agency APRA AMCOS in a 2024 report revealed stark concerns about AI's impact on the music industry. While 38% of respondents already use AI in their creative process and 54% acknowledge its potential to assist artistry, they viewed the economic and cultural risks as substantial. The report predicted by 2028, up to 23% of music creators' income could be lost due to generative AI, with an estimated cumulative damage of $572 million NZD. Alarmingly, 82% of creators fear they may no longer be able to earn a living from their work, and 76% of Māori members believe AI could exacerbate cultural appropriation. The findings show overwhelming support for urgent regulatory intervention with 97% of respondents wanting mandatory disclosure when copyrighted material is used to train AI, 95% demanding prior consent, and the same percentage are calling for policymakers to prioritise AI and copyright reform.

The report underscores a growing sentiment that while creators are early adopters of technology, the current unregulated AI landscape risks exploiting artists' work without credit, consent or compensation. Meanwhile, backstage there are fears that the widespread availability of generative tools allows novices to produce output that can undermine professional standards and shift creative work toward mediocrity. Added to that is the fear that too much emphasis on automation and optimization may strip the creative process of its intrinsic reward and craftsmanship, reducing meaningful work to repetitive or transactional tasks.

From Conference to White Paper to Strategy

In March 2024, the AI Forum of New Zealand, in partnership with WeCreate, Creative HQ, Datacom and Wētā FX, convened the first AI in Creative Industries Conference in Wellington Te Whanganui-a-Tara. The two-day event hosted global experts across the fields of creativity, technology, academia, and governance. Speakers and guest panels

delved into the role of AI in transforming creative industries, exploring both its potential benefits as well as the ethical considerations.

Wētā FX shared their experience of marrying AI with human artistry, with insights into the development of a proprietary Facial Deep Learning Solver (FDLS) to enhance facial animation workflows. This machine-learning–based system processes raw motion capture data in a coarse to fine approach, first solving jaw movement, then applying finer regional expressions, while keeping artists firmly in the loop for verification and editing. FDLS outputs production quality facial motion that animators can fine tune as needed, drastically reducing manual effort whilst allowing more time for creativity, an approach to the integration of AI that has significant appeal to creative sector techs.

Alongside the many exciting innovations showcased, there was a strong consensus that while the pace of AI development is extraordinary, it must be anchored in ethical foundations. The post-conference white paper advocated for a future where humans remain at the heart of creativity, supported, not supplanted, by AI.

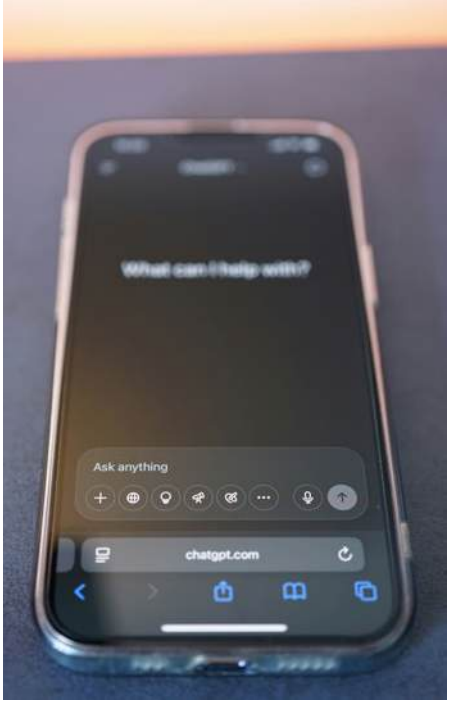
Conversation deepened in December 2024, when the AI Forum, WeCreate and Wētā FX released a second, more detailed white paper. This document made a case for embedding ethics not as a retrospective add-on but as a design principle, proposing a voluntary AI Quality Mark to certify tools that respect intellectual property, data transparency, and cultural agency. Drawing on input from screen, sound, and software practitioners, the paper advocated for co-design with tangata whenua, stronger IP frameworks for generative tools, and incentives for tools that centre human creativity.

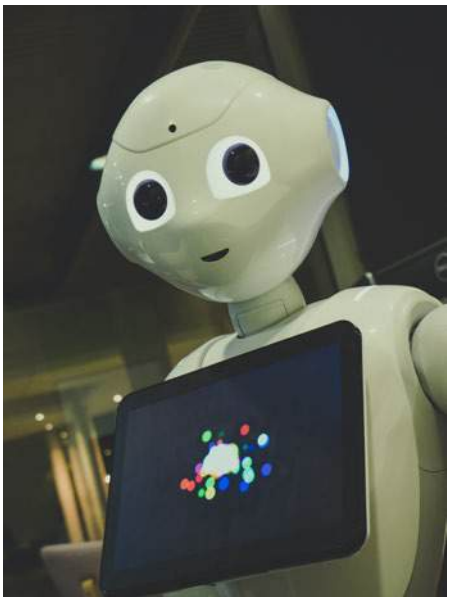
"Just as we have industry standards for safety, we now need standards for sovereignty, accountability, and authenticity in creative AI."

This push toward self-regulation complemented growing public sector momentum. In February 2025, the Government Chief Digital Officer released the updated Generative AI Guidance for the Public Service, a practical framework requiring agencies to assess risks, register GenAI use, and keep humans firmly in the loop.

Turning Talk into Tools

Building on March's momentum, the second AI in Creative Industries Summit has just taken place in Auckland and Wellington, and the conversation moved decisively from theory to tools-in-hand. Film studios demonstrated AI-assisted previs pipelines in action, while venues shared results from early pilots of AI-driven captioning and accessibility tech. Dialogue around a national Creative AI Code of Practice gained traction, with cross-sector support for a voluntary framework to guide transparent data use, IP integrity, and Māori partnership from the ground up.





Breakouts explored everything from accreditation models for ethical AI adoption, to integrating oversight into fast-moving post workflows, to the need for sector-wide upskilling, backed by initiatives like Te Pūkenga (New Zealand Institute of Skills and Technology) new AI micro-credentials, released in June. As one attendee put it, the question is no longer how to get access to AI tools but how to make those tools work in ways that reflect who we are, and where we are heading.

Looking Ahead

Coming up on 18 September 2025, the Aotearoa AI Summit returns to Shed 10 in Tāmaki Makaurau, hosted by AI Forum NZ and NZTech. While the span is broad, from health to agriculture, the Summit is increasingly carving out space for creative industries, building on the momentum of the previous Creative Industries gatherings. If you are looking to stay ahead of the curve, or shape the curve, this national event offers a rare chance to connect with developers, regulators and cross-sector peers in one place.

LISTEN HERE

by Andy Stewart

MIXING ESSENTIALISM

CHAPTER 1

In a world where choice has become a form of musical paralysis, filtering out the essential ingredients from the dross has become one of the most important skills a mix engineer can develop.

What would happen if, the next time you started a mix, you asked yourself: 'What of these sounds can I mute or discard because they're non-essential to my objective?' Rather than spending hour upon hour working out how to squeeze all the various sounds you're initially presented with into a mix, what would happen if right from the outset your focus was rather on what to leave out?

This is the mindset of the less-is-more approach to mixing, otherwise known as essentialism.

Like our lives, our mixes have become cluttered with a mountain of 'pretty good', 'not bad' or 'okay' musical elements that all too often comprise the majority of our song arrangements. These non-essential, unremarkable elements, while initially looking like they 'might' serve the mix by contributing something to the overall sonic outcome, in the end invariably sap our precious time and focus by demanding we find ways to make them work.

So rather than expecting from the outset that everything in an overwrought musical production should fit together – instead of convincing yourself that it's up to you to make it all work no matter what – it's critical early on to make some tough decisions about a mix, between what is essential to the best outcome, and which non-essential elements should be cut to avoid them demanding the most of your time and skill for the least benefit.

The Essential Few

If, for example, we were to reduce a 180-channel recording down to 90, or even 45 musical elements, what would the outcome be? Would we not have far more time and space then to get just right the sounds that matter most, or should we instead devote considerably more of our time and skill to squeezing all the mediocre elements of the production into every nook and cranny, thus compromising all the sounds, including the essential ones?

Would making the decision to eliminate the non-essential elements, open up the soundstage, or throw the baby out with the bathwater?

Well, that depends on how you determine what is essential and non-essential. The main difference with the essentialist's approach to mixing is the understanding that time must be devoted at the beginning of the process to exploring the music – its arrangements, tones and melodic interplay. Not everything has to be determined at once, of course, but our aim is ultimately to discover what ingredients, if any, contribute little or nothing to the overall impact of our mix, or worse, conspire when added to the mix to do nothing but occupy space and compromise other elements around it. These are sounds that you might define as 'net negatives'.

Personally, I like the somewhat simplistic approach of asking myself, 'Do I love this sound, or loathe it?', where everything I listen to is given a grade based on how interesting, generic, derivative or unique a sound is. I particularly find that when two or more sounds work against one another, either sonically or melodically, that only one should survive. If three melodies are trying desperately to co-exist and the result is that you can't focus on any of them, then trying to make them fit is a classic example of saying 'yes' (I can make them work), when you should be saying 'no' (I can't have everything).

It's your job as a mix engineer to produce a fantastic sonic outcome that's engaging, fascinating, and entertaining. I would assert that producing a mix that is cluttered and full of non-essential noise is far less likely to engage a listener than one that has had those ingredients removed. A mix based only on essential, incredible and impactful elements will cut through the noise of the outside world better and be far more attractive to a listener who is themselves bombarded with noise from the outside world. Clarity and essentialism cut through – non-essential, messy, 'determined to have it all' mixes do not.

But I Want It All

Make no mistake, several tough decisions early on while you still have a modicum of clarity makes for far more interesting mix outcomes than leaving everything in and battling to make it all fit. Applying this 'right to choose' to your mixes is more powerful than almost any other aspect of mixing. Making conscious decisions about what improves or harms a mix is essential to what we do. In the same way as you might choose to add compression, EQ or reverb to a sound, being able to spot the non-essential ingredients of a production and removing them is as powerful, if not more powerful, than any 'space generator' like a reverb or delay. Nothing creates space quite like muting a non-essential, underwhelming overdub.

'Noise' Reduction

If our lives were a metaphor for our mixes, then I'm confident in the general assertion that we all do too much. We all say 'yes' too often to far too many disparate challenges, the result being that we perform poorly at

all of them. When we're spread too thin, we can't apply enough creative focus and energy to anything, and as a result the work we do suffers, along with our private life, our health and our happiness. There is too much pressure applied to us and the 'noise' generated by all the demands of these endless tasks we set ourselves generally sets us up for failure. We can't, as they say, do everything... but some of us like to try.

The same logic applies to our mixes, except that the 'noise' surrounding us in this instance is literally that – noise!

Our recordings are often cluttered with layers of 'experimental possibilities,' combined with 'musical options,' 'colours and textures' and – one can only hope – essential ingredients. These are more often than not combined in a DAW session that typically offers little in the way of guidance or firm decision making around what is essential to the mix, debatable musically or entirely non-essential. These elements are thrown together with no real sense of what the musical outcome might be either, because we seem to have grown obsessed with everything 'possibly' having merit. Whether this is because we're too busy in our own lives to make tough decisions about what's essential and non-essential in our own music, or we're just in the terrible unproductive habit of saying 'yes' to everything. We live in a world where saying 'no' seems risky, where cutting something from a mix seems like a loss or failure. That is the wrong mindset.

We all too often think, 'If I cut that out, I might be muting the one thing about the mix that later becomes the hook!' What we should be thinking instead is, 'If I mute that underwhelming part I'm creating space for the essential ingredients to sound even better!'

Muting a sound can seem at first like a loss, but I am yet to hear a great mix where I wished there was more stuff in it getting in the way of all the sounds I love.

I'm always fascinated by the mix engineer who develops highly advanced skills around reverbs, compressors, tone and balance, but who simultaneously never develops the skill of discerning what is essential and non-essential about a mix. It's as if this aspect of the job is itself deemed (by the mix engineer) non-essential. In truth, it's vital. Being able to spot a non-essential or 'net negative' ingredient in a mix can make or break it, and while I talked about deleting 90 elements earlier on to make the (exaggerated) point, in truth it might only be one.

Perhaps the most fabled example of this process of reducing a mix down to its essential ingredients is the story behind Prince's 'When Doves Cry' sessions, a song that later became Prince's first No.1 hit. Not only did Prince cull the non-essential elements of this song during mixdown, he also included in that list of non-essential elements the bass, determining that it took up too much space in the arrangement and made the song sound too conventional. He was right to trust his instincts.

Every song production suffers from the paralysis of choice, and even the mixing process itself has the potential to add a sizeable additional layer of complexity on top. As mix engineers, it's important that we take the time to contemplate the work in front of us, exploring how the various recorded elements of a song might come together before we start diving into the kick drum channel and pulling up an EQ.

Devote time to reminding yourself that you don't have to deploy hundreds among the thousands of plug-ins in your obese plug-in list for the mix to be successful. Remind yourself again – because we're prone to forget – that you don't need to use every channel of audio that's presented to you for the mix to be its best. You have a choice.

So filter out the mud, pan for gold, and remember that the choices you make define your mix.

Andy Stewart owns and operates The Mill in the hills of Bass Coast Shire, Victoria, and he's also the new Editorial Director of Mutech Media. Check it out here: mutech.media or contact Andy directly via: andy@mutech.media.

by Jason Allen. Photo Credit: Daniel Boud

BANGARRA'S ILLUME

Modern Technology, Ancient Stories

After 36 years of existence and 20 years as resident in the Sydney Opera House Drama Theatre, Australia's leading First Nations dance company Bangarra have taken their place in the Opera House's premiere Joan Sutherland Theatre. The Joan Sutherland is now their official home when resident in the Sydney Opera House.

Bangarra have chosen their debut season at the JST to premiere Illume, a collaboration between Mirning Choreographer Frances Rings and Goolarrgon Bard Visual Artist Darrell Sibosado, which explores the awe of light, and its function as a bridge between the physical and spiritual worlds. With many aspects of First Nations knowledge and culture tied to observing the stars, Illume also charts the impacts of light pollution in a climate emergency.

Darrell Sibosado is based in Lombadina, WA, the Country of the Goolarrgon Bard people, in the area of the Kimberley also known by its colonial name of the Dampier Peninsula. The Bard people were recognised as the people of the land, while Jawi were the people of the islands. Together, they share systems of kinship, lore and social organisation. Bardi and Jawi Country is divided into seven clan areas, Ollongon, Goolarrgon, Ardiol, Iwanyland Inalaburu, Jawi, Banararr and Buniol.

Illume takes audiences on a journey through Darrell's Country, and into the iridescent light of mother-of-pearl whose characteristics give life, ritual, sustenance and hope. For thousands of years, the language of light has energised and sustained Indigenous cultures, connecting people, environment, and kinship through nature's rhythms. This luminous force bridges the physical and spiritual realms, carrying ancestral wisdom and power.

This landmark work is the first time Bangarra has collaborated with a First Nations visual artist. Illume examines light from both choreographic and visual art perspectives. The combination of artforms creates a multidimensional experience that integrates dance and visual art design elements alongside First Nations cultural storytelling.

Running at The Joan Sutherland Theatre in June, Illume is now travelling to Perth's Heath Ledger Theatre 10-13 July, then touring to Albany's Entertainment Centre on 18 July, Canberra Theatre Centre 25-26 July, Brisbane's QPAC 1-9 August, Darwin's Entertainment Centre 15-16 August, and Arts Centre Melbourne 4-13 September.

In a first for Bangarra, Illume utilises a suitably impressive upstage LED screen, measuring 13.2 metres by 6 metres, comprised of ROE Visual CB5 LED panels. It was provided as part of a new Company Partnership with Adelaide's Novatech Creative Event Technology, who have also supplied Brompton LED processing and Barco projectors to the production.

"We've come on board with Bangarra as a Company Partner, which further demonstrates our commitments to support the Arts, especially where innovation is concerned," say Leko Novakovic, Managing Director of Novatech. "This is Bangarra's first production with an upstage LED screen, and they've loved the end result, so we're sure there will be more."

The Production Manager – Cat Studley

Cat Studley, Production Manager with Bangarra for eight years, already had an existing relationship with Novatech. "We've dry hired some of their Wahlberg winches before, as well as some comms and bits and pieces, but nothing of this scale," she explains. "When the design was becoming finalised for Illume, I approached them with what is a massive ask, and could we make it work? They couldn't have been more amazing, and they have gone above and beyond."

Cat helped in the initial processes with the design team to shape the work, getting it to the point of being able to bump in and out of the wildly different venues it will visit on tour.

"While we've done plenty of upstage projection before, we were looking for something that was a bit punchier, and that could provide different visual layers," elaborates Cat. "We're using a ghostMESH downstage, which provides a beautiful look in certain scenes. We wanted the ability to be able to layer between upstage and downstage. Working with Darrell Sibosado's artwork, we had to make sure we had enough flexibility so we could explore and play, but still get exactly what he needed

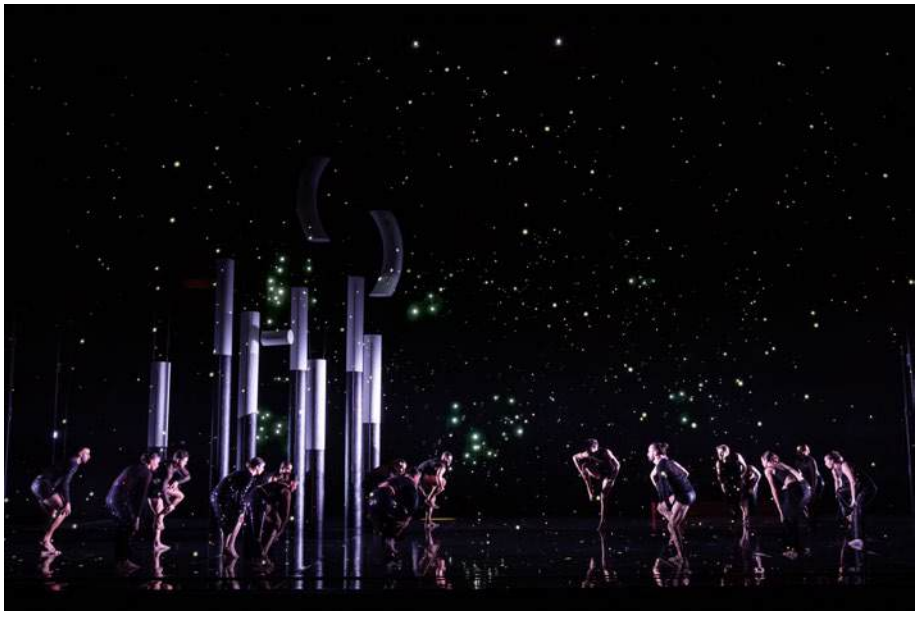
out of it. We toyed with making a physical set piece and having it track up, down, and across, but knew in tech that we were going to lose so much time in each venue. The LED screen could cover everything we needed artistically, plus bring even more ideas to life. It was the best way to go."

Two Barco UDM 4K22 projectors with UST 0.43:1 snorkel lenses hang flown above stage, just upstage from the proscenium, providing floor projection. "There's one beautiful scene with a projected whirlpool," comments Cat, "It's a stunning use of projection. On top of that, we have a Barco UDX 4K32 projector mounted out the front, which projects onto the downstage ghostMESH. We have two other major set elements; there are seven 'trees' - cylindrical poles that are broken into a bottom black section and top white section. They all have inlaid LED tape. The other major set element is a giant 3D printed trumpet shell; it's 3.5 metres tall!"

And where does one get a 3.5 metre shell 3D printed? "There's a company up near Byron Bay called Studio Kite," says Cat. "They have a huge 3D printer they call CADzilla. They use recycled materials, and as an Indigenous company with policies around care for Country, it fits with our ethos. We also worked with Ed Horne of Horne Art Studios, inland from Byron, for the internal work within that shell, inside, there's LED tape and an Ayrton Kyalami laser fixture. The laser shoots from the bottom of the shell onto the floor, and the dancers interact with it."

Cat Studley

Craig Wilkinson



The Video Designer – Craig Wilkinson

Craig Wilkinson is Creative Director of optikal bloc, a Brisbane-based award-winning video projects collective that specialises in reimagining spaces and transporting audiences through live visual experiences and video marketing. Illume is the first project he has worked on with Bangarra.

"I was brought in around week three or four of the 12-week rehearsal and design process," relates Craig. "The team had decided that LED and projection technology in conjunction were the solution to give the work opportunity and contrast while staying faithful to Darrell Sibosado's art. I confirmed with them that this was the right technical way to go."

"Once we actually got into the creative process beyond 'what is the technical specification?' it was a very collaborative," continues Craig. "Every time we met, it was always myself, lighting designer Damien Cooper, set designer Charles Davis, Darrell Sibosado, and Frances Rings. We never worked in isolation."

Craig employed Adobe's After Effects software for animation, Blackmagic's Davinci Resolve software for video editing and rendering, and Maxon's Cinema 4D software for particle generation. "We used Cinema 4D to create the more complex particle systems within the work," Craig confirms. "We'd create other elements in After Effects, and then Resolve was our finishing tool. We used Resolve to do a level of previs, like comping the wall and the floor layers in a very simple way, so that throughout rehearsals, Fran and Darrell and the team could see how some sequences might look. It was a pretty lo-fi way of doing previs, but given the time and how the work was developing, it was the easiest way for us to do it. I was also working remotely from Brisbane, so I was sending things through Dropbox. It wasn't until the last week of rehearsals that I was actually in the space with the team."

Designed to tour, Craig chose QLab 5 to run the show. "Using QLab was more about the touring team; giving them a solution that they were familiar with and that they could troubleshoot," Craig divulges. "With any kind of video system you put on a show, if the team don't know it, it creates problems. For the longevity of the work, QLab is the right choice."

On tour, there's a touring video/audio tech,

a head of department, and a deputy that work across both disciplines. The show is predominantly timecode driven, with video and lighting tied to timecode coming from the audio system. QLab is fed directly into the LED screen's Brompton SX40 processor.

"We hang a shark's tooth gauze in front of the LED screen," continues Craig. "The reason for that is that we're trying to hide the frame and the overall dimensions of the screen. We never use a full image on the screen, because it lives in the light sculpture world. We wanted the screen to feel borderless, and the gauze helps us to do that."

With both the LED screen and three high-powered projectors being major sources of light, how did Craig work with lighting designer Damien Cooper to ensure that video and lighting complement, and not interrupt each other? "Having a very collaborative process throughout rehearsals helps infinitely," states Craig. "Understanding what's illuminating the space; not just Damien and I, but Darrell, Frances, and Charles as well. One of the brilliant things about this particular process was that it was the non-verbal responses where, as a video designer, I saw what Damien was doing, and vice versa, and we responded in the moment. It was effortless in that respect, and really considered from both departments together. I think we blur the lines between what is lighting and what is video. Illume had to be a 'world of light', so understanding that was the main thing."

A secret weapon on the production was Vor, a software designed by American company Borealis Solutions. Vor records video and data in real time and saves that as a simple video file. In addition to video and audio, it records timecode, lighting cues, and automation data. It can then be played back through the same systems. There's no post-processing, and no proprietary software needed.

"We used Vor for recording rehearsal runs which gave us the ability to replay archival video with timecode and LX cues embedded live within it almost instantaneously," enthuses Craig. "It meant that we could solve issues quite quickly. It would record and playback our QLab and Eos data. If something wasn't quite right, we stopped recording, I'd literally pull up the video straight away, scrub through and go, 'ah, it was three seconds into that lighting cue that that issue happened'. It's a really valuable tool. We used it throughout previews and performances as well, but it's incredibly helpful during tech. It's even got an iPhone app; as long as your iPhone is connected to your network, you can literally use the device in your pocket."

Frances Rings – Director and Choreographer

While we can talk about screen resolution, brightness, software, and technical specifications, it's supporting the story and art that all the gear and effort is there for. "As a choreographer, I am always looking at how each of the design elements find a balance with each other to create a balance and draw out the story; it's always about the story," says Frances. "We have strong elements, but probably none more powerful than Darrell's artwork and we needed to find the right way to honour and bring this to life. The LED screen illuminated the symbols and gave them the opportunity to be nuanced or animated, depending on the section. It gave us many options and brought Darrell's work to life in such a compelling way."

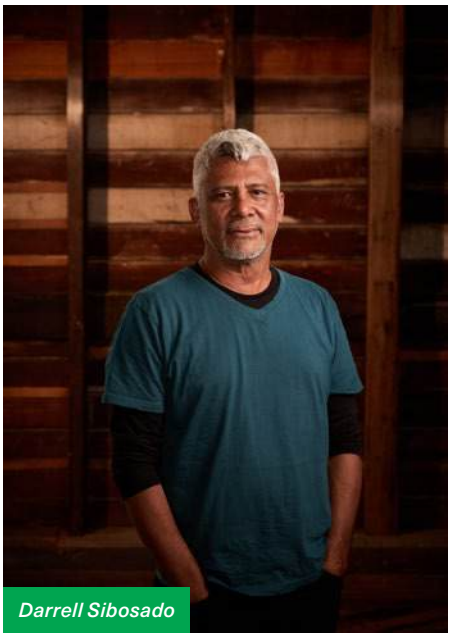
"Lighting and the LED screen have such an important role in this work," continues Frances. "Both Damien and Craig worked tirelessly to ensure there was cohesion between the two. In a funny way, the dancers also assisted with this, and carried a big role with smoothing transitions and softening these two big elements. The magic happens when it's just the marrying of all the effects and you can't tell what projection, LED or lighting is. It's just a full embodied experience."

Noting that it's the first time Bangarra have used a large upstage LED, how did that affect the show? "The screen gave an otherworldly glow and helped create a world that was timeless," observes Frances. "I loved that it was very futuristic and allowed us to explore a totally new way of telling our stories at Bangarra. It traversed past, present and future but still felt very much tethered to an ancestral energy."

Darrell Sibosado stated in 2022 that his art involves "..taking these traditional practices and traditional languages into the contemporary space and trying to make people realise that it doesn't belong way back 1,000 years ago, it belongs here, because I'm here now, and it is me." Does that make telling these stories with modern technology in contemporary theatre spaces part of the aim of Illume, and if so, how did that inform Frances' choices in direction and choreography?

Frances Rings

Damien Cooper



Darrell Sibosado

"Darrell and I spoke often about the challenges we have faced individually as First Nations artists working in a contemporary space," declares Frances. "As you can imagine, our mobs are rightfully very protective of their stories and IP. When we work with Community, cultural consultant and elders to create a new work, it's a process called our Creative and Cultural Lifecycle. It guides everything from firstly seeking permission, research and development on Country, engaging someone to guide the work and, after the work is created and toured, returning it to Country. It's a four-year process. But during this time, it allows us to build a trusting relationship with the community so they can better understand the work we do and what the outcomes are. Technology is another tool that enables us to tell these ancient stories and give audiences a powerful experience that awakens them to First Nations history, perspectives and worldviews."

WHERE PROJECTION GOES NEXT

Luna Park Revlon

Laser, LightField & the Art of Playing Nicely With LED

What really matters to us at TDC are the relationships we've cultivated with the creatives, producers and engineers who trust us to support their creative objectives. Choosing the best technology for the environment is always our priority and advising our clients around what will work to cover all aspects, budget, venue, etc. In the world of video, projection was our first opportunity to create a really large canvas, but today we stand at the crossroads of creativity, performance and precision, melding laser, LED and whatever comes next so television broadcasts, films, concert tours, theatre shows and corporate launches can land that jaw dropping moment or scene.

Is projection obsolete? Hardly - it's mutating

Global laser projection revenue will top US $21 billion in 2025 and is forecast to treble to US $67 billion+ by 2032 as lamp free engines become the default above 10K lumens. Much of that growth sits in the large venue and immersive entertainment tier. The real story of the next five years is not 'projection vs LED' but how the two will happily cohabit the same canvases.

LED × Projection: The new mixed reality toolkit

Virtual production soundstages have evolved into carefully choreographed ecosystems where flat LED volumes and projection play to their individual strengths. The monolithic LED back wall still shoulders the "hero" imagery - the skyline that must parallax perfectly with a sweeping camera move - but the moment the lens tilts down to the floor or cranes above the set, laser projection is the winner. Projected ceilings and floors keep roof loads within safety margins and sidestep the moiré that highly reflective props can pick up from LED tiles. Directors also exploit projected 'bounce' to drop believable highlights into chrome bumpers, polished helmets and standing water - surfaces where even the brightest LED panels struggle to punch through.

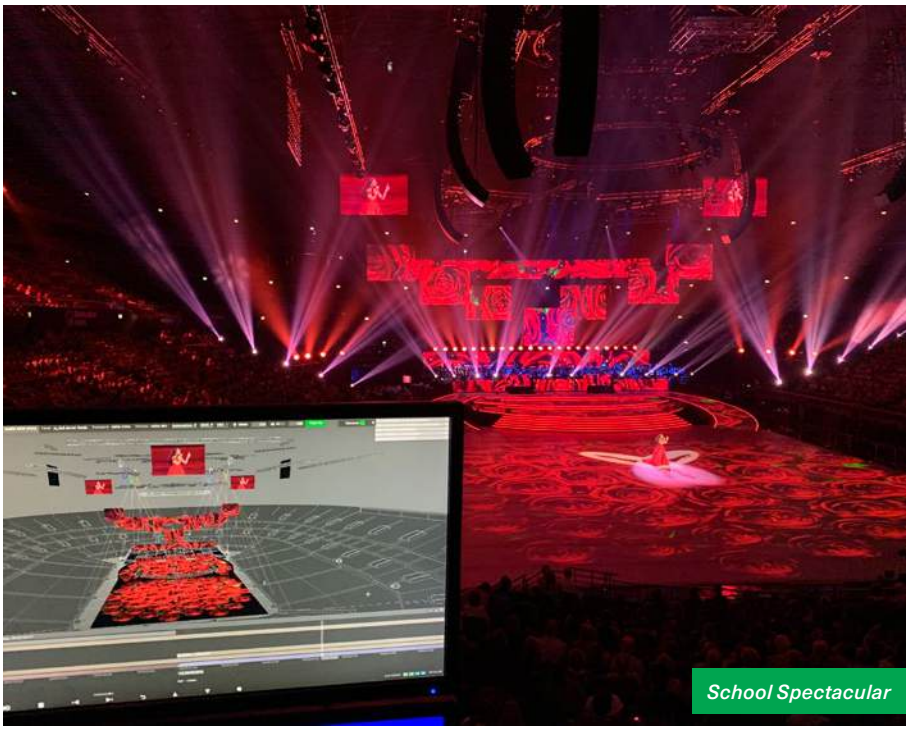
Media server platforms such as disguise vx 4+ now pass HDR colour data between LED and projection in real time, letting the entire volume grade like one giant screen. In practice, that means cinematographers no longer think about

'which technology', they simply choose the right pixel for the shot and roll camera.

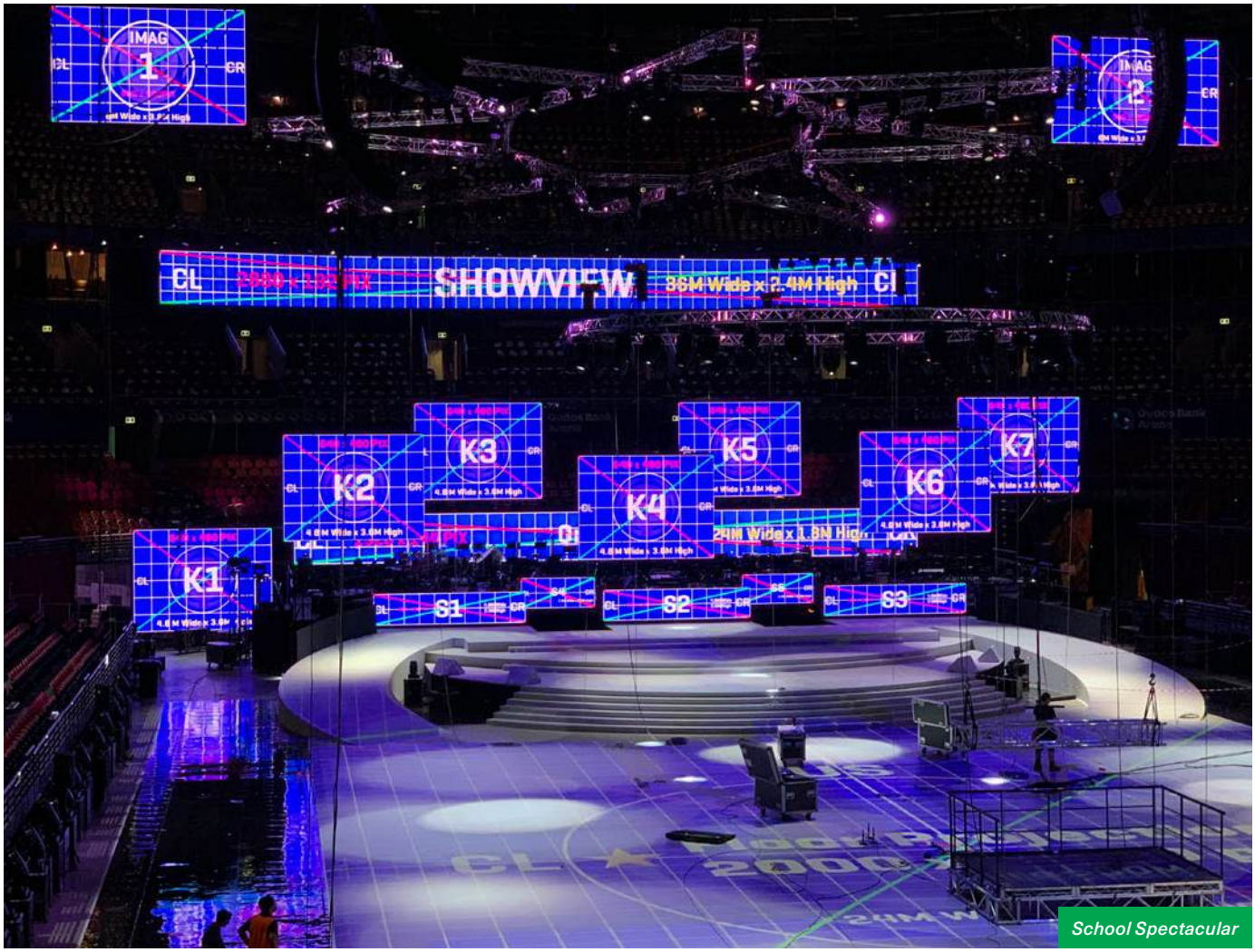
Beyond the soundstage, the same 'right pixel' philosophy scales to arena sized ceremonies. Nothing sells the magnitude of a national celebration quite like projection: in a single cue the field of play, seating, field and the stadium roof can become a single moving canvas, compressing city sized stories into a 15 minute opener. When Sydney's rebuilt Allianz Stadium opened in 2022, TDC rolled in laser projection to drench the new roof and field in artwork that danced in sync with drones, pyro and LED ribbons; no extra weight on the roof truss, no sight line compromise. The annual NSW Schools Spectacular at Qudos Bank Arena blends projection backbone with perimeter LED, stage LED, and 2,500 student performers; projection floods the deck with colour between set changes while LED IMAG keeps every face in the house.

Australian theatre stages are pioneering the fusion of LED, projection and live camera work. Sydney Theatre Company's Kip Williams has made 'cine theatre' his signature: The Picture of Dorian Gray features five moving LED screens supplied and engineered by TDC plus discrete laser projection to extend sets beyond the panels, all while live filming the solo performer so the audience watches both stage action and a cinematic real time composite. Follow up productions such as Strange Case of Dr Jekyll and Mr Hyde and The Tempest push the same toolkit - LED portals do the sharp close ups, side projectors wash portal legs and scenery for dreamlike transitions.

Further down the pipeline, NIDA's annual showcase seasons train emerging designers to treat projection and LED as equal technologies. Supported by TDC's mentorship programme, students in 2024 embedded 4K laser projectors into revolve decks and offset LED columns for an original physical theatre piece, proving that tomorrow's practitioners are already mixing mediums instinctively.



School Spectacular



School Spectacular

What unites these productions is agility: LED delivers ultra crisp hero imagery and live camera feeds, while projection melts scenery, portals and even the auditorium itself into the storyworld, no set change required.

Projection mapping 2.0 - Immersive and Experiential

In the fast growing world of walk through art, brand activations and experience centres, projection does more than decorate walls; it dissolves them. Light can bend around vaults, spill across floors and ceilings, or soak products like our gostMESH fabric that appear to hover in mid air, tricks that LED, with its panel seams and weight, cannot match. Purpose built galleries such as teamLab's Phenomena in Abu Dhabi (700 networked Epson lasers) or the BBC Earth installation in Melbourne treat architectural quirks as part of the palette: archways become portals, columns morph into digital trees, and visitors' shadows are invited to play in real time. Game engine pipelines drive the pixels, so water ripples when a child splashes, or blossoms bloom where footsteps fall. For moments that require tactile punch, hidden LED nodes or strips pierce the ambience, but projection supplies the colour and image drenching that turns a concrete box into living art.

The laser renaissance

The latest generation of all laser projectors has swept aside lamps and most of the maintenance that came with them. Barco's headline grabbing QDX 4K45, crowned 'Best of Show' at InfoComm 2025, proves how far things have come: up to 41,000 lumens of pure RGB, 4K resolution and a 20,000:1 contrast ratio in a chassis you can fly on standard rigging points. Even more important than raw brightness is consistency. Platforms like Barco's UDX run in Constant Light Output mode, holding colour and luminance steady for 20,000 hours straight. For rental companies that means true pixel as a service economics; no more recalibrating mid tour, no lamp stock to manage, just predictable light that stays locked at the spec you sold on day one.

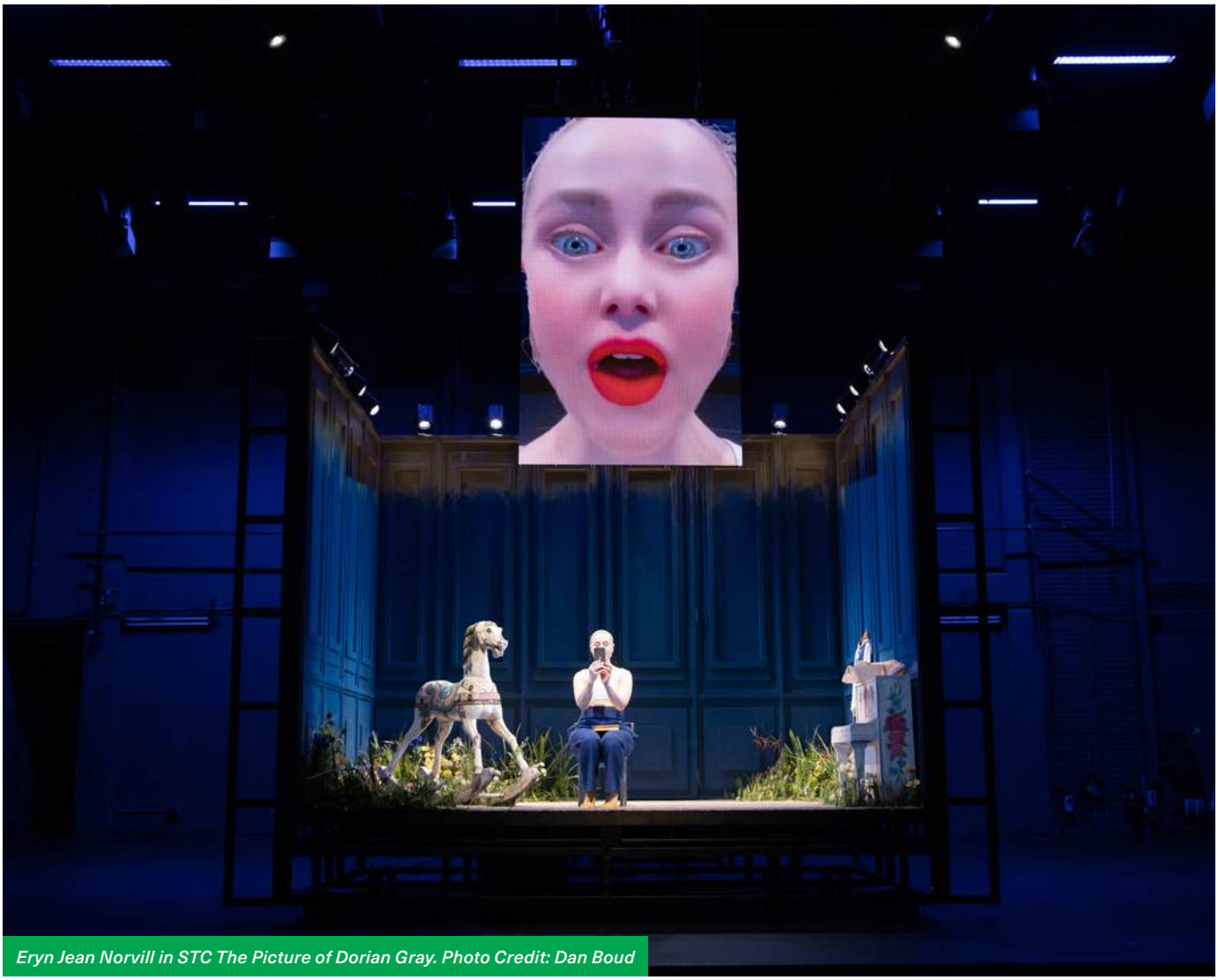
Sustainability and total cost

Projection's green makeover comes from the light source itself. Swap a halide lamp for a solid state laser engine and you immediately cut power draw by roughly half while stretching usable life from hundreds to tens of thousands of hours - no hazardous lamp swaps, no mercury disposal. Barco's cloud based Insights dashboard now lets engineers manage brightness, push firmware and pull error logs from a laptop, trimming on site visits by a reported 30%.

Total cost follows the same curve. A three year rental cycle that once burned through a crate of replacement lamps and the freight, labour, and downtime that came with them, now runs on a single laser bank. Factor in Constant Light Output modes that keep brightness flat for the life of the projector and you have pixel real estate that costs less to own, less to power and far less to babysit. It's not just a sustainability win; it's a line item reduction that CFOs can plot in their spreadsheets.

Where projection still wins - and will keep winning

Projection's greatest strengths emerge whenever the canvas is too big, too odd shaped or too precious for anything else.



Eryn Jean Norvill in STC The Picture of Dorian Gray. Photo Credit: Dan Boud

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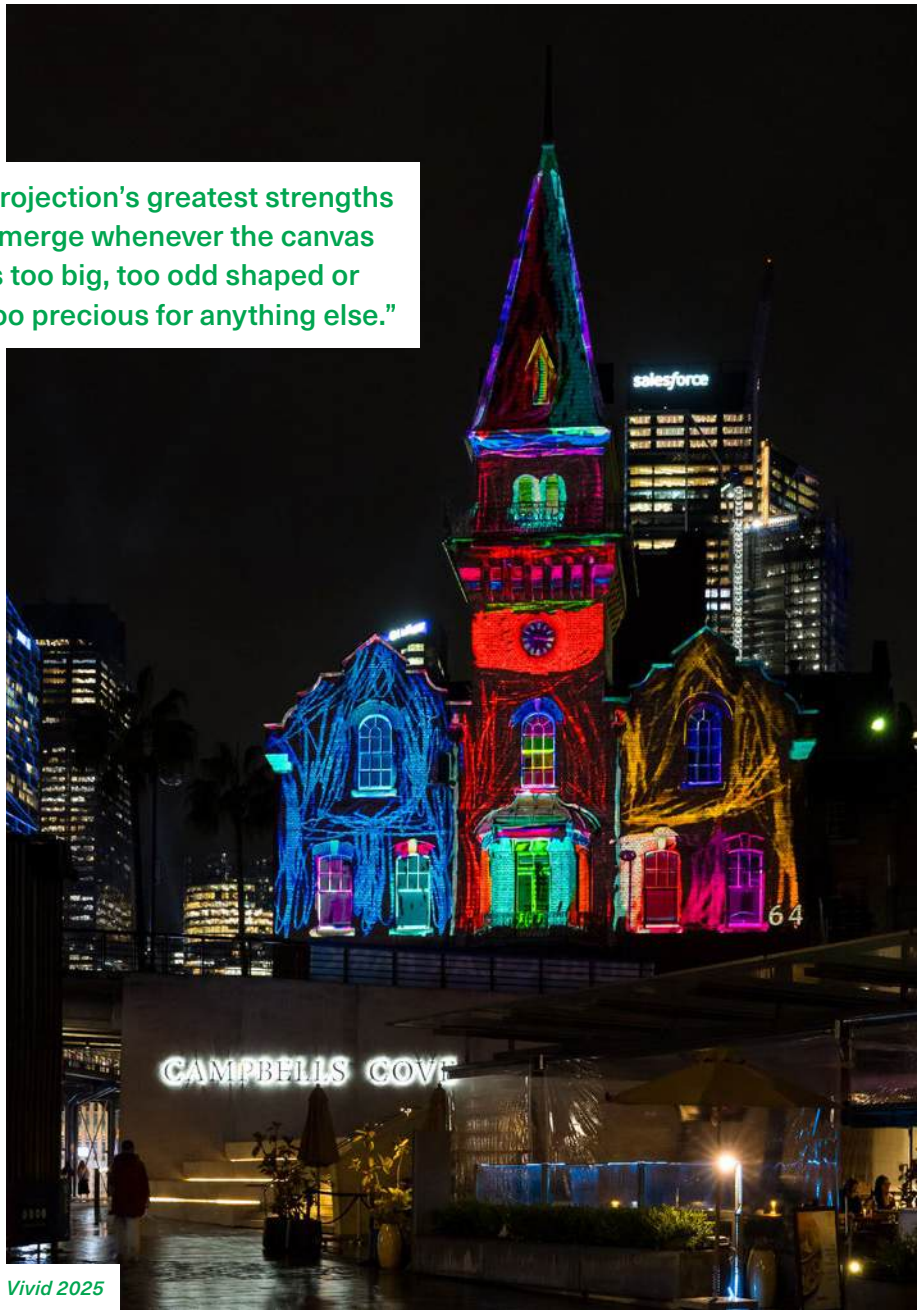

Vivid 2025

> "Projection's greatest strengths emerge whenever the canvas is too big, too odd shaped or too precious for anything else."

Ask any designer to wrap a gothic cathedral, a 100 metre festival stage, or the rolling deck of a cruise ship and the answer is the same: projection.

Projection isn't a nostalgic choice; it's the smartest tool when you need a gigantic image that goes up fast, travels light and vanishes when the story calls for darkness. Projection isn't surrendering to LED; it's playing to its strengths in a mixed display ecosystem. For designers, creative technologists, and audiences, the next decade looks exciting.

Q&A with Drew Ferors (Head of Training & Innovation) and Michael Hassett (Managing Director, TDC)

CX : LED stages are exploding. Why still invest in projectors?

DF : We actually use both on the same shows. LED's brilliant for flat hero planes, but whenever the surface curves, folds or needs to vanish between cues, light wins the physics fight.

CX : Biggest leap in the last 12 months?

DF : Form factor. Panasonic's 25K lm units are 40% smaller; Barco's QDX punches 40K lm from a single phase chassis. AI – transforming everything for designers and content creators.

CX : Hybrid LED and projection tips?

DF : Start in the media server. We map both display types to the same colour space, then decide scene by scene which surface earns the pixel.

CX : How are clients talking sustainability?

DF : In dollars and kilowatts. Laser draws half the power of lamps and remote dashboards have cut call outs by 30%.

CX : Crystal ball through 2030?

DF : Light field projection. Couple that with AI auto calibration and you're talking 'holographic' installs a two person crew can maintain.

CX : From a business standpoint, how is TDC balancing investment between projection and LED?

MH : We buy where the creative brief demands. Its constantly more of everything! We have a long shopping list.

CX : What skills are you prioritising for the next decade?

MH : Media server fluency and systems thinking. Whether you're driving pixels to an LED tile or a laser projector, the magic sits in the server and the network. We're cross training every tech to speak both worlds.

National Reconciliation Week, Australian Parliament House. Based on an original artwork, 'Tjala Dreaming', by Michelle Lewis

by The Electric Canvas

The *Theatre* of Projection Mapping

A lot has been said in recent times about the rise of LED and the inevitable decline of projection, however these prophecies have struggled to materialise.

Despite significant improvements in the utility, quality and resolution of LED panels, meshes, and films, they remain largely a rectilinear medium, primarily for the delivery of image and content. Of course, daytime applications such as digital signage and for use in sporting venues and the like absolutely depend on the benefits of LED technology. Many comparisons between projection and LED are made in the context of traditional AV applications, such as the delivery of content to a confined audience. In these settings, high quality LED offers greater contrast, near perfect black-levels, higher brightness and immunity to ambient light. Projection, on the other hand, relies on reflection from a 'screen' surface, and is much more susceptible to the effects of ambient and incidental light. Of course, projection will always remain a convenient way to render images onto a flat surface.

When projection is considered as a light source, however, the ability to sculpt, enhance and transform the three dimensional world opens up vast opportunities for designers. Architectural projection mapping is a great example of this. The Electric Canvas' approach to architectural projection invariably starts with considering the 'theatre' of the site. How does the building (the actor on our stage) need to be illuminated? Where will it be viewed from and what sightline and glare obstacles exist at the site - our theatre?

While controllable sources such as façade and venue lighting can mostly be managed, inconveniently placed indiscriminate street lighting, as well as bright signage and advertising, can pollute our stage and must be taken into consideration when creating content for the often-over-lit urban environment. LED signage, set up for daylight brightness levels and seldom managed for after-dark operation, is often a significant culprit.

Like in traditional theatre, we believe that the show experience starts as the audience enters and does not conclude until the audience has departed. Many grand theatre spaces feature stunning architecture and decor, despite, ironically, spending the majority of their occupied life in the dark. So we consider audience arrival and departure – first and last impressions – as well as well as ways to entice and engage passing foot traffic. It is so important to approach public projections from a theatrical viewpoint.

As the sun goes down and our audience gather in anticipation, we should light our stage, the building, so that its magnificence emerges from the dusk while waiting for the 'curtain' to go up. It is inappropriate to allow a beautiful façade, often the backdrop to pre-show activities, to remain at the mercy of uncomplimentary ambient light whilst the sun is setting. When conditions are right for our show to commence, the fading of our projected facade lighting creates a theatrical moment akin to the house lights dimming and the curtain rising. The public understand these signals and focus their attention to our stage so the show can begin. Imagine this powerful theatrical moment, synchronised across several facades or even a cityscape!

Continuing our theatrical analogy, we should never reveal our tools and processes; they must remain hidden to the public to ensure technical transparency at all times. A simple example is avoiding projector and architectural alignment checks while there is an audience present. Projecting grids during the preshow dusk, whilst considered essential by many technicians, is an example of poor showmanship. It is avoidable by the use of discrete alignment points only discernible to the trained and assisted eye. Some of the most critical live events such as Olympic Ceremonies or even Sydney Opera House projections have demanded such strategies be utilised.

Often overlooked is the importance of accurate image masking. This might be necessary to improve creative outcomes, such as altering how content flows across a façade, passing in front of or behind

certain architectural detail. Or it might be used to eliminate glare hazards for public or staff exiting through doorways or down stairs that lie within the projected coverage. Often masking strategies are only finalised on-site and after set-up, when such fine-tuning can enhance the overall experience.

Soundtrack delivery continues to be treated as the poor relation to vision. This has never been the case in the theatre. Proper sound design is an essential element of the public experience. Whether sound is the motivation for the image or the other way around, properly considered soundtrack composition and sound design are essential to the outcome. The successful marriage of sound and vision always creates an experience far superior to the sum of their individual parts. A well-crafted soundtrack always deserves the best on-site playback consideration. Placing loudspeakers on the projection structures for technical convenience, almost always behind the audience, disconnects the building from its voice and must be avoided. Try watching television or a movie with the speakers behind you.

There exists a growing number of tools to assist the projection mapping community. Whilst the venerable Watchout media server arguably started it all many years ago, there exists today a myriad of capable and reliable media server systems available for a range of playback and control applications, including projection mapping. Most systems emerged from specific needs; Watchout from the corporate theatre world, disguise from touring concert LED and lighting roots, for example.

For many years, The Electric Canvas has favoured the Modulo Pi family of media servers. Developed in France, the system has proved to be an ultra-reliable, stable, and extremely flexible platform, originally born from the specific needs of projection mapping artists and technicians. A 25-year relationship with the developer affords us direct and prompt access for rapid development of bespoke solutions to meet our clients' particular requirements. This has been invaluable in adapting to the specific needs of challenging installations and events. Our technicians love the unique X-map features of the Modulo systems, whereby a Photoshop file can be used to quickly and simply define architectural features, often from photographs, after which the file can be dropped directly into Modulo, preserving the layer structure of the Photoshop file. From there, the layers of individual architectural shapes can be manipulated (mapped) independently, without affecting alignment of other regions in the overall mapping. These 'pathed' layers can also be used on-site to create and manipulate masks and other objects, such as shapes used to illuminate immovable items like banners and signs that form part of a façade.

It is most important that architecture be treated with respect and brought to life with a thorough understanding of the building and careful crafting of the designs. All building projections should be an immersive, theatrical experience, and practitioners should try wherever possible to integrate their work into the precinct and the overall event. The desire to respect and celebrate architecture must never result in buildings or structures being treated as a mere 'screen'.

As the all-consuming Vivid Sydney festival has drawn to a close, The Electric Canvas has been full steam ahead, delivering a bevy of winter events around the country. It is winter festival season for us, with overlapping delivery for Melbourne's Rising festival, projections onto Parliament House in Canberra for National Reconciliation Week, Sovereign Hill's Winter Wonderlights in Ballarat, Illuminate Adelaide, as well as numerous other activations and installations during this busy period.

'Matha' by Moorina Bonini, Rising Melbourne, Hamer Hall

Anzac Day Projections, Australian War Memorial, Canberra

AT NO STAGE

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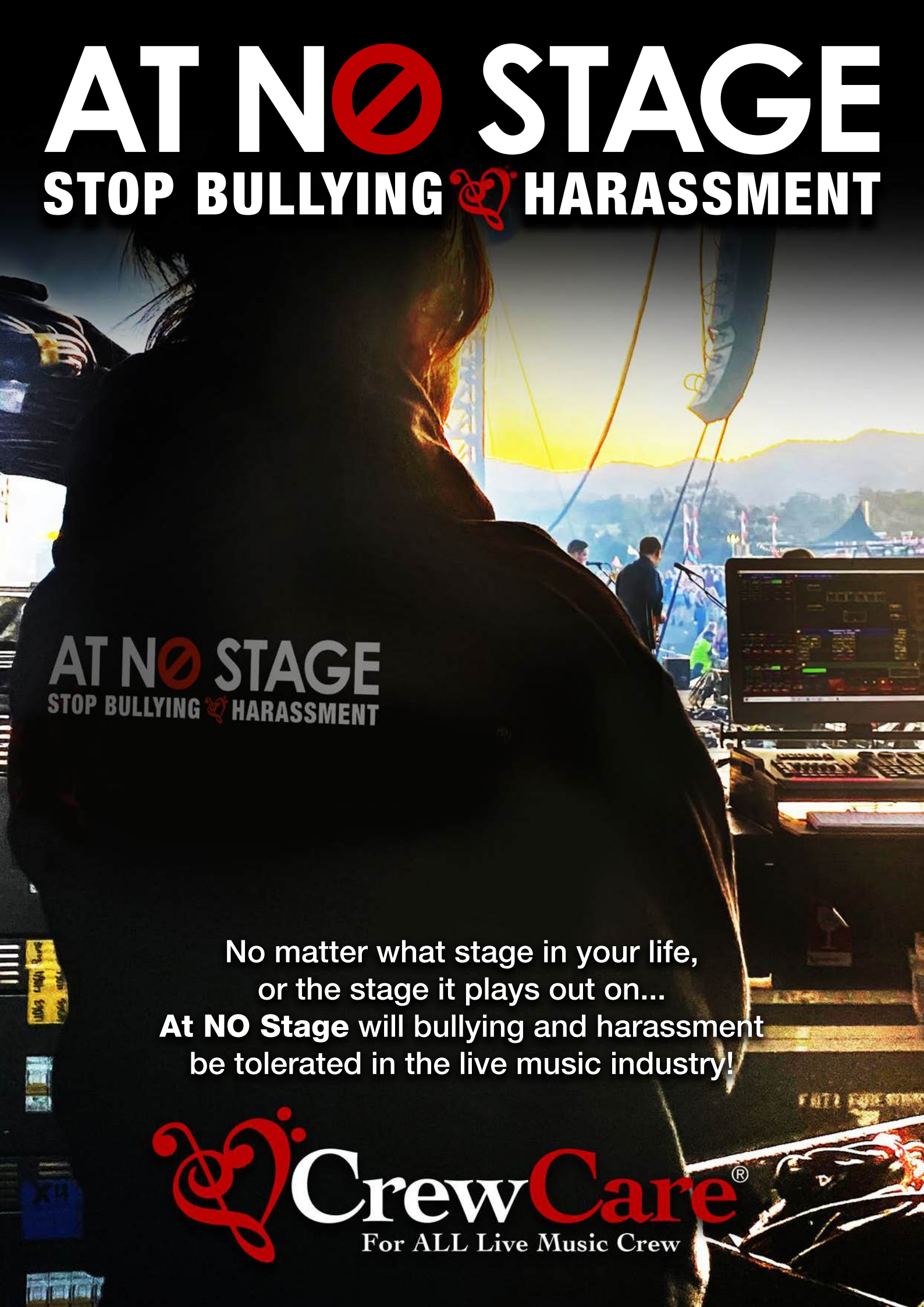

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by Joakim Odlander

Oil and Dichroic glass gobo image from Festival of Sydney NYE 2000, Coemar NAT lights

LETTING LIFE HAPPEN

How Gobo Production Came To Australia

As my daughter takes over the reigns of the day to day running of our company, Gobotech, I reflect on the last 30 years and how we became the hub of gobo manufacturing in Australasia.

Growing up in Sydney in the 1980s, I would ride my motorbike down Parramatta Road coming home from my electronic engineering class. I think it was the flashing light display in the Lightmoves windows on Parramatta Road that inspired me to get into lighting. That and putting a red and blue Par38 onto the chrome of the church drum kit! Still not much that beats that combination.

After a few years in electronics I quit my cushy job to go on a backpacking adventure through Europe, something I wish everyone could experience. As luck would have it, on my travels I also met a young Swedish lady who would eventually become my wife. With a work permit organised I got a job in Stockholm working for an AV company, initially repairing equipment and later lighting events, from rock 'n' roll shows to corporate and trade shows. This was the early 1990s, and I was having a ball working with some awesome and creative people, as well as the odd international or emerging superstar.

I also sold Italian disco equipment and repaired lots of gear. It was in the back of that service room that I first dabbled in gobo making. A gobo is simply a disk that you remove material from to let light through in some parts and leave shadow in other parts. Initially, I cut holes in thin aluminium but eventually I got hold of mirror glass disks from Beacon coated with a photosensitive resist. Beacon in Sweden had a simple gobo making kit with UV fluros, allowing me to expose and etch the glass disk in acid leaving an image cut in the mirror substrate. It was far more sophisticated than a cut-up Coke can with nail holes for a starry sky, and pretty cool I thought!

Some of my very first glass gobos were for the Nobel dinner in Stockholm. I'd reduce designs on the office photocopy machine, print them, and then expose them through paper for what felt like an eternity using the Beacon UV lightbox. Finally, I'd develop and etch the image in acid. The results were crude, but absolutely usable.

By 1996, I was married with three kids, the youngest four months old, but I was ready to move back home to Australia. A chance meeting with Micke from Beacon was, unbeknownst to me, about to set my new course in life. He asked if I'd be interested in bringing their new, patented colour gobo process to Australia. Sure, I said, I can give that a go.

Colour gobos in the mid 90s were horrendously expensive and very few people had the know-how to make them. Micke's process, however, allowed us to stock super-thin (0.1mm) standard dichroic glass and produce custom gobos at a fraction of the cost. The CMYK colour mixing process involved laminating the thin colour layers to the thicker black layer and still maintaining the focus on all layers. Still not cheap, but feasible to make and sell.

I had no grand plan beyond warmer weather, but Joe Labero, an illusionist in Stockholm, was embarking on a few years of shows at Jupiter's Casino, so we packed some stuff in their shipping container to save a few dollars. We had also saved some Gold Coast Aussies in a campervan from death by hyperthermia in a blizzard, so it cemented our decision for the Gold Coast as our destination. They had a house organised for us as we arrived and our new stage in life was about to begin.

I installed an old AGFA Repromaster in the garage and built a darkroom. The Repromaster would allow me to reduce the size of a printed image and process a film that I could use for exposing gobos. We still produce film today but not with the old Repromaster.

I needed a real job, though, so offering to repair gear again I was quickly snapped up by Entertainment Lighting and Sound, at the same time making gobos at home in my garage. I had a great time working with ELS, once again some awesome people, but my sideline, (Lighting By Design), steadily grew. After doing the ENTECH tradeshow around 1998, I got so busy I had to quit and concentrate on the gobo making, still out of home, but it was now a full-time job.

When the New Years Eve 2000 and Olympics festivities were being planned, I got contacted for projections onto the Opera House. It was a lot of images, and a default on payment would have sunk me, but I got the deposit in time to get the job underway and get the job done. A few weeks out from NYE and I was contacted again to make a type of oil wheel effect to shoot onto the Opera House. The light

chosen was a 4,000 Watt Coemar NAT. An oil wheel normally has a wheel rotating through the beam so that it has plenty of time to cool, a bit like passing your finger through the flame of a candle. The NAT, however, had a gobo wheel with the image constantly in the 4,000W beam. They had already approached other manufacturers to do something, but nobody was crazy enough to attempt that. I said I'd give it a go, but no guarantees!

They sent me up a NAT for testing that I had to get wired direct into my switchboard and I lit up the sky like the bat signal. Christmas 1999 had the whole family sitting around a table gluing layers of clear glass and dichroic glass shards together and filling the gobos with synthetic oil through a syringe. I flew down to Sydney with an attaché case full of about 200 full colour gobos and the new oil filled gobos. I wasn't going to trust anyone else with that delivery!

Laser Production room

Joakim and Sara Odlander at the Gobotech Loading Bay

The job was a success and all the gobos were used nightly for a month. I believe we supplied 40 of the oil filled images, and only one had failed by the end of the month. But I'll never do that again!

By now, I was making plenty of glass gobos but I did not have the equipment or skills to make steel gobos. I used The Gobo Factory for steel gobos and they would use us for the glass. By 2002 it made more sense for us to join forces so Lighting By Design merged with The Gobo Factory to create Gobotech Pty Ltd and moved into a larger factory. Now we could offer a complete range of gobo solutions from a single company.

The rise of LED lights brought a new challenge, and we initially thought glass gobos might be replaced by DIY plastic film. We supplied some high resolution film for a while, but in reality, most LEDs quickly became so powerful and gate temperatures so hot that today, most moving lights are too intense even for steel gobos, demanding the ultra-high reflectance coatings and high-temperature glass that we use today.

The processing technology from 1996 to today, 29 years later, has certainly changed. Today our factory is equipped with multiple, ultra-high resolution, laser marking machines suitable for the new coatings. We still choose acid etching for some glass production as the colours tend to be more vibrant but many designs, especially the small, detailed gobos are now best manufactured with the new lasers. Steel production continues with a new large conveyorised spray etching machine, though these days its only used about once per week as steel is simply unsuitable in so many of the new lights.

Over the years we had found that when bars, restaurants, and hotels wanted to promote themselves they were after permanently mounted projectors. The event industry and rental companies did not have the right equipment for this, and the customers ended up with poor choices, making the projections look terrible at times. To fix this, I spent years researching products and making personal visits to manufacturers, finally building up the connections and trust with companies that

Multiple Grand Lighting M33 projectors used to project a bright pedestrian crossing that changes to stop signs for pedestrians as forklifts approach.

Courtesy High Impact Lighting, Indigenous Round 2022, using an ACME XA1000 for each of the animals projected

would supply to our specifications. Today, we have a boutique range of simple but functional lights that we individually finish off, test and adjust for each individual clients needs, all done in our Gold Coast factory. These lights are sold under the Grand Lighting brand and can be found throughout Australia and New Zealand, lighting up council parks and walkways as well as hotels, bars, and restaurants. The new Industrial range and Line Projectors replace painted lines, pedestrian crossings and warning signage in large factories and warehouses throughout our region.

Life has been quite a journey so far and I've had the pleasure of working with many wonderful professionals both in Australia and internationally. After nearly 30 years of making gobos, it's time for the next generation to take the reins. My daughter, Sara, was two years old when I started this venture in my Gold Coast garage and, like her siblings she had no intention in following in her fathers' footsteps - she became a nurse instead. Eventually, she saw the light (pun intended), and decided that making gobos was a lot more fun. 13 years later, she's a highly skilled and dedicated young woman who now, I have to admit, is even better than me at this and will continue with her staff to provide the service that got us here.

I'll still be around in a support role, and I'm confident our small family-run company with four staff will be around to service Australasia for many more years to come. Sara is having fun refining designs and spearheading new sales for our Grand Lighting display projectors, as well as the cool new Line Projectors for industry. Peace everyone and thanks for the ride so far, I've had a blast!

Chernee Sutton art projected using the Ayrton Domino

About Gobotech

Gobotech Pty Ltd, based on the Gold Coast in Queensland, is one of only a handful of full-service custom gobo manufacturers in the world.

Gobos are disks that get fitted into lights to project images and logos. There are stock standard images as seen in every moving light out there, but you can also get custom images manufactured.

Gobos are seen every day on TV and in the movies but we constantly get asked "What is a Gobo?". People don't realise they see them almost daily. We have supplied many movies over the years, including Waterworld, Batman and Star Wars, but it can be easy to miss when you watch a movie. You may not realise that the light coming through an overhead grate as Luke fights Darth Vader in a tunnel with a lightsabre is simply a steel gobo in a profile shining from above. That's the magic of the movies.

Gobotech manufacture full colour, black and white and steel gobos in our factory, as well as supplying a range of display projectors and factory signage solutions including the new Line Projectors.

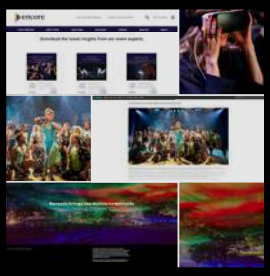
Hundreds of standard images as well as full information on our projector range is available on our website:

www.gobotech.com.au

Grand Lighting GL80 lights with kaleidescope gobos for Port Philip Bay, St Kilda Foreshore installation

17mm image for the soldiers using an ACME Lyra, Photo Courtesy High Impact Lighting

Creative Services for the AV and Entertainment Technology Industries.



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TINA ARENA

Don't Ask Again

Tina Arena has toured Australia with a nationwide encore tour of one of the country's highest-selling albums, Don't Ask. Celebrating the 30th anniversary of the album, the tour is titled Don't Ask Again, with lighting design by Peter Rubie.

The stage has no LED screen or imagery, with the show's creative visuals focused on a touring lighting rig supplied by POWA Productions, including Martin MAC PXL, Ayrton Eurus, and their brand-new zactrack Smart plug-and-play automated follow system.

Jason Henderson from POWA is on tour, calibrating the zactrack system and leading the bump-in for each tour stop. Lyndon Buckley is also on the touring LX team as 2nd LX.

"We've got four dedicated spots for Tina with two Ayrton Eurus on the front truss and two Claypaky Sharpy X-Frames for backlighting, along with a along with a curtain-wall linear array of Robe LEDBeam 100s for effect, all utilising zactrack," explained Jason. "It takes on a distinctly different look depending on the song and the number."

Jason reports that the zactrack Smart is an excellent piece of software, and easy to use. He adds that they've had great support from distributors Show Technology, which significantly enhances the user experience.

"It makes it a lot easier to use," he added. "If you've got questions, you can always ring Branden at Show Technology, and he can answer them on the spot. He's been invaluable with it. I've found it helpful, and it's pretty easy to give the LD control of it. I think zactrack provides the show with so much more dynamic lighting because you're not just getting followspots from the front; you're getting them from the back and covering all different angles."

Peter says he runs two tags on Tina for redundancy and smoothness averaging, and two additional tags for support act Dylan Wright.

"The system has been great," he remarked. "It's so lovely to have a tracking backlight and front light on a performer, and the ability for the colour, intensity and precise levels to run in complete sync with the rest of the design is a wonderful thing."

"Plotting that level of detail into the cues right from the start of Previz sessions becomes so intuitive, and it makes a lot of sense from a design point of view to execute a truly theatrical vision of which this show leans heavily into. Because the show is fully timecoded, it means I know Tina's lights are going to fade up and down at exactly the right moment and fade

duration every show, something that is harder to achieve when calling spots with new operators in every city."

Peter adds that, aside from the X-Frames, the Eurus are his only spot in the show, and he's been impressed with their output.

"The colour mixing has come a long way from earlier Ayrton fixtures," he noted. "I cluster the Eurus in groups of three, giving some nice, powerful looks."

POWA has close to 50 Ayrton Eurus in its inventory, with Jason commenting that they're very bright, punchy and have a great range of gobos. A total of 23 are in the rig.

Hung upstage of the band is a backdrop of four ladders, each holding four Martin MAC Aura PXL. The positioning of the MAC Aura PXLs on the ladders creates a backdrop of fixtures that gives a curved illusion.

"I wanted to move away from traditional straight lines," explained Peter. "The blinders are also formed in curved arches from the floor booms up, through the ladders, overhead trusses, and back down. The LED backdrop of movers replaces a traditional upstage LED wall, and I create custom effects using Madrix for both the main 37 LEDs and the 141 MAC Aura PXL backlights. The fluidness and organic feel of the MAC Aura PXL backlights are lovely, and you can achieve both shiny, sparkly effects and soft diffused content depending on where the lens sits in the zoom range."

Peter runs sACN directly to every MAC Aura PXL, since each fixture requires a whole universe. The main fixtures and 37 LED backlights patch into the console, and then Madrix takes the console's output, and HTP merges it onto the stage. "

"I tour with a Vista by Chroma Q console, which I prefer for a touring show of this nature as it's workflow is very suited for a designer and programmer with everything being so visual," explains Peter. "The ability to create and manipulate show looks and add lots of detail easily without being distracted by complex syntax, macros, or maths is a pleasure to work with. Making updates in the hotel or on the plane without multiple screens is much easier than some of the other consoles I work with, as the interface is designed primarily around a single screen. The show is tightly timecoded and pre-programmed, but I also took advantage of some of the newest busking features of the software to very quickly create unique and fresh looks each night for our support act Dylan Wright."

"The ladder MAC Aura PXLs bathe the stage in colour and effect through the show, but for the times I use them facing the crowd, I lean heavily on the Aura LEDs for sparkly eye candy looks and gentle waves," Peter added. "When using the main LEDs as eye candy, I don't run them over 10% due to their brightness, which presents some fun dimming curve challenges. The fallback to the Aura LEDs is a good saver here, and they throw a fair bit of light and create interesting criss-cross shards of light when there is a good level of haze in the space."

The tour has just wrapped up its final show in Adelaide after an eight-city run, including Perth, where EAVP provided a similar rig.

Photo Credit: Tijs van Leur

THE OFFSPRING

Fresh off the release of their brand new album Supercharged, punk rock icons The Offspring toured Australia through May with Simple Plan in support.

Chameleon Touring Systems supplied the lighting, including 64 Acme Pixel Line IP, 60 GLP JDC 1, 36 Martin MAC Aura PXL, 58 MAC Viper XIP, 3 Robe BMFL FS, 5 Robe BMFL Blade, and grandMA3 for control.

Lighting designer Jay Waddell readily admits he's very particular about the details of his design - he tends to tweak and refine constantly - but reports that the Chameleon crew took it in their stride and were fantastic!

Jay started in the industry 18 years ago and has been with The Offspring for seven of those years. The Australian shows featured a new design cycle in support of Supercharged, with Jay commenting that the design is more modern and larger than that of the previous tour.

"This show leans a little more heavily on video and has a lot more fixtures," he said. "This is the first full design that I've been able to do for the band. In the previous few tour cycles that we've done, outside designers were brought in, so this is my first shot at looking at it and putting something out that I think complements and enhances both the music and the band's energy on stage. It's essential to me that the lighting and video content blend seamlessly, creating a cohesive and complementary feel. I try always to stay aware of the full picture on stage and keep the band out front."

Jay says that they went through a couple of design revisions, but the band trusts him implicitly. The show seen in Australia solidifies the design for their primary touring markets, including the US, Europe, and the UK.

"We started the tour in South America, which can be challenging from a logistical standpoint," added Jay. "We were getting new rigs every single day, so we took out some of the more bespoke details of the design and made it a little more friendly to replicate each day."

"I wanted the design to feel modern but not too polished like a pop show. We wanted it to still have a rock and roll feel and keep that punk energy. I wanted to be able to punch, to be in your face, but also pull back when needed. It's not too shiny, but it is a lot of stuff to play with."

The truss layout is relatively straightforward, with six fingers overhead that break up the structure. With the variety of venues on the tour, Jay wanted something that he could

stretch out when he had room, but then flatten out if he didn't, without cutting fixtures.

"The idea with the fingers is that you can scale up or down to larger and smaller venues; we can tweak the rake angle, and the look stays intact," he said. "The finger trusses have MAC Viper XIPs, and the fingertips, one of my favourite parts, feature GLP JDC-1s. We try and keep the front of the stage pretty clear, so then, working backwards, we have an upstage truss with MAC Viper XIPs and a bunch of Acme Pixel Line IP. We've got pods on each side of the LED wall each with 18 MAC Aura PXL and more Acme Pixel Line IPs on each."

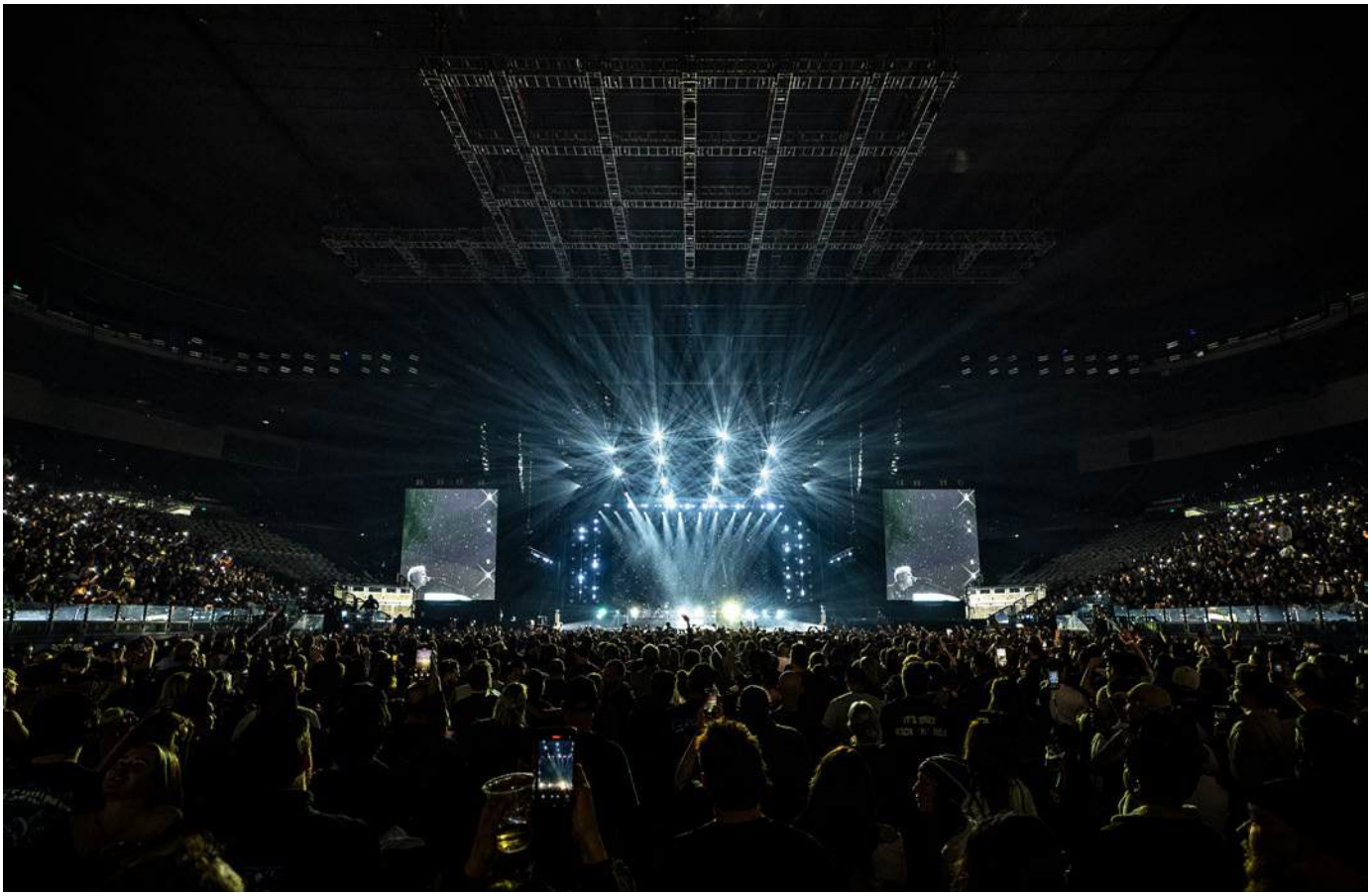
A riser across the back of the stage is a mirror image of the upstage flown truss. Six more MAC Viper XIP are flown on either side for side light. Two flown key light trusses house the Robe BMFL RoboSpots.

Although he specified MAC Ultras, Jay was excited to discover Chameleon stocked a large quantity of MAC Viper XIP, which he wanted to get his hands on!

"I hadn't seen them in person before this tour, and wasn't surprised to find that they're great," he remarked. "They're very bright and render colour well - no problem cutting through the upstage video wall. I'm very pleased with them and would happily spec them on another tour."

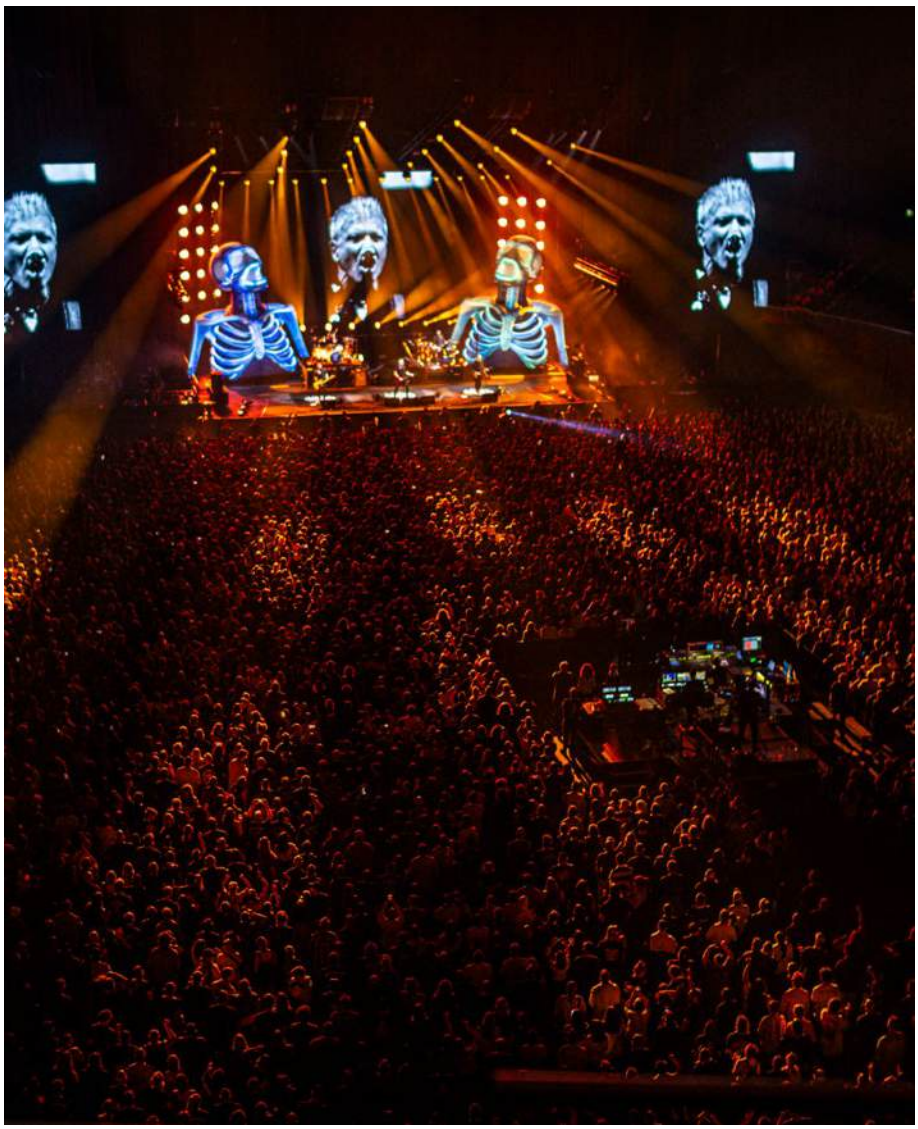
Jay explains that they don't use a lot of wash, and consequently, the MAC Aura PXL is more for effect lighting. Not so much fancy eye candy but rather for bold, big movements, punches, and chases.

"Martin fixtures all strobe well - they always have - which is great for a punk band, because you've got to have a good strobe," added Jay. "Fixtures need a solid random strobe, and they need to be able to strobe in unison at different speeds without drifting out of sync like so many others do. That's something that always bugs me, but Martin has that figured out."



The Acme Pixel Line IP features prominently in the design, placed across the top truss, across the bottom riser, on the two lines on each tower, and on the sides.

"They're great - they're punchy but not overwhelming," commented Jay. "I don't have to hold them back much. They've got a great dimming curve. I like to feather the ends of both sides and create gradients and other effects. Those come through really nicely, better than probably any other pixel bar fixture I've seen."



As well as on the flown truss ends, GLP JDC-1s are also found on the floor in the back, where they create a god-like light effect. Jay says they are cool for strobing on the ground, but he tries hard not to assault people all night.

"I like the effect, but I don't necessarily always want it right in your face," he clarified. "Sometimes, you save a little bit of that for an accent or a big cue when you need it."

Although on a grandMA3, Jay was running the show in Mode 2, mainly due to the constantly changing gear list and limited time each day to accommodate updates and new equipment at the beginning of the tour.

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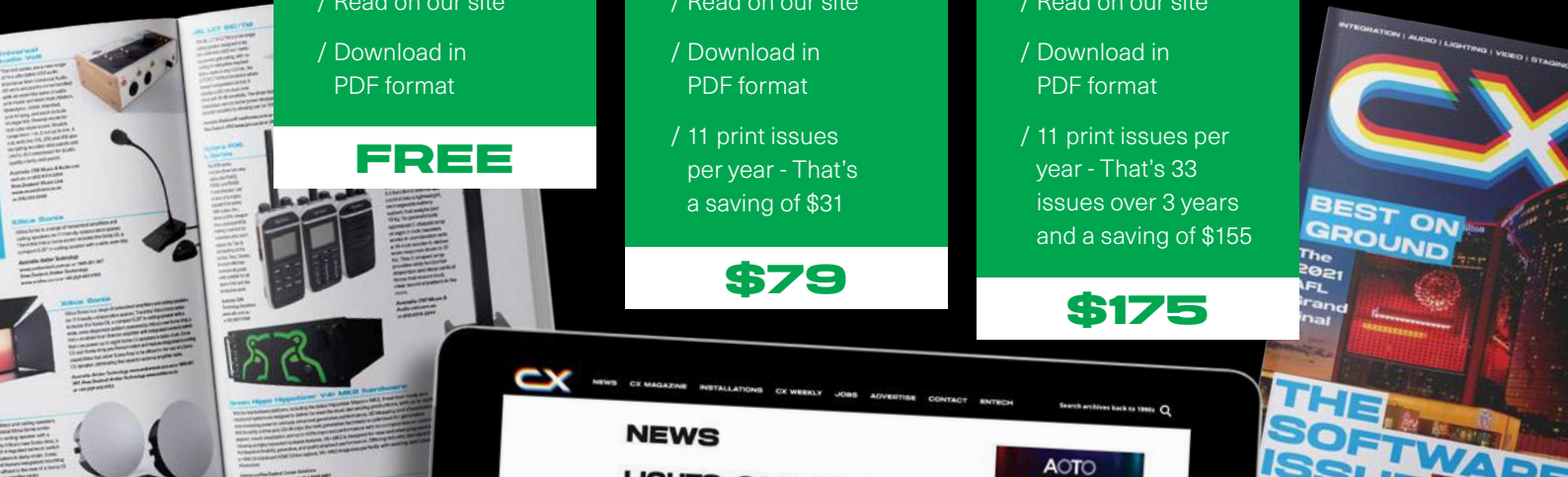

"I did do a show earlier this year in Mode 3, so I have one under my belt, and I'm going to move this show to Mode 3 for the summer," he said. "It's time-consuming, especially since I've probably got 50 songs in the can. So it's a substantial project to go ahead and do that. But this summer, I look forward to taking the time to switch this over and reimagining a lot of what's possible in the show."

"Everything is live. There is no busking; everything is cued. I run a main cue stack, along with a handful of accent buttons for each song, punches, strobes, drum fills, things like that. We do use timecode to drive some of the video content, ensuring it's in sync and on time. Some of the videos contain on-screen lyrics or other elements that require precise timing. But all the lighting is manually cued and fired by me."

Jay comments that he enjoyed working with Chameleon, adding that all the gear is nice.

"The crew they sent out has been great," he said. "They've been super accommodating with the adjustments I've made along the way. I'm particular about how things are set up - small shifts, precise placements - and they've done an awesome job helping dial everything in exactly how I want it."

Sometimes it all gets too much...

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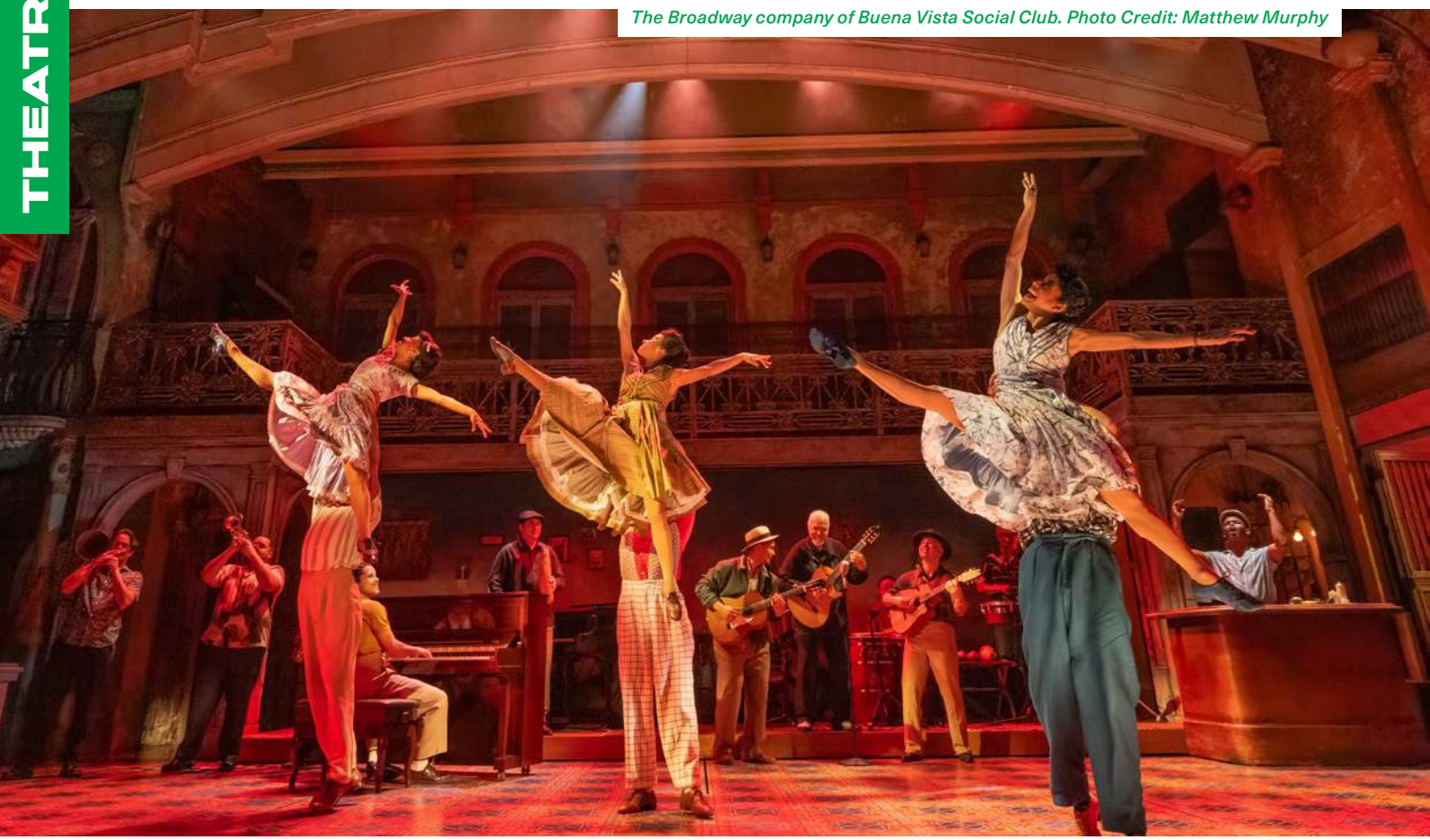


The Broadway company of Buena Vista Social Club. Photo Credit: Matthew Murphy

Three Nominations and Two Wins - **Meyer Sound Dominate Tony Awards for Sound Design**

Meyer Sound has proudly congratulated the sound designers of Buena Vista Social Club, Stranger Things: The First Shadow, and Just In Time on their 2025 Tony Award nominations for Best Sound Design. Each of these acclaimed productions relies on Meyer Sound reinforcement systems to deliver immersive, emotionally resonant audio that supports both technical precision and artistic expression.

On June 8 at Radio City Music Hall, it was Jonathan Deans' design for Buena Vista Social Club that took home the trophy for Best Sound Design of a Musical, and Paul Arditti's work on Stranger Things: The First Shadow that won Best Sound Design of a Play.

Buena Vista Social Club

Jonathan Deans

In Buena Vista Social Club, staged at the Gerald Schoenfeld Theatre, music doesn't just support the story, it is the story. For sound designer Jonathan Deans, the production was less about theatrical spectacle and more about emotional authenticity. Drawing on decades of experience and a deep respect for the show's cultural roots, Deans crafted a design that foregrounds the lived-in intimacy of Cuban music, played live onstage by master musicians. "These musicians know this music from birth," says Deans. "They're not reading music onstage. It's all instinct, and that instinct changes from show to show."

Because performances can shift subtly night to night, Deans' design focuses on delivering every nuance exactly as it happens onstage; no colouration, no distractions. "What that does is allow a conduit between the instrument, and that might also be the voice of an actor or a voice of a musician, to the audience, and for it to be layered in the correct context. You want to meet that expectation for the people who know the music."

Rather than embellish, Deans took a straightforward approach to sound reinforcement, deploying a focused Meyer Sound system, provided by PRG, centred on ULTRA-X40 and ULTRA-X20 compact point source loudspeakers. The result is a sound design that disappears into the show's rhythms; unobtrusive but deeply felt.

"It's very simple, yet complex," he says. "Every string, every bit of air, every space, everything is critical. Meyer Sound gave me the transparency I needed to let the music speak for itself."

The Tony nomination, Deans adds, is a rare kind of recognition. "We try to be invisible. But when people do notice, and they understand what's been achieved, it's incredibly meaningful."

Stranger Things: The First Shadow *Paul Arditti*

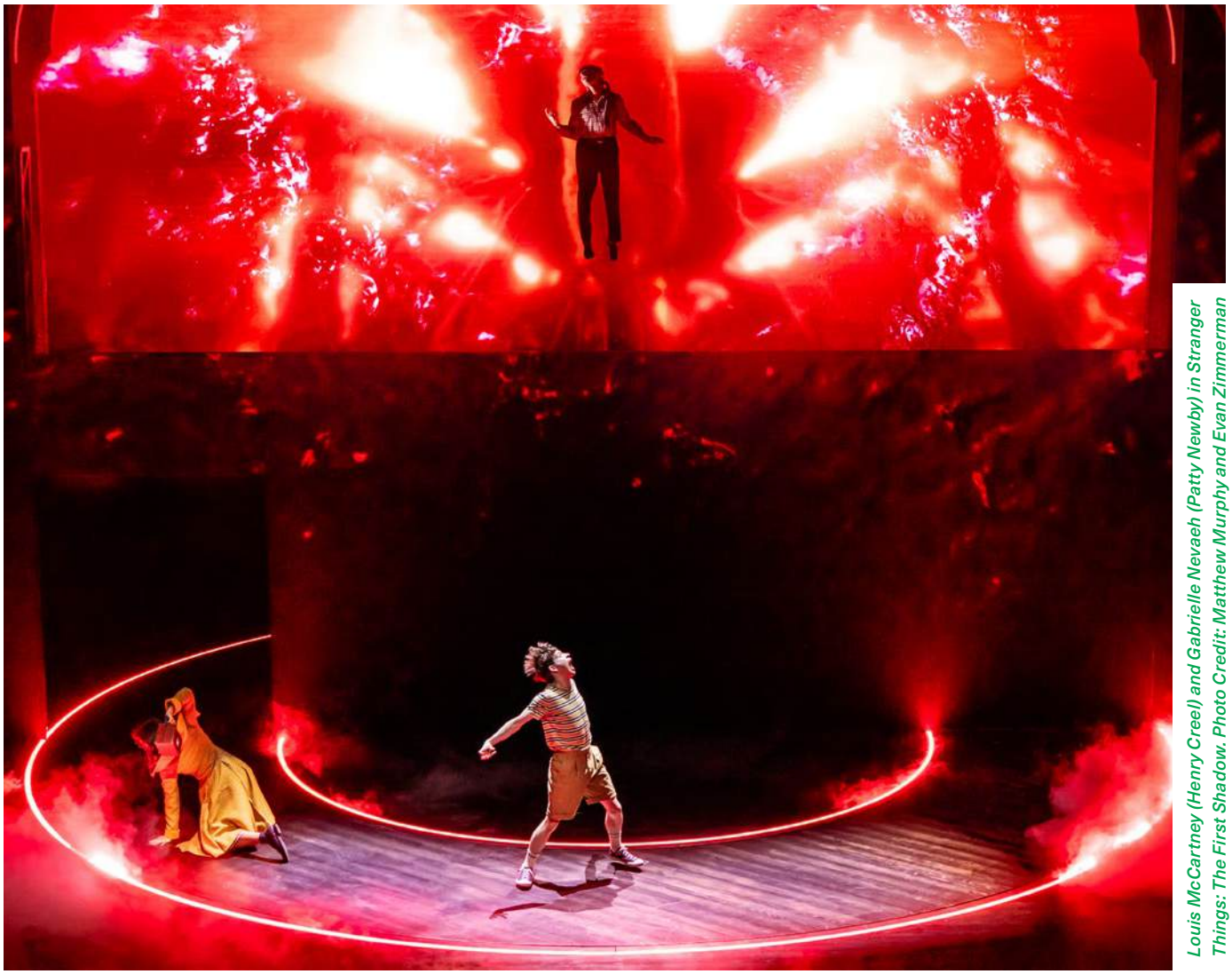
The Broadway transfer of Stranger Things: The First Shadow gave sound designer Paul Arditti the opportunity to rebuild the show's sound design from the ground up. Building on the West End production, the creative team embraced new material, new effects, and a new scale. "Every scene is to some extent new, and there is virtually no sound or piece of music that we've left untouched," says Arditti. "There are several new special effects and new sounds to go with them!"

To meet the demands of the larger Marquis Theatre, Arditti specified a Meyer Sound system from Masque Sound, incorporating LEOPARD compact linear line array loudspeakers and LINA very compact linear line array loudspeakers along with a range of ULTRA family and UP-4slim loudspeakers. Low-end reinforcement comes from 900-LFC low-frequency control elements and what Arditti called "some truly stunning 2100-LFCs" in both the orchestra and mezzanine. "From the moment we powered up the system I knew I'd made the right decision," he says.

The theatre's acoustic treatment added to the sonic precision. "Effectively the auditorium is a dead room, with almost every surface covered in acoustically absorbent material," says Arditti. "With the excellent controlled coverage of the Meyer Sound speakers, there are no bad seats for sound; rare in a theatre of 1,600 seats."

Arditti describes the Broadway run as a demanding but creatively rewarding process, an evolution of one of the most challenging projects of his career. "Being nominated for a Tony is a huge honour," he says. "Acknowledgment from your peers is the ultimate reward."

Louis McCartney (Henry Creel) in Stranger Things: The First Shadow. Photo Credit: Matthew Murphy and Evan Zimmerman



Louis McCartney (Henry Creel) and Gabrielle Nevaeh (Patty Newby) in Stranger Things: The First Shadow. Photo Credit: Matthew Murphy and Evan Zimmerman

Just In Time

Peter Hylenski

Set in a reimagined supper club with cabaret tables and an onstage band, Just In Time blends concert-style performance with character-driven storytelling. For sound designer Peter Hylenski, the challenge is to create a mix that can shift fluidly between emotionally charged scenes and high-energy musical numbers, often within a single transition.

"The show tells the life story of Bobby Darin, so there are scenes of intimate dialogue followed immediately by an explosion of his live performances taking place at venues such as the Copa club," Hylenski says. "I play with the expansion and contraction of the theatre using focused point-source systems combined with surround usage."

Jonathan Groff as Bobby Darin in Just in Time. Photo Credit: Matthew Murphy and Evan Zimmerman

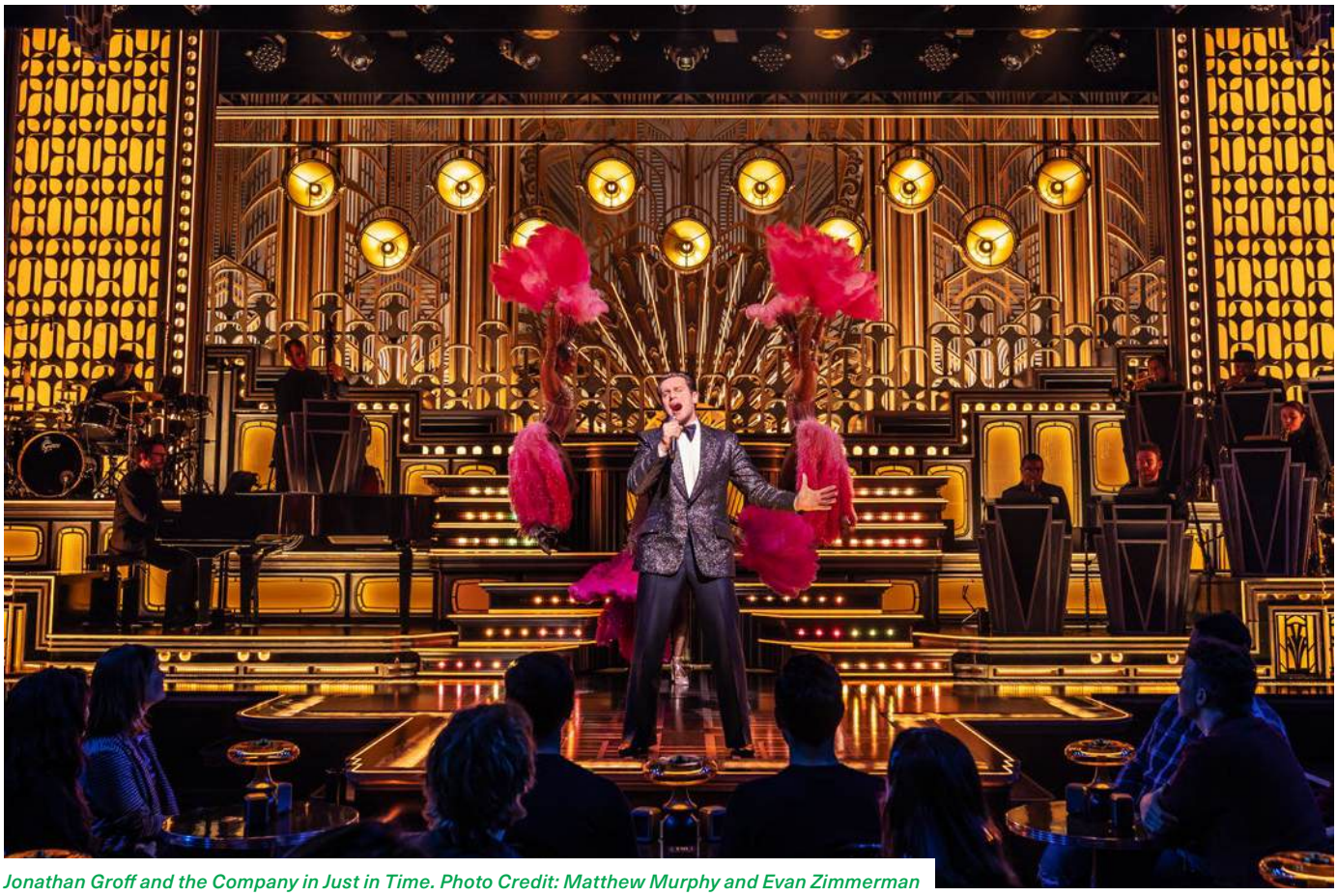
Just In Time is staged in-the-round at Circle in the Square, in a wraparound layout that presents distinct technical challenges. "When sourcing vocals in-the-round, the level of complexity increases exponentially," Hylenski explains. "Actors are walking through the audience, blurring the lines between 'performance stage' and 'listening area,' which requires extreme accuracy as far as system coverage and control."

He adds that the complexity is heightened by the physical proximity of musicians and performers. "The onstage band shares the same acoustic space with the actors. Balancing band versus vocals to each zone is challenging in a small space. As sound designers we are often tasked with adding sound to a room, but sometimes our job is to figure out how to manage the acoustic sound as well!"

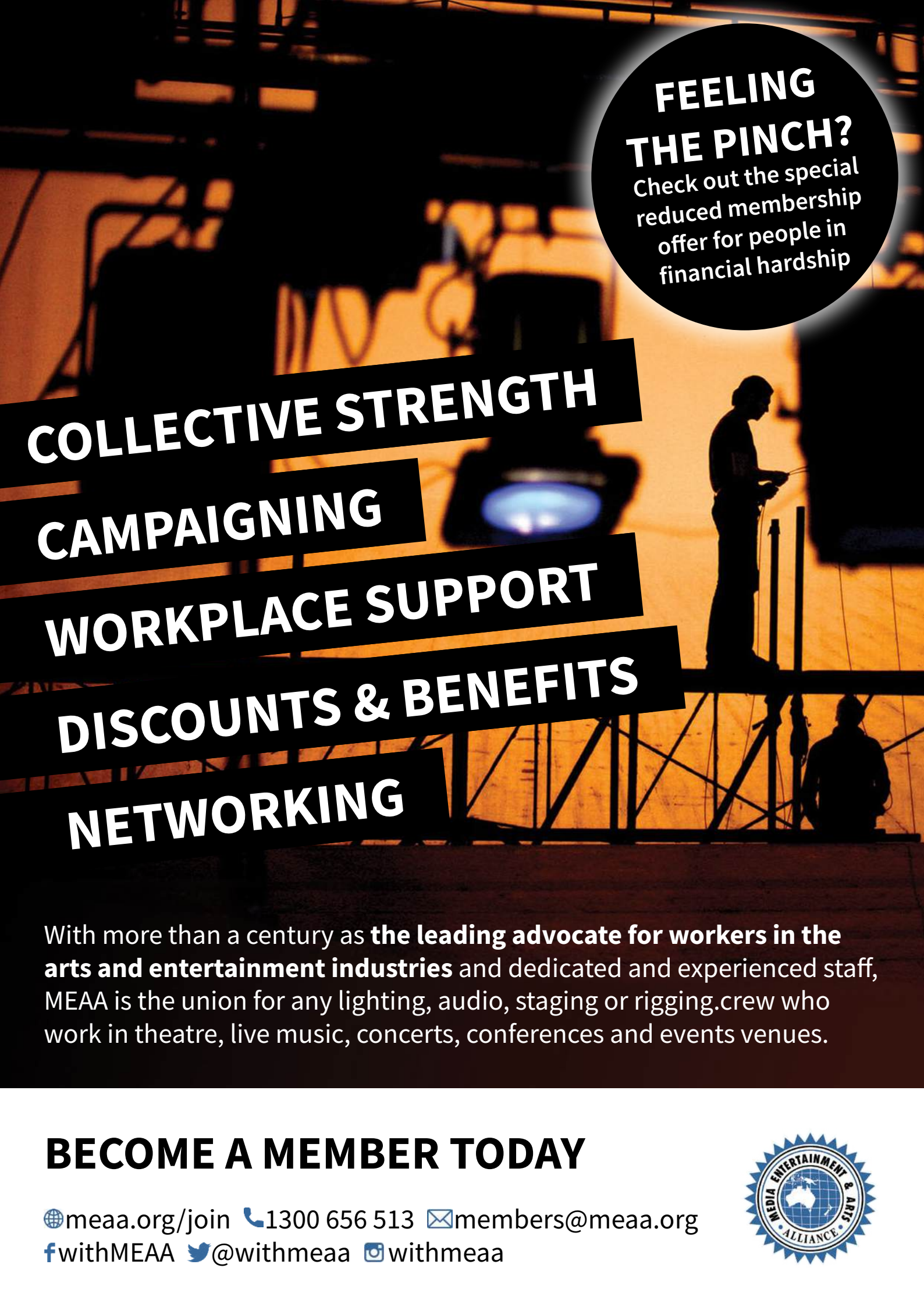
The show's Meyer Sound system, provided by Sound Associates, is centred around ULTRA family loudspeakers, with ULTRA-X40 and ULTRA-X42 compact point source loudspeakers forming the system's core, supported by ULTRA-X20, ULTRA-X22, and ULTRA-X23 compact point source loudspeakers, UP-4slim ultracompact installation loudspeakers, plus MM-4XP miniature self-powered loudspeakers and an array of 750-LFC very compact low-frequency control elements.

Meyer Sound's NADIA integrated digital audio platform is used for output management, matrixing, and Spacemap Go panning. "Meyer Sound's digital control platform has always been my go-to 'Swiss army knife' for handling complex system designs like this one," says Hylenski.

It's a complex design shaped by constant collaboration, a process that, for Hylenski, reflects the spirit of the entire production. "Just In Time is a collaboration that challenges the entire creative team," he says. "To be recognised for this work, and the sonic contribution to the storytelling, is such a great honour."



Jonathan Groff and the Company in Just in Time. Photo Credit: Matthew Murphy and Evan Zimmerman



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THE FINAL IN A CONTINUING CX SERIES

WORKING IN SHOWBIZ

by Julius Grafton

GETTING A JOB

Emailing resumes is almost a waste of time. Filling out online forms is also a zero sum game, you have to do it, but of itself it's hard to cut through the crowd. I'm going to suggest something you may find hard to do.

Knock on the door. Put on your best show face, make sure you look 'right', and go on a journey. Visit venues, production companies, and places crew get hired. Your best shot is to be prepared to start at the bottom.

Take your SINGLE page CV with your photo on it, so they remember whose CV it is. Your pitch: "Hi, I'm looking for trainee or junior work starting at the bottom. I'm ready to do anything, sweep floors, whatever. Do you have any jobs open?"

If negative, "Do you have someone I can talk to?" Then if no, "may I please leave my CV with you, to pass along?"

I'll tell you now, the number of people who do this are very few, and they are all remembered. A good short cut is to list yourself with one of the many crewing agencies out there. They need numbers, and once you are doing a load in, see if you can navigate yourself onto the team that has your tech of interest.

Be keen, listen before you speak, be proactive, and remember names. Your name? I'm lucky, I'm 'Julius – like Caeser'. They remember that. Maybe you're 'Helen – like Troy'. Or some-such. Maybe you need to create a memorable nickname. How many John Smiths are out there? Or Lisa Nguyen?

Working on payroll requires you have all your 'numbers' on hand: tax file, superannuation account details, tickets and licences, Working with Children Check. Keep all your records together, on your phone.

Consider visiting a second doctor every now and then, for mundane stuff, if you have any 'conditions'. Keep those away from the doctor whose records may end up with your employer. Keep 'conditions' with a doctor who doesn't put them on the National Register.

Don't disclose anything unless asked. Listen before you speak. Be prepared to sign a 30 page contract. Read it. Chances are it will have stuff that is semi-unreasonable; like maybe a non-compete (if you are headed into a sales role) which can sometimes be contested after you leave.

If there is 'commission', how is it determined and how is it reviewed – and when? How thorough is the job description, roles and responsibilities? Chances are your position will not accurately reflect these, so be flexible.

Pay attention to the social media rules. Chances are no posts about work unless positive and even these could be a breach of policy.

You hear about the bad stuff within employment but generally most jobs are fine, some are brilliant, and just a few are toxic. One AV integrator that works across several states has GREAT and also TERRIBLE Glassdoor reviews. Any employer with that kind of binary range should be a red flag.

None of us are here for the money – a full time venue tech with at least five year's experience will earn between $60 and $75K before overtime. Casual rates are running $29 to $40 an hour. The money is rubbish. We're here for the roar of the greasepaint, and the smell of the crowd, right?

Finally, I told my diploma students at my college that having done the year and achieved the diploma, walking away from our industry wasn't failure. Failure is to pass up a chance, to wonder 'what if?' Deciding not to work in an industry like ours, with crazy hours, poor work life balance, and difficulty managing a relationship let alone a family, is a considered choice. That's not failure.

That concludes our series. Feel free to email me: juliusmedia@me.com

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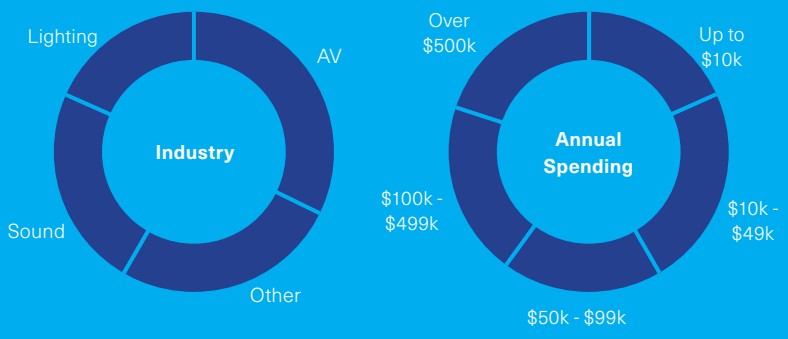

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by Nick Macfie, Production Technologies

Nick Macfie started Production Technologies fresh out of the Australian Institute of Music 23 years ago with Ricki Cook. Focused on audio only in the beginning, Ricki Cook departed 10 years in, but still maintains a close relationship with the business. Production Technologies evolved to embrace technical direction and production management. They now stock high-end control systems across RF, audio, video, lighting, and communications, deployed for their use only, serving special events, broadcast, and corporate.

Shure Axient Digital PSM

Shure Axient Digital PSM and the WMAS Revolution

Shure Axient Digital PSM is one of only two products now to market (the other being Sennheiser's Spectera) that utilises WMAS (Wireless Multi-Channel Audio Systems) technology. WMAS represents a generational change in how wireless audio is managed, transmitted, and received. WMAS equipment operates in wide blocks of spectrum, typically the same bandwidth as a broadcast television signal, and digitally manages channel assignments and intermodulation frequencies within it, enabling up to 64 channels of bidirectional audio and control signal.

Shure's AD PSM is an in-ear monitoring system that utliises WMAS. It can use up to 184MHz of tuning bandwidth, providing up to 17 channels over 6MHz, or 23 channels over 8MHz of TV band in Standard Mode; and up to 47 channels over 6MHz or 63 channels over 8MHz High Density Mode. Other operating modes include Quadversity, combining four antennas for extended coverage, and selectable transmission modes and power levels to enable optimum range and audio quality.

Shure's optional ShowLink control hardware works with AD PSM to give engineers comprehensive real-time remote control of all transmitter parameters using a 2.4GHz diversity wireless connection, allowing settings to be changed right from the control booth.

ADTQ AC Back

ADTQ DC Back

At Production Technologies, we have invested in three ADTQ transmitters, which have four separate radio transmitters. Each radio can transmit four separate stereo channels. At the moment, only one radio is enabled, and the other three will be activated in the future with a firmware update. We've also got 12 ADXR bodypack receivers.

We got our first transmitter about two months ago, and the other two transmitters plus the AD8C Axient Digital PSM 8-Port Antenna Combiner quite recently. While we familiarised ourselves with the first transmitter in the warehouse over the last two months, we didn't really dive deeply into it until a week before the system did its first big, high-profile show in late June. We spent four days building the rack we'd take out, and two days with our staff getting to know the system. We're very experienced with the existing Axient Digital system, and while there was a little bit of a learning curve, it was quite familiar territory for everyone.

User Interface

I think the user interface on the front panel of the transmitter is brilliant; it's really quick and easy to navigate. The front panel is a very clever layered system of menus, and Shure have really listened to the feedback of touring techs and people that need to jump into the panel quickly.

In addition, being able to plug in the ADTQ over a network and have Dante signal distribution and Shure's Wireless Workbench software control work seamlessly is a game changer as far as efficiency on site.

The ADXR belt packs have had a few changes incorporated from their PSM 1000 system predecessors, including the orientation of their infrared sensors. The IR sensor is on the opposite side to the Axient Digital P10R+, so it's now on the back, which people are going to have to remember for a few months until it gets into their muscle memory, but it's a much better spot. You're not opening the belt pack or opening the front flap; it's a less compromising position and much easier to do quick updates with it. The volume control has a nicer feel to it; it's much more rugged, so you're not going to be replacing the caps as often. The antennas also feel more rugged. It's definitely a much more 'hardcore' belt pack and shows that Shure have definitely listened to the market.

The AD610 Diversity ShowLink Access Point is a must-have addition to the system because the remote control, changing frequencies on the go, battery telemetry, and more, is reliant on it. It gives us an amazing array of capabilities. Even firmware updates are easier; we're able to do everything remotely, instead of holding the belt pack in front of the transmitter.

The First Gig

Our first gig with Shure Axient Digital PSM was a very high-profile outdoor event in an exposed location in central Sydney with no weather protection. Conditions were not good, and front of house got completely rinsed. It was bucketing down for the three days of loading in, and it cleared up just minutes before the show. We're always happy to set up in the dry and do a show in the rain, but setting up in the rain and doing show in the dry is not our preference! All of the gear not only survived, but thrived, so we can vouch for Axient Digital PSM's resilience straight away!

We used our entire AD PSM system; 12 channels of transmit from three ADTQ transmitters and 12 ADXR belt packs. We had a mix of high-profile dignitaries, IFB (interruptible foldback), and then transitions into performances from international acts. Due to the weather, everything was sound checked in a tent without access to the stage. Under these conditions, the ADX PSM proved to be a vital piece of the workflow. The coverage of those units and the RF control is ridiculous. We were getting coverage in green rooms behind concrete walls. In the world of analog IEMs, it wouldn't have been as easy.

The stage was 40 metres away from front of house, but we had to set up a temporary waterproof structure around the corner of a building, which was definitely not line of sight to the transmitters at FoH, and was a good 60 or 70 metres away. We accomplished this without even having to change the transmitters into long range or extra power mode.

RF Environment

Being central Sydney, there was quite a lot of environmental RF. In addition to the AD PSM system, we were running 16 channels of our own Axient Digital wireless microphones, and there were eight channels of guest RF. Using Shure's Wireless Workbench software, AD PSM analysed the spectrum, found a space for itself, and just worked. It managed itself from there with absolutely no problems.

The AD SPM Difference

While it's an extreme example, at this gig, we were in one of those ugly situations where we were losing power every couple of hours. Everything's getting wet, and things were failing. To be able to have AD SPM patched into our Dante network, monitor it, and know that things were coming back the way they should be after power outages was invaluable. Just having AD PSM with Dante integrated into the rest of our Axient ecosystem made life a lot easier.

The gig would absolutely have happened with our Axient Digital PSM 1000 system, and they're still a staple. But I very much appreciated the efficiency of the RF of the AD PSM; we never saw any of the RF compromised in any way. The way the dual antenna distribution works is very smart.

Sound Quality

We had quite a few comments about the sound quality. Everyone was excited to see the new belt packs, even the international touring artists. With all 12 belt packs in Standard Mode, which is digital low latency, we didn't have any negative comments from performers about latency. We had four guest engineers and our house engineer Trevor Beck, and everyone had a great experience with AD PSM.

But the most important question is; does AD PSM sound good? Yes. Everyone operating on the gig commented about the superior audio quality, and I listened to it critically as well. We all know what PSM 1000s sound like, and I was very impressed. The big standout is that AD PSM sounds a lot less "RF-y", if that's a word.

Back Compatibility

On the day, we had one touring act that wanted to use his own PSM 1000s, which we didn't end up doing, but would have been a very simple thing to implement. It's this backwards compatibility with AD PSM that's going to be a market favourite. For production houses and companies like us with existing stock, it means our PSM 1000s are still a usable product for another five to 10 years. I think that's a remarkable move on Shure's part.

Product Info: www.shure.com
Distributor Australia: www.jands.com.au
Distributor New Zealand: nsl.co.nz

The Specs

ADTQ - Axient Digital PSM Wireless Quad Transmitter

- Scalable channel count (available in planned firmware update)
- Multichannel wideband RF
- Spatial diversity transmission
- ShowLink remote control
- Networkable monitoring with Wireless Workbench
- Analog and digital (AES3, AES67, Dante) inputs
- Internal antenna combining

ADXR - Axient Digital PSM Wireless Bodypack Receiver

- ShowLink real-time remote control of all ADXR bodypack wireless receiver parameters
- True Digital Diversity reception combines two discrete RF signals
- >110dB of stereo separation
- Wide tuning range
- CueMode with encryption supports monitoring of different stage mixes and storing of up to 64 separate channels on one bodypack
- Durable, moisture-resistant design with lightweight hybrid aluminum/polymer enclosure
- Threaded headphone connector for added protection against sweat and moisture
- External charging contacts for convenient docked charging
- Includes 2 x SB910 lithium-ion rechargeable batteries

by Kurtis Hammer

ACME SUPERNOVA

The ACME SUPERNOVA is a large, robust, very powerful, full-featured moving head luminaire. It features a big 1,800 Watt LED engine that produces bright light and vibrant colours with an impressive output of 65,000 lumens.

ACME have been hitting the market with some really interesting and high-quality fixtures recently, including the SUPERNOVA. They are a lighting brand to keep an eye on, as they are not just coming out with your typical offerings.

Construction

This is a big unit, at nearly 53kg, and on par with other fixtures in its class. Dimensions are: width 465mm, depth 365mm, and height 830mm. It is IP66 rated, making it a true outdoor fixture. It can be hung on a truss or placed on the ground just like any other light. Movement is smooth, with a reasonable range of motion at 540° Pan and 270° Tilt.

It's a well-constructed light. It is robust, and it definitely looks like it has an IP66 rating and will survive the elements.

Optics, Colour and Brightness

The main selling point for this light is the sheer power and brightness of the light engine. The ACME SUPERNOVA is powered by a massive 1,800 Watt LED engine with a colour temperature of 6,700K. It outputs 65,000 lumens. It's a very, very punchy light.

It features linear CMY colour mixing with two colour wheels as well as Linear CTO colour correction, ranging from 2,700K up to its native 6,700K. It produces a solid array of bright, crisp colours from a single source LED that is the same colour from when it leaves the light all the way out to the end of the beam.

It has a very impressive 12:1 zoom ratio, with a solid zoom range from 4°- 48°. To achieve a zoom range that large it takes a bit more than a longer zoom motor. It really speaks to how impressive the optical quality of the light is.

It has a large frontal lens diameter of 225mm, or nearly nine inches. It casts a good healthy beam. It works well as a beam and zoomed out as a wash. Naturally, you do lose some intensity as you zoom out, but it is still very bright. Same for when using darker colours. But with 65,000 lumens, you probably wouldn't be too worried.

I was surprised to read how high the CRI is for what is effectively a big outdoor light. It is a nice touch that shows quality and attention to detail. It has a CRI of 90 with the CRI filter dropped in. This would make it suitable for TV and other high-end applications such as lighting an outdoor art installation.

Applications and Features

Although the main selling point is the size and power of the light engine, it also has a solid and quite refined feature set. The features, and the quality of the features definitely surpassed my expectations.

The SUPERNOVA features two rotating gobo wheels. It has both projection and aerial gobos on deck as well as an animation wheel for effects. It has a four-shutter framing module in which a single shutter can give a blackout. It has a four-facet linear prism, and two independent frost filters to soften and spread the beam.

Pan has a range of 540° and the tilt has a range of 270°. Both of those figures are pretty respectable given that it is about standard for a mid to large moving light. To be honest, I thought the range of motion would have been compromised in delivering a moving light this heavy.

Although you could use the SUPERNOVA indoors in a venue or as part of a production house's kit, it would be best suited for an outdoor installation, like Vivid for example, or in a stadium show. You could use it for a large number of applications.

You can use it outside for its beam, or you can project it at something and use it to light something up. It does both really well.

Control and Programming

Control and programming is much like any other fixture out there. It can be controlled using 5-pin DMX or Cat5 cable. Protocols include your standard DMX512, RDM, Art-Net and sACN.

The ACME SUPERNOVA has four DMX modes: 23 channel, 32 channel, 34 channel, and 43 channel. It has a reasonably low DMX footprint, which would theoretically make it easier to program as there are fewer parameters to worry about.

The unit can also be manually controlled via the onboard control panel which features four buttons and an LCD display. The onboard control has the same look and feel of most of the other ACME products I've used. Familiarity is a great thing when it comes to trying to manually test, control, or address a fixture.

Verdict

My initial thoughts were that I was going to be dealing with a big, powerful, brawny light first and foremost, and everything else was going to come in a distant second. What I got was a surprisingly refined light, with a quality, well finessed feature set. Make no mistake though – the powerful 1,800W light engine is still the main selling feature.

If you are in the market for a large outdoor fixture in the 65,000 lumen range, for a gig or an installation, make sure you check out the ACME Supernova. It's a fantastic light.

Product Info: en.acmelighting.com
Distributor Australia and New Zealand: www.ulagroup.com

The Specs

Light source: 1,800W LED engine

Total Lumen output: 65,000 lumens

Colour temperature: 6,700K

Zoom range: 4°-48°

Standard mode: Ra≥72

HCRI mode: Ra≥90

Diameter of frontal lens: 225 mm

4 touch button control panel

LCD display

DMX 512, RDM, Art-Net, sACN

DMX Protocol Modes: 4, Control Channels: 23/32/34/43

Linear CMY colour mixing

Linear CTO colour correction: 2,700K-6,700K

Two colour wheels: 5 colours, plus open, 3 colours + CRI, plus open

Two rotating gobo wheels

Animation wheel

Two combinable rotating and indexable prisms

Frost filter

Framing shutter blades: four blades, each with separate movement and full blackout

Dimensions: Width: 465mm x Depth: 365mm x Height: 830mm. Weight: 52.5kg

by Kurtis Hammer

CLAYPAKY SHARPY X FRAME

The original Claypaky Sharpy has a lot of fans. It is arguably one of, if not, the most well-known and popular fixtures Claypaky have ever released. There have been a number of updates and iterations to the Sharpy family, including now the Sharpy X Frame.

The Sharpy X Frame is a multifunction compact hybrid fixture that can be a wash, spot, or a beam. As the name would suggest, it also features a framing kit, making it one of the most versatile fixtures on the market.

Construction

Claypaky have a long-established reputation for building lights that are well designed, and the X Frame is no different. The handles are in a good spot, and it's easy to move around and hang. It's also an aesthetically pleasing light. This of course doesn't impact performance, but is always appreciated.

For those familiar with the Sharpy family, it is bigger than a standard Sharpy. It would be closest in size to the Super Sharpy or Sharpy Plus. It weighs 28kg; a two person lift. The chassis is made from aluminium and steel with the covers being made out of plastic.

Optics, Colour and Brightness

Sharpy fans will know that the optics are what sells the light. The Sharpy produces a perfectly parallel, laser-like beam. It is also known for the purity of its beam, which is sharply defined and free of any halo or discoloration around the edges. Although the optics were the main selling point for most of the Sharpy family, the Sharpy X Frame goes a few steps further with a much more versatile and feature packed light.

The Sharpy X Frame utilises the same optical system, albeit with a number of upgrades. Sharpy X Frame features a powerful 550W arc lamp. It throws a very intense beam with good colours to match; the warmer colours are especially vibrant. It has an 18,800 lumen output. It sounds like a respectable figure on paper, but when you see it in person you would think it is much higher.

The Sharpy X Frame has a 160mm front lens which features a zoom range from 3° to 52° in spot mode and from 2° to 29° in beam mode.

For colour mixing, it has linear CMY (or subtractive) colour mixing as well as linear CTO. It features a colour wheel too, with 14 colours.

The Sharpy X Frame really does punch above its weight. For the size of the light, it has fantastic output.

Applications and Features

The Claypaky Sharpy X frame has a solid feature set. Most noteworthy would have to be the framing system. It features a four focal plane shutter system. What that means is that you can get a full blackout using one shutter. This system makes it possible to do "curtain effects", offers a way to transition between scenes in a live performance, or create a dynamic visual element during a live show. With the framing system you also have your own set of built-in macros which will save you a lot of programming time. This framing system can do much more than just make a square on the wall.

It has a rotating gobo wheel with eight gobos, a static gobo wheel, four- and eight-facet rotating prisms, linear frost, and a colour system with CMY, CTO, and a separate colour wheel. From a programming and design perspective it gives you a lot of options.

Pan and tilt are both 16-bit, operated with a tilt range of 270° and a pan range of 540°, which is what we have come to expect from a mid-size light. Infinite pan and tilt would have been cool, but are definitely not essential.

The idea behind the X Frame seems to be to make the most versatile light possible. It functions well as a wash, a beam and a spot. You can use it anywhere (inside) that needs a wash, spot, and beam, or just one of these

The Specs

Philips 25R 550W lamp

CRI: 80+

Colour temperature: 6000K

Zoom range: 3° to 52° (Spot mode) – 2° to 29° (Beam mode)

18,800 Lumen output

Front lens diameter: 160mm

Linear CMY colour mixing (brilliant and lighter Magenta in the Sharpy X Frame FD model)

Linear CTO

Fixed colour wheel with 14 dichroic colours

1 rotating gobo wheel with 8 HD indexable and replaceable gobos

Framing: 4 blades with +/- 60° rotation of the full system

Linear heavy frost 5° for wash effect Sharpy X Frame

Linear light frost 2° for wash effect Sharpy X Frame FD

Aluminium animation wheel with continuous rotation in both direction at variable speed

2 prisms (4 and 8 facet) with rotation in both direction at variable speed

Iris: motorised with variable pulse and random effects

Tilt: 270° - 16bit

Pan: 540° - 16bit

Dimensions: Weight 28 Kg. Base 306mm x350mm, 668mm high with vertical head

functions. It will work just as well in a venue or in a production house.

It would work well as a backbone in a venue standard rig. You could use these as your stage wash, for gobo effects, and as beams on the floor.

For the size of the light, it can do a heck of a lot. While the rest of the Sharpy range's main selling point is its optical system, the Sharpy X Frame's main selling point would have to be its overall versatility and the number of things it can do.

Control and Programming

The control and programming side is relatively straight forward. those who have used Claypaky fixtures will be familiar with the onboard menu layout and general look and feel of programming them.

The X Frame is controlled by 5 pin DMX and can also be run via Ethernet. When patching them, there is only one mode, which uses a DMX footprint of 43 channels.

It has its own built in web server and for control protocols it can be operated through DMX512, Art-Net, RDM and sACN – your usual suspects.

They use about 750W of power. This means you could get three to a standard 10A circuit. They also make about 49.3dBA of noise when running, which is on the quieter side.

Verdict

With just about every other lighting manufacturer moving over to LED and having done so for years, it seems an interesting choice for Claypaky, who have made some high quality, high end LED lighting fixtures, to stick with a discharge lamp. There are of course pros and cons to each.

That said, it is a really good light. It is a fantastic all-round fixture and one of the best, most useful hybrid fixtures I have ever come across. It performs as a spot, a beam and a wash exceptionally well.

There is a bit of a stereotype out there that a hybrid can do two or more things but can't do either that well. If you subscribe to this school of thought and would like to challenge it, check out the Claypaky X Frame.

Product Info: www.claypaky.it
Distributor Australia and New Zealand: www.showtech.com.au

by John O'Brien

Prior Preparation and Planning Prevents Piss Poor Performance

The title of this piece allegedly comes from the British military. It has now been appropriated for multiple other scenarios. In the CX world of productions and installs, it is an essential mantra.

Pulling off a successful project like a concert, festival or AV installation requires plenty of good planning. You have to take into account a whole bunch of known knowns, like playing lineup, set times, tech riders, band riders for gigs, and construction schedules, pre-cabling, consultant specs for installs. Then, you need to allow for the potential of another heap of known unknowns, such as punter numbers, weather on outdoor events, configuration changes for shows, or delayed precursor trades, shifted goal posts, and software bugs on the average building site. And that's all without the inevitable unknown unknowns – those circumstances, beyond your control, that you have to deal with anyway. It is always worth having at least 10% in both timelines and budgets for 'stuff that happens'.

It is easy to get complacent though. Why are you bothering with all those phone calls, paperwork and pre-packing when you've done it all before and know in your gut that you stand a pretty good chance of turning up with all your regular kit and just winging it to another successful gig? Mainly to appear both professional and predictable. But also to be prepared for any likely eventuality. When something does go awry and you fix it quickly without skipping a beat ... well, the legend of Keitel's The Wolf is reinforced.

All clients, whether corporate suits with narrowly defined expectations or wild-eyed artist promoters, all expect that you will be able to deliver whatever services that you have promised. They don't care how you get to that point. And when it's written in contract, you are even more liable to ensure certain levels of supply and performance.

Gig Planning Tricks

Having enough spares in the rig for any equipment failure is a no brainer. Getting the quantities of said spares right is the trick. There's no point lugging a full duplicate rig 'just in case', unless you are on a mission critical live broadcast that can budget for such a redundancy. You are getting paid to supply a full backup inventory, right? Otherwise, just chuck in the regular spares of leads, DIs, batteries and gaffa tape.

If a widget goes pear shaped 10 minutes before the main act is due onstage, you better have a replacement unit nearby. If not, you'll have to bypass said sad unit (and all that it adds to the gig) quick smart. You'll also have to explain to management why the Huge-o-tron-3000 didn't work on the night. Around this time, there will likely be discussion about dollars and discounts. Not usually in your favour either...

Install Gotchas

The more relaxed timeline of installs means you can occasionally afford to leave a few things in the shed as you are heading to site. If it is a multi-day or longer installation, there is always adding it to the list for tomorrow.

If you are on a remote site with a limited access window, you are better off treating it like a gig and preparing accordingly. Assume that everything that can go wrong will and have a fallback ready to enact. Another few minutes at the factory are better than many hours wasted getting back from site. On these jobs, a few spare units never hurt.

A well set-up work vehicle should already have all required tools charged, cleaned and serviced. Organiser boxes with a good range of connectors and other consumables are a must. Spare cable rolls, conduit, cable trays and other ephemera are always handy.

Installations require a clearly defined set of deliverables, critical dependencies and mutually agreed timelines. The bigger the project, the more zeroes on the end of the budget and the more detailed the planning and upfront paperwork. Detailed GANTT or Pert charts, Kanban boards or the like are powerful but require much precursory input to be effective.

The potential for scope creep is a particular trap with residential installations. Successfully managing this comes down to successfully managing your client. Good luck with the entitled nouveau riche ones. Plan for this tricky delay to happen more often than not with this demographic.

Shows are relatively easy to re-adjust on the fly. If an act is delayed in transit, a quick rejig of the running order is annoying for stage crew but not a major deal breaker. When performers get sick, it is not uncommon for a crew member or member of another band on the bill to step in at the last minute to cover. Artistic success may vary here but the show goes on.

Planning for the unplanned

It is almost certain that there will be some detail or occurrence that is unexpected. Sometimes it is an inconsequential blunder like 'oops, wrong cue' and can be laughed off with a wry smile. Other times, a big scary disruption can arise seemingly out of nowhere, threatening to bring the whole enterprise crashing down without your immediate input.

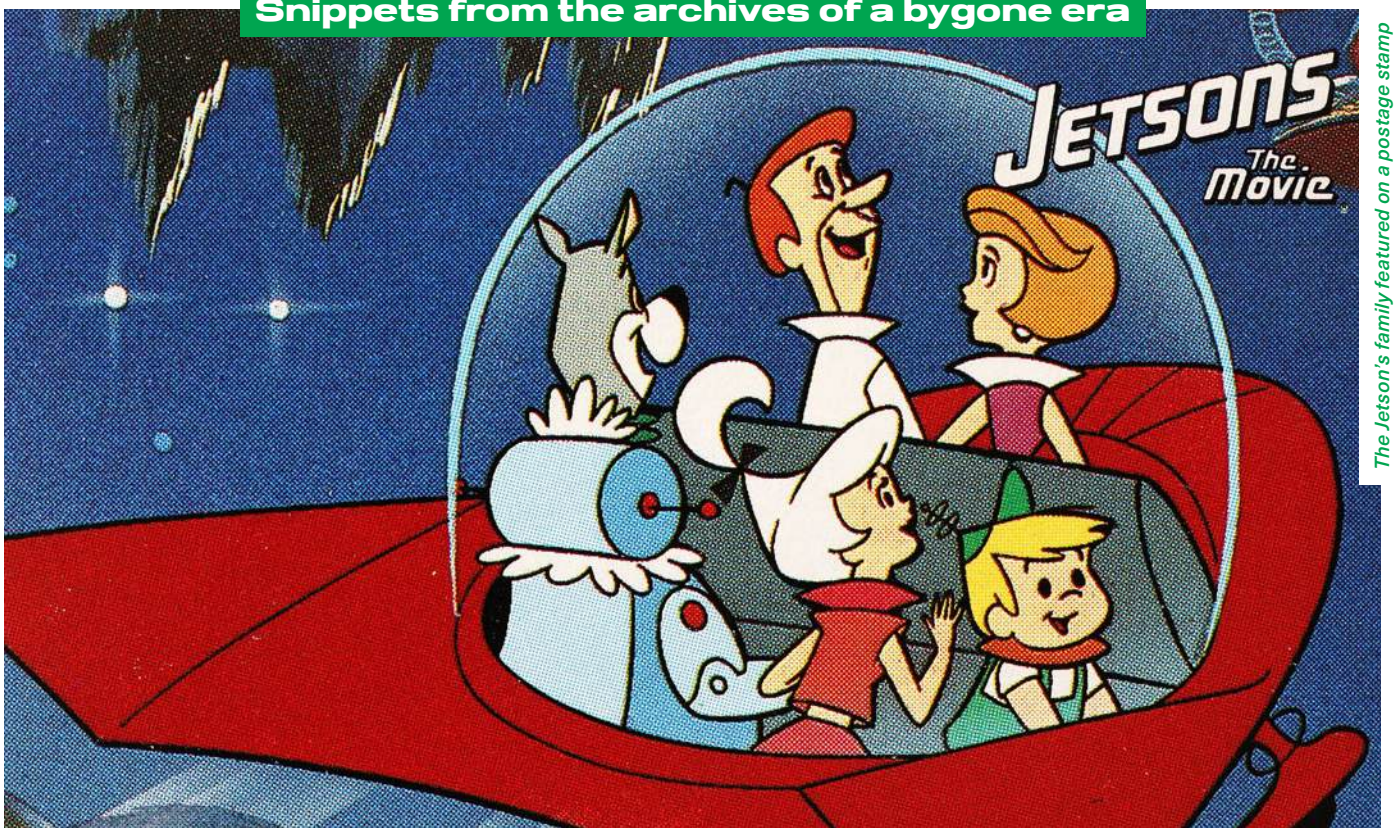
This is exactly where contingency planning kicks in. You did plan for the known unknowns didn't you? If you have gone through the risk assessment process in granular detail, you should have a backup ready to kick in on short notice for most potential incidents. Don't panic, identify the issue, enact the plan and trust in the benefits of your foresight.

Once in a while, it is even greater than that. Catastrophic stage failures have been all over the news for a few years. Thankfully, this has led to far better engineering and procedures on outdoor stages worldwide. Unfortunately, the odd show still cuts corners, falls over and we all get tarnished by its unsafe reputation. From the frying pan to the Fyre we go.

None of this is new or news. It has all been covered before. Tiredness, laziness or lack of budget can all lead to shortcuts. Experience would dictate that everything that can go wrong will eventually do just that ... for those who fail to plan.

by Brian Coleman

Snippets from the archives of a bygone era



The Jetson's family featured on a postage stamp

Baby Boomer in a Technological World:

GAME OF PHONES

In my final year of high school, 1964, a teacher asked the class to write an essay about the technical advancements they thought the future would deliver. The essays were then read aloud, with most students envisioning flying cars, moving footpaths, protein pills replacing balanced meals, interplanetary space travel, AI robots, and the video phone. Almost all of these futuristic predictions were lifted from the 60s animated television series, The Jetsons. While the video phone, as predicted by Nikola Tesla in 1926, has become a reality, no one could have foreseen that the smartphone would mesmerise future generations and even make its way into the world of pro audio and video.

Baby Boomers, now shortened derogatorily to 'Boomers' by successive generations, are often accused of rejecting technological change at every turn. It could also be argued that the current generation has been rendered pawns on the technological chessboard, where a smartphone is considered smarter than some of its users. But one of the pitfalls of categorising people into groups is that the subgroups of academics, non-academics, those with technical prowess, and non-technical individuals are all incorrectly thrown into the same generational mix.

In 1966, working as an insurance clerk on the sixth floor at the offices of the NRMA at 151 Clarence Street, Sydney, I'd send requests for client and insurance policy information via the pneumatic tube transport (up the chute) to the 7th floor, which was the EDP (electronic data processing) department. The floor was devoted to the use of punch card machines and magnetic tape for digital storage of client data. It was in the EDP department, apart from the rows of rotating punch card machines operated predominantly by women, that I witnessed a room full of magnetic tape drives transmitting information to automated typing machines that were typing out insurance renewals. Additionally, all the elevators in the building were operated by touch screens. This was the time prior to Sgt. Pepper's, when the Beatles were recording their Revolver album on a 4-track tape recorder. Of course, all this discourse serves to emphasise that technical change did not suddenly manifest in the new millennium.

The rejection of any so-called technological advancement can leave you branded as a Luddite that rejects all technological change, including devices that create regressive practices that actually slow down progress. Since the 80s, I've been sceptical of devices that, in my opinion, tend to have a regressive nature. The fax machine was a clever way to quickly send a copy of a document from

IBM 1401 Data Processing System C. 1959: *The Computer History Museum houses one of the largest collections of computing artifacts in the world*

one place to another over a phone line, but it considerably slowed down the workflow in the offices of Audio Telex, where I worked as a sales engineer in the 90s.

Audio Telex was the largest supplier of audio equipment in Australia. We took orders and gave technical advice over the phone to audio installers. Often, after long technical discussions with installers, they would say, "Thanks, can you fax all that to me now?" This was a mundane, time-consuming exercise that considerably slowed down the workflow. The ultimate lethargy came when an installer asked me to fax a phone number to him, which I refused, instead advising him to invest in a pen or a pencil.

I tried many times over a five-year period to leave Audio Telex, but I couldn't even get a job interview after mailing countless job applications. In desperation, I asked a mate who worked in a government HR department for advice. "It's your age, mate," he said, adding, "It's the only area left where employers can discriminate." I was only in my mid-40s. There was a large audio corporation at the time that didn't employ anyone over thirty-five years of age, and the Australian Age Discrimination Act didn't eventuate until 2004. However, companies soon began to find workarounds to continue age discrimination, like questions on job application forms that asked for the year you left school and your age at the time; primary school mathematics could then reveal your age.

The scanner may have replaced the fax machine, but even scanners are now playing second fiddle to smartphones that utilise photographs and screenshots, and since the file manager is rarely used on a smartphone, these images are mostly haphazardly corralled amongst thousands of other images and often lost completely. I'm now finding that obsessive smartphone users are reluctant to use email and email attachments, so I get a plethora of information with links sent to my mobile phone; it's like I'm being forced to use the device when I prefer to use my PC.

Smartphone technology for pro audio can be as innovative as connecting a lavalier and other microphones via an app for live recordings. In certain scenarios, it can even serve as the primary microphone. Rode has employed smartphone technology in its smartLav+, Wireless Micro, Wireless Go, and other microphone applications. I've used many Rode products, from my trusted NT2 condenser microphone purchased in the 90s to the dynamic microphones and Roadcaster Pro production mixer that I use today in my community radio programme. I haven't yet delved into the world of smartphone recording, mainly because I'm uneasy about the deluge of apps that have descended on the devices, which now range in the millions. Additionally, I find some of the functions and mainstream uses of the smartphone as regressive. Apart from a generation's addiction to social networks, I find it unsettling to watch someone fumble with a smartphone to produce a driver's licence or pay a grocery store bill when a piece of plastic can suffice.

Fortunately, the age of information rescued me from my mundane sales job at Audio Telex. We now had word processors, email, and the Internet. So I scripted all my job applications in Microsoft Word 2 and sent them via email as file attachments. These were early days for word processors and file attachments, and it gave potential employers the impression that the job applicant was on board with the new technology. This was also the era of the audiovisual explosion with PowerPoint 95 and PowerPoint 97. Not only did I start to get job interviews, but I headed directly for the audiovisual market, where tech-savvy applicants were highly regarded. By the late 90s, I was managing all the audiovisual at Macquarie Bank and their holdings at 10-20 Bond St., Sydney.

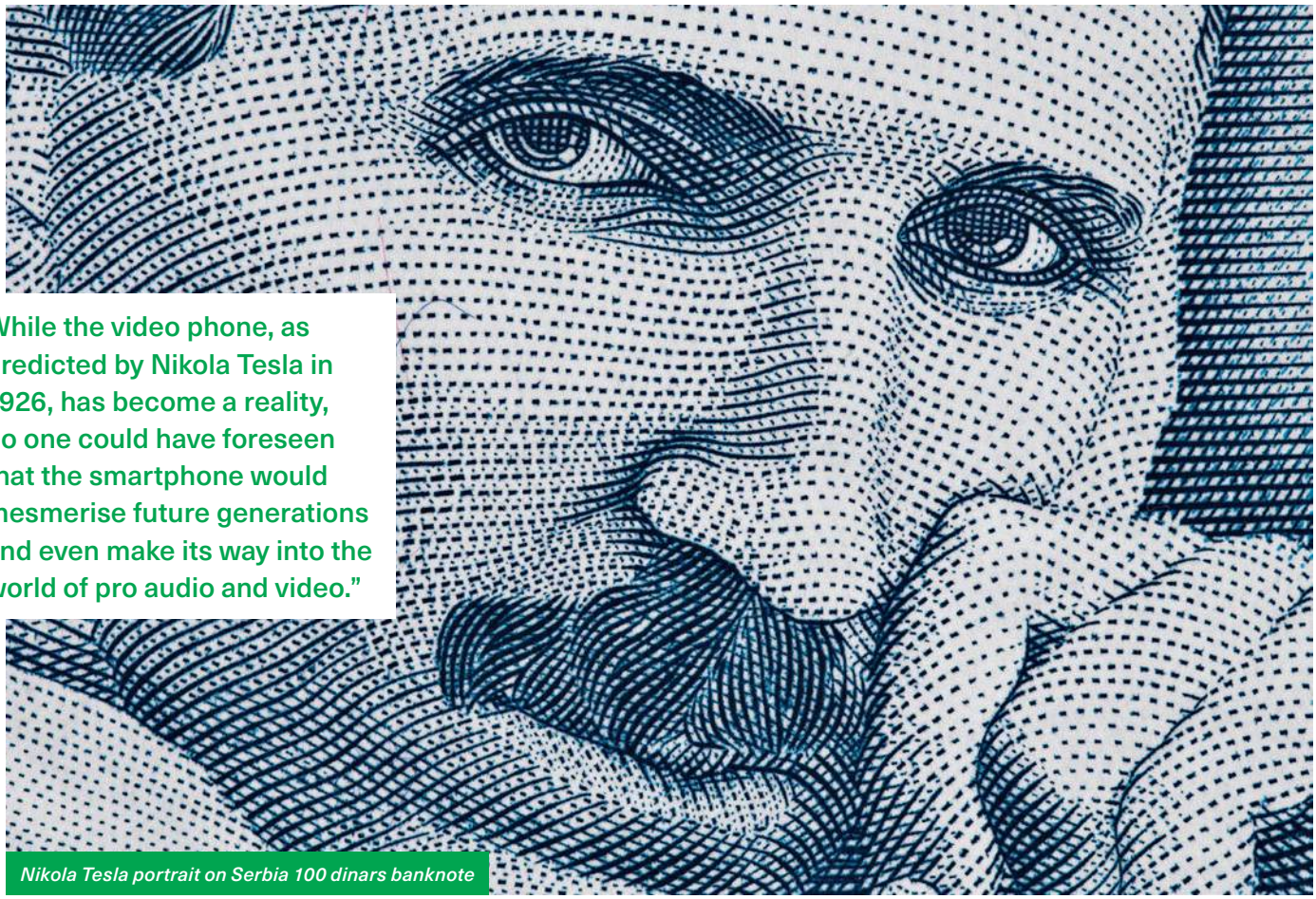
The technology age again smiled upon me in 2003 when I applied for the position of editor

at BEN (Broadcast Engineering News). The publisher, who had created the magazine in the 80s, was in the process of letting go of the reins, but before handing it over to the media department, he insisted on a tech-savvy journalist to head the magazine. I then had to survive an interview with the new publisher waiting in the wings, who wanted to see an example of something I'd written, as he knew nothing about broadcast. Looking back, it seems farcical, but I gave him a comedy screenplay I'd written. He liked it, and I got the job. And so it went, that all the publishing staff at the magazine thought that I was tech-savvy but a fledgling journalist, and the broadcast technicians that I interviewed and wrote about thought that I was proficient in journalism but had a few more tricks to learn about broadcast. Since I had to work amongst more clowns than you'd find in a Ringling Bros. Circus, I felt justified in performing my balancing act.

Without the constant flow of information from Reuters and Associated Press subscriptions, as well as the numerous press releases from distributors and manufacturers of broadcast equipment, I'm not sure how I would have managed. If I received a good article, I could then look for a good image online. If I received a great image without a detailed piece, I could either look it up online or get in touch with the source.

All of my resources were made possible by the information age. However, having used a mobile phone since 1992, I was conscious of becoming a slave to it. There was a phone with voicemail at the office, and I had email and a home phone. After about 18 months, the publisher asked me why I didn't claim mobile phone expenses, and he was stunned when I said, "I don't own a mobile phone."

Chicago-born electronics engineer Martin (Marty) Cooper, while working at Motorola, developed the first hand-held mobile phone in 1973. He is considered the father of the handheld mobile phone. Born in 1928, Cooper is 96 years old, and due to the current social and cultural climate, few people have heard of him. He said of the smartphone, "My most negative opinion is we don't have any privacy anymore because everything about us is now recorded someplace and accessible to somebody who has enough intense desire to get it. You should not be a slave to your telephone. The technology is there to serve you, not the other way around."



"While the video phone, as predicted by Nikola Tesla in 1926, has become a reality, no one could have foreseen that the smartphone would mesmerise future generations and even make its way into the world of pro audio and video."

Nikola Tesla portrait on Serbia 100 dinars banknote

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