

Lighting & Sound INTERNATIONAL

January 2000

The Entertainment Technology Monthly

House Clearance

- The new £214 million Royal Opera House

Designer-Led

- Leon Lenik's Area nightclub in Watford

Apocalypse Now

- One-off special: The Tube

Writing to Vermeer

- Peter Greenaway's ambitious new production

Girls & Boys

- On Tour with the Spice Girls and the Pet Shop Boys

PLASA

PROFESSIONAL LIGHTING
AND SOUND ASSOCIATION



124 MANOR WINDOW

*Moonlight patterns the flagstones
of the Great Hall.*

Dusk falls softly through the aged panes.

130 HALLWAY WINDOW 1



Hot mediterranean sun

125 VENETIAN ARCH

dapples the cool tiled floor.

*A pool of early morning light
breaks through the gloom of the attic.*

128 ROUND WINDOW



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Lighting & Sound INTERNATIONAL

January 2000 Volume 15, Issue 1



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DAILY NEWS SERVICE - www.plasa.org/news

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Andrew Lloyd Webber Buys Stoll Moss Theatres

Lord Lloyd Webber is to take control of 10 of the West End's leading theatres in a deal said to be worth £85million. The purchase of the Stoll Moss group of theatres was carried out by Lloyd Webber and a City financiers NatWest Equity Partners, in order to prevent the venues from falling into the hands of 'money men'.

The Stoll Moss theatres were put up for sale last year (see L&SI August 1999) by Australian businesswoman Janet Holmes a Court, and became the subject of a bidding battle between Lord Lloyd Webber and US businessman Max Weitzenhoffer. The 10 theatres involved in the deal are The Lyric, The Apollo, The Gielgud, The Queen's, The

Duchess, The Theatre Royal Drury Lane, Her Majesty's, The London Palladium and The Cambridge.

Speaking on the BBC's Breakfast With Frost programme, Lloyd Webber said: "I think a lot of people have been worried the Group would fall into the hands of people who are money men, and who wouldn't necessarily understand that the thing about theatre is that you have got to take risks." He added: "The way to make theatre work is not to run it as a business, in a way."

The three West End theatres owned by Lloyd Webber's Really Useful Group - The Adelphi, The Palace and The New London, will also be incorporated into the new, business, which will reportedly be called Really Useful Theatres.

Vari-Lite Europe to be Sold

PLASA Publishing has learnt that VLPS (Europe) is to be sold to a European-based consortium. Although the move has not been officially confirmed by parent company Vari-Lite International Inc. VLPS Europe is understood to have all but completed the paperwork for a management buy-out backed by a venture capital company based in Sweden. A letter of intent is in place and confirmation of the deal is expected in the next few weeks. Vari-Lite Europe, together with Theatre Projects/Concert Productions and Brilliant Stages, became part of the Vari-Lite Inc Group in 1994 when the Samuelson Group sold off the companies. It later merged with TP to form VLPS London.

Technotronics in Liquidation

PLASA Publishing has learnt that Technotronics, the West-Yorkshire-based manufacturing company who specialised in lighting effects and control equipment, were declared insolvent at the close of last year.

Insolvency practitioners are now dealing with the company's affairs and a meeting of creditors is to be called shortly. Earlier in 1999, the directors of the company established a new company - TTL Distribution Ltd - to help promote and sell its lighting range, but also to distribute complementary products to the trade - principally those of Ultrak UK and Chauvet. TTL Distribution Ltd continues to trade from Technotronics' premises.

Millennium . . .

Given the extensive nature of events surrounding the Millennium, we've decided to hold off coverage until the next issue at which point we shall probably go barmy trying to make sense of it all. If you were involved in any of the events celebrating New Year's Eve, please pick up the phone and let us know ASAP.

Don't forget you can also keep a daily check on the industry news by logging in to the PLASA Publishing website at . . .

www.plasa.org/news



Terra-Fill

The Colour-Fill range from Artistic Licence represents true innovation in LED based Luminaires. The latest addition to the range will preview at the Paris SIEL show: Terra-Fill is a robust, LED luminaire designed specifically for direct burial.

Terra-Fill TF250: Terra-Fill is the latest addition to the Colour-Fill range of digital luminaires. Based on red, green and blue light emitting diodes, Terra-Fill produces in excess of 16 million colours. The product is IP67 rated and designed for direct burial whilst withstanding both pedestrian and motorised traffic. The range of applications is immense, including street lighting, illuminating foliage and patio displays.

Power-Pipe: The Power-Pipe is an intelligent power supply used to both power and control Colour-Pipe, Water-Fill and Terra-Fill.

Colour-Fill CF250: The CF250 is the very latest technology in stage and architectural lighting. Based on coloured light emitting diodes, Colour-Fill provides noise free colour changing at low power and with exceptional lamp life. The lamp operates in either DMX512 or stand alone mode. Stand alone operation allows multiple lamps to perform a range of pre-programmed effects including rainbow sequences.

Water-Fill WF250: The Water-Fill is a waterproof LED fixture. The environmental rating of IP67 allows it to operate submersed to a depth of one metre.

Colour-Pipe CP1000: The Colour-Pipe is a linear array designed for cove lighting and hidden lighting effects.

Colour-Flex: Artistic Licence have recently developed a method of producing flexible LED arrays. Colour-Flex is manufactured to order for custom installations. Why not call to discuss your project!

Internet: ArtisticLicence.com Email: Artistic@csi.com

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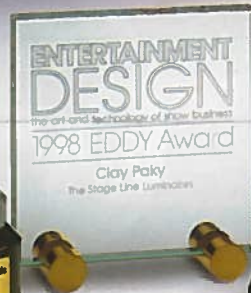


STAGE LINE
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STAGE COLOR 300
1999 ETA AWARDS
Budget Lighting Effect



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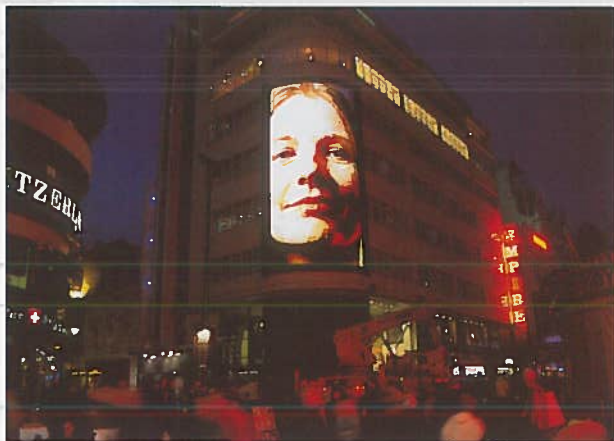


PROFESSIONAL SHOW LIGHTING



Pixelite Unveils World's First Multi-Media Interface Video Screen at Home

Pixelite, the video screen sales division of Avesco plc, scooped the most challenging outdoor video screen contract of last year as its very first installation order - with a unique curved design on the front of the recently opened Home nightclub in London's Leicester Square.



Owners the Big Beat Group - operators of highly successful venues in Sydney and Scotland - planned Home as the capital's most exclusive leisure venue. The first Pixelite PXT-1204 LED screen - using modules designed by sister company System Technologies in Belgium - displays digital art on the building's facade overlooking the famous square.

Uniquely, the 11.52m x 5.76m (portrait format) screen curves through a 93 degrees convex plane, with a 12mm pixel pitch and a total of 960 vertical lines of resolution by 480 horizontal. In all there are almost two million LEDs in the screen. Because of its sheer size and resolution, the GMI screen at Home can show up to 12 images at any one time.

Spice Girls Rigger Dies

A 25-year-old freelance lighting crewman was killed in the early hours of Thursday 16 December when he fell more than 80ft during the breakdown of the after-show party for the Spice Girls following their recent sell-out performances at Earl's Court.

PLASA Publishing has learnt that the technician, one of the crew working for lighting supplier Spot Co, was not de-rigging the stage in the main arena, but working on the second level where the after-show party had been held. He was taken to Chelsea and Westminster Hospital. A spokesman for Earls Court confirmed that the fatality had occurred at 3.50am Thursday morning. Earls Court management, in conjunction with the relevant authorities, is in the process of a thorough investigation of the incident. A further statement is expected shortly.

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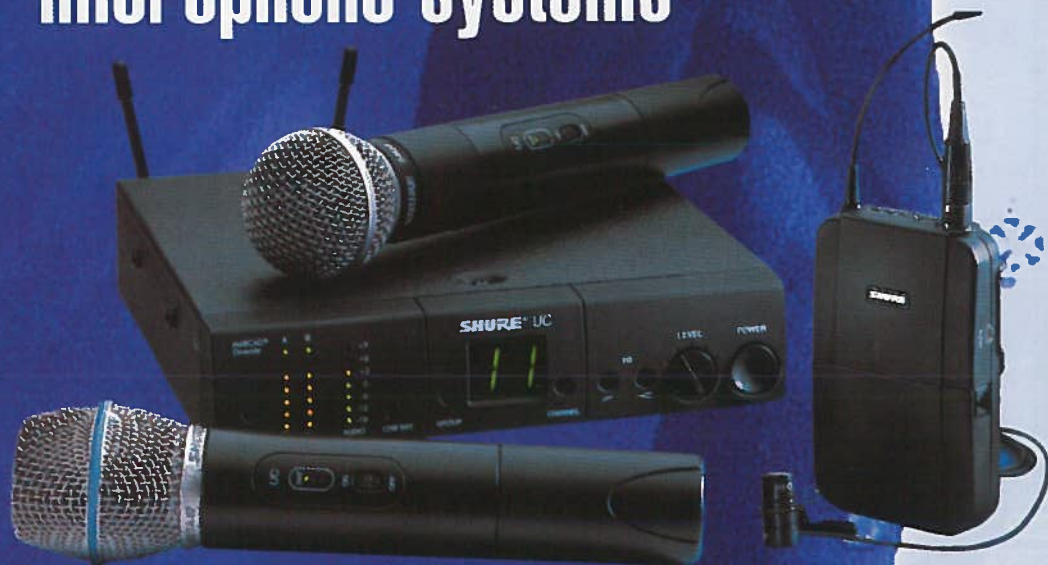
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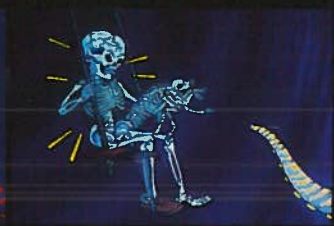
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The Offspring



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Same Scenery Under UV Light

Scenery Under Ambient Light

Same Scenery Under UV Light

Creation

Alladin's Lamp



Scenery Under Ambient Light

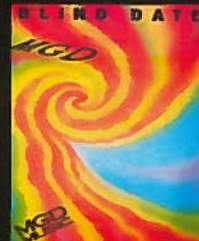
Same Scenery Under UV Light

Scenery Under Ambient Light

Same Scenery Under UV Light

Creed

Miller Genuine Draft



Scenery Under Ambient Light

Same Scenery Under UV Light

Scenery Under Ambient Light

Same Scenery Under UV Light

John Fogerty



Scenery Under Ambient Light

Same Scenery Under UV Light

Same Scenery Under UV Light

Nintendo

The Castle



Scenery Under Ambient Light

Same Scenery Under UV Light

Scenery Under Ambient Light

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Woman of the Dream

Texas Tech University



Scenery Under Ambient Light

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TO
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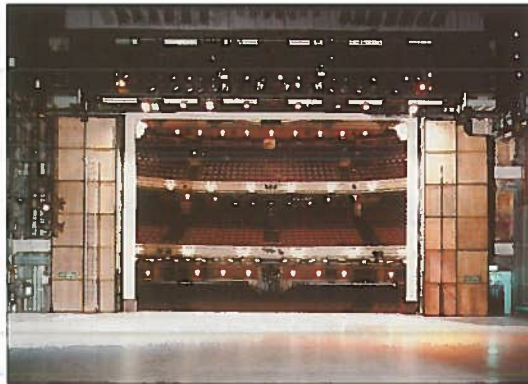
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2001 - The Showlight Odyssey Continues

Established in 1981, when the first event took place at London's Barbican, Showlight exists specifically to give people time to talk, to discuss ideas and to mix with some of the best-known names in the lighting industry. Organised by lighting professionals for lighting professionals, Showlight takes place every four years, always at a different venue and, with the same winning formulae as previous events in New York, Amsterdam, Bradford and Ghent, the sixth Showlight will take place in 2001 in Edinburgh on May 21, 22 and 23.



international mix of manufacturers (but without the sales hype!) and lighting practitioners, Showlight 2001 promises to be, like its predecessors, a diary date not to be missed.

If you would like further details on how to register for Showlight 2001, or would like to be kept informed of speakers and exhibitors as they are announced, contact Ruth Rossington, Showlight 2001, 38 St Leonards Road, Eastbourne, BN21 3UT.

Showlight (UK) +44 (0)1323 642639

Over the three days you will have the opportunity to meet some of the world's top names from theatre, television, film and even architectural and themed lighting. Not only will they pass on the fruits of their experience during the conference sessions, but you may find yourself sitting next to one or two at dinner! A comfortable and

Web Five

If you're surfing the net you may like to check out the following web sites

5

1. How, when and why dozens of famous people died, where they are buried and lots more grim info.
www.findadeath.com
2. US-based website alerting users to a variety of web-based fraud.
www.scambusters.org
3. Common errors in English - piss off your friends by correcting them on their misuse of the English language.
www.wsu.edu/~brains/errors
4. Spend hours watching live pictures of events and places all over the world, courtesy of hundreds and hundreds of webcams.
www.earthcam.com
5. If you're the type of person who spends a ridiculous amount of money on hamsterdance merchandise, go and waste some more at the Hamster Republic Homepage.
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CATALOGUE COLLECTION



See pages 82-87
for L&S's NEW LOOK
Catalogue Collection

New Life for Light Console

Jim Laws and Adam Grater with Fred Bentham's 1950 Light Console originally installed at London's Royal Festival Hall. Having been part of Laws' collection for some 25 years, the console is now being refurbished by DHA and will be on display in their board room.



AC Inc's Distribution Deals

California-based AC Lighting Inc has announced new product distribution deals with MA Lighting, Zero 88 and Selecon.

AC Lighting Inc will be distributing MA's range of control consoles exclusively throughout North America and Mexico. Included within the MA portfolio is the new grandMA console, which won a Product Excellence award at the 99 PLASA show, and then followed it up at LDI by being awarded an honourable mention in the awards category of Lighting Product of the Year (Entertainment). Topping the year off, the desk also won the 1999 EDDY award for Lighting Control Console Of The Year from US magazine, Entertainment Design which was presented at the recent Broadway Lighting Master Class.

Established manufacturer Zero 88 is no stranger to awards, with its latest lighting control console, the Illusion, also scooping a PLASA Product Excellence Award this year. AC Lighting Inc will be distributing the Illusion along with the Level Plus, Alcora and Elara console ranges, topped off with the Linebacker DMX tester and back-up unit exclusively throughout the United States and Mexico.

New Zealand-based Selecon has also appointed AC Lighting Inc as a US distributor for its comprehensive range of theatrical fixtures, which includes the new Pacific 'Cool' range. Available in both fixed and zoom formats, these ellipsoidal fixtures are available with a variety of lamp sources, including both tungsten halogen and discharge.

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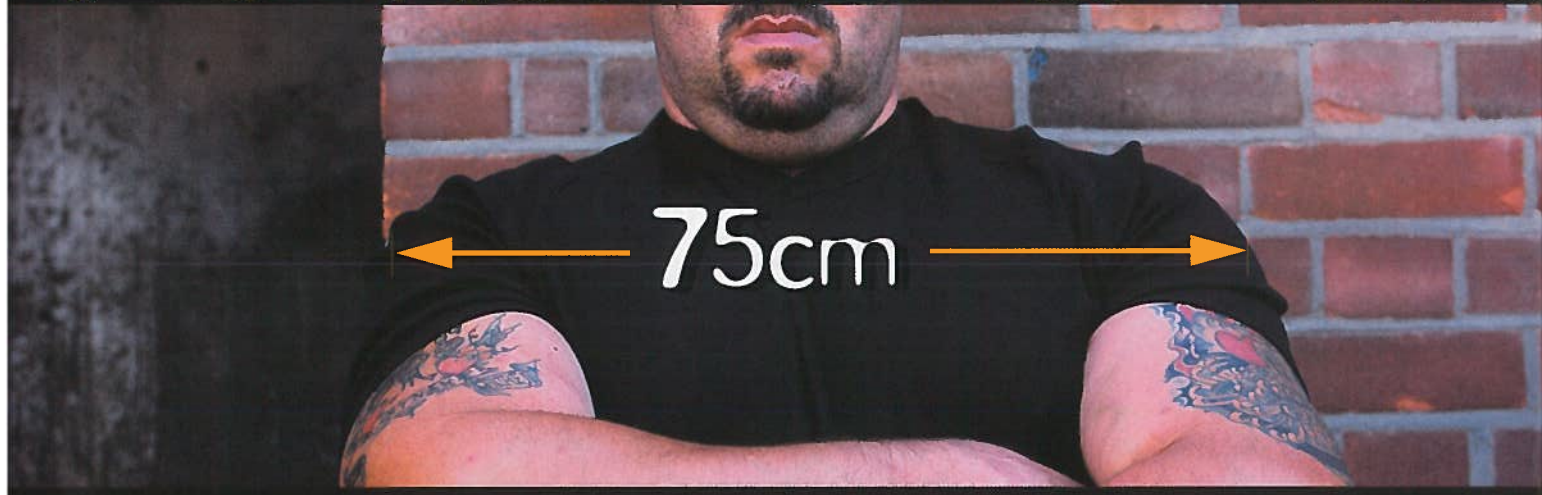
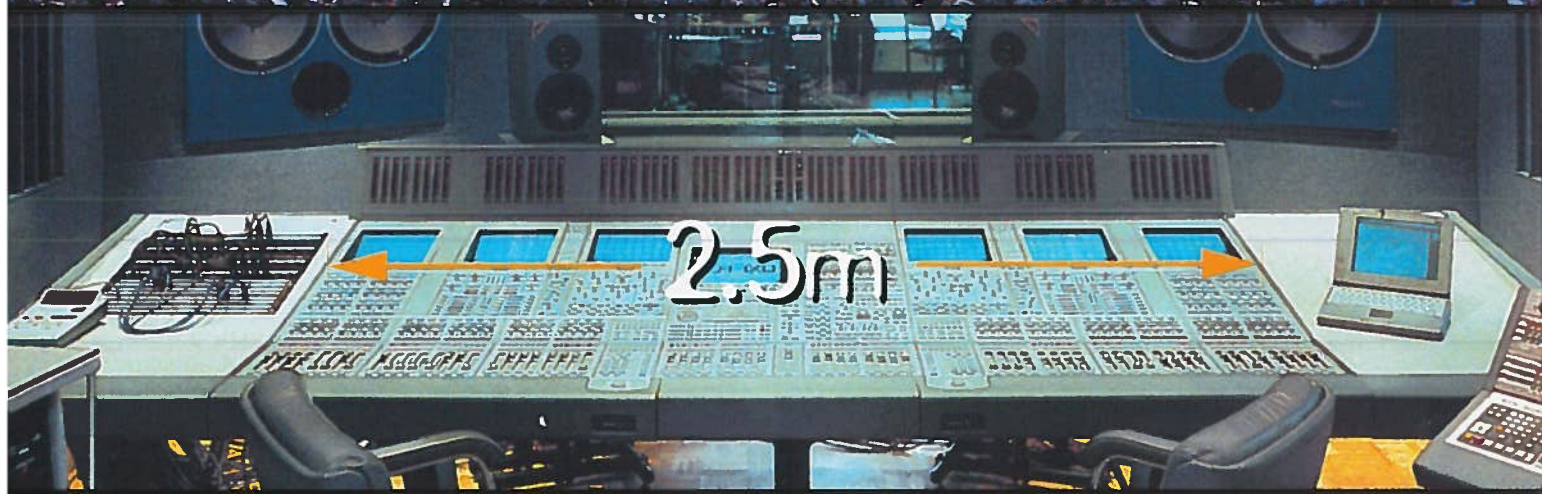
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Early December saw the official opening of GVC Laserpoint LLC's new European Headquarters.

GVC Laserpoint Opens New European HQ

A team of seven will be based at the new premises in Thriplow, just outside Cambridge, which has demonstration facilities and an R&D department. The company is the new trading name for the former Laserpoint Communications Ltd, which was purchased in March 1999 by US-based General Video. In the interim, the company has been working on its range of videowall processing and video products for the control and delivery of video, multi-media display and digital signage. Recent additions to the range include the PIP Composer, Aurora 2000 and QT2 dual live 2x2 - all videowall processors. At the launch, PLASA Publishing joined with members of GVC's US and UK teams and representatives from the company's European dealers and distributors.



Richard Wright, general manager of GVC Laserpoint (left) is pictured with Stuart Liddle of Philips (centre) and General Video Corporation chairman Justin Korn.

Up the GarryOwen for SSE

In an unusual departure for the company, SSE Hire of Birmingham, better-known for its work in the live touring market, has just completed a benchmark Nexo Alpha E installation into a large, purpose-built club/live venue in Birmingham - The Garryowen.

The system utilises seven pairs of Alpha E, each comprising an Alpha E-M mid-high and an Alpha B1-18 bass cabinet, powered by Crown MA3600VZ amplifiers. The main stage area is covered by two pairs per side, while for club nights there is a further pair left and right at the rear of the hall.

A long bar area adjacent to the main room is covered by another pair. With the exception of the bar area, and the subs which fit neatly under the stage, the entire system is flown.

FEATURES IN THIS ISSUE

"The rebuilding of one of Europe's finest opera and ballet houses has attracted a great deal of public controversy. However, no-one who has ever set foot behind the proscenium of the original 1855 house could be in any doubt that a re-fit was urgently needed."

Mike Mann - The Royal Opera House, London - page 44

Pacific 90°

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News Round-Up



They came, they saw, they listened, they learnt! From 9-12 December, 125 lighting enthusiasts were able to benefit from the experience of some of the leading names in theatrical lighting at the Seventh Annual Broadway Lighting Master Classes in New York City.

Conceived by legendary Broadway figure Sonny Sonnenfeld, the Master Classes are now run by Intertec Publishing and led by the leading Broadway lighting designer, Jules Fisher. Fisher himself opened proceedings with a fascinating talk that described his approach to theatrical lighting, while at the same time clearly demonstrating his on-going passion for the art.

Lighting designer Chris Parry came equipped with props - a mini-rig lighting equipment he has found useful over the years - as well as slides showing that equipment put to use in actual shows. Leading projection designer Wendall Harrington also - unsurprisingly - brought slides, these helping her to chart the development of the projections for Chicago Opera's new operatic version of Arthur Miller's play *A View from the Bridge*.

Lighting designer Beverly Emmons led sessions on 'issues of style in lighting design' and, with Clifton Taylor, 'colour in lighting'. Production electrician Steve Cochrane discussed the practicalities of getting a show on, while Vivien Leone spoke about the documentation now required to allow shows to be maintained and recreated with examples from the newly-opened Broadway production of *Saturday Night Fever*. Fisher's long-time design partner Peggy Eisenhower spoke about 'cuing for musicals' and 'working with followspots'. A wide-ranging discussion section led by set designer Ming Cho Lee ensured that lighting was always considered in the wider context of stage performance as a whole.

Broadway Lighting Master Classes '99



As in earlier years, Master Class participants received tickets to one featured Broadway show which then formed the basis of a number of sessions. This year's show was *Cabaret*, lit by Eisenhower with Mike Baldassari; the pair, later joined by other members of the production team, led a session discussing their work.

Complementing the Master Classes was a Manufacturers Showcase, with involvement from White Light, who distributed its Training Initiative Resource Packs to participants, and AC Lighting, among others, who displayed a number of product lines. A panel discussion featured the nominees for this year's Wally Russell award (Dave Cunningham, Stan Miller, Sonny Sonnenfeld and Don Stern, led by Steve Terry) and the presentation of the 1999 EDDY Awards. Those interested in the latest automated lighting technology had an additional workshop, allowing them to gain hands-on experience with a range of current lighting consoles.

The Broadway Lighting Master Classes seemed to be greatly enjoyed by those who attended. They and others will have the chance to return for more towards the end of 2000; dates for the Eighth Master Classes are yet to be finalised, but details will be available at www.etcnyc.net.

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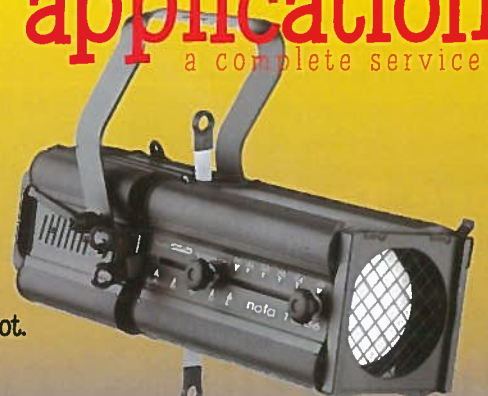
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Orbital Sound Expansion



Orbital's Dominic Rozendaal (left) and Tom Byrne (centre) with Andy Hilton, managing director of Totally Brilliant Software

Orbital Sound has moved into new premises in Brixton, London, more than tripling the potential size and capacity of its facility.

"Considerable investment in making all our departments networked and on-line was imperative, and has formed the foundation of our expansion," explains Orbital managing director Chris Headlam.

The company aims to provide a complete support mechanism for producers, production houses, choreographers, sound designers, and sound engineers alike. On completion, the new facility will extend from the elegant four-storey Victorian building where the sales, marketing and accounts departments are based, into the spacious adjacent buildings. This area will house full pre- and post-production recording suites, rehearsal rooms and warehouse space.

The warehouse will accommodate the company's extensive inventory of pro audio equipment, along with its technical support division. The sophisticated stock control system was designed specifically for Orbital by Andy Hilton of Totally Brilliant Software.

Martin's German Subsidiary

Martin Professional has entered into an agreement with the owners of its German distributor to establish a joint venture, creating a new Martin subsidiary - Martin Professional GmbH. Martin will hold 51% of the shares in the new operation, which officially began trading on January 1st 2000. Located in Karlsfeld, near Munich, this latest venture brings the number of Martin subsidiaries to six.

FEATURES IN THIS ISSUE

"Music fans who are old enough to remember the Friday night favourite, broadcast live from Newcastle, will recall the quirky presentation . . . how times have changed. The Tube late nineties-style, or 'Apocalypse Tube' as the three-hour one-off was dubbed, is slicker, more hi-tech, and for those with the technology at home, benefiting from fully digital sound and picture."

Caroline Moss - The Tube, Newcastle - page 65

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News Round-Up



No.30 Berkeley Square



Benny Ball Lighting Design and Rob Olins Architectural Sculpture first combined their skills when working on the 90m high atrium feature at the Jumeira Beach hotel in Dubai (see L&S July 1999).

Following the success of that project, it became clear to both Ball and Olins that the specialities of the two companies should be brought together again. The pair subsequently worked on a couple of proposals together which, although they never came to fruition, confirmed their belief that partnership offered exciting opportunities.

The ideal project arose with Olins' proposed sculpture for 30 Berkeley Square in London. To light the sculpture Ball, put his theatrical background to one side and decided to use five exterior Color Kinetics LED sources and eight Irideon AR5s. The AR5s were positioned on opposite sides of the foyer interior with five on one side and three on the other. The Colour

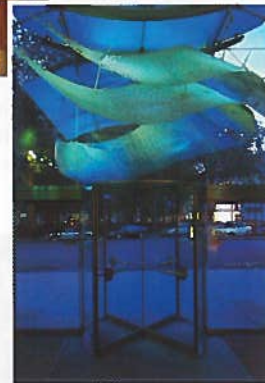
Kinetics in similar positions, but on the exterior of the building. The sculpture seems to pour itself through the glass front of the building and that quality has been enhanced with the addition of the changing colour states and movement of the lighting.

BBLD was the first company to specify the exterior version of the Colour Kinetics in the UK - AC Lighting came up trumps and supplied the kit one month before the official UK release

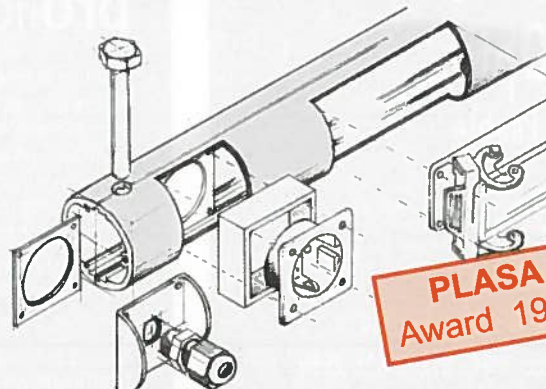
date. The control system used was Irideon's own, tucked away in the central control room, along with the existing BMS and programmed from a PC laptop. White Light North's projects department managed the whole installation, with Jeff Demain and John Anderton attending in person to ensure everything went smoothly for the

programming. Rob Olins was also present, casting his beady eye over the programming and focusing, which was completed in one long evening session by Benny Ball and Stanley Wilson, the pair, incidentally, rebuked for contravening the official policy of the building with the assistance of a bottle of favourite red wine.

The partnership are now involved in two more projects together, one in the north of England and one in Amsterdam, both are currently at the proposal stage.



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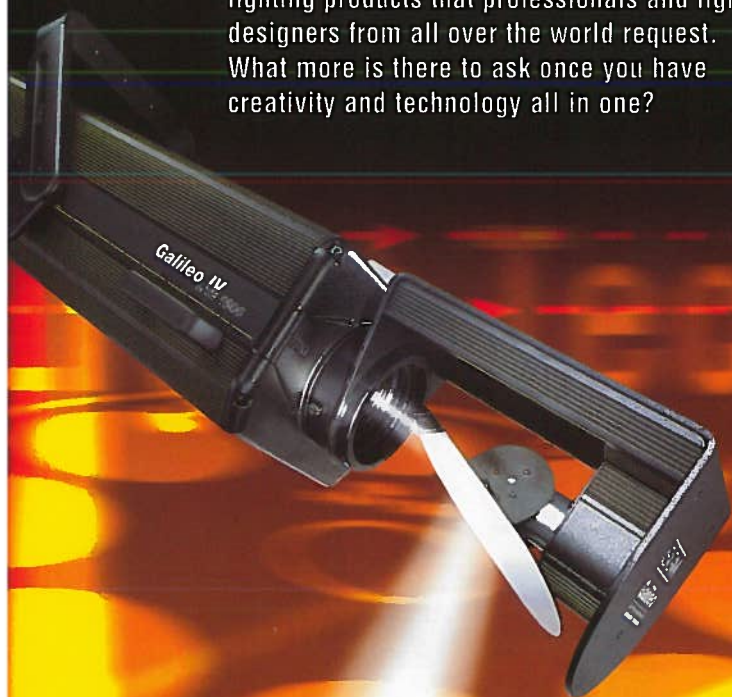
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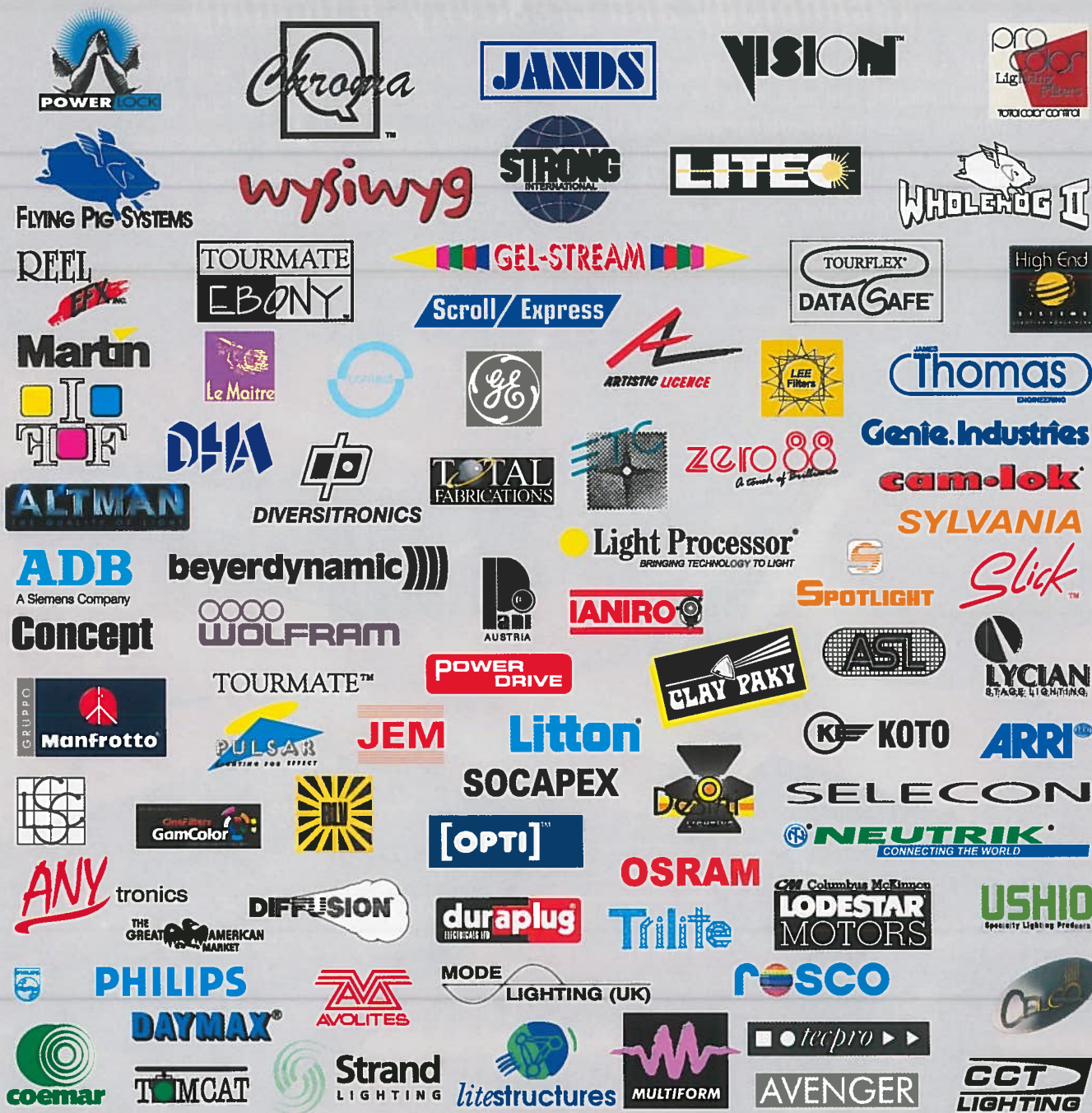
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Spend, Spend, Spend



Rick Clarke, sound designer (left), Tim Sharrett, Orbital technical support (centre) and Matt Dando, sound operator

systems for voice and orchestra - with E18 subs for some whoomph. Two of the subs are flown above the PA truss downstage of the pros - a small indulgence that smoothes the passage of bass to the theatre's higher reaches.

As ever, Clarke has an extensive array of fills, mainly the ubiquitous E3; however, the under-balcony delays are a deviation from his norm. Here he's using EAW JF60s which, Dando admitted, needed to be EQ'd a little harder to get the vocal tone required. But Clarke stuck to the little d&b box for onstage fold-back, presumably in deference to Barbara Dickson ('Viv') whose experience as a solo artist means she's more accustomed to the audio performance of a big wedge monitor.

Control at the sharp end is all quality: Dando is blessed by having Neve modules in his desk for all the vocal channels, plus kick, snare and one for Stick Bass (this is a very 'musical' musical). System delays are all set through XTA's Audiocore, with a completely different setting for when the action moves up to the stage-bridge. (Dando has all the vocals routed through a separate sub-group on the desk so they can be easily switched to the lengthier delay.) An unexpected tenant of the mix position was a pair of flat screen displays for Dando to monitor status on the Trantec radio mic system, and Amek Showtime. Dando uses Showtime mainly to send mics to the VCAs, freeing him up to mix the orchestra - yet another reason why this show has such a naturalistic sound.

Spend has already received the Evening Standard Award for 'Best Musical', and deservedly so. If nothing else go and see it for its celebration of life.

Steve Moles

"She came and watched all the rehearsals," informed Matt Dando. "Viv Nicholson. In fact she came to the opening night. She's a real character. Mooned the Press after the final curtain call."

Warts and all, this is a tale of a very modern woman - a woman ahead of her time. Unfortunately, it wasn't seemly for a woman of her era to steer her own destiny so forcibly, not least in an environment of cloth caps, pith and pit, so she was vilified for it. But fear not, this is no sad tale of riches to rags, Viv didn't just splurge her winnings in a reckless binge, she enjoyed every flamin' minute of it. Sure, pathos casts its grey tinge, but only that we might laugh all the harder.

Dando is sound operator for Spend, using an Amek Recall out front to run what is a big, but uncomplicated show. Uncomplicated in that it's not reliant upon six figure stage stunts - and no blizzard of sound effects to accompany them - but nonetheless big in that a nine-piece orchestra sounds twice that size, and 20 cast members rarely rest. Sound design is by Rick Clarke who, in his usual fashion, has our ears glued to the performers. His typical rig (all supplied by Orbital) comprises mainly d&b C6 and E9 boxes - separate



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Grofftech Launches Artemis

A new manufacturing company has been launched in Marlborough, Wiltshire. Grofftech - the brainchild of Alex Groffman, Rory Young and Paul Heyward - was officially launched in September last year, since which time the team has been working on Artemis, a product which got its first airing at the recent LDI Show in Orlando.



spec'd in a wide range of applications from product launch to nightclub. Pictured above are Rory Young (left) and Alex Groffman with the Artemis unit attached to a Pani projector.

Grofftech (UK): +44 1672 515417

Solutions on the Move

Total Audio Solutions has relocated to new premises in Bromsgrove, near Birmingham.

The new 6,000sq.ft facility was opened at the end of last year by Mr. Kantaro Tadaka from Sony, who is responsible for the company's pro audio product development in Japan.

Total Audio Solutions' relocation now places the company adjacent to the M5/M42/M40 Midlands motorway hub, as part of the company's drive to maintain and improve technical support for its growing list of rental and sales clients.

Artemis is a unit which offers greater control over large format imaging and has been developed principally to work in combination with Pani projectors. The unit lends the end-user the ability to display fast moving images without trailing, it also has an image reversing capability and one of its key features is its cooling system. This features a new type of glass (specially developed by the company) with 16 optical coatings to address the heat problem and thereby avoid meltdown of the LCD panel. Because Artemis is compatible with any SVGA PC or MAC, it should find itself being

Stageline & Pitstop Working Together

Stageline, the mobile stage specialist, has formed an agreement with Pitstop Barriers Ltd, in order to offer customers in the UK and Ireland a single source for the companies' combined products and services.

The complete Stageline product range is now available through Pitstop Barriers for short-term hire, long-term rental or purchase. Products include the SL and SAM series of staging products, as well as the soon-to-be-launched SL100 'smart' mobile stage - a 24ft by 20ft mobile unit with multiple applications.

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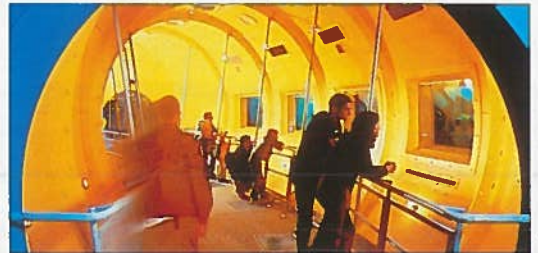
Following our coverage of Edinburgh's Dynamic Earth attraction (see L&S November 99), which looked at the AV and lighting elements of the project, we can now complete the story with the audio installation.



The sound consultant for the project was Peter Key. The Millennium-commissioned project - the first to be completed, with the aid of a £15m Lottery Grant - had been talked about as long ago

as 1992, but Key's team was only brought in as the final concept was taking shape two years ago. It was his task to detail all the playback equipment. Whilst Electrosonic was appointed as the hardware supplier, the main element in Key's contract was to produce the soundtracks, which he achieved with the aid of a Soundscape Workstation. The audio is stored on Electronic ESTA units and the video sources on MPEG servers are synchronised to the related audio using SMPTE or MIDI time-code.

Among the array of speakers used, Key opted for Martin's EM Series, supplied by Electrosonic. He specified batches of EM15s, EM26s, EM56s, EM76s and all three sub enclosures in the series. The speaker equalisation was carried out within the Soundscape software and recorded direct onto the audio tracks. Show presets are stored and routed via an Allen & Heath DSP management system.



Maltbury Sells Hire Division

Maltbury has sold its hire division to Gallowglass of West London.

Formed in 1994 to specialise in the hire of staging products, Maltbury soon found its sales service, and in particular its special projects team, taking pole position. Now, with sales accounting for more than 70% of the company's turnover, it was felt that the time was right to concentrate on what has become its core market.

Philip Sparkes, managing director of Maltbury, told L&S: "The hiring of staging is labour intensive and Gallowglass is a specialist crewing company, so it's an extremely logical deal. They have an excellent reputation and we are confident that in the future our clients will receive the same high level of service as always."

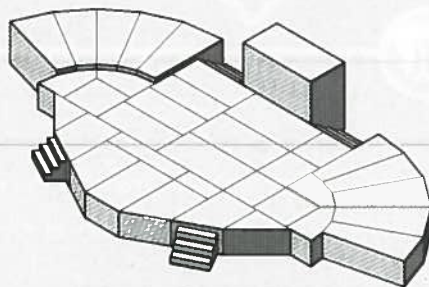
Gallowglass managing director, Paul Grecian, commented: "The deal has increased the amount of staging we have available five-fold and makes Gallowglass a serious force in the staging hire business."

Sennheiser to Distribute Innova-Son

In a move that is certain to be of interest to the live sound marketplace, Sennheiser is to distribute Innova-Son digital mixing consoles and related products in the US.

The new Innova-Son Sensory console was used during the summer on the 12-week Audio Denver Gipsy Kings tour and has been widely used elsewhere by the BBC, Radio France, in several national performing arts centres and by Jean Michel Jarre for the Y2K concert at the Egyptian Pyramids. In addition to its own range, Sennheiser currently distributes Neumann microphones, D.A.S. Audio Loudspeakers and Chevin Research Amplifiers.

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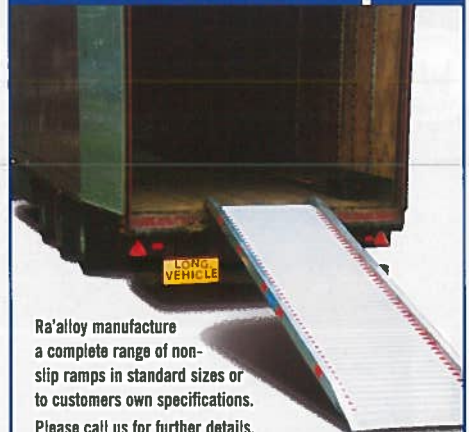


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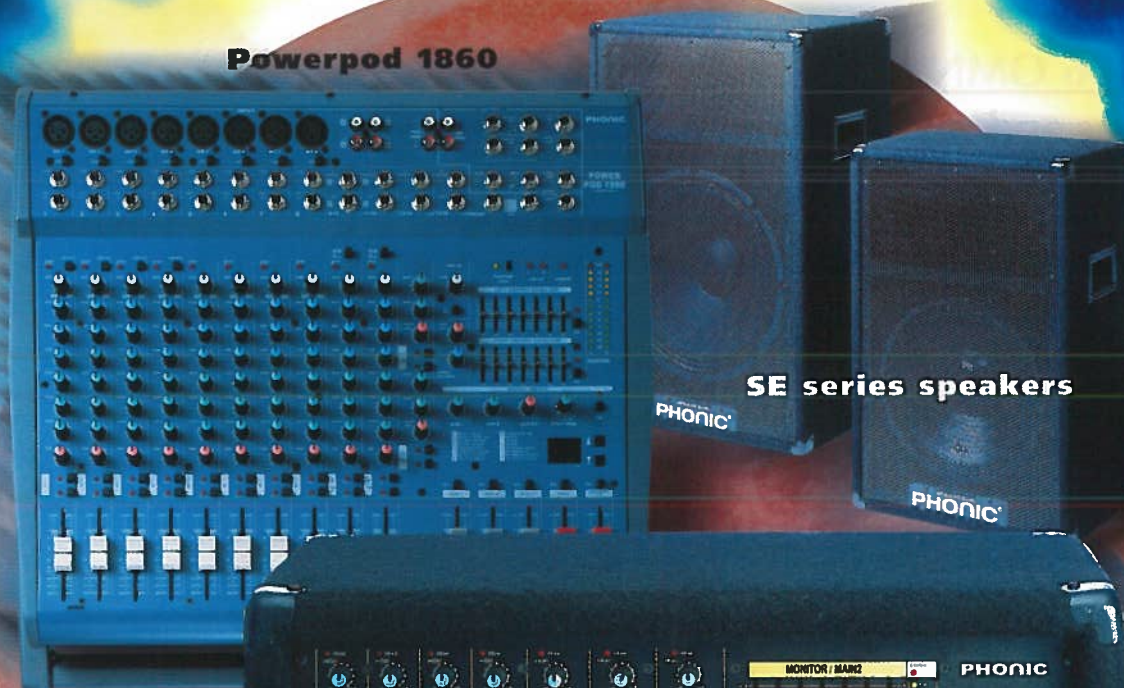
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News Round-Up



It took Vertigo Rigging just five very hectic days, to transform the concert hall auditorium and stage of The Royal Festival Hall on London's South Bank into a fully-fledged theatre. This was for the renowned Atlanta Ballet's - America's oldest continually operating ballet company - production of Peter Pan.



Atlanta Ballet

Vertigo worked closely with Nigel March, The Royal Festival Hall's head of production. The process started overnight on the Tuesday when a heavy canopy was the first element to be rigged, raised to the festival Hall's roof using seven 3 tonne BB lever hoists. The canopy was raised to approx. 1.2 metres at the upstage edge to allow for the trussing grid, rigged immediately below, to be levelled and left with enough height for the show. To achieve maximum height, the 17 Lodestar motors lifting the mother grid, plus a cable pick were rigged 'motor up', i.e. with the motor body at the roof rather than the truss. With no room for any motors between the canopy and the roof, all motors were carried through the roof and rigged standing on the canopy - a delicate and long-winded operation!

Overnight on the Wednesday, the mother grid was rigged out of 30.5cm Thomas SuperTruss. This smaller gauge trussing was used with more

motors than would have been necessary had 52 cm truss been used - again to gain that little bit of extra.

Overnight on the Thursday, the grid was lowered to de-rig the lights from previous night's show. (Shows were scheduled every night throughout the ballet fit-up week, so each time the grid went up in the morning after an overnighter it would have to be safetied, tidied up and left ready to use for that

evening's performance.) Vertigo then commenced rigging the tab tracks, Austrian drapes, lighting bars etc. Overnight on Friday was reserved for Terry Vickery, who does all the South Bank's staging, to install the 7ft high stage.

By Saturday it was time to start hanging the set and soft goods, rig the lighting booms and to install a full width black drape portal across the RFH's auditorium . . . all ready for focusing, technical rehearsals and flying rehearsals to commence on Sunday.

The show's vital rigging statistics included over 328m of tab track - all assembled at Vertigo's yard complete with sash cord. Over 164 metres of lighting bars were rigged, nine suspended bars in total at three different heights, complete with 'bumper bars' to stop the nearby wires and lamps from catching and interfering with the Foy's flying tracks.

FEATURES IN THIS ISSUE

"Lenik was insistent he wanted the lighting to be animated, but not in a robotic sense. Ewington, who holds the honest opinion that clubs are basically for "drinking, dancing, pulling and visiting the toilets," has long thought that ostentatious club lighting 'structures' are irrelevant."

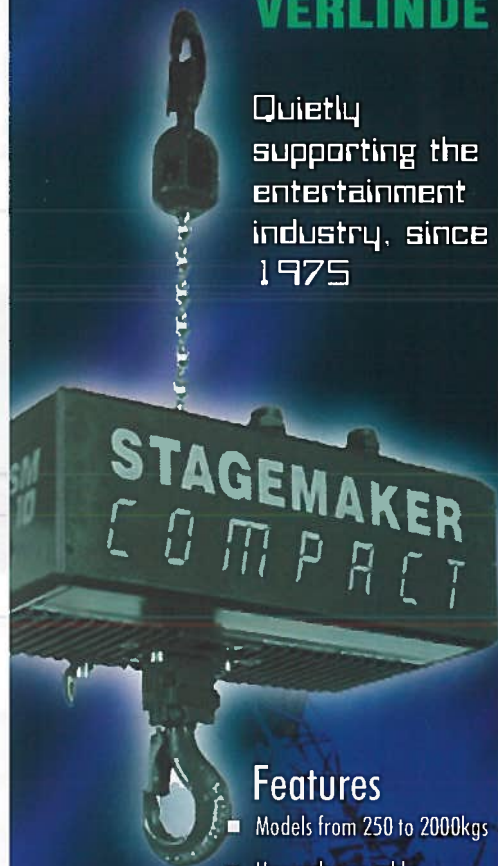
Louise Stickland visits Area nightclub in Watford - page 57

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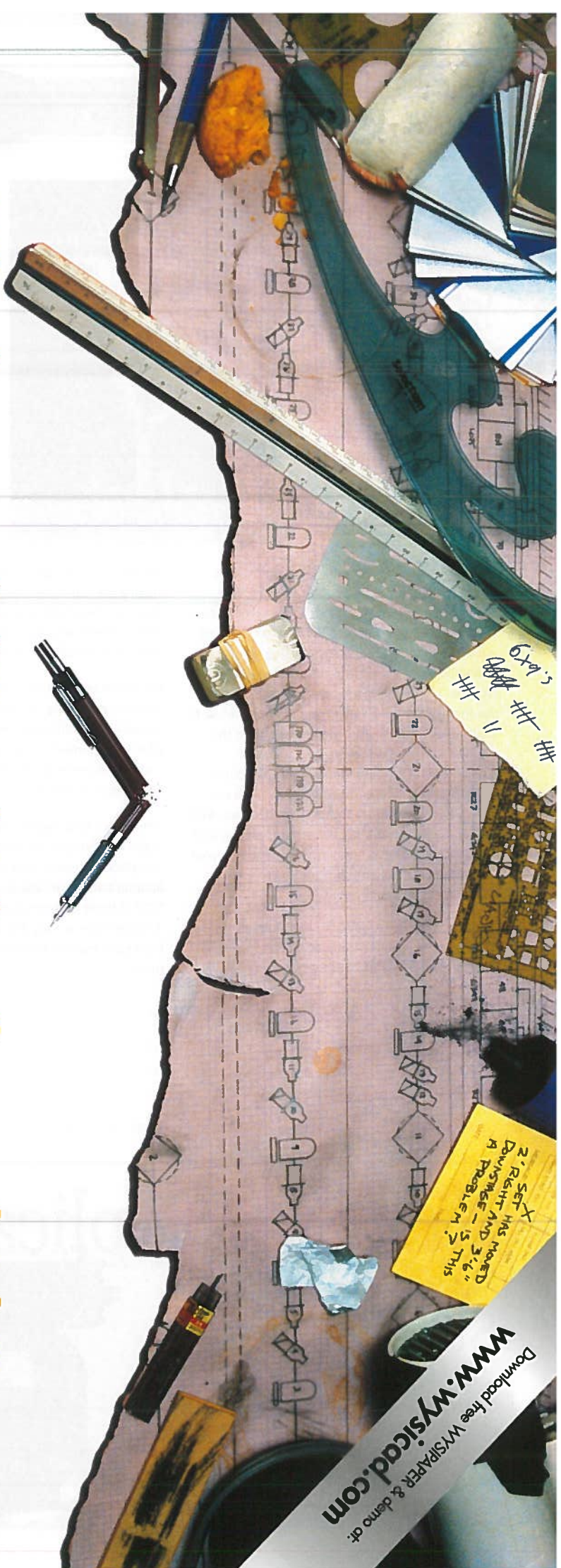
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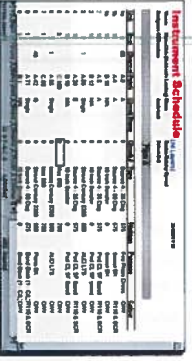
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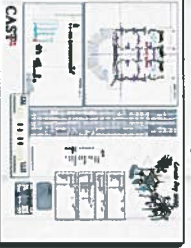
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Retail for DJs

Intercom DFB trade distributors has announced new developments in its trading operations.

The company has relaunched itself as Intercom Sound & Light Warehouse. Building on its existing trade business, Intercom Sound & Light will additionally provide retail sales to the club market. Designed specifically for DJs, mobile discos and pro sound, the company will supply equipment from some of the leading manufacturers in the industry, including Altai, Skytronics, Celestion and Denon.



Warren Morrow of Altai Group (left) and John O'Boyle of Canadian Instruments & Electronics (right) sampling the equipment.

Electrohome Enters New Era

The deal taking Electrohome Projection Systems to Christie Inc, was formally concluded on November 1 last year since when the company has been known as Christie Digital Systems.

The company will retain its manufacturing facilities, engineering and administrative offices in Kitchener, Ontario, as well as its sales and service locations around the world and has also released a new product portfolio to complement its existing range. With combined 1999 revenues of around US \$150 million, the new company, which will employ 350 people worldwide, is well-placed to exploit the digital future.

Scottish Lighting Exhibition

The Scottish Lighting Exhibition, organised by BBC Resources in Scotland, will be held on Sunday 13th and Monday 14th February in Studio A, Broadcasting House, Glasgow.

The popular exhibition covers all aspects of lighting for film and television, and will be open each day from 10am to 6pm. The entrance fee is £10 per day or £15 for both days.

Contact Joe Breslin at BBC Resources for further information
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News Round-Up



People on the Move

Following our web piece that **Chris Monsor** has departed PSL after three years as head of concert touring, comes the news that he is to head up a new video rental company, specialising in the field of camera and video design and support to the concert touring and music industries. Monsor has teamed up with industry legend **Pat Morrow** of Nocturne Inc and **Rene De Keyser** of XL Video to create Nocturne (Europe) Ltd. The company is currently in negotiations to purchase a 6500sq.ft warehouse in St Albans, and hope to be ensconced by February 1st.

Meanwhile, PSL's concert touring business has been left in the capable hands of **Des Fallon**, ably assisted by **Scott Russell** and **Stephanie Jefcoate**.

Martin Professional has appointed a new managing director for its UK subsidiary. **Claus Puggard**, Martin's former area sales manager for Central Europe, was named to replace long-time head of Martin UK, **Ian Kirby**. Puggard has been with Martin for a number of years.

Phillip Norfolk is to leave Lighting Technology after 12 years with the company. He is relocating to Chicago to take up a position with Tech Lighting, who manufacture low voltage and display lighting. Norfolk will join a team of 120 people and will run their national specification sales and special products.

Iain Elliott has left the Canford Group plc, the company he founded 23 years ago. Under Elliott's direction as chief executive, the Tyne & Wear-based company grew to become one of the UK's leading pro-audio distributors and manufacturers with a range of over 14,000 items.

One of the country's leading PA distributors, RW Salt Communications, has started off the new Year with the appointment of the man they call, 'Mr PA', **Harry Greenaway**, with responsibility for the company's key distributor accounts. At



Don't read too much into the positioning of this photograph on the People on the Move page - certainly none of those shown above is on the move (as far as we know) and we're not even certain all of them are People. But since they're reading our mag (OK, so it's upside down), we thought we'd give it an airing. Thankyou to Fred Foster (ETC), Paul de Ville (Lighting Technology), Diane Grant (DHA), Louise Robson-Tester (DHA) and Mike Goldberg for the shameless promotion of L&S! It won't do you any good.

the same time, RW Salt has also announced the appointment of **David Holt**, formerly of Willow Vale and Philips CSS, to establish and run the company's new southern office, which is due to open within the next few weeks.

Michael Irwin has replaced **Christian Choi** as the voice of technical support at California-based AC Lighting Inc. He will be responsible for answering all programming and software-related questions regarding the WYSIWYG range of programs, along with MA, Jands and Zero 88 product lines.

Strand Lighting has appointed **Phil O'Donnell** to the new position of group sales and marketing director. O'Donnell has spent 25 years in the industry, 20 of them with Strand, and has recently been responsible for Strand's operations in the Americas and Asia.

PA and voice alarm specialist **Baldwin Boxall** has expanded its sales team. **John Spurling** has joined the company as a country-wide systems sales executive, and will be responsible for raising awareness of voice alarm systems and all aspects of the company's Vigil systems. Spurling joins Baldwin Boxall from Millbank, where he spent five years.

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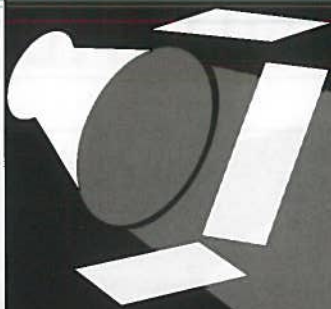
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Le Mark and NDC Work Together



Le Mark has appointed NDC as its dealer in Switzerland. The company, run by Nicholas de Courten (pictured left with Le Mark's Stuart Gibbons), will handle the full range of Le Mark products.

NDC already has strong ties with the major TV studios, theatre and

production companies across Switzerland and is looking to expand into the conference and exhibition markets. De Courten's appointment follows a series of new appointments by Le Mark, including that of Strong in Spain.

Sound Beam - Directional Sound

The BBC's *Tomorrow's World* programme recently featured a new development - Soundbeam - which, according to its designer, is capable of transmitting sound in a straight line - working on much the same principles as a spotlight.

Designed by Joe Pompei, a researcher at MIT media lab in Boston, it can be used to relay audio to just one person in a crowd. Pompei's design is based upon high frequency ultrasound waves which are beyond our hearing which act like a 'carrier' for audible sound. His design combines music with ultrasound; this then recreates the complex wave patterns of the music at a much higher frequency that can't be heard. A specially designed speaker is then used to send out this high frequency ultrasound beam. Physical properties in the air then distort the beam producing a range of frequencies, including audible sound. The sound quality isn't high enough yet to cover very long distances, but when it is, the potential applications for the product in public places such as airports, stations and cinemas are mind-boggling.

FEATURES IN THIS ISSUE

"Barnes' design puts almost the entire production in the air above the stage - amp racks and PA, lighting and control, projectors and screens. Including the mother-grid - 38 tonnes of it in total."

Steve Moles On Pete Barnes' design for the *Spies* - page 77



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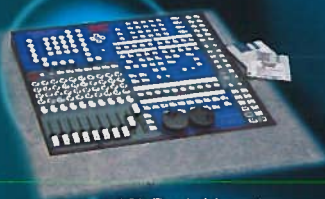
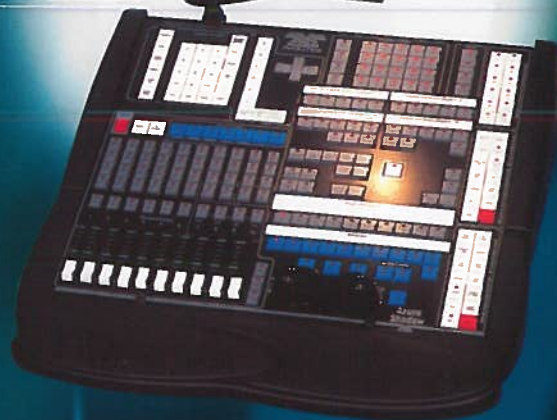
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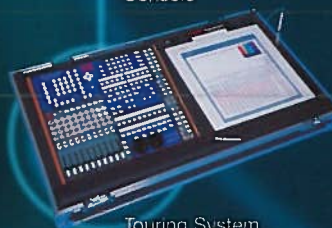
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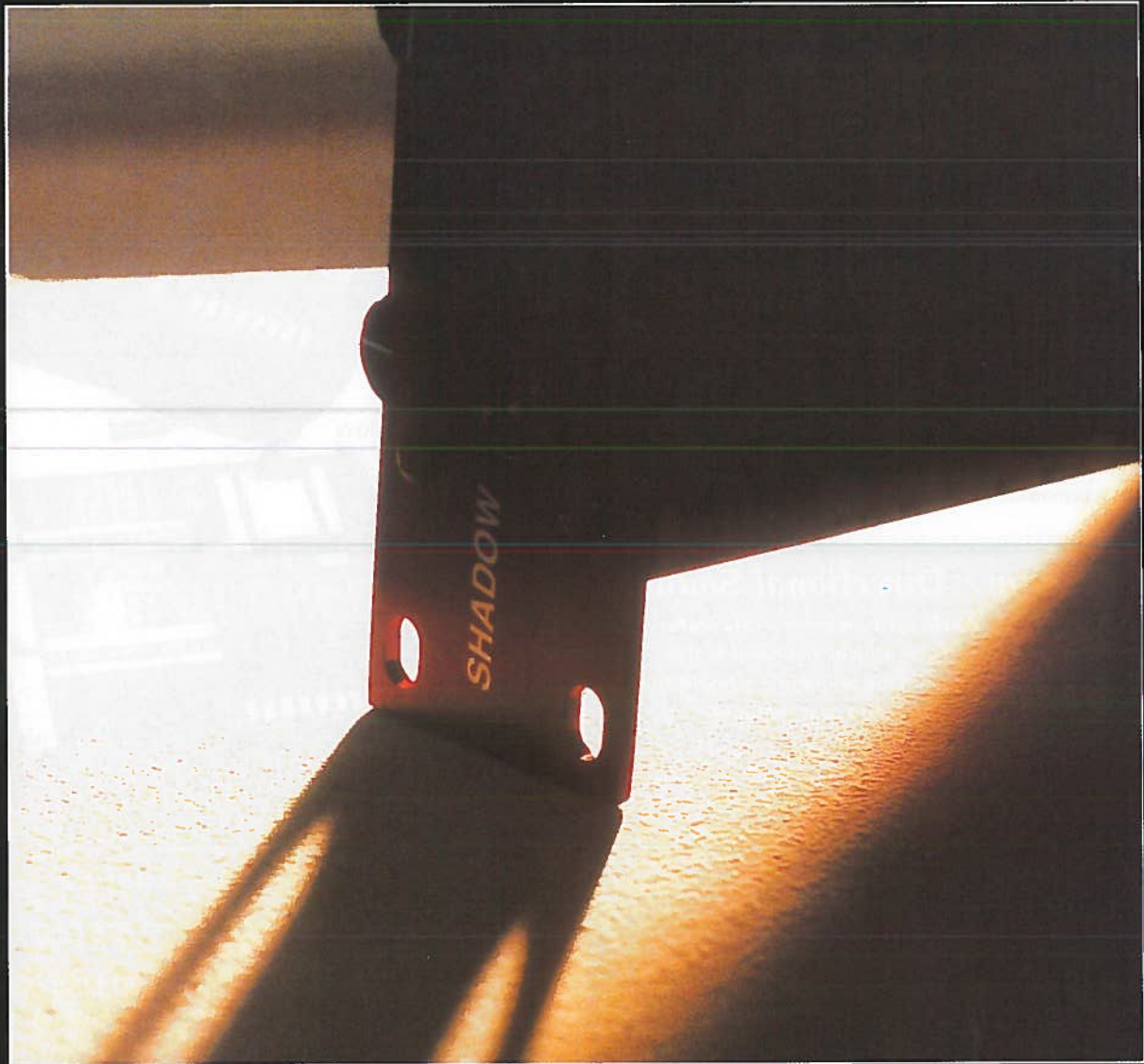
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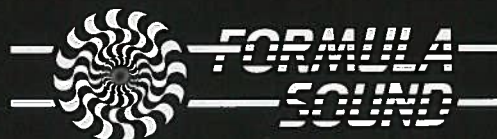
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An ambitious audio design spec has been laid down by Andy Kayle of Home for the new Levi UK flagship store in London's Regent Street. The store follows the design blueprint established at the company's flagship operation in San Francisco, with Checkland Kindleysides creating the interior model at both stores.

The installation required multiple inputs to be routed to a number of zones.

Covering the ground and basement floors a maximum 20kW of JBL Array, Marquis and Contractor series sound output is processed by four BSS Soundweb 9088s, programmed by Vision Re's Josh White and Ian Woodall of LMC Audio, who supplied the systems. Rather than use a hub, the individual 9088s combine to create a single network controlling five separate zones, with the full input/output capacity utilised. It takes input feeds from both DJ levels, VCR, CD changer, DVD player, as well as a live performance input on each floor, with an ISDN line allowing the venue to send, and receive, remote signals.

Soundweb Networks Levi Super Store



Contained in Soundweb are two-level Retail Mode presets, and a DJ Mode where the volume gets cranked up and the frequency response can be adjusted accordingly. "The thought of being able to put active EQ curves into the EQ section is fantastic," says Josh White.

However, the store wanted priority volume control, enabling the manager to override the presets using an AMX touchscreen, which

will move around four locations in the store to give total zonal control.

Thus the Soundweb software has been developed so that it can be exported to the AMX touch-screen, via AXCESS, AMX's main programming language. Vision Re also installed state-of-the-art video technology to complement the high standard of professional audio in the store.

ESTA's Review of Fog Recommendations

ESTA has announced that the draft American National Standard BSR E1.14, *Entertainment Technology - Recommendations for Inclusions in Fog Machine Manuals*, is available for public review until March 14, 2000.

The draft standard applies to the instruction manuals for fog machines manufactured for use in the entertainment industry, and describes what information should be included in fog machine manuals to help ensure that users operate these machines safely and effectively. A copy of the above standard may be obtained from the ESTA website at www.esta.org/tsp/ or by writing to Technical Standards Manager, ESTA, 875 Sixth Avenue, Suite 2302, New York, NY 10001, USA.

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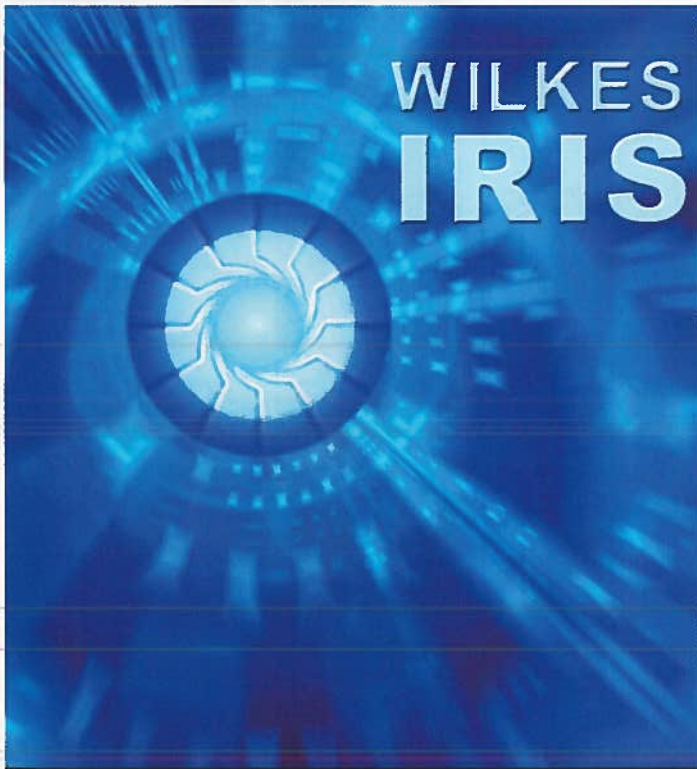
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Las Vegas Valley Water

Bill Saucier, senior programmer/analyst for the Las Vegas Valley Water District (LVVWD) always knew there had to be a better way of displaying his organisation's critical control room information.

LVVWD is responsible for the distribution of water throughout the entire Las Vegas Valley - a virtual desert made habitable only by precise water regulation. Inside the control room, two operators relied on eight 20" computer monitors mounted on a console for vital information on water reserves and alarm conditions. But this was never quite satisfactory, so the company called in Electrosonic for advice, largely because the company had already handled a number of successful control room installations. Saucier chose Electrosonic's ProDigital/Vector solution after a detailed review of display technology.

Now, the display at Las Vegas Valley Water uses an Electrosonic display of eight ProDigital 50 inch projection units with Vector processing, to give a 14ft wide display only 28" deep. Displayed resolution is 3200 x 1200; and 32 different data and video sources can be displayed. The ProDigital displays uses Texas Instruments DLP technology, to give a steady, evenly illuminated and highly legible image. Electrosonic customised

its videowall programming software, C-Through Interactive, to allow the videowall processor to work with the existing water distribution control software.



Good News for PLASA Exhibitors

Earls Court Olympia, the venue for the annual PLASA Show, is currently part-way through a £60 million six-year improvement programme.

Phase One sees several improvements come on line including the upgrade of the main escalators. Phase Two will address the general upgrade and refurbishment of facilities throughout the venue, including the upgrading of several catering areas in Earls Court 1 and a new business centre. Part of this phase will also see the completion of the painting and 'column cladding' programme on the ground floor of Earls Court 1. The Warwick Road and West Brompton entrances to Earls Court 1 are also on-line for upgrading during 2000.

FEATURES IN THIS ISSUE

On the face of it, the show is nothing more than a succession of drag acts, but what drag acts: a wisecracking Joan Rivers conducts the proceedings, introducing a wicked series of send-ups and devastatingly faithful imitations of the icons of the drag world, from Judy Garland all the way to Michael Jackson.

Ian Herbert on Le Cage - page 74

Focus & Jansen & Jansen Combine


Netherlands-based companies Focus Showequipment BV and Jansen & Jansen have combined forces, and will now operate under the sole name of Focus Showequipment BV.

The move has been made in order to combine the areas of expertise in lighting, sound and studio facilities developed by the two companies over the past 25 years. In addition, the company will alter the way it deals with projects to provide a segmented approach, fully utilising its various fields of expertise.

Neutrik Files Patent Suit

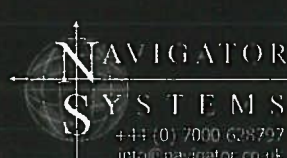
Neutrik USA Inc and parent company, Neutrik AG, have filed a patent infringement lawsuit against Switchcraft Inc, over the Neutrik Speakon product line. The federal suit, filed in the United States District Court, Southern District of New York, seeks a remedy for Switchcraft's infringement of Neutrik US Patent No. 5205749 directed specifically to an electric plug-in socket that covers the company's Speakon connector line. The litigation seeks to enjoin Switchcraft from selling its HPC (High Power Connector) line, leading to a permanent injunction and possible financial compensation. Neutrik also claims that Switchcraft has made trademark infringements on the promotion of its HPC line.

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Black Box Wins AV Award



The achievements of small businesses in West Glamorgan were recognised recently at the 1999 Business Connect Neath Port Talbot Awards Dinner, during which PLASA member Black Box AV won the coveted Business of the Year award.

The company was chosen because of its success in the audio-visual industry and its innovative approach to both product and company development. Black Box AV enters the millennium with a 'personal best' turnover and profit for 1999 and excellent prospects for 2000, with a host of new products to be launched during the first quarter.

Pictured above (far right) is Jonathan Knight of Black Box with others who were honoured at the ceremony.

Powering Up

Manchester-based Power Gems has grown over the last eight years to become one of the world's largest independent designers and manufacturers of electronic power supplies for the motion picture lighting industry.

PLASA Publishing has learnt that the company has entered into a strategic alliance with US-based Warner Power LLC, and as a result, is now expanding its technology into industrial and medical markets. Power Gems investment has secured a 49.9% shareholding in Warner Power, a management buy-out of WPI Electronics Inc and WPI Power Conversions Inc, with a combined \$20million turnover.

Power Gems (UK): +44 161 789 7897

Product Watch . . .

Since its introduction in 1995, the Shure SCM810E has been widely specified in a range of applications. Shure has now released a smaller version - the SCM410E - a half-rack automatic mixer with features such as four input channels with balanced XLR mic level inputs and mic/line outputs, an unbalanced RCA aux level output, a +16 dBu peak output limiter and 12v phantom power.

HW International: +44 181 808 2222

LightProcessor is capitalising on its newly-expanded premises in Greenford, Middlesex with a tranche of new initiatives. The company has re-designed the Paradime Touring digital dimming rack, - all elements are now modular and in 19" rack-mounting format. The Patch Rack is a new 6 x 16 amp or 6 x 10 amp patchable rack, whilst the QBuffer has morphed into a 19" rack mounting version. Last, but not least, is the Replica - a 19" rack mounting replay unit for shows conceived and programmed on the QCommander console.

LightProcessor: +44 181 575 8828

Cerwin Vega! has introduced the SUB-15, a compact, direct-radiating 15" sub-woofer. The high-powered enclosure (500W programme, 1000W peak) is available through Lamba plc in the UK.

Lamba: + 44 1727 840527

Multiform Electronics has added the DMX 424 - a 24-channel DMX decoder - to its range of control products. The decoder is designed to provide the 10V DC analogue control signals essential for dimmer packs, colour-changers, effects lighting, smoke machines and special effects in systems using the DMX 512 control protocol.

Multiform: +44 1825 767005

Strand's SL theatre luminaire range has expanded with the announcement of a new series dedicated to the architectural market. The new spotlights house metal halide 150W CDM lamps, available in two colour temperatures - 3000 degrees for a warm, tungsten look and 4000 degrees for a cool, daylight appearance.

Strand: +44 181 571 3588

A new system to enable lighting and electrical crew to gain access to overhead rigs in theatres is being manufactured by Tomcat UK. The system - CES Trolley Truss - was designed by Colin Smith, head of lighting for Opera North, based at the Grand Theatre in Leeds. Opera North itself changed its entire rig to the system over a year ago and another recent convert to the system has been Scottish Opera.

Tomcat: +44 151 334 8885

MTFX has expanded its range of smoke and aroma machines. It now stocks three Jem Heavy Fog 6500 smoke machines and has recently invested in The Effects Company's new Aroma-Tech machines. MTFX used them to good effect recently when they produced an orange aroma for the Tango Conference at the ICC in Birmingham.

MTFX: +44 1454 615723

FEATURES IN THIS ISSUE

"There were several reasons that made the opera an ideal candidate for multi-media presentation. The fact that Greenaway and Boddeke are highly creative risk-takers and have used film and video in their three previous opera productions, Vermeer's potential historical associations with lenses and optics and the fact that his paintings have a genuine filmic quality are just a few of them!"

Louise Stickland - Peter Greenaway's Writing to Vermeer - page 69

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On 1st December, Royal Opera and Royal Ballet opened the doors of their new Covent Garden home for the first time in over two years. Mike Mann went backstage to see what it takes to build a world-beating opera house.

The rebuilding of one of Europe's finest opera and ballet houses has attracted a great deal of public controversy. However, no-one who has ever set foot behind the proscenium of the original 1855 house could be in any doubt that a re-fit was urgently needed. The crumbling Victorian structure, coupled with woefully inadequate stage systems and cramped rehearsal facilities, made Covent Garden an expensive and inhospitable place in which to stage a production.

New Covent Garden

Project director John Fairclough was an executive with property developers Stanhope in 1993, when an outline plan was submitted for a new opera house which was to be the envy of Europe. Having already advised on the successful Glyndebourne opera house project, and with a solid background in commercial development, Stanhope quickly revisited the original concept of adding 200,000sq.ft of office accommodation to help pay for the theatre rebuild.



THEATRE

In the post-1991 property slump in London, it was reasoned that office space could not attract the sort of revenue needed to keep the project afloat. Fairclough was seconded as project caretaker in August 1994, and appointed as project director later that year, working alongside John Seekings who was to represent the client. "The final scheme revolved around two things," he explained. "The first was to make the design as flat as possible, with a minimum number of changes in levels, and the second was to maintain a clearance of 11 metres over the stage and the side stages."

This in itself was no mean feat, since the original auditorium, a Grade 1 listed structure, was to be left standing, as was the 'Phase One' building that makes up the rear third of the Covent Garden site. Added to which, the land on which the theatre is built slopes from North to South (across the stage) and East to West.

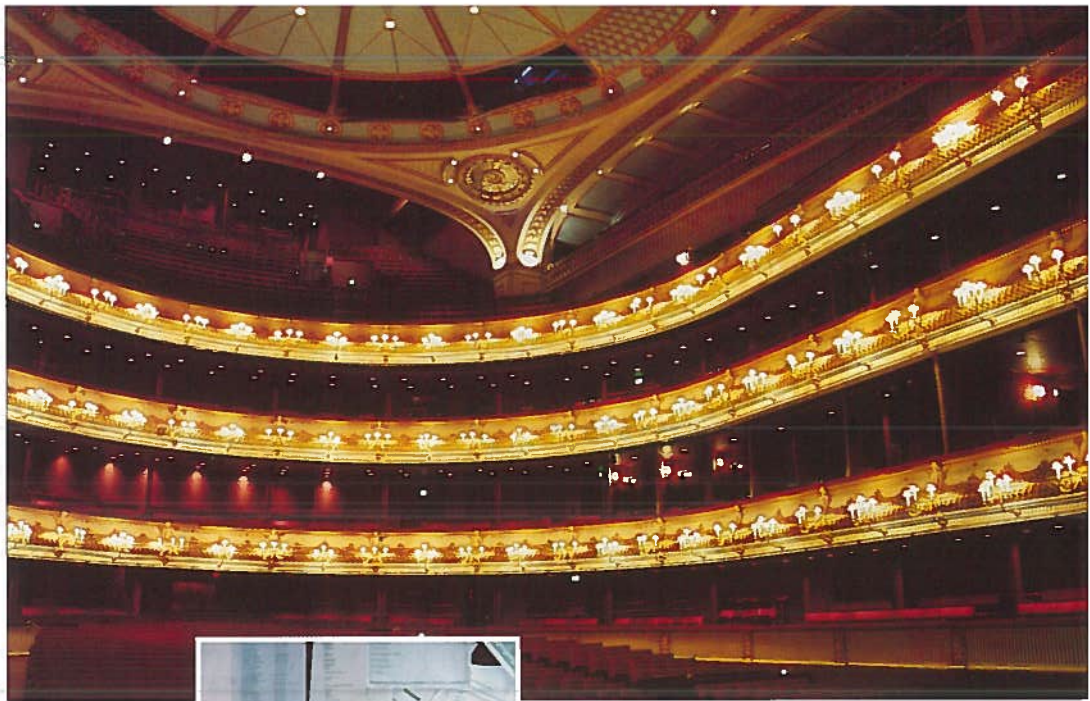
Ballet Moves

One of the main aims of the redevelopment was to incorporate the Royal Ballet company, which had previously occupied a separate building in West London. The final building project, on a 2.5 acre site, is more than a theatre; it is a vast opera and ballet production village. As well as the main 2,257 capacity auditorium, there is a 420-seater studio theatre, a ballet studio theatre with seating for 200, two full-scale opera rehearsal rooms (which can take complete sets for pre-production work) and a further six studios. The mixed opera and ballet repertoire staged at Covent Garden requires not just the usual theatrical departments, but also the more specialised trades - gents' and ladies' opera shoes, for example, and an in-house wigmaker. For the audience, apart from the addition of air conditioning to the auditorium, the elegant Floral Hall (previously used as the main scenery store) has been rebuilt and the facilities and access through the building have been greatly improved.

Unseen Work

Sadly, the less inquisitive opera or ballet-goer will never see the incredible transformation that has happened backstage. Upstage of the luxurious new red house tabs and Royal Crest (supplied by Gerriets and stitched by the Royal School of Needlework), there is barely a single reminder of the creaky old stage. Even the proscenium itself is new, and movable; the opening can now be varied by two metres in width and five metres in height, to a maximum of 15.5m wide by 9.5m high. The flytower, which now forms a completely independent structure, is 50m high with a triple-hung grid height of 37m above stage level. Support for this structure comes from four giant 3.3m diameter piles, sunk 35m into the ground, and widening to six metres at the bottom. Below the fixed galleries on each side of the stage is a rise-and-fall fly floor, which can be dropped to within three metres of the stage, while a huge (26m wide by six metres deep) mobile gantry is used to hang cloths and focus lighting without the need to fly the bars in to the stage.

Until the late 1980s, manual counterweight flying was still the norm at Covent Garden, but



Above, the rebuilt 1858 auditorium, Inset, project director John Fairclough

following a limited motorised installation before the closure of the house, German lifting giant Krupp was commissioned to supply a new flying system. The resulting installation offers a staggering 106 24m flown bars (all Triple E UniTruss), plus three up/downstage bars per side and six lighting pipes. The bars are rated at 1000kgs each and are set on 150mm pitch - just enough to allow them to pass each other. In

addition, 30 point hoists are installed, each with a capacity of 500kgs. Small wonder, then, that the main plate girder across the top of the tower weighs in at a mighty 56 tonnes!

Triple E collaborated with James Thomas Engineering (JTE) on the production of the UniTruss, which is designed to make the reviled task of hanging of drapes completely painless. The new product was originally specified for Covent Garden by Clive Odam, stage systems manager for the ROH. Odam needed a complete system - as opposed to just a track - that was able to accommodate a range of accessories and could speed up set-up times and increase scenery safety. The UniTruss resembles a ladder beam, but has an in-built track running along the bottom instead of just a normal barrel tube. Soft goods can then be attached via standard Triple E rollers, or if desired, lighting instruments can be clamped on via hook clamps.

JTE has been supplying the ROH for over 10 years, and other recent Thomas equipment to make its stage debut there has included a space-saving cloth truss with storage



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Left, Triple E Unitruss bars on 150mm pitch



bins, allowing rolls and large quantities of drapes and softs to be flown up and stored in the roof. JTE also supplied a 15m by 6m box grid of SuperTruss, available for when the venue stages concert-style productions. The UniTruss, cloth bins and SuperTruss grid were all supplied via Stateg Buhntechnik GmbH who motorised the flybar system.

Nomadic Tribes

London-based Stage Technologies was called upon by Krupp to provide the Opera House stage crews with a control installation that met their requirements for quick (twice-daily) repertoire change-overs, pin-point accuracy and a high degree of safety. The system is based on the company's Nomad portable consoles, which are used to control and monitor all flying, as well as handling the stage elevators (of which there are six), pit elevator and the wagon-based stage system. 10 Nomad

controllers are used, with fly staff receiving visual feedback on the fly floors via a 3D representation of the various objects under each person's control. The consoles, mounted on wheeled dollies, can connect to 24 strategically located points around the stage and galleries, which allows their operators to position themselves for the best possible view. The Nomad consoles and handheld Solo controllers connect to a server and a series of 24-axis control racks via Ethernet, while motor synchronicity and monitoring is assured by a CANBus network. As with any overhead system, crew and cast safety is of paramount importance, and rules concerning line-of-sight operation of equipment are strictly enforced. A total of 216 'axes' of movement are controlled by the ROH Nomad system, with the ever-changing repertoire making the storage, modification and accurate repetition of cues a major task for the system.

Quick Change

One of the most pressing reasons behind the technical refit was a need to reduce changeover times. The original manual flying system and lack of stage mechanisation meant that to go from a morning rehearsal on stage into an evening performance of a different production would take up to five-and-a-half hours. A full-time overnight crew was also required to repeat the process after the evening performance finished - and an average week of opera and ballet activity would see three different shows in performance and one or two in rehearsal - all sharing the same stage.

The original Covent Garden configuration had a single rear stage on which to store scenery required for an individual production, whereas the new theatre has a rear stage, side stage, rear-side stage, plus space between the scenery building dock and the main stage. Geoff Wheel, head of the Royal Opera House's technical department, explains how the system will improve changeovers: "With our old system, we had to use a 10ft by 8ft lift to the Floral Hall store - and this had a maximum height of only 24ft.

Cyrano wins it by a nose...

The Cyrano produces 50% more light than other followspots from Robert Juliat.

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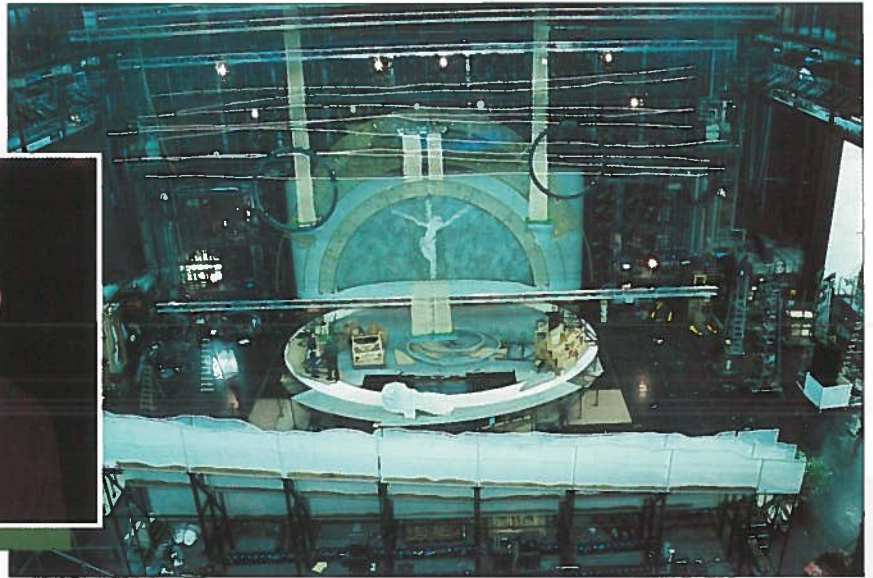
Right, the stage viewed from the overhead gantry. Inset, Geoff Wheel, head of the Royal Opera House's technical department

Now we have a wagon-based system which means that once a set is packed and the edges cleared, it now takes probably two minutes to roll the whole thing away to either the rear or side stage."

Rollers

The wagon system itself was custom-designed for Covent Garden by Clarke Chapman, an engineering subsidiary of Rolls Royce, and comprises a jigsaw of 14.8m by 4.8m mobile decks, which move orthogonally at a speed of up to 0.27m/s and can support 10 tonnes of set. Each wagon is propelled by static motors mounted on the edges of the surrounding floor sections, which use a caterpillar drive to engage with ribbed tracks fitted to their sides.

A total of 27 of these wagons are used at Covent Garden, with compensating elevators fitted to the entire storage area, allowing wagons to sit flush with immobile sections of floor. "We have two wagon types," adds Wheel. "The ballet company wagons are fitted with a fully-sprung dance floor, while a different wagon type offers a solid hardwood base for more substantial opera scenery. The original five-section stage was a compromise that was far from ideal for either application." A full opera set or ballet floor comprises three wagons: though these can be locked



together for transportation, the proximity of the stage to Covent Garden's famous piazza means that there is a restriction of two wagons' depth to gain access to the dock and rehearsal room.

Scene but not Heard

Once sets are no longer required in active rep, they must be stored off-site - the space required for the Royal Opera and Royal Ballet scenery alone is far greater than central London can offer. Part of the redevelopment project was the construction of a 10,000sq.m high-density storage facility in Aberdare, about 20km from Cardiff. Technical manager Gary Mardon explained the system now being used to handle this potential logistical headache: "We



"UniTruss is more than just another track: a complete system which accepts an extensive range of accessories, it will speed our set-up times and increase the safety of our flown scenery."

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PHOTO: ROB THORPE

use a system of 'pallets' - these are 9.7 by 2.1 by 2.3 metre cages that have a capacity of 4.5 tonnes. We use three custom-built Fruehauf Megadeck trailers which have built-in conveyors so that they can load and unload at each end."

At the House itself, a 24-tonne lorry lift drops both trailer and tractor to three floors below stage, where a carousel system is used to store and locate up to 30 pallets. This kind of materials handling technology is rare in theatres, but is commonplace in the motor industry. In fact, the system used at the House (a Fredenhagen system) has previously been used in the UK by Ford.



Above, lighting control with the ETC Obsession II.

Right, Lighting consultant John B Read

Below, Technical manager Gary Mardon

The system is designed for one-man operation - though HSE regulations required a second staff member to be present at the remote Aberdare site. The Welsh warehouse holds 720 pallets, providing long and short-term storage for ROH productions as well as co-productions and rentals. Mardon is keen to see some standardisation between European opera houses: "We are trying to encourage more houses to work in this way, and to adopt a similar pallet system. If this happens, getting productions from other parts of the world will be much easier and more cost-effective."

In addition to the three pallet trailers, ROH has also invested in an orchestral trailer, which is custom-fitted on a 10m step-frame chassis to take the wide variety of instruments required for any production.

Light on its Feet

With so much new technology being installed at the Royal Opera House, one might expect the lighting rig to be full of highly specialised gear. However, this is not every designer's cup of tea, as John B. Read, lighting consultant at Covent Garden, explained. "The system has to accommodate a broad range of designers who

need to feel that it's their own. It has to be flexible enough to light classical and modern opera and ballet. Read has worked at Covent Garden since 1981, having previously lit Contemporary Dance Theatre and Ballet Rambert.

Though a fan of moving lights as a way of speeding up the production process, he is aware that practical considerations limit their usefulness in this application. "Our noise levels on stage are less than those found in many recording studios," he explained. "The acousticians [Arup] vetoed the use of fan-cooled moving lights from a noise point of view. Also, with the physically larger automated luminaires we would have to cut down the numbers - which is a problem when we need sheer power. The lighting pipes trim at 11.5m above the stage, so the throw is a minimum of 12-15 metres. That's a long way for a moving light to throw with a saturated colour."

Read adds, however, that the VL7 will be added to the house inventory as soon as it can be made quieter. "I'm a firm believer that every type of luminaire is necessary for an opera house. A fixture where we can focus and choose colour at a whim is a necessity."

Read's lighting concept reflects the shift in emphasis away from purely traditional designs, where overhead fixtures were almost unheard of: "When I joined the Opera House, there were only 16 spotlights over the stage. By the time we closed, there was always a minimum of 250. The rig is slightly bigger now, with six



pipes providing high, side, cross and backlighting, and using a conventional portal bridge to give front light positions. All major opera houses now need this kind of bridge, with stage perch positions at three or four levels."

Read had originally considered using walk-on bridges across the stage

for better access - however, the extra space required would have meant losing a complete pipe or most of the scenery flying space. A workable compromise was reached, with some fixtures being fitted with City Theatrical AutoYokes, and the addition of a two-man cherry-picker to the high-level gantry. "This is very useful for focusing standard and conventional luminaires," pointed out Read.

"At the moment we have about 60 instruments that are capable of being remotely panned, tilted and focused. The AutoYokes reduce our production and changeover time, but are used purely as a means of focusing for static light. We're not in the business of moving light around the stage."



ETC was awarded the contract to supply and install the control and dimming systems, as well as a large number of Source 4 fixtures. The main house console, an Obsession II, is installed in the rear-stalls control room,

along with a Unison system for house and working lights. Dimming is provided by no less than 15 Sensor CE racks, each giving 96 outputs of mixed 3kW and 5kW power. The diminutive size of these racks, as with other venues, had taken the Opera House by surprise; the cavernous dimmer rooms situated above the FOH dome were clearly designed with much larger equipment in mind! The Obsession, as well as receiving constant information from the racks about load status and any failures, is provided with dual processors (both on UPS feeds), and is networked to the Unison control system. In this way, even a catastrophic problem would not result in a darkened stage.

Over 1,700 luminaires, plus colour scrollers and ancillary items have been supplied to ROH by Lighting Technology in West London. As well as the ETC fixtures mentioned above, there were large quantities from Strand Lighting, Robert Juliat, James Thomas, CCT Lighting and ADB included in the inventory, plus Rainbow colour scrollers and various equipment from Smoke Factory, MDG, Doughty Engineering, Rope Assemblies, SES and projector lamps from all the major manufacturers. Batches of equipment were supplied in stages during the three months preceding the opening, being stored until required in LTG's Park Royal warehouse, as secure storage for the £500,000 order was not available at Covent Garden.

The ROH has been using Robert Juliat fixtures for some years, and is familiar with the reliability and performance of the brand. Because of this, Juliat profiles and fresnels were chosen to form a large part of the basic rig: 48 2.5kW profiles are used front-of-house, on the ballet booms and on the side bridges, as well as 92 1.2kW profiles and 52 2.5kW fresnels on the portal bridge, overheads and stage perch positions. Of the fresnels, 16 are also used in Lichttechnik moving yokes supplied by The Moving Light Company, and mounted in the overhead battens. The Moving Light Company was also responsible for the supply and commissioning of the City Theatrical AutoYokes. A service contract has been set up that will see MLC looking after the automated elements of the Royal Opera

ETC ENTERTAINMENT



Royal Opera House, Photo: Rob Moore



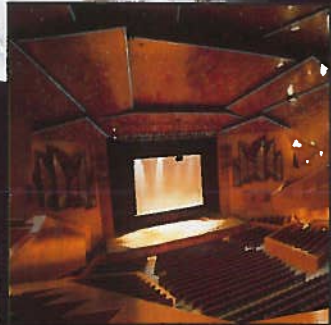
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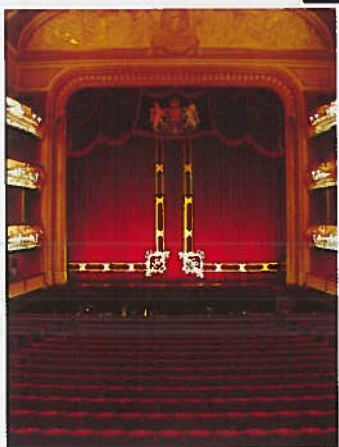
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Main picture shows one of the six lighting pipes. Inset, the house tabs, designed and supplied by Gerriets



House's lighting rig - as well as providing emergency call-out and support services to ensure that the show goes on as plotted, even given the Opera House's hectic schedule of constant changeovers between shows.

Despite the comprehensive nature of the lighting spec, the ROH team still felt they had a hole in their system and were looking for a high brightness, HMI zoom luminaire with as many automated features as possible but, top of the list for all the obvious reasons, it had to be quiet in performance. In the spring of 1999, technical consultant Mark White, together with John B. Read, John Charlton and David Harvey among others, paid several visits to Wynne Willson Gottelier's (WWG) London Studio.

What brought them to WWG was the knowledge that the design company are behind the twin axis, double mirror, beam positioning system as used on their own RazorHead searchlight project and by Coemar on their NATs. "The advantage of the system was immediately evident," says Mark White. "We have very restricted room for the hang, so there can be no question of an automated yoke in those positions. Furthermore, within reason, the WWG orbital head gives us the flexibility to choose any luminaire on which to put it. Another crucial factor is that, unlike other mirror systems, this one will always give us a symmetrical beam-field."

The luminaire selected for this treatment was the Juliat 2.5kW HMI zoom profile, and by the time the design process had run its course, a whole new automated light emerged from the shadows - Fantôme. To global positioning, were added the following remote attributes: zoom/focus, iris, framing and scrolling colour. Naturally, all these attributes will run on DMX and they are provided on top of the DMX controlled dower and remote ignition already resident in the luminaire. The first Fantômes will be installed shortly.

Cue Lights!

Cueing the vast number of potential operations in an opera or ballet is a complex task; the ROH's previous cuelight system, while sophisticated, did not allow the level of flexibility required by the new stage systems, and has been replaced by a touch-screen system from Northern Light. The control panel presents the SM with a heavily programmable display, with monitoring of outstations to detect failures, as well as 'acknowledge' functions from each remote position. The system is being installed in two phases; the final version will allow software patching of the 24 'keys' on the touchscreen panel to the 285 remote outstations, complete with lamp detection (a custom modification for ROH). This application represents only a fraction of the potential of the Northern Light system, which can be used to control and link virtually any element of a production.

In Translation

One unusual requirement of opera is Surtitles. The provision of a simultaneous translation of foreign-language operas (called Supertitles in the US) was started in the mid-eighties at Covent Garden amid much controversy. The opera cognoscenti claimed that this was 'dumbing-down' opera, while Royal Opera management stuck doggedly to their guns, and now the Surtitles facility is seen as a key factor in persuading new audiences through the doors. The first system at Covent Garden was based on a trio of Kodak 35mm carousels with high-power lamp bases, controlled by an Electrosonic dissolve unit. These were located in an amphitheatre projection box and fired at a 4.8m wide screen flown below the royal crest downstage of the house tabs. The requirement to crossfade subtly between one pair of lines of text and the next was established; whereas television subtitles may be seen to 'cut', this was unacceptable when the characters were so much bigger. Mechanical unreliability, coupled with the inflexibility and cost of a slide system, resulted in a change to a video projection system in 1989, with a custom-designed event control system used alongside a two-channel caption generator and Hughes monochrome projector.

The new Surtitles system is the third generation of video systems to be used by Royal Opera, and with the increase in throw caused by an extended amphitheatre, the possibility of an active screen was investigated. Despite experiments with plasma technology and the increasing number of LED-based products available, the unique display requirements of the Surtitles system meant that a projection system was once again selected. A Digital Projection 5gv 5000 lumens projector now fills the diminutive projection box, throwing the image 39m to the gauze-covered screen. Two floors below, the Surtitles control room resembles a broadcast suite; TFT monitors from Sony and Melford Electronics are used for programme output, conductor camera, stage camera and the Courtyard Electronics Credit caption system. In addition to visual feedback, the isolated control room also receives show relay in stereo via an Allen & Heath GR-1, with an overriding paging feed in the event of any critical calls.

Sound Connections

Sound, as with Surtitles, is a potentially controversial subject in an operatic environment. Unlike arena productions, however, Covent Garden remains faithful to tradition and does not reinforce on-stage singers - except where it is specifically required by the composer or designer. The precise requirements for effects, off-stage choruses and other aural trickery necessitate an immensely flexible sound system. So flexible, in



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The balcony sound position with Calrec console

While this is far from ideal acoustically, it has the commercial advantage of not using up paying seat space for a mix position. For more complex productions, an area of removable seating has been constructed near the centre of the balcony tier, where a temporary FOH position may be set up. The custom-configured Calrec Q-series console used for this purpose was chosen, in part, for its compact dimensions - given the need for up to 48 inputs and 40 outputs. Elsewhere, much custom-built equipment is in evidence; Pressley's own loudspeaker designs are used for all but the smallest enclosures (though Ethos Acoustics and ATC both supplied midfield and nearfield designs as part of the re-fit).

Amplification is by Chord - a name associated with the studio market, but not previously seen in any number in theatres. The ROH

requirement for over 200 mono amplifiers gave rise to a custom design that delivers 280W RMS continuous into 8W - but a burst power of over 1kW into 2W if required. Amplification is routed to loudspeaker positions by a distributed speaker jackfield - supplied, like the other audio and video patchbays, by Ghilmetti.

Programme Mode

The full opera and ballet programme kicked off in early December as scheduled with a new production of Verdi's Falstaff. Final commissioning and debugging, however, has slipped by about three months and will continue for the next few months as the various systems are exercised by their new owners. John Fairclough expects to vacate his project director's seat by April as the last of the building handovers are completed, and his praise for the in-house development team is unequivocal: "To have got here on time after five years is amazing," he confesses. "All credit to the house staff - much of this was a totally foreign activity to them. There has been a huge learning curve for everyone, with new ways of working and a much higher level of technology than before."

Fairclough also points out that this was no ordinary development project: "The Opera House is an amazingly complex environment - more akin to an aircraft carrier than a normal building. It's full of a myriad of different cottage industries that go to make up the opera and ballet companies, each of which has its own very specific set of needs. I'm very proud to have seen this project through from checking the first drawings to buying the last teaspoon."

"It's full of a myriad of different cottage industries that go to make up the opera and ballet companies, each of which has its own very specific set of needs."

fact, that no part of the Sound Department's system is permanently installed. Instead, ROH has installed an infrastructure of mind-boggling complexity, designed to manage the transition from analogue to digital equipment while coping with the needs of operas spanning nearly three centuries.

As well as front-of-house and on-stage sound, the infrastructure provides connections for video (stage and conductor pictures, house sync, Surtitles), communications (talkback, paging, show relay, cuelights, IR, RF) and allows for future control applications that do not form a part of the house IT network. A total of nearly half a million metres of cable has been run between the 3,000 connection panels and the three rack rooms located two floors below stage level. Canford Audio was appointed as overall infrastructure supplier, and teamed up with AVS to install and terminate the system. ROH head of sound Eric Pressley has applied an 'infrastructure-led, rather than equipment-led' philosophy to avoid tying himself to one type of equipment in any location. The stringent HSE regulations now placed on the Royal Opera House make it a complex job to plan for cabling to moving elevators, across doorways and the hundreds of stage-related locations, and staffing limitations dictate that changeovers should be as swift as possible.

Though most locations around the house have a selection of audio, video, control and data connections (generally provided on patch panels), two positions are earmarked for mixing and have to cope with rather heavier traffic. The Staff Box - the most upstage of the house-left Grand Tier boxes - has been divided to allow a mixing position.

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At the close of the year I went on a test run of the Docklands Light Railway (I'll go anywhere with the word 'Light' in the title), and thus found myself at the Dome - the other side of a security fence admittedly, but actually quite

close for the first time. Contradicting logic, it didn't look that big, but it was intriguing just the same.

I'M NOT SURE what I expected of it lighting-wise. I have watched it rise over the last two years and decided that some lucky blighter was going to get an astronomical budget to indulge in some truly lateral thinking. What a huge canvas to be let loose on.

"A window is a high tech trouble-free monitoring device which I recommend to weather forecasters. Like the man said, if panic didn't reign, it certainly had a working majority."

ANYWAY, all this was just daydreaming as, on the big night, I was due at the local 'big house' and thus to be safely insulated from the televised New Year. Horror of horrors, the damn man had installed a set bigger than I've ever seen away from Mr Barco's premises, so there was nothing for it other than to watch the efforts of Mr Woodroffe and his team. I was a bit disappointed: certainly there were enough moving lights to empty all those sheds at Greenford, but doing all the predictable things moving lights do - that's how it was in the brief bit I saw anyway. Is it enough to just have more of the same?

YOU CAN PUT my apparent sour grapes down to the fact that I'm currently on a trip through the 'Flu Zone' and still bruised at not being invited to do the job.

NATURALLY, I'D KEPT MYSELF FREE for the New Year period, waiting for the big one to turn up and make me a small fortune, but somehow the celebrations got staged without me. I did get one offer to "care-take" the TV interests of a concert "up North" albeit at a week's notice - very fishy! I wonder what you do about such challenges? You know the scenario: a rock and roll LD, no less egotistical than the rest of us, has painfully given birth to his latest creation and you are supposed to persuade him, amongst many things, that the deep red he uses on half the numbers is not really televisual and gets very noisy once transmitted. He also quite likes the unadulterated 6,000 Kelvin from the followspots - it helps to cut through 150m of smoke. Flesh tones to him are whatever transpires, not what's built in to yours truly's head. Anyway, as the words 'no win' and 'situation' fleet through my mind, I achieve an increasingly rare 'first' and turn down a job which, for the mere price of 40 years of marriage, I could have done. There are simpler ways of having a miserable few days.

I RECENTLY RECEIVED a call from a company who produce weather forecasts for a number of ITV companies. They get two Brownie points (well three if we give them one for choosing me). The first is for providing a moment of sheer poetry: As I arrived at their offices it started to snow - big fluffy flakes in true Christmas-style. I was ushered into the control room where a lady was recording the midday forecast in the studio next door - "not a bad day" she's saying, "about 7 degrees Celsius, dry, rain later etc". I tried to point out the white stuff on my shoulders to the bloke in charge, but he was too busy rolling tape, tweaking the camera and running the autocue with his foot to be phased by a noisy visitor. When he finally came to notice me, he did the biggest double-take of the year, then, accompanied by five forecasters, legged it for reception where they have a window! A window is a high tech trouble-free monitoring device

which I recommend to weather forecasters. Like the man said, if panic didn't reign, it certainly had a working majority.

BROWNIE POINT TWO was for giving me a lighting problem that I knew I could solve - rare indeed. There had been complaints that the pictures were a bit flat and I reckoned I knew why. Immediately over the one camera was a Blonde or one of its derivatives. About 10 or 15 degrees away on either side, at the same height, was an Aurasoft. The two backlights were of different types, but didn't enter the equation as neither pointed at the presenters. The conversation went as follows: John Watt - "You're using all the wrong lights." Weather man - "No, we're using all the right lights . . . (wait - it's called timing), not necessarily in the right places."

I HAD HOPED TO AVOID an annual formula this year - namely New Year Resolutions. However, my correspondent in Wiltshire has increasingly referred to this column as the moan of the month so my own resolution better be to stop moaning and, come to think of it, stop reminiscing too, though the latter may spell the end. As for the rest of you, here are a few ideas if you don't have any original ones of your own.

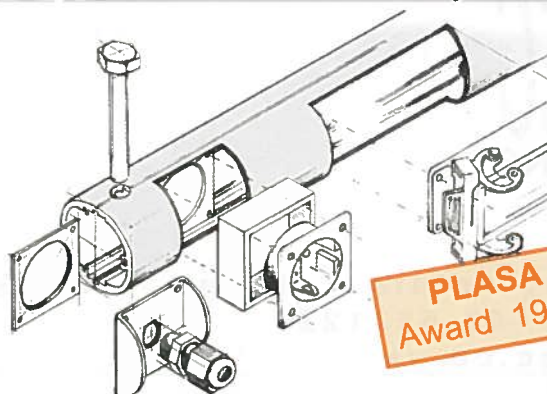
WEAR TWO WATCHES, one showing UK time and the other set designer's time (the latter being back timed from transmission time, it automatically excludes all focus time and assumes all operations will be suspended for six hours while the floor is painted).

DON'T WATCH GMTV on a day when you are required to make any colour decisions - it will distort your perception for hours after. It is now so orange that news shot in sodium discharge lighting looks quite pleasing.

ON CORPORATE SHOOTS add one of those smiley masks on a stick to your kit; you will need it, as the MD will assume he qualifies as executive producer, whilst at the same time not having an inkling about the desirability of being miked before he speaks, or the inevitable "am I on now" lack of polish after his cue from the floor manager.

BUY A FORD TRANSIT VAN as all studios have now stopped making any pretence at servicing equipment so you need to carry the essentials of life with you. It wouldn't be so bad if this was only blackwrap and gaffer, but you should also now include buckets of hot soapy water, profile shutters (various), ladders, scaffolding and, of course, aircrew-type survival rations as canteens are only open for the convenience of the office staff. Incidentally, don't be fooled by the little sticky labels saying 'Pat-tested'. All you can depend on is that someone stuck a little sticky label on the gear, probably not Pat at all.

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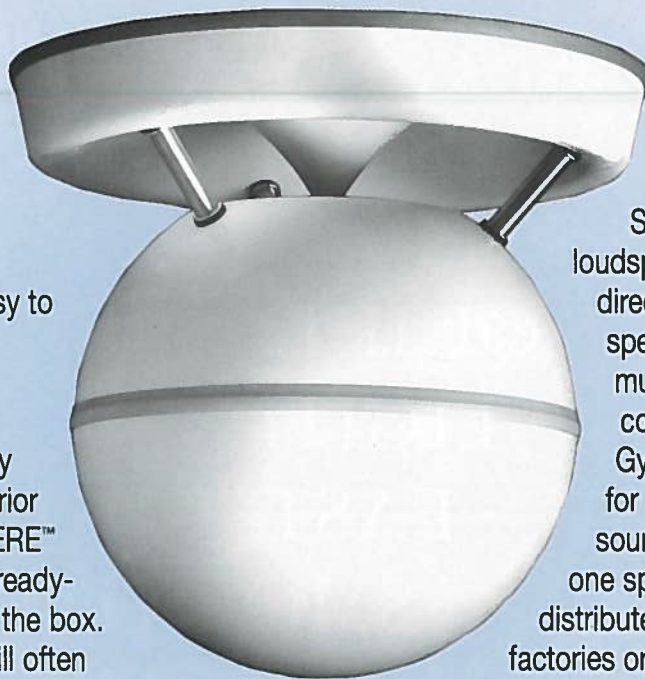
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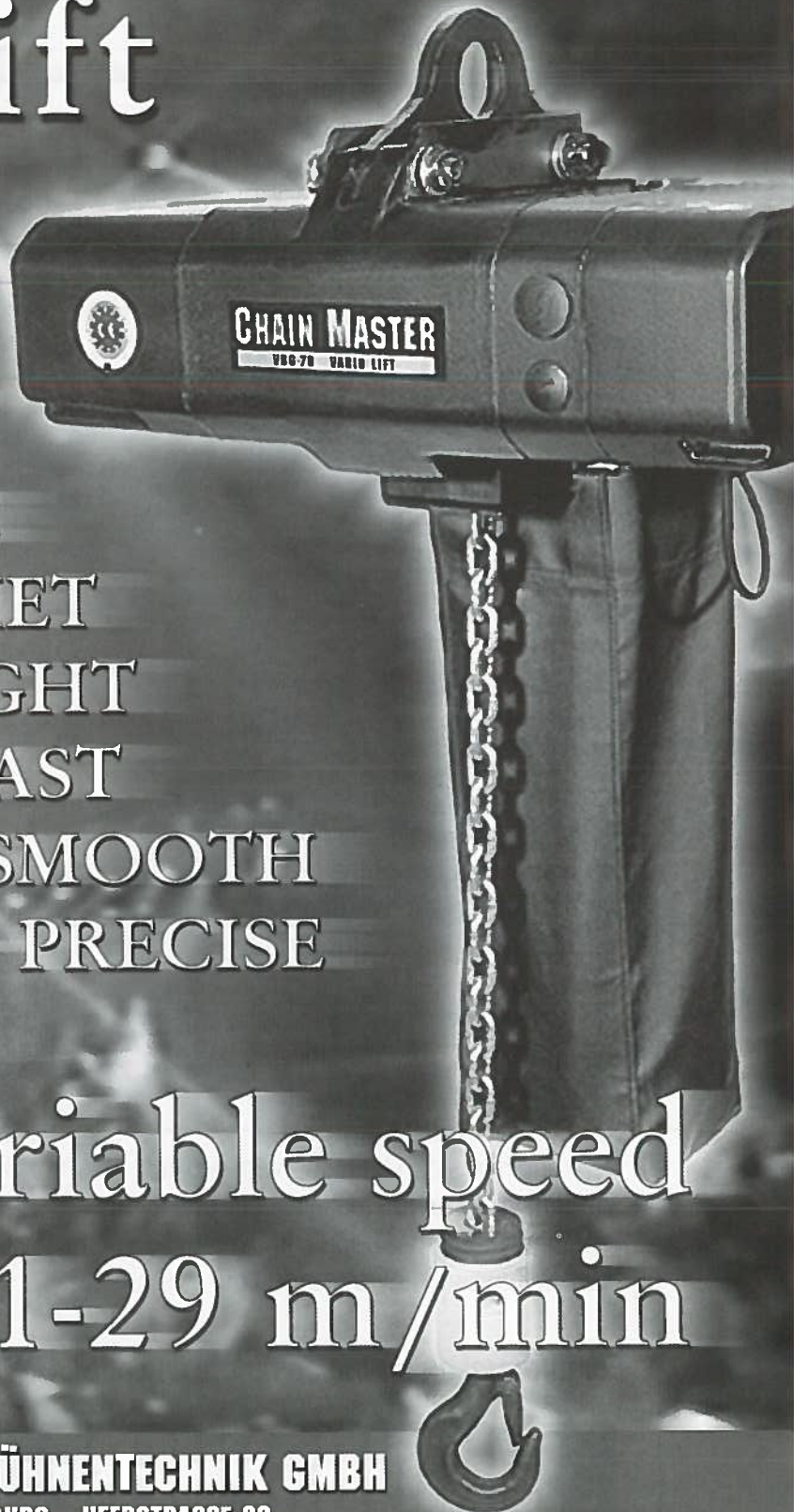
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Designer-Led

Technically adventurous, it took the right environment and an imaginative installation team given enough creative space to produce something different from the plethora of other recent high profile 'cutting-edge' dance venues. Area claims the first dedicated club surround-sound system, a specially-devised laser and a funky, immersive lighting scheme tailored to the space.

The 1,600 capacity club is placed smack bang amidst downtown Watford's central shopping precinct. It is an underground club - if only in that it's located in the basement of the former Kwiksave! Area's large, modern, low-ceilinged, open plan design is uncomplicated, inviting and warm. Full of wooden surfaces and dramatic photograph-clad, constantly changing foamex wall panels, Area beckons those seeking a more hardcore music policy and a less sterile environment than the mainstream.



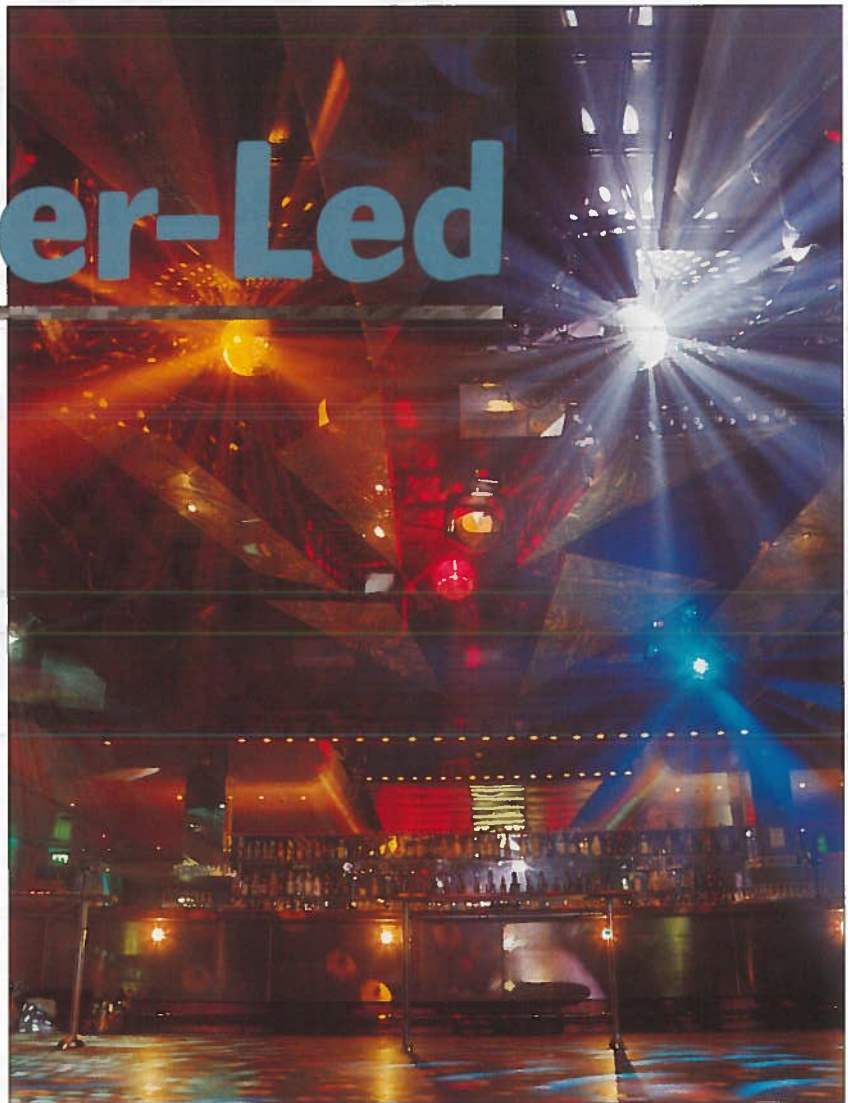
NIGHTCLUB

The effects lighting and audio installation was undertaken by Manchester-based Fern Audio Visual. Headed by Chris Ewington, Fern has been actively engaged in lighting and sound installations (and loudspeaker manufacture) for the past five years. Fern also specified the club's architectural lighting, installed by AES Electrical.

Ewington has a different outlook on life to that of many of his contemporaries. He originates from a theatrical background and has also worked as a rock and roll and conference lighting designer. He and his associates enjoy clubbing on the vibrant Manchester off-mainstream scene. They are bristling with innovative ideas, passion and energy for the business in which they work.

Fern came into contact with Lenik initially through a Fern mailshot. Once the Watford site was acquired Lenik asked them to tender for Area. Ewington initially didn't think they stood much of a chance with the larger project, pitching against several other higher profile installation companies. At his first meeting with Lenik at Shepperton Studios, Ewington was given 10 minutes to state how he'd do it differently.

Ewington told Lenik that Fern was 'design-led'. He meant that each project was individually technically conceived and evolved organically with reference to the surroundings and vibe - not clinically designed or specified to a formula or according to which equipment manufacturer gave him the best deal! An hour later they were still



locked into the philosophical definitions of 'design-led' . . . after which Lenik seemed convinced Fern was the company for the job!

Building contractor Quinbuild moved onto site in August. In addition to designing and supplying effects lighting and sound, Fern also designed the electrical infrastructure for the whole club and worked alongside interior designer Brian Miller. Other team members were Dave Russell who co-ordinated with Watford City Council, ensuring all necessary regulations were in place, and quantity surveyor Ian Webber.

There were the obligatory heated debates over the placement of AC ducts, cable runs and doorways. However, having a small and integrated team made the decision-making process relatively easy. This was one of the reasons the schedule ran so smoothly. By October, things were going so well that they decided to accelerate the club opening to December! "That's when it all started getting very hairy!" declares Ewington.

Lenik was insistent he wanted the lighting to be animated, but not in a robotic sense. Ewington, who holds the honest opinion that clubs are basically for "drinking, dancing, pulling and visiting the toilets," has long thought that ostentatious club lighting 'structures' are irrelevant. "People don't stop dancing, look up and start examining the lighting rig," he states. Similarly, once they've seen a lightshow once, they won't be interested in seeing it again.

Area, Watford's new dance venue, owned by entrepreneur Leon Lenik, opened in December - three months ahead of schedule. Naturally it was not without plenty of sleepless nights and seat-of-the-pants moments as Louise Stickland discovered



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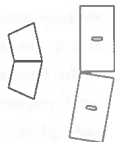
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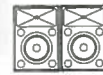
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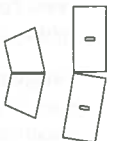
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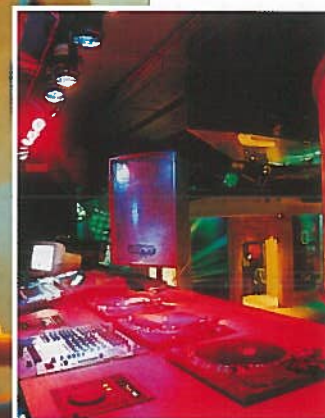
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*Title page - the main dancefloor
Left, the lounge bar and inset, the DJ booth - complete with Allen & Heath Xone 464 DJ mixer and Yamaha O2R digital desk*

He became convinced that colour psychology was the way to go in Area. He dryly recalls a moment years ago while working with Mike Sweetland when he had a long debate with a lighting student on the subject. He concluded dismissively that it was "total bollocks!" However, in the light of experience, enlightenment and practical research - including a visit to the Colourscape art installation in Castlefield, central Manchester and seeking out a huge diversity of opinions on colour - Ewington decided that it really could influence people's moods.

He put the idea to Lenik. They then decided to build a prototype version of a colour-changing light panel for Planet K in Manchester, on which they were simultaneously working. This back bar lighting feature was based on a 40-wide, six-high set of amenity lights (commonly found in council house toilets), specially modified to take low voltage lamps and controlled via a 96-channel dimming system. Together with Fern's 28kW touring sound system, it attracted much attention in the press.

Once they had decided on the panels for Area's roof, it was a question of producing them cost-effectively. Initially, they intended to cover the entire ceiling above the dancefloor with one panel, but then Ewington decided it would look better broken up like shards of glass, and so Area's 21 assorted sized and shaped triangular light-boxes materialised.

These contain over 7,000 50W MR16 lamps, all wired in series and run back to the LightProcessor wall-mounting Lightomation Power Stations. Effectively, they are giant disco boxes. Fern drew up the shape designs on CAD and sent them to a laser metal cutting firm. The finished plates were returned to them to have the MR16s mounted and wired in, and for 7,200 individual squares of red, blue and green coloured glass to be stuck to the front of the sheets. Outer boxes were then fabricated and fitted at Fern's unit in Manchester. It took five weeks to complete the boxes, swelling Fern's full-time staff to over 16 casuals and freelancers, working 24-hour shifts!

In between the light boxes in Area is a minimal sprinkling of moving heads - six High End Studio Spot 250s (to be increased to 12), 20 Pars and some Strong strobes from Spain. The side room is lit even more simply, with four High End Technobeams, four strobes and another 20 Pars.

The High End Systems kit was supplied by UK distributor Lightfactor Sales, who turned the order around in lightning quick time. Ewington loves both the mirror units and the moving

yokes for their superior optics and has long awaited a project where he could specify High End fixtures.

Ewington explains that the original financial plan was geared to a 25-week timescale, so when the build plan was compressed to 17 weeks, large amounts of additional money needed raising at very short notice. This put all suppliers and contractors under further pressure. He reckons many contractors would have walked off the project, but Fern held their nerve and the money arrived - sometimes only with hours to spare - in the relevant bank accounts just before the club opening.

Area's diode-pumped frequency-doubled neodymium validate 400mW argon laser was developed by James Powell, a long-term associate of Ewington. Powell, currently finishing his Ph.D in Laser Physics at Manchester University, is shortly joining forces with colleagues at Quantum Lasers, a Manchester-based company which supplies lasers for assorted industrial applications and the entertainment business.

Quantum supplied the laser heads, while Powell developed all the electronics and designed the control software allowing the laser to be run fully via DMX, hooked into the Avolites lighting console, where it is treated like any intelligent lighting instrument. The laser's 120 pre-programmed graphics can be selected and manipulated via the desk as simply as if they were gobos. The laser is hermetically sealed and has a 10,000 hour lifetime. As with all nd lasers, it's air cooled, draws an expedient three amps and can be powered from a 13 amp socket.

For lighting and effects control in both rooms, Ewington chose an Avolites Azure Shadow 2000 console. He sought an affordable, powerful, easy to programme and use machine that fulfilled the usual club criteria - robustness, reliability and preferably resistance to liquid. He caught up with Avolites' May Yam at PLASA '99 and saw the desk in action. The order was actually only confirmed the day before the club opened, and on the night Yam and her colleague Tony Shembish stepped forward from the crowd to help programme the Azure during what was a completely manic evening!

Fern began manufacturing its own loudspeakers because it was sick of installing other people's that weren't right for the space, or disintegrated after a few months due to mass production techniques or lack of attention to detail. It was always the intention to make a standard range, but invariably the company ends up constructing space-specific boxes.

"People don't stop dancing, look up and start examining the lighting rig," he states. Similarly, once they've seen a lightshow once, they won't be interested in seeing it again.."

Area's main room contains eight mid-top cabinets positioned all around, loaded with a 2" horn flare and two 15" drivers. These are designed as bass drivers, but work very efficiently in the mid-range section, producing a superb sound while leaving the bass speakers to take care of the sub-bass. There are 14 bins in the main room, set into the structure of the building, underneath the DJ platform at one end. Being involved, hands-on, at all stages of the project's build meant Ewington could ensure things like this happened! This speaker arrangement yields enormous energy yet dissipates bass frequencies away from the dancefloor, leaving a warm, rich sensation and a solid barrier of bass between the bar and the dancefloor.

The side room has four mid-high boxes and 10 double bass bins, also built into the DJ platform's underbelly. They are using PSL amps which Ewington says are "Excellent". They also have two BSS Soundweb units, used for distribution and EQ'ing and four Omnidrive Compacts used as limiters for the two main rooms. A series of coaxial drivers in the ceiling further back from the main system act as delays at the rear of the room. More coaxials feed the chill-out room, together with two bass bins, all routed through the Soundweb.

The DJ booths each feature the recently launched Allen & Heath Xone 464 DJ mixer units. DJs get particularly energised by the on-board effects filter each side of the crossfader, which enables them to drag the sound through the whole frequency range in flanging-effect style. The main room also has a Yamaha 02R digital desk, and Ewington believes it is the first specifically-designed club surround sound system in the UK.

On one hand, they wanted the option of hands-on real-time control of the sound, to be able to split it and bounce various elements all around the room. On the other, Ewington also sought to ensure the sound was surround in the truest sense, even when no-one was 'playing' with the mix or on the 02R, and so added a Dolby Pro Logic Processor into the equation.

The 02R enables the addition of effects, loops and samples to the sound, effectively by

Members of the Fern Audio Visual team at work . . .

Right, Chris Ewington working on the design brief with Chris Wardle in the background

Below, Dave Vachre, James Simpson and Darren Wills on site

Bottom Right, Dave Vachre building one of the speakers destined for Area



creating a studio-based environment so sound can be moved using the 02Rs in-built surround panning facility. It can also sequentially send MIDI cues to and receive them from the Azure lighting desk - so as the sound moves around the space, lights can change colour and move in unison.

Under normal circumstances, the Dolby decoder tries to receive the datastream of information usually laid down with the stereo track at the final mix stage. Surround sound, used for several years in the film and television industry, has been known to have an effect on music when the processor is set to phantom mode.

Ewington discovered the extent of this by accident! Hours of exhaustive experimentation followed with him listening to a myriad of different tracks and music. It dawned that, in essence, when sound effects are added to a raw piece of music, they are treated as devices separate to the studio mixer. When a producer/engineer adds effects like reverb to a vocal track, it's done by routing the channel out of the desk, through the effects unit, and returning the effect sound back into the desk. With this routing the effect acts as a mirror,

returning the sound out of phase. The Dolby decoder set in phantom mode recognises only the material recorded out of phase. It distributes that sound through the back left and right (surround) channels, simultaneously eliminating the effects material from the front left and right. Perhaps not very noticeable when playing-

back certain types of music like classical, but for the effects-laden genre of dance music the result is utterly stunning!

In Area, the signal is fed from the Xone mixer into the 02R. The master output from this is fed through the Dolby decoder which sends back four

channels that can be individually routed, mixed, panned and overlaid with loops or other effects if desired - or alternatively, just left to do its thing.

The system designed for Area maintains the stereo image, which is ideal when the dance floor is focused onto the DJ, but when the effects are slung out of the back channels, the impact is gobsmacking! Even the most dedicated groovers and gurners stop in their tracks in amazement!

And that's what the technical installation at Area is all about - experimentation, passion for ideas and the balls to be different. Maybe not the likeliest location for a club that's pushing the frontiers of technology, but anomaly has a habit of having the last laugh!



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After all the promise and the ballyhoo (no, that word is not a certain lighting company's™), how did the industry fare over the millennium? While there is no doubt that it was a disappointment from the aspect of its promise to deliver massive revenues,

nevertheless, we emerged virtually unscathed. We don't seem to be carrying the can altogether for too many of the perceived failures.

THE BIGGEST OF THESE was the press label of damp squib slapped on 'The River of Fire' promised for the Thames, but I suspect that this may have been more to do with the hype, rather than the failure of pyrotechnic perpetrators themselves.

People, including the press, took the literal meaning of Fire, and totally forgot that the same word is part of Firework. Consequently, they assumed that the Thames was going to be set alight for 18 miles in some huge emulation of Backdraft which, needless to say, did not happen. However, the array of explosive devices did seem to appeal to the punters, whatever the national press may have thought.

COLLECTIVELY, we seem also to have avoided the general opprobrium over the Dome. Despite the fact that the word on the street has it that the opening show was delayed by the failure of a crucial part of the audio system, the greater failure in organisation of the guest arrangements seems to have been sufficient distraction to have kept that out of the headlines.

SO WHO WERE the winners on the night? According to my E-mails from outside the UK, mostly based on CNN coverage, London came out best (but then the writers wouldn't have been aware of the pre-publicity promise). Within the business, Paris and the Eiffel Tower extravaganza mastered by Yves Pepin of ECA2, with lights supplied by Procon of Germany, seems to have been the favourite, with Sydney and Rio close behind.

MY SPECULATIVE PIECE last month about the proprietorship of DMX 512, seems to have stirred a flurry amongst protocol aficionados. The only consensus seems to be that the situation will only get resolved if and when it is tested in court by Vari-Lite themselves. Not what you might call an ideal situation.

STEVE CARLSON, of Rosco and Co-Chair of the ESTA Control Protocols Working Group, takes issue with my statement that 'we were assured that DMX was a universally open protocol'. I think what he is saying is that it was an assumption that we all drew, rather than an assurance, but he says, "USITT made DMX available as a public standard with no royalties attached" and Steve Terry of PRG Lighting, the Chairman of the original USITT committee and the acknowledged father of DMX512 says, "DMX remains securely the property of USITT, and indeed the world market."

I DON'T REALLY SEE that with statements like those one could have come to any other conclusion than that what was on offer was an open protocol, and even if that was an assumption, a heck of a lot of people made that same assumption, however . . . Steve Carlson qualifies his statement as follows: "While most standards-making groups have a patent policy, including ESTA, there is no guarantee that a standard will not contain elements that become points of contention as intellectual property.

Standards groups do not conduct patent searches (my underlining). It is each company's responsibility to judge the validity of such claims and make their own decision as to their use of such a standard. In some cases, the final test will be in a court of law." Steve Terry also points out that the claim "has yet to be put to test in a court . . ."

NONE OF THIS gives me any more comfort, nor moves us on from the position that another party, other than USITT, may have a claim on the application of asynchronous serial protocol with a moving light. Something that the entire industry is now dependant on, whichever way you cut it. Remember, that the original committee never imagined that the protocol would be co-opted for this purpose, it was originally proposed for dimmers, so factually DMX has become anomalous as a victim of its own success.

INCIDENTALLY, while I have your attention on DMX, can I suggest that anyone who wishes to influence the future direction of the protocol takes the opportunity to read the proposals given on ESTA's website (www.esta.org/tsp/index) and further to register their views and comments. I will say no more, except that people are welcome to copy their comments to me and if there is a consensus I will open it up in this column for discussion - tony@wwg.co.uk.

BACK TO THE ORIGINAL THRUST: It has been pointed out by others that there has been something of a shift in the situation since Vari-Lite started selling product as opposed to renting it. Their press release of 31st August last, announcing that decision, includes the following statement from Rusty Brutsché, Vari-Lite Chairman and CEO: "The new products are being developed from Vari-Lite's innovative technology but will operate on non-proprietary industry standards (again, my underlining), and meet specific cost targets for competitive pricing." In its literature for the products, the company refers to DMX512 as 'the international standard'. While this is a long way from conceding any claim for proprietorship that they may entertain, it is probably about as good as we are going to get while current, not directly related, patent actions are in train with Martin, and pending with Clay Paky, Coemar, Studio Due and SGM. Ho, hum.

THE ANNOUNCEMENT that Andrew Lloyd Webber's Really Useful Company, is to buy the Stoll Moss Theatres chain, rather than see it become a corporate extension of Broadway, seems to have been greeted with general relief. Apart from evident xenophobia, perhaps somebody can tell me why that should make any difference whatsoever.

"My speculative piece last month about the proprietorship of DMX 512, seems to have stirred a flurry amongst protocol aficionados."

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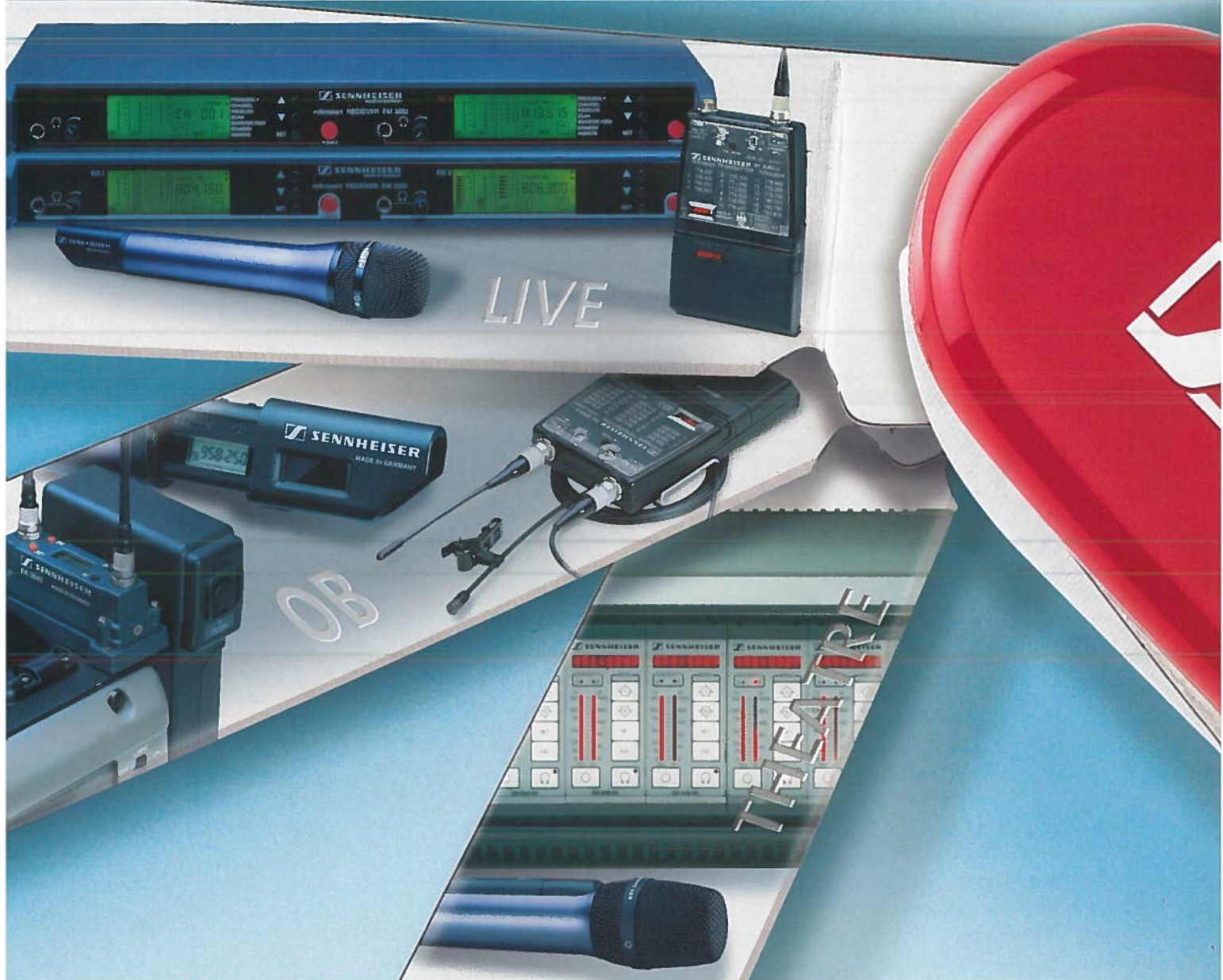
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Apocalypse NOW

November 20 1999 marked an important milestone in the recent history of live televised music - the resurrection of eighties stalwart The Tube. Music fans who are old enough to remember the Friday night favourite, broadcast live from Newcastle, will recall the quirky presentation skills of dynamic duo Jools Holland and Paula Yates, together with cutting-edge bands, humorous and informative interviews and a controversial attitude which resulted in a ban for Holland, who used a four letter word when it still had the power to shock.



TV/BROADCAST

How times have changed. The Tube late nineties-style, or 'Apocalypse Tube' as the three-hour one-off was dubbed, was this time in the hands of Radio One DJ Chris Moyles and former MTV presenter Donna Air; slicker, more hi-tech, and for those with the technology at home, benefiting from fully digital sound and picture. However, the format was still basically the same, constituting a mix of live and pre-recorded performances interspersed with filmed interviews and documentary-style items plus sketches by Moyles and Air in such locations as the men's toilets, the pub next door and along the frozen wastes of Newcastle's River Tyne.

Together with the appearance of The Artist, a Tube guest way before his name change, and the original director/executive producer team of Geoff Onefour and Malcolm Gerrie, there was another Tube veteran in evidence on the night: sound recording truck the Fleetwood Mobile. Fleetwood, which worked on several of the mid-eighties programmes, was on hand to provide the live mix for the show's broadcast on Sky.

Now at the forefront of live music on TV, Fleetwood's history began in 1978 when engineers Andy Rose and Nick Reynolds perceived a gap in the market for a good mobile facility. According to Fleetwood's present co-owner, Tim Summerhayes: "Nick and Andy proceeded to clean up. Live albums were experiencing an all-time high in the late seventies, and they were in such demand, recording anything and everything."

By 1989 Fleetwood had doubled its quota of trucks, but four years later the recession had taken its toll on the music and entertainment industries while the Tory government's decision to franchise commercial TV channels meant less budget for luxuries like live recording. Compounded by internal management problems, Fleetwood went out of business, the first truck being sold off to the Manor while the other was left in limbo.

In 1995 Summerhayes was working with Ian Dyckhoff on a project for the Manor. Summerhayes was a freelance engineer who had worked for Fleetwood in its heyday, running the second truck, while Dyckhoff was freelancing at the Manor. A visit to the pub one night sealed the pair's future; over many drinks they put together a self-confessed "harebrained scheme" to buy the Fleetwood truck and refit it.

A priority was to equip the truck with a mixing console which would be technologically capable of handling the most demanding projects, the original Raindirk desk having been modified to the extent that no more upgrades were possible. However, Summerhayes had built a studio for Status Quo's Francis Rossi, installing a digitally-controlled, analogue Euphonix CS2000 console. Rossi was still hankering after his old Harrison desk, so it wasn't difficult for Summerhayes to persuade him to reinstall that and rent Fleetwood the Euphonix - extended to 72 channels.

One of the reasons for Fleetwood's success is undoubtedly Summerhayes' and Dyckhoff's dedication to improving the sound quality of televised music.



Caroline Moss catches The Tube live from Newcastle

According to Summerhayes: "There's so much bad sounding music television because it's done on the cheap, and it's completely counter-productive. I think record company people hear bands sounding awful on television and think 'We don't want our band on there sounding like that, let's do the track to playback.'"

On the night, an audience of several hundred had gathered in Studios 2 and 5 at Tyne Tees by 8pm for the three-hour broadcast, which went on air at 9pm. The main Studio 5 hosted most of the live acts - Robbie Williams, Paul McCartney et al - while the smaller Studio 2 featured DJs for the dance slots, plus Travis who performed one song live. The sound team on the night came from John Henry Enterprises, who provided the stage monitoring and sound reinforcement for the audience, and the Fleetwood Mobile which supplied the broadcast feed to the Visions OB truck for uplink to Sky.

Aden Gregory, manager of John Henry's audio department, was in charge of live sound. The rig included two Midas Heritage consoles plus an XL3 - all around 40 channels - in Studio 5, with a 32 channel Soundcraft SM20 in Studio 2. "We basically had a desk per stage, so there weren't really any changeovers on the night, and all went well," says Gregory. All monitors were EAW JH15s - around 26 in total - powered by EAW KF850s and SB1000 amps. Fleetwood and John Henry provided half the microphone splitters each, sending the signal to the monitor consoles inside and to the truck in the car park, and an Opticord was used to run between the two studios, taking care of the 250m optical cable run outside the building. The mics used were "the basic touring



Cover page - Studio 2 which featured DJs for the dance slots.

(photo: Richard Young/Rex Features)

Above, Tim Summerhayes in the Fleetwood mobile

standard" including Shure SM58s, whilst Shure SM 600 and 700 in-ear monitoring systems were used to supplement the system. All radio mic systems were provided by Cine Video.

Outside in the Fleetwood Mobile, Summerhayes and Dyckhoff shared the same logistical problem of juggling numerous acts on several different stages. Dyckhoff explains: "We used five stage boxes between the three stages and then replugged the multicores from one stage box to another as the performances progressed, resetting on the Euphonix desk as we moved the multicores across for each band."

With the advent of digital and pay-per-view broadcasting, the amount of live music on TV has been on the increase in recent years and John Henry now specialises in this kind of work rather than touring. The company has worked on the BBC's Later

With Jools Holland since the show's inception, has just been out on the road with Top Of The Pops Live for eight weeks and also worked with Fleetwood on Channel 4's Music of the Millennium. Despite John Henry Enterprises having carved itself a niche in live TV work, Apocalypse Tube nevertheless presented its own set of challenges which the company rose to admirably. "It all went really smoothly, if not necessarily easily," says Gregory. "At the end of the day, it was a three-hour long live show and we didn't have one problem."

The lighting designer on Apocalypse Tube was Eugene O'Connor, who has worked extensively with Geoff Onefour as a co-director on such programmes as

The White Room and the Beat Route series with Jools Holland. All lighting equipment was supplied by Light & Sound Design and consisted principally of Icons and Martin Macs 600s and 500s. In Studio 5, O'Connor worked with art director Christopher George to design light boxes instead of projection screens. "During the meetings to plan Apocalypse Tube, we

decided we didn't just want to have four flat screens," he explains. "Instead we decided to have a 'bar code' effect all around the studio. Every screen had one or two moving lights behind it so you could change the colours in the boxes and also chase light around. It also meant that the light didn't spill everywhere - we could flash the colours in the boxes and chase them around the room."

Five Barco 9200 projectors - three along the main wall of Studio 5 and two on a second wall - were used to project computerised images supplied by Chris Saunders with a mixture of gobos from the lighting rig. Even though Studio 5 functioned as one self-contained sound stage, each stage necessarily had its own lighting rig, with the stage used for The Artist and Skunk Anansie featuring lots of Par cans and ACLs as well as moving lights. In Studio 2, O'Connor created the atmosphere of a small club by using more conventional lighting, with a few smaller moving lights, plus Lightning Strikes strobes.

O'Connor reports a smooth and successful show, and indeed this sentiment is echoed by all who provided technical services. It helped that many of the companies involved - production company Initial, Sky, Visions, Fleetwood and John Henry Enterprises - find themselves working more and more together on live broadcasts of this nature. The Fleetwood and Visions OB trucks in particular are working more and more as a team, as testified by Vision's managing director, Bill Morris: "They really understand television and are a very TV-friendly company. Using Fleetwood actually helps when you're planning an operation because you know you can rely on someone else to plan and co-ordinate on your behalf and that they're going to deliver exactly what you need."

One of the key developments of the last year was that the company became part of the Sanctuary Facilities Group in April. The duo had been feeling the need for a business infrastructure, freeing them to focus on their strengths, and this latest move has provided that and much more besides. "When we set out one of our aims was to see projects all the way through, from initial organisation to recording the job, then mixing it before taking it through to the mastering stage," says Dyckhoff. Sanctuary's other facilities, such as Nomis, Trident Studios and Chop Em Out's mastering suite, will smooth this process considerably: for example, Nomis Studios in West London is equipped with another Euphonix console, eliminating compatibility problems.

Like John Henry Enterprises, Summerhayes and Dyckhoff are also picking up on new opportunities for Fleetwood such as digital, pay-per-view TV and webcasts. Now with the backing of the Sanctuary Facilities Group, together with their hard-won reputation which has placed them at the forefront of televised music, they are perfectly positioned to take on the challenges of the new Millennium.

"With the advent of digital and pay-per-view broadcasting, the amount of live music on TV has been on the increase in recent years."

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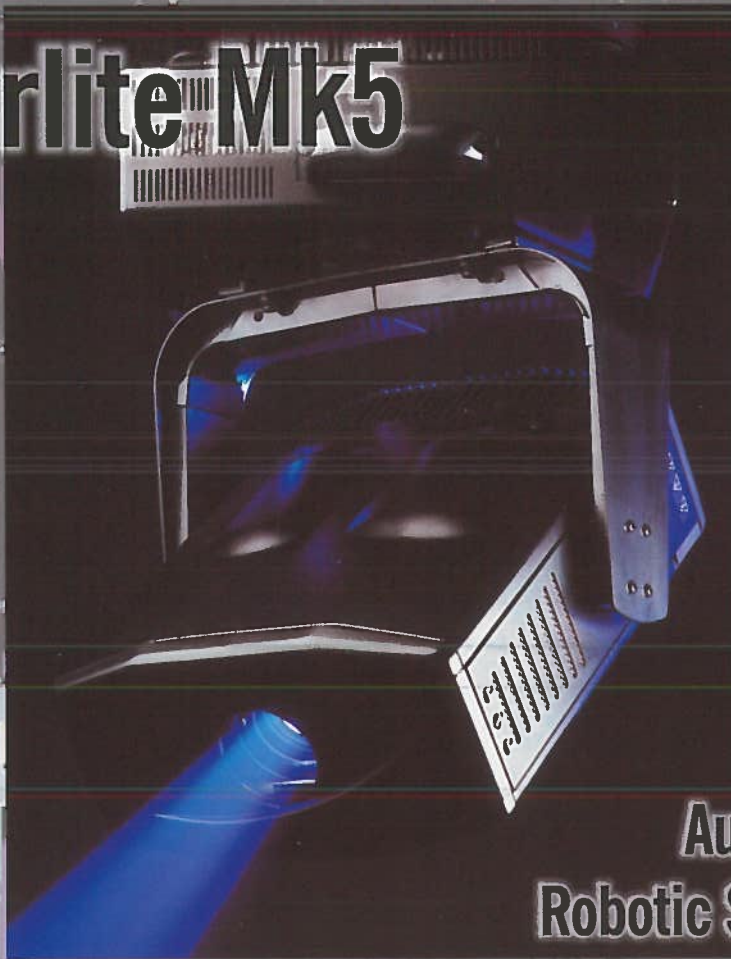
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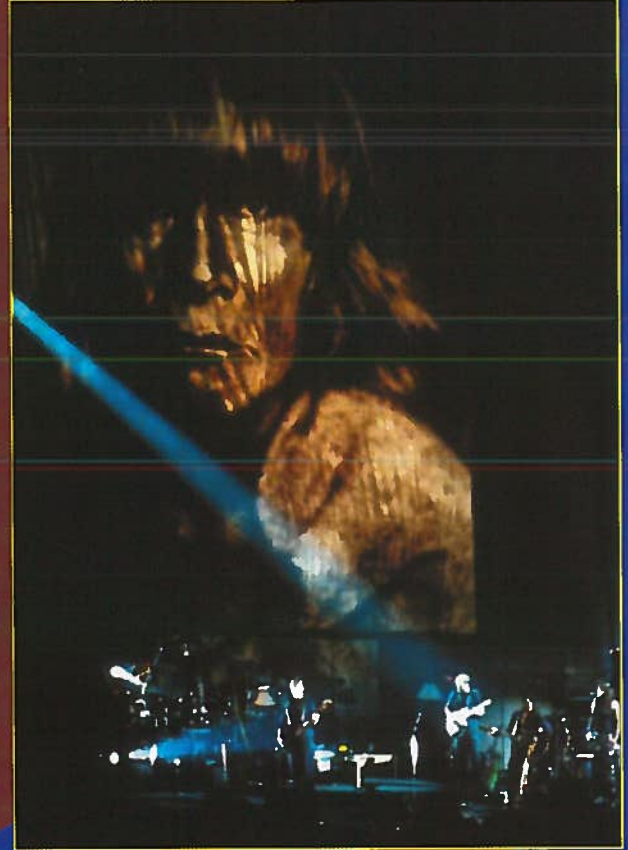
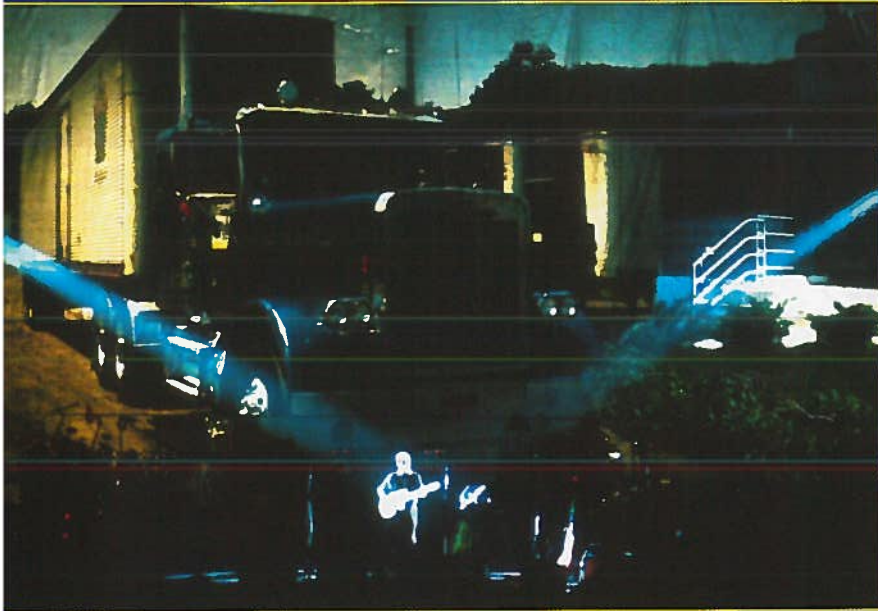
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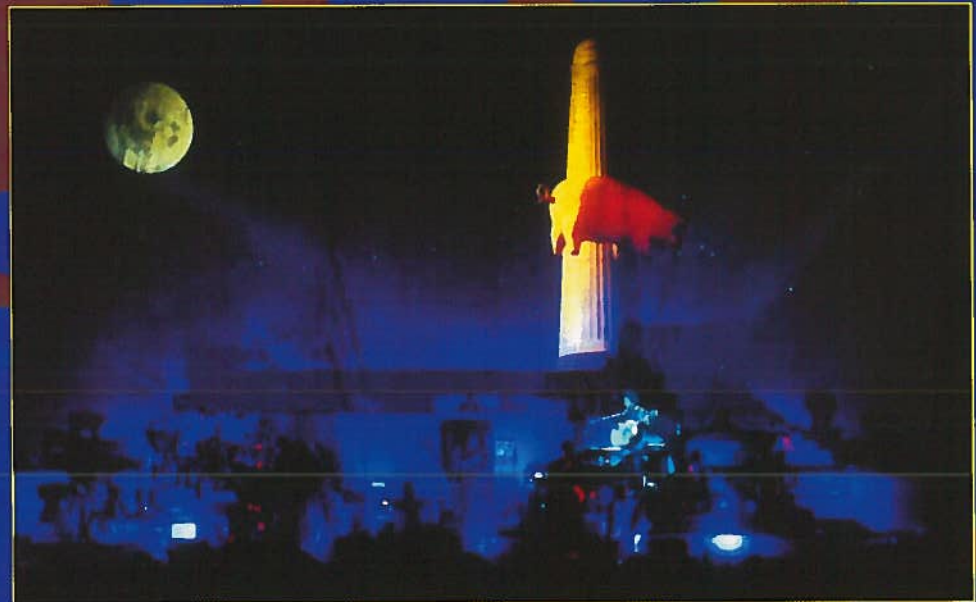
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Writing to Vermeer

Louise Stickland

finds a layered production full of symbolism crafted from the seamless amalgam of multi-media technologies

Writing To Vermeer is a work of many paradoxes. Its images and memories are simultaneously thought-provoking, shocking, beautiful - and always memorable.



THEATRE

The opera is the latest collaboration between darling of the intelligentsia Peter Greenaway, Saskia Boddeke, Holland's finest avant garde director and renowned contemporary composer Louis Andriesson. Together these protagonists form a powerhouse of creative risk-taking, and Writing To Vermeer is a truly innovative work in terms of ideas, non-narrative format and stage presentation.

Being premièred at the end of the century, it puts both times and contexts of past and present into new perspectives. The work references some of Holland's most dramatic historic moments aided by modern performance technologies more akin to pop videos and rock shows, and its opening run straddles two centuries.

The première caused a notable stir in performance circles with Greenaway - not by his own choice - receiving the bulk of the attention for producing this left-field contemporary work. Apart from the fact that he has the name, he's male and he germinated the original idea and wrote the libretto, he's also the first person to point out the importance of Boddeke's role. She did most of the rest.

Greenaway's fascination with Johannes Vermeer has a long prequel. In 1982 he made a film in Rotterdam called *A Zed and Two Noughts* which featured the life and work of Vermeer. His research on the painter and the contemporary political events during his productive years - the mid 1600s - has been exhaustive.

The intense visuality of moving image which dominates Writing To Vermeer is not mere gimmickry or creative recalcitrance - it informs the production with a real emotional depth and meaning. French cinematographer Jean-Luc Godard suggested that Vermeer was one of the world's first cinematographers as his paintings are consistent with a world created entirely by light. Greenaway believes Vermeer may have used an

early camera obscura; the construction, framing, cutting and cropping of his paintings - entirely at odds with the classical style of the age - plus the painter's very specific use of light has reinforced this theory.

He also points out that development and experimentation with the first crude optical systems and lenses - for use in microscopes and telescopes - was happening in Utrecht during this time. In fact, the Dutch's repertoire of scientific feats includes the first examinations of spermatozoa under a microscope!

There were several reasons that made the opera an ideal candidate for multi-media presentation. The fact that Greenaway and Boddeke are highly creative risk-takers and have used film and video in their three previous opera productions, Vermeer's potential historical associations with lenses and optics and the fact that his paintings have a genuine filmic quality are just a few of them!

Vermeer himself is absent from the piece. In fact, there are no male leads at all onstage. The story is of the three women in Vermeer's life - his wife Katrina Bolnes, his mother-in-law Maria Thins and his model Saskia de Vries - and the letters they write whilst he is away for 14 days in The Hague authenticating paintings.

The letters tell of day-to-day harmony, bliss and domestic trivia - much like the pastoral nature of his paintings. This is sharply contrasted to the increasing external political events and unrest of the time like the Tulip Crash, growing public discontent, the murder of dignitaries the De Witt Brothers by the mob and the territorial aggression of France under Louis XIV. The external action culminates in the French invasion of 1672, when the Dutch opened the dykes and deliberately flooded their country to repel the invaders, dramatically ending the Golden Age of economic prosperity.

Het Muziektheater, home of De Nederlandse Opera in Amsterdam, was built in the seventies and offers an enormous space and considerable staging opportunities. The Writing To Vermeer set consists of a massive 12m by 9m canvas tilted forward at 20 degrees set in a tray of water -



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to represent Holland. All the action takes place on the canvas or in the water surround.

Water and other symbolic liquids - varnish, milk, blood and ink - play a pivotal linguistic role in the piece. Actors/singers receive frequent dousings from rain pipes and pre-rigged tanks of water and other substances located in the roof. They are soaked for most of the opera's continuous hour and 45 minutes running time and the final denouement sees a waterfall cascading down over the canvas washing away the blood and guilt of the people following the De Witt murders and representing the flooding of the country.

The Opera House had to install extra water management facilities and piping for this production. Three enormous water tanks and pumps are located under-stage, holding eight tonnes of water and pumping 2,000 litres per minute round the system when the waterfall is in full tumble. Another under-stage device splits the flow between the two main water effects - the tray beneath the canvas and the waterfall at the end - and also pumps water up to the rain troughs above stage. A thickening agent is added to the water going to the waterfall which increases its viscosity, making it appear to move in slow motion.

The spectacular moving image elements of the show were co-ordinated by Peter Wilms, who is rapidly carving out a niche for himself as a creative video/projection director and programmer. He is assisted by Marita Ruyter who, like Wilms, has worked with Greenaway and Boddeke for a few years. Both were also involved in their other recent opera, Christopher

Columbus, which opened in Berlin two months earlier.

Video preliminaries on Vermeer commenced 12 months in advance. All concerned were keen to escape from conventional viewing angles and perceptions and move on from just using squared up screens positioned end-on to the audience. So emerged the idea of projecting some of the footage onto the floor, using gauzes at various points and generally creating different layers and depths of projection - and perception.

The film in the opera was produced by Kees Kasander (Greenaway's regular producer) and edited by Elmer Leupin, with Ruyter overseeing its production. The footage contains scenes - both realistic and symbolic, representing the historic references - invasion, assassinations and economic collapse, as well as replications of Vermeer paintings and the handwriting of the three women. Calligraphic text is a frequently recurring building-block in Greenaway's work. The handwriting appears at various moments of the opera, ghostlike with no hand or pen visible, just the unfolding text marching its way across the screens and up the canvas.

Moving image is formatted for three different types of projection - film, video and scrolling slides. The slides are projected by two Pani BP4s. One belongs to the opera house and is rigged over-stage, pointing vertically downwards, projecting handwritten texts and 'floors' which creep over the canvas. The other Pani is a brighter Compact version and sits front-of-house, projecting onto a variety of surfaces over the set. Both have PIGI single scrollers, a favourite of Wilms

which, with the stability of the HMI lamp, are ideally suited for this type of show. Both scrollers are mounted vertically to enable movement along the upstage/downstage axis.

Three onstage video screens, rigged at different upstage/downstage depths, fly in and out on the house bars during the performance, in unison with their own three rear-projected Eiki LC1 projectors rigged in cradles also on house bars. There are a further two Digital Projection 8GV video projectors, one at front-of-house and one in the roof pointing directly downwards. These are again used for projections onto the canvas floor and into the water.

All video projectors are fitted with conventional Pani dimmer shutters converted to take a 0-10v control signal. This allowed Wilms to fade video images to complete black rather than the grey that is produced by video projectors without an image. With five machines operating in close proximity, a dark stage soon becomes unachievable without such devices.

Finally there is a rear projected 7kW 35mm cinema projector which throws Cinemascope footage onto the 17.5m rear cyc. In addition to these surfaces, a front-of-house scrim flits in and out at strategic moments and takes projection from both front video and slide projectors.

Wilms explains that much to the chagrin of the film purists on the technical and creative crew, the

Van de Aa manipulated the sound of breaking tree branches into an animated, fractured frenzy for the moment when the De Witt brothers are murdered by the mob.



Accompanied by explicit video, this sent the woman sitting next to me momentarily into the crash position, hands clamped over ears!



footage was initially shot on video with some on 16mm and transferred to film, impostoring for the 35 mm parts. This was a practical decision. Het Muziektheater is the largest of the spaces on the current itinerary, and with the others not having the luxury of sufficient room for widescreen rear projection, this source had to be adaptable.

All video material is stored on five Doremi hard drives fed via a matrix and RGB data dissolves to the various video projectors. All video hardware and the projector dimming shutters are controlled by a Mac running Dataton multimedia show control software, programmed and operated by Wilms. He also uses this to trigger the PIGI computer controlling the scrollers, bringing the entire visual element into a single control hub.



Librettist and co-director Peter Greenaway with co-director Saskia Boddeke

Above right, lighting operator Dick Jan

The front-end video control system has been instrumental in giving the directors the total freedom to route the various sources to all possible locations, enabling them to experiment with different combinations of material. Looping, fade times and image sequences can be programmed, rather than being edited to disk. This flexibility has also been an asset during the

rehearsal period when on-stage time was limited in a busy opera house with a full on-going repertory programme.

This type of control is also perfect for live performances. Cues can be tweaked if the orchestra changes tempo from night to night - not uncommon - at the end of the day the show is ultimately driven by the conductor! Wilms, Boddeke and Greenaway all comment that putting on such a technically ambitious show in the short timescale available simply would not have been possible had they still been reliant on restrictive video disk or tape playback methodology. By contrast, the 35mm projector is switched manually on cue by its own operator, which has proved as reliable and accurate as any machine!

The video and projection equipment has been supplied by a combination of Creative Technology and Production Arts Europe in the UK and Dutch AV specialists Heuvelman.

Sound and acoustics for classical or operatic performance is a delicate matter which becomes even more complex when the sound is amplified. Opera purists are notoriously hostile to any type of reinforced sound, but with Vermeer already pushing the boundaries of convention, this major technical component came naturally! That aside, the copious energy and action of the piece and consequent high ambient noise levels onstage made amplification essential.

To sound designer and engineer Wilfred Houthuijsen, it's all in a day's work. He's been applying sound to classical works for 25 years and is one of Europe's leading specialists in the field. Vermeer is a great tribute to his abilities. Even the trained ear is hard pressed to realise that the orchestra and performers' clear, precise

and natural tones are the result of some carefully applied technical chemistry.

A clue lies in the overall assertiveness of the sound, plus the fact that it's quite obvious to most that the orchestra would never get themselves out of the pit into the house whilst simultaneously contending with very powerful singing, water pumping, actors splashing and the chorus clumping around with props if it wasn't for a bit of enhancement. As always, the bottom line with any amplified classical show - although Vermeer is hardly 'classical' in aesthetic or musical terms - is that the reinforced sound is absent and natural. Het Muziektheater had a new



Apogee speaker system installed in the summer which is excellent. It consists of three main clusters of Apogee ALA3 enclosures, six per cluster, and is an in-line system for maximum flexibility, enabling the sound to be very directionally projected into the house.

Around the sides and rear of the auditorium are Apogee AE5 and FH2 speakers, the latter loved by Houthuijsen for their power and energy. Front-fills are six SSMs and AE3s, and there is a ceiling system of AE5s for sound effects which points directly downwards into the house. The ambient system is set up in five different groups from left to right, all run through a matrix and augmented by an under-balcony delay system and two side-balcony delay systems. An enormous effort has been made to pull the sound image down so it appears to be coming from the stage.

All speakers are powered by 41 Apogee DA-800 amps and Apogee DA1 digital processors are used for EQ'ing and delaying the whole system, crossovers, plus the storage of effects presets. The whole is 'supervised' and controlled by an



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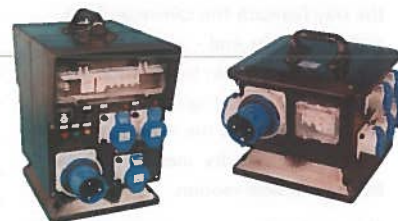
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For Vermeer, the orchestra were fully mic'd, with particular attention paid to strings and the pianos, using a total of 24 microphones, a mixture of AKG 414s and Neumann KM140s. Apart from adding a touch of reverb, they were simply brought up into the mix and out of the pit to come alive with the rest of the performance.

The sound department built a further four AE3 wide dispersion front-fills into the set for Vermeer, primarily for the vocals. The three principals, the chorus and the four person children's chorus are all on radio mics for which Houthuijsen used a Sennheiser 1046 receiver system.

Houthuijsen is very much a feely, hands-on engineer who enjoys 'riding the faders' of his Yamaha PM4000 throughout the show. An additional Yamaha 02R console deals with the 13 digital musical inserts fed into it via ProTools software. This is then fed into the PM4000 and into the surround-sound speakers at the back of the house. Originally it was planned to trigger these with the video by Dataton, but the ProTools' two-second kick-in proved too slow, so control passed back to the sound department for manual operation on cue.

The electronic inserts were created by talented young Dutch composer Michel Van der Aa. They heighten the often shocking real-world moments, working in tandem with the moving image, jerking everyone from Vermeer's domestic bliss into facing the violent external issues of the day. Some of these sonic moments are incredibly graphic! Van de Aa manipulated



Left, video co-ordinator and director Peter Wilms and Marita Ruyter

Inset, sound designer and engineer Wilfred Houthuijsen



the sound of breaking tree branches into an animated, fractured frenzy for the moment when the ill-fated De Witt brothers are castrated and murdered by the mob.

Accompanied by explicit video, this sent the woman sitting next to me momentarily into the crash position, hands clamped over ears!

Lighting and set was designed by Michael Simon from Germany. Apart from the canvass, the other main feature of the set was six side-stage vertical towers with moving drawbridges that connected with the canvass.

Associate LD Marc Thurow explained that lighting is very much a servant to video in terms of Writing To Vermeer's visuality. They used a total of only about 80 lighting circuits, assorted fixtures, culled from the Opera House's own stock.

Lights are almost entirely located from side stage to avoid interference with the screens and obviously, with the amount of water onstage, floor lighting was not an option. The only overhead lightsources are 12 Martin PAL 1200s, not seen moving, but used for precise highlighting and pinpointing of actors and props on the canvas. Five ARRI 4K fresnels are used for

strong slices of side light from one side, and the rest are a mixture of house profiles, fresnels, pars and low voltage lamps. The water surrounding the canvas is lit very effectively, bouncing reflections enthusiastically around the stage.

Lighting moods plays a lot on colour temperatures - it's either warm or cold shades of white, with saturated colour and tinted shades virtually absent. The simplicity of the

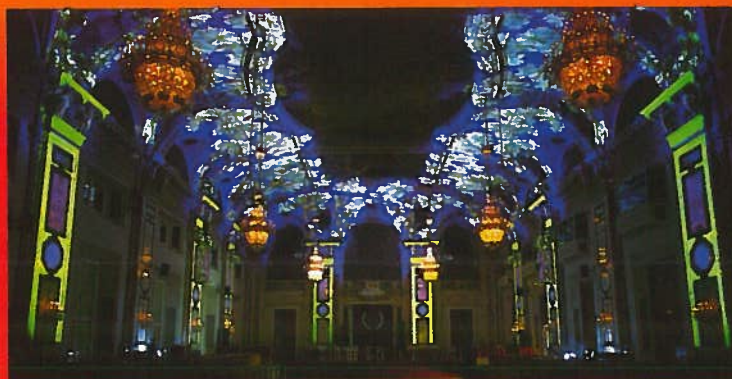
monochromatic tones works in tandem with the stage action and the moving image, adding a further layer of filmic montage.

Lighting control is from the house Compulite Ovation 4D console run by Dick Jan who heads up the lighting department for this production. Thurow comments that it has been very enjoyable working with the highly motivated and positive attitudes of the primarily Dutch crew at Het Muziektheater!

Writing to Vermeer has received fantastic critical acclaim from those enthused by the ideas and the creative coherence of experimental opera. It's doubtful whether the conservative English operatic establishment would have let them get away with it, but the Dutch psyche and culture are totally different. It wraps in Amsterdam in early 2000 and moves to Australia to play the Adelaide Festival in March before moving to New York for a month in July. It will probably be revived at Het Muziektheater, but is unlikely to be performed in the UK in its current format.



Life is a projection



Jan Herbert, Asleep in the Stalls...

Did I tell you before that circus is the new rock and roll? Well, it may be marching bands after all, or transvestite revue. I've seen some tremendous shows in the last month or so, in and out of conventional theatres, but some of the most striking ones have been far from conventional in what they're trying to do.

ON THE CONVENTIONAL side, there's been a mass outbreak of gadgetry, from Katie Mitchell rather unnecessarily spicing up Ted Hughes' *Oresteia* at the Cottesloe with hand-held video cameras, to Simon McBurney making very creative use of mobile phones, of all things, in *Complicité's* latest, the amazing *Mnemonic*. I suppose it's pushing things a bit to call these two very creative directors conventional, but I do so to distinguish them from some decidedly unconventional and highly entertaining shows that have been around.

TAKE LA CAGE, for example. It bowled in from Las Vegas to the tatty old Embassy Rooms (Masonic and barmitzvahs a speciality) and created a minor sensation. On the face of it, the show is nothing more than a succession of drag acts, but

what drag acts: a wisecracking Joan Rivers conducts the proceedings, introducing a wicked series of send-ups and devastatingly faithful imitations of the icons of the drag world, from Judy Garland all the way to Michael Jackson.

THERE ARE NO credits for the technical side, which is a pity, because the unnamed LD is the hero of the evening, making glamour out of nothing more than a foil-strip curtain and a tiny apron stage. The costumes of the queens and their attendant dancers contribute, of course, but it's the resourceful cabaret lighting that gives the show its essential top dressing of glitz.

FROM THE RELATIVE INTIMACY of Tottenham Court Road to the cavernous London Apollo (which will always remain the Hammersmith Odeon to me) is quite a step, but there you'll find another unlikely American import in the shape of *blast!*, modestly subtitled 'the musical explosion of the millennium'. Don't laugh, please, when I tell you that this is the work of a group of young, permanently but genuinely smiling American ex-high school musicians, many of them from the Star of Indiana Drum and Bugle Corps of Bloomington, not a stone's throw from the stamping ground of the Music Man and his 76 trombones. From the opening version of Ravel's *Bolero*, which starts with just one drummer and builds to the traditional ear-splitting climax, to the finale, *Malaguena*, which fills the whole theatre with twirling ribbons, arched flamenco backs and every conceivable variety of brass and percussion instrument, the show never lets up.

THE CONCEPT of the show is based on colour, a fairly straightforward progression through the rainbow from a cool violet start to a brash second half among the yellows and reds, and sure enough we have another LD as hero. This time he gets a credit, and it's our own Hugh Vanstone, no stranger to this hall having lit *Dolittle* there. For once Mark Thompson's very practical design plays willing second string to Vanstone's effects, which range from the gentlest of colour washes to a violent assault on the audience from floor-set white mini-floods shone straight in our eyes. Having been able to cope with Dr Dolittle flying round the theatre, Hugh has no problem with a staging which makes

clever use of the sides, aisles and balcony of this rather wide auditorium and boasts an in-the-round finale: no matter where they are in the house, every performer is lit. The sound design comes from Bobby Aitken, who doesn't need to do much for the brass players, but gets extra sharpness for the drum interludes and makes sure that the gentler sounds of the percussion spectrum come through. A week before *blast!* opened, Messrs Thompson and Vanstone were responsible for the very different sights of Alan Bennett's *Lady in the Van* at the Queens. That's quite a design triumph as well, but I bet they had more fun in Hammersmith.

PERCUSSION is a major feature, too, of Ariane Mnouchkine and Hélène Cixous's new show for Théâtre du Soleil at the Cartoucherie in Paris. Its title translates, perhaps a little too resonantly for these two ladies, as *Drums Across the Dyke*, and sure enough the climax of its first half is a drumming sequence of great beauty and ferocity that recalls the heyday of Footsbarn. There are three lighting credits, and the sets are the work of Mnouchkine's long time collaborator, the brilliant Guy-Claude Francois. A visit to Soleil is always an experience in itself: for this oriental excursion, the foyer is crowded with purveyors of noodles and won ton. The production itself is magical, if over-elaborated as is the way with this company. Its basic concept has all the actors in a somewhat Brechtian folk tale playing puppets manipulated by bunraku-style handlers. However, after three hours or so its originality pales somewhat, only to be redeemed by a fantastic final scene in which the dyke of the title bursts, the stage is flooded and a flotsam of puppet-corpses covers its surface.

OUT AT LA VILLETTE, Paris's shiny science park, Cirque Plume has set up its marquee for a new show. If circus is the new rock and roll, Plume are certainly high in its charts, with a mix of skills and humour that other troupes would find hard to equal. What is especially fine about the show is the smoothness with which scenes segue into one another - even Cirque du Soleil (no relation to Mme Mnouchkine) can't always adequately disguise the length of set-up necessary for a high-wire or a trapeze act. Most of the changes are done by the performers themselves, and they can turn a hand to followspot operation or hand-held lighting when needed.

I'VE NEVER BEEN A GREAT FAN of circus, but today's practitioners win you over by sheer speed and skill. Which is why a visit to the Dome and its acrobatic highlights is higher on my list of priorities for the coming year than Covent Garden, although a first look around suggests that the new Opera House is a tremendous entertainment in itself, without a single soprano in sight.

"The costumes of the queens and their attendant dancers contribute, of course, but it's the resourceful cabaret lighting that gives the show its essential top dressing of glitz."

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Girls

Boys

The Spice Girls and Pet Shop Boys provide Steve Moles with plenty to talk about



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"Tips for people working in set carts," said Deptford John, warming his feet. **The Spice Girls** back line meister and source of much mirth at Christmas, Deptford has his finger firmly on the pulse of this show. "You can't shuffle around like the hunchback of Notre Dame all night. I went along to a breakers yard and got myself a seat from a Granada Ghia." Very Deptford, but how about this for an insight? "You don't realise how cold it is being that close to the ice - I'm sure that's why the kids dance all the time."

That's roughly what the journalist for *The Guardian* thought - rather a curmudgeonly appraisal, especially for a home turf show, but then he's nearly as old as I am and his leg-shaking days are obviously well behind him. The fact remains that the Spice Girls have now achieved sufficient gravitas to attract nay-sayers like vultures round a Tory mayoral candidate. 'This Tour could be their last' goes the refrain, so it's as well that tour manager Richard Jones reminds us that it was only this summer past when they sold out two stadium venues (outselling *Net Aid*, for example). And the Christmas shows - four nights each at Earls Court and the Manchester Evening News Arena all sold out months ago: "I put two nights at each venue on sale back in Easter," said Jones. "The extra two nights sold without any additional advertising." As you may have gathered, being tour manager for the Spice Girls has a wider brief than for most bands, thanks largely to their decision to self-manage. "I'm more their 'live

manager'," he said, "I talk directly to the Girls about all decisions to be made." It's a crucial point: this is by no measure a cheap presentation, roughly 80,000 tickets per venue is a fair revenue stream, but hardly enough to recoup major pre-production costs. Or is it?

Production

Chris Vaughan is the production manager and he maintains that the direct link between Jones and the Girls is one of the major reasons that the show came in on budget. "Because the internal structure is very small, you don't have to go through several layers of hierarchy. As it sold out in advance, we also knew from the outset exactly how much time and money we could invest in pre-production."

The classic example is show director Pete Barnes' set design - essentially a central circular stage - comprising a series of set carts built from steel. "We could have had them built from aluminium, and had all the back-line gear fixed in and hard wired," said Vaughan, "but that's where the savings are made. We got all the major suppliers together, told them of Pete's concept, and asked them all to go away and think about it."

Barnes' design puts almost the entire production in the air above the stage - amp racks and PA, lighting



Spicies in action at the Manchester Evening News Arena photos: Steve Moles

and control, projectors and screens. Including the mother-grid - 38 tonnes of it in total. "The riggers' role was thus much more critical," said Vaughan, "that's why I had to bring in an organisation with a lot of experience. I've known Jon Bray for years and defer to his judgement."



"There's already been more than enough discussion about whether the girls can sing with any power - but then they're not claiming to be Shirley Bassey - so the placement of the entire band, plus horns and strings below stage had to be a plus. "

With Bray's company, Summit Steel, at the reference point, all other contractors passed decisions through them. Vaughan singled out Wigwam for going to the trouble of weighing their PA cables so Bray would know almost exactly what he was dealing with. That might seem a small point, but the MEN, with its enormous central scoreboard, presents problems, not least finding 21 points at 1800kgs a piece in the central area, and still achieving a 10m trim for the lighting.

Lighting, Video, Pyro and Lasers

As show director, Pete Barnes has made this presentation visually as grand as the big tour last year, but not such a vast production. I liked his idea of getting Nathan McCree (composer of the music for Eidos's world-beating Tomb Raider) to score the opening sequence. As Barnes notes: "there's no existing Classical passage that can so neatly fill four minutes and fulfil the script." The script includes some spectacular laser work from Laser Creations International (LCI), two 18W Kryptons, two 12W mixed gas, and a YAG make a big impression. Part of the opening sequence includes sensational pyrotechnic detonations in the roof: seemingly triggered by the YAG, they are in fact radio controlled devices from Pyro Production Services. "They're absolutely great," said operator Clive Standly, pointing out that the radio system precludes him having to run miles of cable through the roof of the arena.

Barnes' key discipline - lighting - has not a filament bulb to be seen: 12 finger trusses fan out from a centre circle, spanning the 16.5 metre diameter of the main stage. Most of the 62 High End Studio Colors and 50 LSD Icons are there, just two of each above the B stage (not a playing area, just an entrance podium at one end of the arena), and another half dozen of each to light the walkway which spans the gap between A and B.

For most in-the-round shows, the general convention is to fill the void left by an absence of back drop, by being lamp heavy. Instead, Barnes has placed a followspot at the end of each finger, giving him three lamps per girl to provide constant coverage. In collaboration with Alan Chesters of Hangman, Barnes' design is a frosted wedding cake of ice and snow, Chesters putting a giant fibre-glass icicle at the rigs' heart to give Barnes a vertical target for colour and gobos. Though using under 100 instruments over the stage, the added gain to level from all the reflective white surfaces keeps this show bright and sumptuous.

Director Blue Leach runs the video side of the show. With an already heavy production hanging above stage, LED screens were a non-starter, so a projection system supplied by PSL is used. The new DP5 digital projectors, a pair each on four sides of the arena, play on to 20ft x 15ft screens. All video is live, and as such Leach does his usual breathless exposition of cut, change, and inter-play, between the six cameras he has at his disposal. Obvious ploys like putting each Spice Girl on the screen diametrically opposed to where they are performing, is livened up with old Super 8, Negative and Strobe effects. The camera chases that roll around the screens are likewise effective, but as Leach himself adds: "This is all about image magnification for the kids," and he doggedly sticks to it.

Sound

While the controversy continues about Wigwam's purchase of V-dosc (they have systems out with Steps and Boyzone, V-dosc UK providing another for Bewitched) the Spice Girls use Wigwam's core system of d&b C4s (formerly named 402). "Frankly we couldn't have done this show with V-dosc," said Wigwam supremo Chris Hill, immediately justifying his rationale for remaining a multiple-choice system supplier. And being the owner of two distinct types of PA has its advantages. "The d&b B2 subs are the perfect bottom end for the V-dosc," he continued, a point concurred by FOH engineer Ray Furze, who readers may recall had problems with said low end when he ran the M People show in early '99 (see L&SI January 1999).

Not that Wigwam has been entirely happy with all things d&b, not least controlling the vertical curve of the flown cluster. "They've provided a back hinge for the cabinet which we're beta testing here," said Richard Gibson, who puts the clusters together. He has just one column using hinges out of 20 (there's a five-wide cluster in each corner, as it were). "There's no doubt the hinges are better," he said. "Not only do they keep the back of the cabs in line, when it comes to de-rigging, the whole procedure is much, much faster."

That aside, Furze and Graham Blake on monitors both point to the stage configuration as the largest contributing factor to both of them having a relatively easy life. There's already been more than enough discussion about whether the girls can sing with any power - but then they're not claiming to be Shirley Bassey - so the placement of the entire band, plus horns and strings below stage had to be a plus. Add Shure in-ear systems for the girls, put all the band on lined Sennheiser HD25 headphones, and you've got 20 times more headroom than poor old Mike Dolling had on the first tour. Naturally, there's a couple of 'musos' determined to mess that scenario up, guitars and drums each have Nexo PS15s as well, the MD also using the smaller PS10s, but even so Blake is serene.

Furze's FOH position sports one new toy - the Sabine Feedback Exterminator: "It really helps in trying to get level out of low vocals." Furze has also become a fan of the Schertler mic for strings (see Deep Purple, L&SI September

1999), but otherwise his control, effects and dynamics are his familiars, not least his beloved Yamaha PM4000. "When they stop making this desk I'll be out of a job," he mused, and then passed some comments on what he considers to be the over-development of the new Yamaha board. No doubt he'll get used to it - they didn't make him engineer for the Dome opening for nothing.

As for how it sounds? There's no disguising the weakness in a couple of the girls, Posh is as lame vocally as she is wooden in performance, and Scary's not a lot better. But Sporty has both presence and a voice, even if a little ragged, and Baby was a revelation compared to May '98 when they first appeared in these pages. She'll never be a Céline, but she could give Ms McCutcheon a run for her money.

Musically, the bulk of their oeuvre is beginning to show its age: what it lacks in quality it compensates for with quantity. Quantity, it is said, is a good substitute for quality when you're hungry. How long the kids remain hungry for Spice remains to be seen.



Wide of vista, if sometimes bleak and barren, the Pet Shop Boys' take on life is at once exacting, yet wryly humorous, maintaining a callow eye on the absurdities of modern living. Very much in the Zen idiom, they manage to express the most with the least. You might almost cast them as Gilbert and Sullivan, poking fun at the establishment, but their gags are shorter and to the point. Nonetheless, the operatic reference holds good - there is no way on earth that a PSB show is a rock concert. From a production point of view, they must be fun to work with.

For a start, the set design is by Zaha Hadid. An architect of some renown, Hadid's a big enough fish in her own pond to have crossed over, becoming a populist whose face has graced the Sunday colour supplements. Like many an architect before her, she dabbles with set design: what she's produced for the PSBs is not profound, but it is unusual. Talking with Jon Pollak, who runs the light show, and Chris Bird, who operates the video projection, it's apparent they've become indifferent to its relevance. But I was struck by one powerful aspect to which they've obviously become accustomed - Hadid's set is simply a huge capital L in *italic*. A framework covered by stretched white lycra, it reaches 10 metres to the lighting rig's high trim.

For the first act, the L is a flat, two-dimensional object. Couple this with the surrealist costumes of the performers and it's a futuristic tableau on which to paint. For the second half, the

wigs for the natural middle-aged balding look. It's altogether a softer, more joyous occasion. The change is subtle, inasmuch as if you don't think about it, you'll overlook it, but the lifting of the atmosphere in the audience is palpable.

Lighting

Jon Pollak designed for the band's residency in London last year, but was unable to attend their needs when this tour was first mooted. "With this band you need to be on the scene, you have to get with the artist, their ideas and vision," he explained. "So I casually suggested they try Mark Brickman. They contacted him and he agreed." So it was that the wunderkind of Floydian excess came to modern musical irony. "It was a stroke of genius," said Pollak with some justification. "I'd never had occasion to work with him before, but he's certainly the most intuitive designer I've ever met." You'll have gathered that Brickman evolved the design, and when Pollak became available he took over the operation.

The entire system is High End - Cyberlights and Studio Colors - the one departure being a 70kW Lightning Strikes. "It's a system that could have come from any supplier," observed Pollak, "but LSD got the job and it's worked very well both here and in the US where the tour kicked off. Control is from a Hog II, which was a big departure for Brickman, but he tried the desk and became a convert."

Brickman's design is three simple brush strokes - a high truss mid stage, an angled truss stage right flattering the slope of the L, and a vertical stage left. By the time rehearsals drew near, Brickman, Pollak and the Hog programmer

horizontal part of the L is opened to reveal a deep interior, transforming the stage to 3D. The costumes change to casual, and both Tennant and Lowe forego their

Martin Phillips were all together in Florida. "What Mark has conceived is more theatrical than a rock concert. Most of the cues complement the video projection, which is more of a focus for the audience than the light show."

In fact, Pollak revealed that originally video (it's virtually all abstract, or modified VT, there are no live cameras) was to feature in every song, but Brickman fought hard and won the right to use just lighting for certain songs. "The thing is, I don't think there's any band who are as interested about how they're presented; they have a particular vision. They realise it's a package, and all of the elements are part of that package."

Video

Staging Techniques from New York provide the projection equipment - a pair of NEC 6500s. A DLP projector, the mirror chip technology within allows director Chris Bird to easily mask his projected image to an exact fit of Hadid's L. That's quite important, firstly because the tour has gone from sub-2,000 seat pros' theatres to big arenas, shifting projector and L positions daily, and secondly because the black space that surrounds the L is crucial: were it splattered with video spill, the whole conceit of the presentation would be lost.

Bird's main tools are a hard disk video player (based on a Windows NT system) with a DPS Video Perception video card in it. There's another computer (running in Win 98) for two software-based effects generators - Geiss and Dancer DNA - supplied by NottingHill Publishers. "Both bits of software analyse the sound and create effects in real time." A bit of an understatement by Bird - the DNA software particularly, is stunning, "as the name suggests it analyses the music and produces an evolutionary code."

What Bird describes is rather obscure when not viewed in context with what happens on the screen. There are 'creatures' programmed into DNA, these can be abstracts, or recognisable

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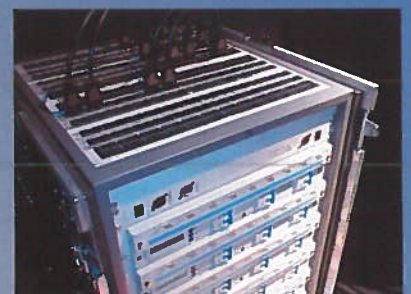
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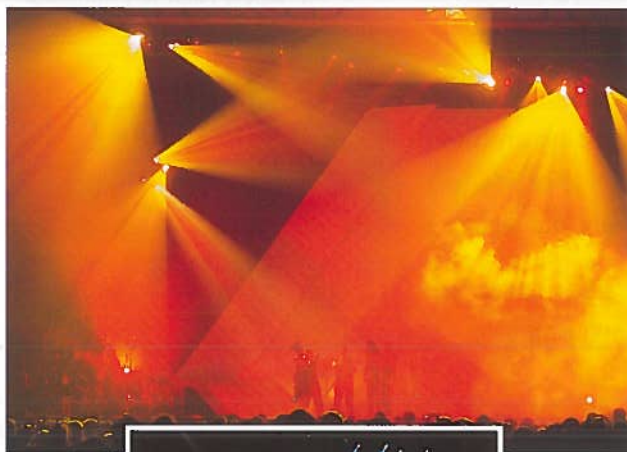
shapes. What's crucial is that from the original image, the evolutionary nature of the DNA software will change, grow, and animate the image. It bears some comparison to the Arkaos system, except that in realisation the image is much tighter.

Bird also has a pair of MX50 desks for control, giving him access to fading, strobing and other stock effects which he can overlay, and there is a VT source for one particular image. What Bird does is laudable, even more so when you learn he had just 10 days to put his part of the show together. "Brickman had heard about NottingHill's DNA, visited their offices in London, and I was the freelance operator they chose."

With almost no brief, Bird went out and bought all the PSB's pop videos, listened to the music and built a show. "Special praise must go to EMI's Interactive Studio in Abbey Road - they were the only place I could find that could take all the varying standards I was using for source material and put them on CD-ROMs for me." Bird chose that medium so he could take his stock material anywhere in the world and be pretty much certain of being able to find equipment to read it.

Sound

As you might imagine, Carl 'Snake' Newton has a busy time out front. It would be true to say there's more electronics surrounding his Midas XL4 and stretch than can be seen on stage, largely thanks to Jon Lemon who started the tour off. "He does know how to spec' a system," commented Newton on his good fortune, but Lemon has always been one of the engineers Britannia Row (main contractors) has always fully indulged, and not without good



reason. That doesn't mean FOH is a deep-pocket playground - some of it is there for security: "Like the DA88, which is used as a back-up if the sequencers sit down," which apparently they have done. And when you get to Tennant's vocal, surely one of the two key elements of the PSB sound, there are a couple of unexpected discoveries. "I've recently changed him onto an old EV757 microphone," explained Newton. "He has quite a sibilant voice and the more modern mics with their characteristic high-end frequency lift just didn't suit." Newton is also using a Behringer Feedback Destroyer on Tennant's vocal: "I'd been thinking about a Sabine for some time, but then I saw the Behringer and it's one tenth the price and I thought, I'll try it. If it's no good I won't have lost anything. It does 1/60th octave wide, so you can go to town on the filters, but you have to be careful or it will eat

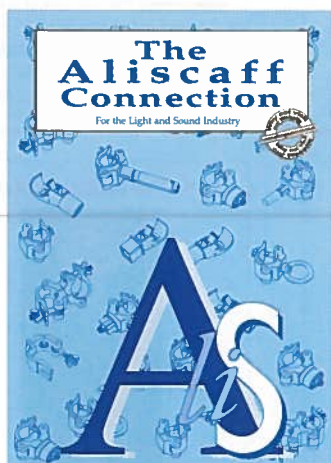
you alive. It can show the filter locked - which implies that it will sit on that frequency - despite which if it does see anything it thinks is feedback it will hit. You have to switch it to parametric to make it sit on what you've manually set it to. That said, it does sound good."

Newton also has a 901 on lead vocals (there is a lot of off-board EQ which seems to reflect both his and Lemon's preference), a 160S compressor ("absolutely gorgeous") and a Varicurve ("for good measure"). I'd say Tennant's critical sibilant frequency would be around 6.3kHz, judging by the way it's been squeezed out.

Essentially, this is a bass-heavy show, inasmuch as Disco is core to the musical ethos, and the Turbosound Flashlight system is not found wanting. It is worth noting that image-wise, the music is presented up in the air where the PA is, rather than focused down to the stage. Where normally this might be to the detriment of the show, here it works well, adding to the affected detachment of the performers. I hope and assume this is deliberate on the part of systems man Bart Schoonbaert.

It would be unfair to ignore monitors for this show: Roly Oliver is in the hot seat, providing 24 mixes, with everyone on in-ears (Shure PCM600 and 700 systems). There are two significant features to the stage set up. Firstly, he's using a BSS Soundweb to provide a flexible approach to sound management, EQ, etc: "It makes moving between mixes really easy." Secondly, a Ramsa DA7 digital desk subordinated to his Midas Heritage - the Ramsa chosen for its programming. "I think it sounds great, and because it was already set up, taking over this tour was a lot easier."

PSB photos: Phil Dent, courtesy of Lightfactor



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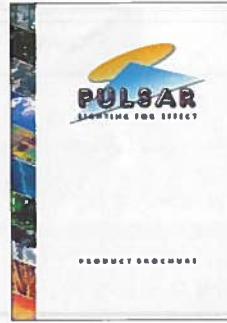
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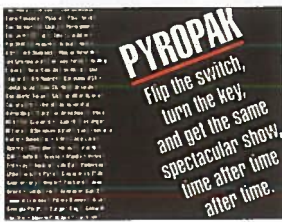
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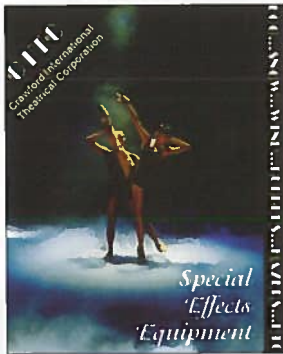
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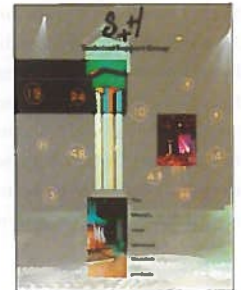
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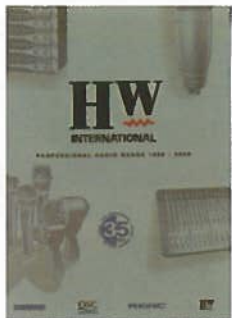
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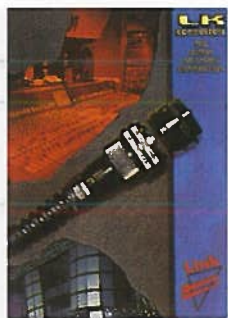
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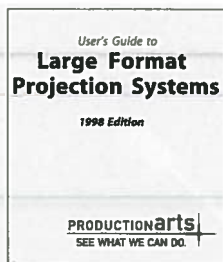
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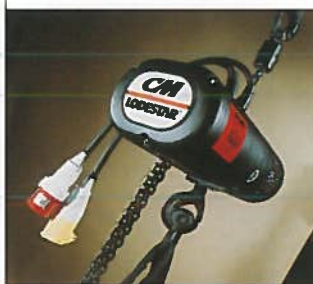
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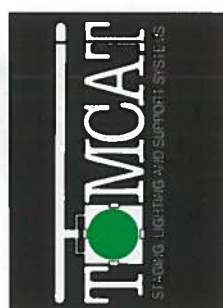
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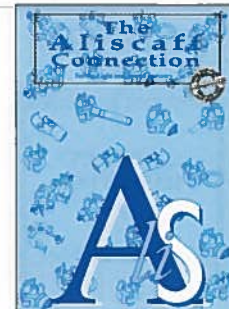
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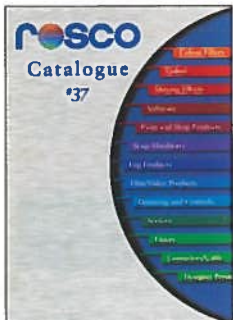
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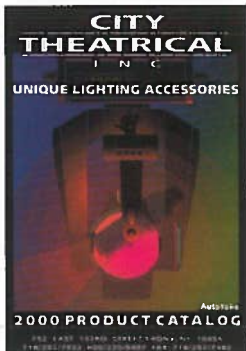
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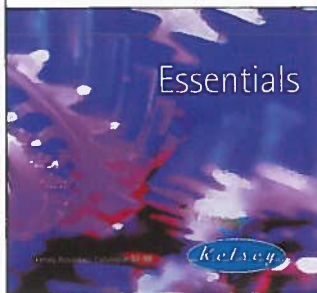
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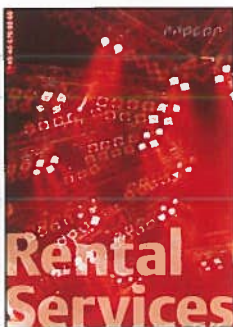
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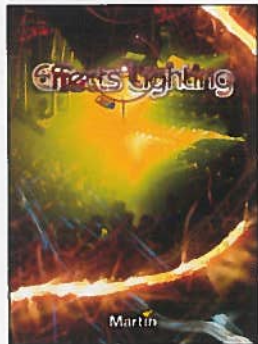
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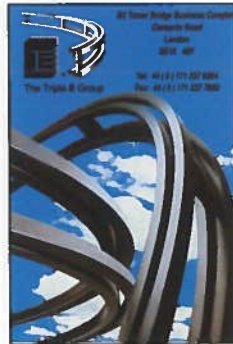
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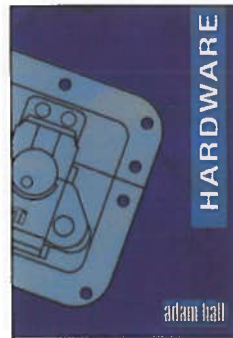
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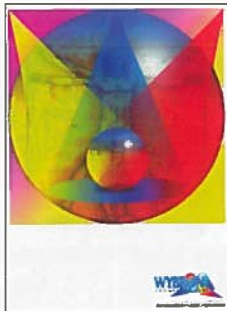
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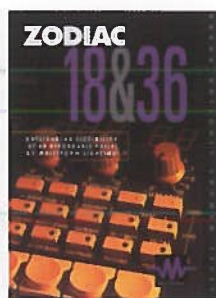
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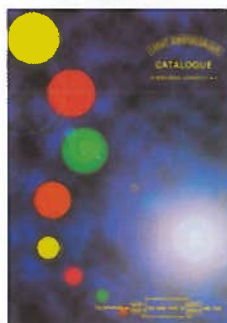
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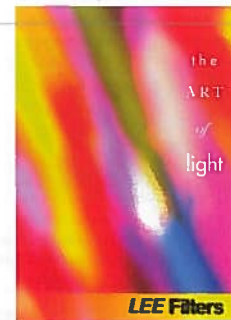
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Tel: +44 (131) 555 6900 Fax: +44 (131) 555 6901

E-mail: Cameron.Crosby@Warehousesound.co.uk

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As part of the continued expansion of both the hire and sales departments of White Light, we are looking for new members of staff to join the team.

The successful candidates should be self motivated and willing to work as part of a very busy team. Training will be supplied wherever necessary. Salary depending on experience. A good telephone manner, basic computer skills and a knowledge of lighting would be advantageous.

Please apply in writing including a CV to:

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Please send CV and a brief covering letter to: Glen Steggall, Production Human Resources, NMEC, Gate 1, Drawdock Road, Greenwich, London SE10 0BB.



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We need highly skilled technicians with the experience of working with the very latest audio visual technology. You will have good client liaison skills.

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We need office based people with industry experience to support our sales and service teams. You will be strongly customer orientated.

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If you are interested in being part of an expanding and motivated group, please e-mail or write to us, indicating clearly in which of the above positions you are interested and which Avesco company(ies) you are interested in joining, if you have any preferences. **All replies will be treated in the strictest confidence.** Everyone who contacts us will receive a reply.

Please send a comprehensive CV with your current salary details (no phone calls please) to:

Ms Della Baxter

Executive Assistant, Avesco plc, Venture House, Davis Road, Chessington, Surrey KT9 1TT.

e-mail: dellab@avesco.co.uk or fax on: 020 8974 1622



UK NATIONAL SALES EXECUTIVE



Due to continued expansion Sound Dept, the UK importers and distributors of Community, Crest and EAW are looking to recruit a UK National Sales Executive. Interested candidates should have a proven history within our industry as well as excellent communication and organisational skills.

The successful applicant must be capable of working individually as well as being an important team player. This exciting new opportunity within a growing, committed, organisation involves working with existing nation-wide customers, exploring new client activities and further enhancing Sound Depts' potential within the marketplace.

Interested applicants should send their CV along with a letter of application stating why they are suitable for the position and include details of salary expectancy to:

Alex Schnider, Sound Dept,
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Job of the Month: Sales Manager

Location: Southern England • Salary: OTE 50K + bonuses • Job Ref: 1125/1

Candidates will have a proven sales track record with a minimum of 5 years experience. The company will consider candidates from any sales background including Exhibition/TV/Touring/Films etc, and are looking to expand into these new territories.

Bench Repair Technician

Location: Hayes • Job Ref: 569/1 • Salary: £15-16K

A Bench Technician is required with audio and maintenance experience. Candidates should have an understanding of contract rentals, be actively mobile and able to produce the equipment.

Field Service Engineer

Location: London/Southeast • Salary: £12-15K • Job Ref: 506/1

The position includes scheduling regular maintenance visits, covering preventative maintenance, the cleaning and checking of equipment and diagnosing faults.

Field Service Engineer

Location: National • Salary: from £15K • Job Ref: 156/1

Candidates will have experience in lighting, audio and video products. The position includes the servicing and maintenance of existing installed equipment.

Installation Engineers x 2

Location: London/Manchester • Salary £12-15K • Job Ref: 551/2

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INTERNATIONAL Sound Engineer

Salary £18K+ incl. Accommodation Location Hong Kong

Candidates will be a team player with the ability to train others and have at least 5 years experience with audio and live music.

INTERNATIONAL Lighting Designer

Location: Hong Kong • Salary £30K+ incl. accommodation

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Location: Southern England • Salary: £16-20K • Job Ref: Sal 024

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Sales Manager (Audio)

Location: Southern England • Salary: £25-30K • Job Ref: Sal 023

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Location: Surrey • Salary: £18k basic with OTE £24k • Job Ref: 231/1

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Marketing Co-ordinator

Location: Northamptonshire • Salary £15-16K • Job Ref: 280/1

An experienced marketing co-ordinator to assist the general manager is required. Candidates should have PR experience, be computer literate and have the ability and initiative to work unaided.

Sales Manager

Location: Middlesex • Salary Negotiable • Job Ref: 216/1

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Location: Kent • Excellent Salary + benefits • Job Ref: 227/1

Candidates will have at least two years experience and will be expected to develop marketing strategies, produce presentations and visit clients to help the company fulfil its potential.

Financial Manager

Location: S. England • Salary: Circa £30K • Job Ref: Man 024

Our client is one of the leading lighting and special effects suppliers to the theatre market. The company is looking to consolidate its management team with the successful candidate having a good understanding of accounts principles. The position would suit a financial controller looking to further his/her career.

Retail, Commercial & Architectural Sales

Lively, enthusiastic, supportive, progressive, ready to take up the next challenge - that's us, how about you?

If you have these qualities and have worked in the retail, theatrical or architectural lighting industry then we would like to hear from you.

Due to the continuing expansion of this innovative projects company we require additional Lighting Sales Professionals to be based at our London office.

As part of the Projects Sales Team you will be involved in representing the company to leading specifiers new clients and specifiers in appropriate areas of the market place.

The successful candidate should have a positive and enthusiastic sales manner and a sound knowledge of standard Microsoft and Database Packages

Please send your C.V. and a covering letter to:

**Ray Dolby, Projects Sales Manager
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721 Tudor Estate
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Huge potential exists for our products and services but we require bright and enthusiastic people to deliver our message.

Prospective candidates will be tenacious innovators with a proven sales track record. A strong desire to influence the retail sector through a/v design and to be recognised as a leading-edge supplier is important.

Successful candidates will be home-based with administration and marketing support being provided from our head office. Salary, benefits and company car depend upon experience but will reflect the high expectations we have for the candidate.

For further details please contact Jonathan Knight at Black Box AV Ltd.

Website: <http://www.blackboxav.co.uk>

E-mail: jonathan@blackboxav.co.uk

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High End Systems and Flying Pig Systems—industry leaders in automated lighting and control—are undertaking a dramatic expansion of their London office to better serve European customers. We are currently looking for personnel in the following areas:

Sales

Experienced sales people who can help us service existing clients, drive specifications, and explore new markets are required both in London and throughout Europe

Programming

Programmers will work with lighting designers and clients to create the best show possible with their automated lighting and control.

Technical Support

Technical support specialists are focused on educating users on the use of our equipment and troubleshooting problems either on the phone, through e-mail, or in the field.

Operations

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In Profile...

L&S Talks to the Industry Trend-setters

How lucky can you get? A brother at college in Farnham staying in a room at Hedley Grange! What's so special about Hedley Grange? Well, apart from being a quite spectacular house in itself, at the time when Gary Bradshaw visited his brother there, it was also being used by Led Zeppelin to record Physical Gaffiti. "Just one of those fantastic coincidences," said Bradshaw. "Alan, my brother, lived in the annexe of the Grange and was studying at Farnham Art College.

for other bands' gigs with our kit if we weren't working."

Trouble was, they never made any money, either as a band or a PA company. "The biggest tour we ever did with it was that of Bill Oddie," a performance artist, you may be interested to learn,



name] and Roy Tough. They taught me a lot." Praise indeed. Having learned from some masters, Bradshaw was set to really progress his career. "John Giddings was the agent for XTC in those days, and afterwards asked me to do The Stranglers tour. One band soon followed another."

It was sometime later, 1984 to be precise, when Bradshaw received another call from Andy Partridge who was by

now tour manager for the Eurythmics. "It was the Touch tour. The very first thing Dave Stewart said to me when I turned up for rehearsals was 'you kept my Fender Twin'. I reminded him he hadn't paid me and that was that." Such are the mundanities of the glossy pop world.

Since then, Bradshaw has mixed for bands as diverse as Simple Minds and Mike Oldfield. "Oldfield gave me access to something I've always wanted to do for every band I've mixed. He had his own multi-track recording equipment and during rehearsals I could record raw output from each musician and use those tapes to practise a mix. It also means you can demonstrate how you propose to mix to the artist. That's a real help." And despite a two-year spell in 'The Church' engineering in Dave Stewart's recording studio, Bradshaw still enjoys road work above all else. "I have one real desire left - to mix for Paul McCartney before I quit." Must be those old Liverpool roots pulling.

That apart, Bradshaw now has a 13-year-old son, Tommy, who already is the resident sound engineer at his school, maybe it's the start of a dynasty? ■

As ever with such opportunities, timing was everything. Not only was Bradshaw catapulted into the driving seat for a known band, but they were out doing support for the Police. "It was great. Tasco provided the system, I got to work with people like Gungee [he goes by no other

Despite the auspicious pedigree, nought was to come of this meeting. "I was really broke. In fact, it got so bad that eventually we reached the point where Dave owed me so much money I kept one of his Fender Twins in lieu." Soon Bradshaw left for a proper wage to work back-line gear for XTC. On the day XTC departed for a US tour, the band's FOH engineer dropped out and their manager, Andy Partridge, asked Gary to have a go. "He did know I'd done it before, but literally he said, 'do you want a go?' I've been doing front-of-house ever since."

As ever with such opportunities, timing was everything. Not only was Bradshaw catapulted into the driving seat for a known band, but they were out doing support for the Police. "It was great. Tasco provided the system, I got to work with people like Gungee [he goes by no other

"I remember going in and seeing John Bonham's Kit. There were four-by-twelve cabinets all over the place, mics and all sorts. I was 19 years old and thought 'this is what I want to be involved in.' It must have affected his brother too: both Bradshaw boys now work at the sharp end of live audio in rock and roll.

The boys were born in Liverpool, where both

parents worked at a local factory. Speaking to Gary, it's apparent that little stimulus was needed for the two of them to search for more fertile climes. Gary went to Cardiff University to study geology, "But by the end of the first year I already knew this was not what I wanted. I used to play guitar in Alan's band," a passion Gary still pursues to this day, "which was why I went down to see him at the Grange." So far, so good, but it was to be some years before he came to realise his discovered ambition, although not for want of trying. "The bass player in our band inherited a reasonable sum of money and we bought our own PA. I recall some Martin bass bins and a Malcolm Hill 16-into-2 desk. We often used to do sound

For a geology student he certainly got off course; Steve Moles talks to sound engineer Gary Bradshaw

Lighting & Sound

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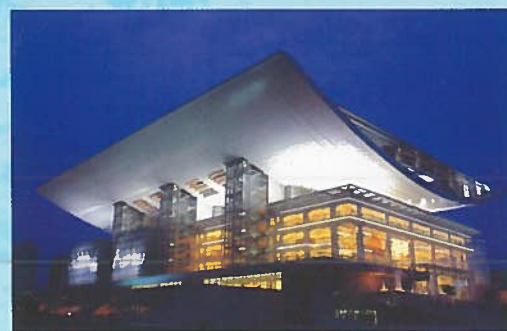
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