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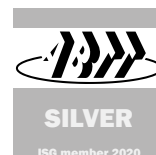
Journal of Theatre Technology and Design

Spring 2020



**Climate Emergency – new initiatives:
On Bear Ridge
Green Adventures**

**The Sondheim Theatre refurbishment
Did the Earth Move? – The Prince of Egypt
Diversity in Sight?**



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Sightline

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Sondheim Theatre. Auditorium dress circle, looking towards one of the reinstated side boxes. Photograph © Philip Vile

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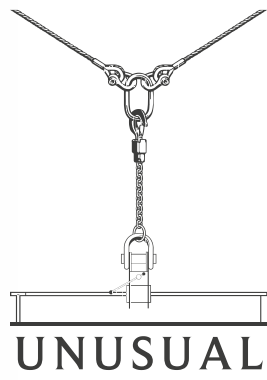
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Editorial

Welcome to the spring edition of *Sightline*, which will be arriving on your doorsteps to herald the start of spring after a long damp winter.

We're increasingly aware that the climate emergency is starting to affect our lives and that everyone has a part in combatting this. There are already many great initiatives throughout our industry, and at *Sightline* I think one of our roles should be highlighting best practice, and therefore bringing these initiatives to wider attention. Otherwise we risk reinventing the same wheel in different parts of the county and different sections of the industry! This edition features two examples, and we would love to hear from anyone else who is doing great work in their own area at whatever scale. In the meantime, there's lots to enjoy and learn from David Evans' report about *On Bear Ridge* exploring the ways in which production design and delivery can be made more circular, and also from New Adventures where their award-winning initiative *Green Adventures* is bringing environmental sustainability to large-scale touring.

I'm always very grateful (and interested) when someone takes the time to unpack the technical processes behind a production, and we have two nicely contrasting examples in this edition. John Young reports from the latest West End show *Prince of Egypt* and explains the detailed technical infrastructure that sits behind this biblical epic! At the time of writing this has yet to be reviewed, so I am looking forward to reading what reviewers think of such epic moments as the Parting of the Red Sea. In contrast James Laws explains the process he has gone through with students to explore the role that candlelight can play in theatre – an approach that is obviously still relevant in the light (sorry) of theatres such as the Sam Wanamaker.

These technical processes rely on the skills and expertise of theatre technicians, who enter the industry through many different routes, and who improve their skills in many different

ways. The ABTT obviously plays a key role in training, and Jonathan Brown in *Lighting Up*, highlights the pioneering work that ABTT did in the 1970s and from which he and others benefited. What his article also highlights is changes within the composition of the workforce, with the final cohort of students being considerably more diverse than earlier ones. Change is however, coming quite slowly, as the latest Arts Council report *Equality, Diversity and the Creative Case* demonstrates, and it is therefore quite timely that we return to one of the initiatives which is now making a difference, Stage Sight, previously featured in Autumn 2018 *Sightline*. It's great to catch up with them, and we hope to return to other initiatives that we've featured over the last few years.

The restoration of the Queens Theatre, now known as The Sondheim Theatre, attracted much publicity, as the building re-opened with the latest iteration of *Les Misérables*. Cameron Mackintosh's commitment to the theatres he is responsible for is exceptional, and is estimated to have already cost him in the region of £125 million. We asked Julian Middleton, from Aedas Arts Team, whose team was responsible for the auditorium refurbishment, to explain the process, which he does in fascinating detail.

There have been a lot of interesting events over the winter, and we manage to catch up on several here – in no particular order we hear back from the Production Managers Forum, the Stephen Joseph Association and the Schools Theatres Support Group. It is, of course, going to get even busier in the months ahead, with one of the highlights of the year – the ABTT Show – is coming up surprisingly soon. There's a new commitment to sustainability at the show, which is highlighted in their recent blog, *Review, Reimagine and Rethink* abtttheatreshow.co.uk/review-reimagine-and-rethink/. Our next edition of *Sightline* comes out just before the show, so I'm sure we'll be covering other related issues then.

On Bear Ridge

David Evans
Head of
Production,
National Theatre
Wales

National Theatre Wales and The Royal Court are two companies who strive to work sustainably, I think “strive” encompasses the duality of ambition and failure that is inevitable.

In 2019 we co-produced Ed Thomas’ *On Bear Ridge*, the show opened and rehearsed in Cardiff so this is where the production process started and most of the decisions were made. When the set builders pulled out between the white card and the final model we were initially disturbed (understatement) but soon realised that this gave us an opportunity to rethink the build.

Cai Dyfan’s set called for an almost four meter-tall rock upstage right. The obvious way to build this would have been a combination of frame work and polystyrene carving, but as we know polystyrene is non-recyclable, so a different solution needed to be found and this was part of the brief to Ridiculous Solutions who took on the build. “That will be interesting” responded the unflappable Richard of Ridiculous. The brief is key but so is the setting and *On Bear Ridge* sits in a world of desolation where a couple eke out a life in their old butcher’s shop. The Postman has stopped coming, their animals have disappeared, their once busy life has resolved itself into mere survival. If ever a world was created that required recycling and make do and mend this was it.

The props were all recycled, recovered and repurposed, for which markets and ebay are perfect. There was no place for a shiny meat

clever or a non-rusty chain – everything had to look old and used. The walls of the set were a palimpsest of the shop’s past, wall paper peeling off to reveal old tiles, wooden planks over laying older planks, it was the shop’s history on display. One way to do this would have been to break down wallpaper, rough up vac form tiles, sand blast timber, stain and restrain the wood until it acquired a patina of age and weathering. I have done this dozens of times, it is the tried and tested route. Instead Ridiculous Solutions went back to the intention of the design and hunted down old timber, old paper, old bits of chain. And working with Cai they composed the set, they created his vision from what they could find and by working with the designer his intentions were achieved. Working together they achieved the spirit of the design if not a slavish reproduction of the model.

Changing our way of working must be a collaboration, the current hierarchy which places one role above another is not fertile ground for solutions to flourish, the designer must trust the Production Manager and the Production Manager must trust the Set construction company and the Set construction company must trust the designer etc ... a circular relationship, not vertical. Most of the *On Bear Ridge* set was made from repurposed materials with the exception of some steel frame work, a cyc, the floor and some 2 x 1 timber (all from sustainable sources) – the steel can be recycled easily and the floor, despite being covered in various paints, can live again, if not on a stage and

*Model Box courtesy of
National Theatre of Wales*



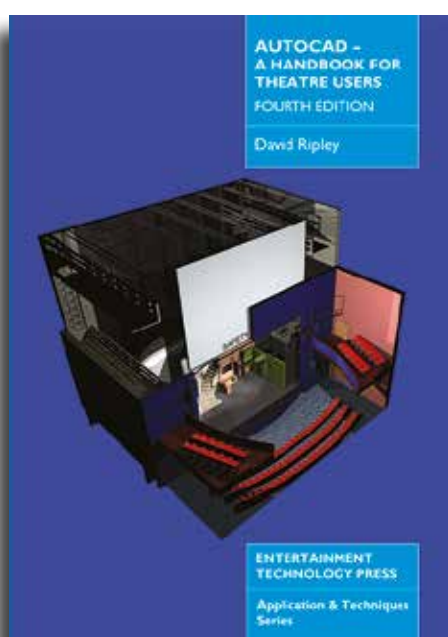


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*The Rock under construction.
Photo by David Evans*

cycs are always useful. The success that all of us were most proud of was, of course, the rock; created from cardboard boxes recovered from various shops near the workshop that had all already been used for deliveries, their journey to recycling being interrupted.

We had failures as well. The show used snow, lots of it, drifts in corners, dustings on the walls, and falling from four snow machines above the stage. We started with snow made from paper, not easy to recycle but significantly less damaging than any other form and something that would break down in the end. Unfortunately, it produced a lot of dust and the actors began to suffer, so reluctantly and after much more research here and abroad we resigned ourselves to using a plastic based product. Another problem was where Ridiculous Solutions are based. Ilfracombe is beautiful but it is a long way from Cardiff, a 280 mile round trip which equates to 80 kg of CO₂ for every car trip to see the set, 169kg for the truck's delivery to Cardiff and 181kg for the move from Cardiff to London. This is a very clear example of why it is much better to work with local suppliers, the CO₂ impact is greatly reduced and visiting is much easier.

It was an enjoyable challenge to see how circular we could make the process, the wins were satisfying and were achieved with no artistic compromise but there are some seemingly unavoidable impacts; transport and travel being quite obvious, but we did not spot the snow challenge. This does raise an important question; how much damage is

acceptable? Expressed baldly like that the answer is none, but then we close down, we stop making work. We need to look at this another way. If we take as a premise that we will make work then we have to make work in such a way that causes no damage, or maybe that has a positive impact. It is easy to spot the mistakes, the vast quantities of CO₂ released, but we must also acknowledge the vast quantities not released. *On Bear Ridge* was inspired by the Circular Economy – we used a lot of old items and will move them onto other uses when we finish with them, the same with new items. Just like people “stuff” has a portfolio life, NTW have boards in a store that have done four or five shows, others that have done three and have then gone onto become flooring in houses and workshops. Most of the chicken coops and sheds in *Usk* are made up from the corrugated iron we used for a show called *Mametz*. In 2012 we saved three caravans from destruction, used them on a show and then passed them on to become a classroom, a recording studio and a stock car trailer.

Our industry is already quite circular, we use equipment for a long time, we have rostra that is tens of years old, masking in venues is of a similar age, and I have worked with Eastern European Opera companies who cloths were antique. Lighting, sound and video equipment is mostly owned by hire companies who maintain it well and ensure that it lasts for years. Rigging is similarly owned on behalf of the industry and truss can be melted down and reused. We do have one endemic challenge that needs thought, we are driven by the new, a new light is created and that becomes the luminary of choice, the must have item, often making its predecessors redundant, on the other hand the arrival of the new can make the suddenly undesirable more accessible to the less funded. But is new always better? Rick Fisher was the original lighting designer of Matthew Bourne's *Swan Lake* and his design lasted unchanged for 20 years. He had many opportunities to change it, to adopt newer equipment but he didn't and it continued to look brilliant. There is a lesson here, part of it is that equipment cannot make up for skill but we must also ask do we need the newest tool, can we use something that already exists?

Planning a show means planning for the future of what we use and this will only work if the entire team is engaged in the process, if they buy into the idea. No longer is “the show needs it” sufficient justification for profligacy. Do we damage a theatre to mount one show?



*On Bear Road by the
National Theatre of Wales
and Royal Court Theatre
Photos by Mark Douet*



Of course not, just as we protect the theatres that we work in so we should protect the rest of our environment. Both the Royal Court and NTW brief the teams they work with, we ask them to understand that we must think circular and we must plan for the future use of everything that we use, that shows should not cause damage, and that we strive to have no impact except the impact of the performance.

Car emissions calculations based on <https://www.theyworkforyou.com/wrans/?id=2013-03-01a.144740.h>

And truck emissions based on HGV Artic 28-34 Tonne Euro IV <https://www.theyworkforyou.com/wrans/?id=2013-03-01a.144740.h>

Green Adventures

Rebecca Morland reports on New Adventures' award-winning green initiative



Will Bozier as *The Swan*
Photo c. TEA Films

New Adventures tours nationally and internationally. Led by Sir Matthew Bourne, their large-scale dance-theatre pieces include such iconic hits as its *Swan Lake*, which replaced the female corps-de-ballet with a menacing male ensemble, and *The Red Shoes*.

Green Adventures, the company's environmental sustainability strand, was launched in July 2018, and its innovative work in this area has been recognised by winning the Creative Green Pioneer Award in 2018, and by piloting a new Creative Green certification for the touring sector on their 2018-19 UK tour of *Swan Lake*, for which they were awarded a four-star rating.

Particular elements of their green touring model include: storing and re-using all sets and costumes; a Green Rider which goes out to all the venues that New Adventures tours to, a network of Green Champions throughout the company who advocate and support every initiative; and the Green Adventures brand itself which features in all their audience engagement.

I spoke to one of their Green Champions, Head of Operations, Louise Allen, to find out more about these initiatives and in particular how they work for a busy touring company.

It is not unusual for companies that keep shows in their repertoire to store sets and costumes, but for New Adventures what has helped do this efficiently is finding a more permanent store and also engaging people

to manage it who have worked on their productions before and are therefore very familiar with the various shows. Everything in the store has been audited, and time is also taken after a production to catalogue all items before they go back into the store. This attention to detail means that items can not only be re-used for the same production, but also taken from one production to another. Quite clearly, with large shows like these, there is a need for quite a lot of storage.

The content of the Green Riders (which go out to every venue) was worked on in collaboration with Julie's Bicycle and the Riders were sent out for the 2018-19 *Swan Lake* UK Tour. They were quite ambitious, covering not only New Adventures' vision, and their requirements, but also including questionnaires. Initially these went out with contracts, and because they were very all-encompassing, there were instances when they were received and not acted on - possibly because for some venues there was a bit of confusion about who was responsible for what internally. They therefore needed to be followed up by phone calls, which again exposed the very different ways in which individual venues worked on green issues.

What was then incredibly useful was the involvement of one of the company's Green Champions, Andrew Ashton, one of the Swans. He took this on as a crusade - arriving at each venue enquiring about their green policies, placement of recycling bins and offered advice on quick wins that everyone can undertake



*Andrew Ashton (L) and
Isaac Peter Bowry (R) at
Norwich Theatre Royal*

and ended up doing a complete recycling audit on each venue! His commitment was acknowledged by a Green Champion Award at the 2019 Julie's Bicycle Creative Green Awards.

What has also been very important has been the much more focused work that New Adventures has done as part of their involvement in Julie's Bicycle's inaugural Accelerator Programme. The Accelerator Programme is a new strand of the work that Julie's Bicycle have been doing in partnership with Arts Council England to inspire environmental action across the arts and cultural sector. The programme looks at everything from touring models and audience engagement to design and supply chains, income generation and governance. New Adventures has now completed an 18 month programme working with Norwich Theatre Royal and Sadler's Wells looking to create a change in the relationship between touring companies and receiving houses, and with hopes to develop a new blueprint for environmentally sustainable touring. The programme was particularly valuable as it offered opportunities to share information and knowledge between organisations.

For a company such as New Adventures which reaches large audiences, advocacy can have a real impact, hence the Green Adventures brand. This has been given its own page on the website and in the programme, and dedicated social media activity. It has also

included green branded merchandise such as metal water bottles, reusable hot drinks cups and tote bags.

Like every successful initiative, this needs to be something that everyone at New Adventures needs to embrace. The role of Green Champions, who come from all parts of the company – including permanent staff, touring teams and artists – relies on individual passion and commitment but everyone needs to be involved in some way or other, which is quite hard to sustain in a touring company where many people join for a finite period of time. However, New Adventures has done much to embed Green Adventures within everything they do. The initiative is covered as part of the company briefings given on the first day of rehearsals, it has a page in the company handbook, and there is also a clause in everyone's contract. On a more practical level, all new company members are given a metal water bottle and a reusable hot drinks cup at the start of rehearsals.

What next for this pioneering initiative? Green Adventures will continue to be an important part of New Adventures' work, as they tour *The Red Shoes* throughout 2020. They will also start to explore how to extend this initiative to their international touring work.

Brian Legge 1933 – 2020

An appreciation by Roger Fox based on his address at Brian's funeral on 29 January 2020, with additional contributions from ABTT members



Brian Legge was a familiar figure at ABTT gatherings since its founding in 1961. He was proud to have been at the inaugural meeting and formally joined one week later. He paid his subscription on 10 March 1961 and it is amazing that he was member number 80. Clearly the ABTT was really popular.

Brian was a private person who everyone knew. He never really changed since I first met him in 1963. His trademark was a cigarette and he hated having to go outside to smoke when he was part of a social gathering sharing a bottle of wine.

Brian was born in London. When he was a boy his family moved to Maidstone, where from an unusually young age, he was an active member an amateur drama club working on the technical side of productions. Later, he went to the local grammar school he was non-plussed to find that people he knew by Christian names at the drama club were now his teachers and had to be called Mr. and Miss.

After leaving school Brian became an apprentice electrician at The Strand Electric and Engineering Company where he remained until new owners, The Rank Organisation, made him redundant many years later.

Many people had a torrid time serving their two years of National service but Brian thrived. He spent much of his time in the RAF organising the station theatre, creating sets and lighting using items from the well stocked MoD Stores catalogue.

One of Brian's first assignments on his return to Strand was to join the team re-wiring the London Coliseum. He added to his wages by working as a Showman on followspots when he witnessed the great revolving stage in action. His first show was *Seven Brides for Seven Brothers*.

When Strand closed in its original form, Brian found himself working for an architectural lighting company.

He spent a lot of time flying out at short notice to handle hotel ballroom mood lighting installations in the Middle East.

This was a phase of his life which I suspect he did not altogether enjoy but it gave him a host of great stories to regale us with later.

Brian's commitment to theatre was legendary. His wife, Thelma, recalls how on one night of their honeymoon in Bournemouth Brian chose to work the lighting board at a local theatre instead of a romantic dinner with her.

Brian was an active ABTT member and attended most of its events. I inherited him as a member when I became Chairman of the

Theatre Archaeology Committee (later the Historical Research Committee).

Brian was a committee in himself and was an avid researcher, whether he was using the London Metropolitan Archives, Westminster Reference Library or just at home. He produced a series of short works for ABTT publication on many topics including theatre disasters and theatre suppliers, and would often send me an A4 explanation of a topic which we had recently discussed

What he did not know about Strand Electric, the history of theatre lighting, control systems, lamps, electrical systems, and the like was not worth knowing. He was a fount of knowledge which he dispensed in a quiet manner.

His repertoire covered all aspects of theatre, engineering and some physics including optics and colour. He could produce an archive catalogue for almost anything.

Brian was made an Honorary Member of the ABTT in recognition of his work.

A curiosity is that Brian's personal technology never progressed beyond an electric typewriter and a fax machine. Just imagine how much more would we have of his knowledge had he embraced the digital age with a computer and email?

Fortunately something of Brian's life is recorded in an ABTT video interview and in a British Library audio recording.

Some additional contributions from ABTT members:

"Brian was a wonderful man, a legend and his death deprives us all of so much information."

"He talked a lot – but every word was worth listening to."

"He was a real repository of theatre memories, impossible to replace".

"Brian's passing is indeed sad news. It is regrettable to learn of the passing of any friend, acquaintance or colleague, but immeasurably more so when a life-time of experiences has been largely lost to posterity. Brian possessed such a breadth of knowledge that a conversation with him often veered off somewhat tangentially; nevertheless ten minutes in his company discussing Strand Electric so frequently revealed the 'b' which linked the 'a' and 'c', concerning which one had so often pondered, and ranging from the retardation of Fred Bentham's career by his refusal to join the Masons to Strand's sale to Furse of thyristors which had failed its own stringent quality tests."

"Very sad to hear – job well done Brian!"

"We will miss him."



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Did the Earth Move?

John Young delves into some of the technical staging aspects of Dreamworks' epic new musical *The Prince of Egypt* at The Dominion Theatre, London.

One cannot envisage bringing the story of Moses from the *Book of Exodus* to the West End stage without the phrase 'Biblical proportions' springing to mind. That is to say – it's going to be BIG. The 'Parting of the Red Sea' in a theatre show, for one, is not a plane that faint-hearted creatives would dare to inhabit.

Step forward Dreamworks – the movie studio behind the 1998 animated feature of the same name – with songs and lyrics by Stephen Schwartz (*When You Believe* won an Oscar® for Best Original Song at the 1999 Academy Awards). At the helm is Schwartz's son Scott, with sets and lighting by fellow Americans Kevin Depinet and Mike Billings. Sound design is by last year's Larry® recipient Gareth Owen and projection design by Jon Driscoll.

The scenic design centres around the 'Earth Piece', an 8.5-metre square platform weighing 6.8 tonnes, which hinges on its downstage portion and can incline from 4° to 27° – being raised and lowered by two linked LL80 Serapid rigid chain units mounted Substage. Mechanical engineering of the Earth Piece is courtesy of Brilliant Stages, project manager Lucas Wilkinson. Automation is by Absolute Motion Control, project managed by Ben Phillips and programmed by Rob Raskovsky using AMC's own Desk [Five] console.

The Earth structure changes incline at several points during the performance – and to satisfy the design brief, Brilliant's machine was required to lift not only the weight of CTS's 2-tonne show deck cladding, but of 26 cast members as well. To accommodate this,



Right: The stage right Serapid LL80 rigid chain unit in its protective enclosure Substage

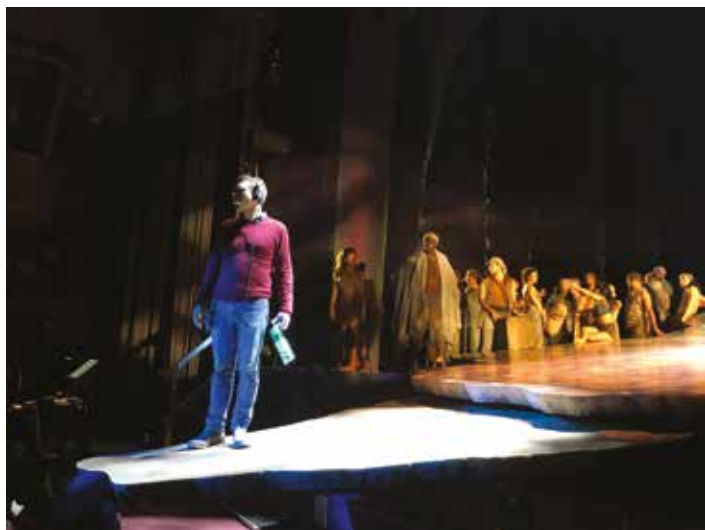
the Serapid LL80s each have a maximum dynamic capacity on the chains of 50kN and the force provided by the drive system is 3820Nm. Due to the uneven shape of the Earth structure (displaying a larger overhang stage right), a 1.5-tonne counterweight assist is integrated with the stage right assembly to assist the Serapid with the requisite cantilever effect.

So why does the Earth tilt? That might be giving too much away – but it does have something to do with the climax of the show, the epoch-making 'Parting of the Red Sea', which sees all the copious axes of automation, performer flying and immersive lighting, projection and sound come together in a truly jaw-dropping spectacle. As part of this epic final sequence, the Earth Piece also issues forth a telescopic ramp named the 'Tongue' – which extends 2.8 metres over the Orchestra Pit and into the Auditorium Stalls, with the Pit wall lowering to accommodate it.

Within the body of the Earth platform is another discreet lift, the 'Sand Lift', with a two-person capacity. This smaller lift rides within the main structure and is anti-raked to 12° – to enable it to raise and lower cast members when the main Earth Piece has been tilted from its 4° home position up to a maximum of 9°. Furthermore, the Sand Lift comprises of both an inner and outer lift. The inner lift can independently lower to create a 2.15-metre deep well in the show deck – but can also slave with the outer lift to form a 2-metre high 'sand column' in the centre of the Earth.

Stage Left view of the Earth Piece at maximum incline





As one would expect, a range of enabling handles, interlocks, E-stops and safe edges are intrinsic to the safe operation of this multi-faceted leviathan. For example, the Sand Lift is interlocked so that it cannot operate if the angle of tilt is more than 9° and the Tongue will only deploy if the angle of tilt is between 8.5° and 8.7° . In addition, the Orchestra Pit wall will not permit the Tongue to deploy if the Pit wall is not lowered. There are enabling (dead man) handles for the subsidiary automated aspects of the Earth and the upstage 'Drop and Slide' trap, operated by team members on stage and / or in the Substage. There are safe edges protecting the occupants of the Sand Lift from shearing hazards whilst in motion and also in the orchestra pit to prevent a crush zone risk from the lowering of the pit wall.



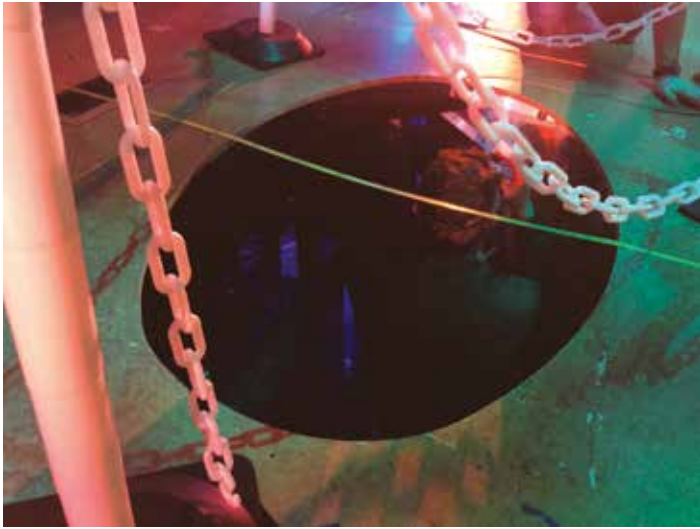
Above left: Production Manager Lloyd Thomas atop the Earth Piece's extending 'Tongue'

Above right: Upstage view of the Earth Piece showing the aluminium Sand Lift frame within

There are additional stage effects housed within the body of the Earth Piece. Low-lying smoke machines comprise of four Le Maitre G300 fog generators combined with four Freezefog Pro chiller units which utilise liquid carbon dioxide to cool the smoke down so that it becomes low-lying. This is coupled with pneumatically operated floor pockets ('Pop-ups') which are set into the Earth and lift vertically to allow low smoke to exit radially. Each unit requires a liquid withdrawal CO_2 cylinder. The machines and 'Pop-ups' are controlled by DMX from the lighting desk. Also within the Earth Piece, is a 'Dust Explosion' effect designed by Edwin Samkin from EventFX. The effect is delivered by a *Cryojet*. This is an electrically operated



*Before – the Sand Lift prior to being clad
After – the Sand Lift after cladding*



The Sand Lift's inner lift creates a well in the show deck]



Absolute Motion Control director and programmer for The Prince of Egypt, Rob Raskovsky, runs through the main components of the system:

Control Console:

1 x Desk [Five] – a centralised control surface for the programming and operation of all axes. This includes feedback for all safety devices such as Limit Switches, Emergency Stops, Load Cells, Enabling Handles, Safe Edges, Interlocks etc. Video Tracking - integration of axis position transmission to the Video Department to allow for automatic tracking of scenic elements which allows them to precisely map video content to the automated scenery.

Motor Control:

3 x Rack [Four] – our standard rental motor control cabinet. Each rack contains: Motion Control, PLC and Safety PLC, 12A Servo Drives, Brake Control, General I/O etc for 4 axes. 1 x Custom Earth Tilt MCC - a custom-built motor control cabinet specifically for the Earth Tilt. Consists of 2 x 25A Drives, Safety, Brake Control for 8 x Brakes, Safe Edge, Load Cells & Interlock I/O.

Interface:

7 x IO [Box] – our standard connection box for termination of all axis level field wiring, for connection into the control system. This is where axis level I/O is connected, such as Limit Switches, Interlocks, Brake Feedback, Safe Edge, Enabling Handles etc.

Safety:

1 x Safety [Controller] – a stand-alone Safety PLC for the coordination and connection to all Motor Control Cabinets, E-Stops & Console.

E-Stops:

4 x Stop [Box] – Emergency Stop boxes strategically located around the stage.

unit that releases a plume of dust-filled vapour five metres directly upwards. The Cryojet is connected to a supply of nitrogen (used to achieve higher pressure) via an armoured high-pressure hose. The nitrogen is released by an electric solenoid that opens on a signal from the firing system. A small amount (50ml) of Fullers Earth (Bentonite) dust is placed in

the nozzle outlet so when the jet is triggered the dust is propelled upwards.

The Earth Piece has one final trick up its sleeve. The perimeter of the show deck houses a propane-fuelled flame trough, also designed by EventFX and incorporated into the deck by CTS, which ignites to surround the cast with 300mm high flames at the end of the first act.

Alongside the Earth Piece are numerous other axes of automation (there are 13 altogether). These include the 'Drop and Slide' trap, a 'Levitation Lift' and six automated 'String Curtains' which provide a constantly morphing projection surface / scenic backdrop throughout the performance.

But that's not all – Flying By Foy has augmented all of this with four performer flying axes plus Auditorium 'Plague' apparitions, which dart about like ghosts over the audience's heads. There is also a Sky Piece, matching the shape of the Earth Piece, which is independently flown via Unusual Rigging's Kinesys controlled hoists.

So, plenty of technological wizardry and visual effects to delight the audience – most certainly matching anyone's expectations of 'Biblical proportions'.

The Prince of Egypt opened on 25th February and is currently booking until 12th September 2020.

Many thanks to Rob Raskovsky for his help in compiling this article. Photos by John Young.



The Earth Piece's flame trough and Sand Lift being tested during Dry Tech

For The Prince of Egypt:

Set Designer – Kevin Depinet

Lighting Designer - Mike Billings

Sound Designer – Gareth Owen

Projection Designer – Jon Driscoll

Costume Designer – Ann Hould-Ward

WHAM Designer – Luc Verschueren

Illusions Designer – Chris Fisher

Production Manager – Lloyd Thomas

Earth Piece Tilt and Lift Engineering – Brilliant Stages

Structural Engineering – MJ Consulting Engineers

Automation – Absolute Motion Control

Scenery and Show Deck – Cardiff Theatrical Services, Set Up Scenery, MDM Props

Rigging – Unusual Rigging Ltd

Performer Flying – Flying By Foy

Automated Scenic Tracking – Triple E

Special Effects – EventFX

Lighting Supplied by White Light Ltd

Sound Supplied by Stage Sound Services

Video and LED Supplied by Stage Sound Services, Unipix

Drapes Supplied by J.D. McDougall, Drapemakers, Showtex

Lighting Up

Jonathan Brown

I was 15 and keen to learn how I could begin a career working backstage. I'd received some suggestive ideas from a couple of male show dancers about how a naive boy might make his way in show business, but I was hoping for more serious advice.

I spent many evenings at my local theatre loitering around the stage door, chatting with staff and performers (and no doubt making a nuisance of myself). One night I finally plucked up the courage to ask the Technical Manager the secret to a successful career such as his.

I was hanging on his every word as he told me: "If you really want to work in the theatre... you need to... smoke." That was confusing. Of course I'd consider smoking if that's really what it took, but even at 15 I knew it couldn't be that simple.

My English teacher, who better understood my love of theatre and things technical, was more helpful. She supplied me with a copy of *Training for the Theatre*, a booklet outlining courses provided by the ABTT. Training to be a theatre electrician made sense. I was thrilled that such a course existed and enthusiastic about joining it.

The interview for the course, which after a year might earn me the City & Guilds 181 Theatre Electrician's Certificate, took place in the Circle Bar at Wyndham's. I guess I must have made a good impression as I somehow convinced them I should have a place.

But I was young, living in Nottingham and the ABTT courses were in London. My older sister instilled in me the courage to consider it, and my parents were brave and let me go.

Two weeks after turning sixteen I was driven south and settled into Oppidans House, a hostel for young men near Notting Hill Gate. Concerned that the earlier advice I had received might be right, and being a teenaged idiot, my first venture out was to buy twenty Silk Cut.

The hostel, where we lived two or three to a room, was a regular home for ABTT students. Our first week on the course was spent at LAMDA and RADA. It was a gentle, theatrical, introduction to the course, beguiling us with gobos, gels and Chinagraph pencils. Once we arrived at Paddington College that world faded, and a starker spotlight fell on trunking, conduit and circuit breakers.

College days were Tuesday to Friday and split between two sites. Most days we were at Saltram Crescent in Kilburn, where the terracotta-tiled Paddington Technical Institute was originally founded seventy-five years

before we got there. The other building was on Paddington Green, nearby the now defunct Police Station that was built on the site of the Metropolitan Music Hall. One lunchtime, a few of us were recruited to help out with an identity parade.

Mondays were good. The ABTT arranged for students to be attached to a theatre for each term. Many West End theatres took trainees as well as a number outside London – East Grinstead, Leatherhead, Farnham, Bromley. I spent one term at Harlow Playhouse and remember being told of some electrocution tragedy there they believed was a catalyst for setting up the ABTT course. Young people had been working as electricians in theatres with no training at all. Something had to be done to stop us killing each other!

Placements at theatres outside London provided more direct theatre experience as the turnaround of shows was greater. In the West End, experiencing a get out or fit up was a rare treat, but out of town those Mondays brought more variety, particularly in touring houses. Less glamorously, it was on my first day on attachment to the Fortune Theatre that I was taught about the gas era link between electrics and plumbing and was tasked with scraping limescale off a urinal.

Although most were funded to attend the course – I was on a full grant from my local authority which included something to help cover living expenses – some students took up part-time work. I returned to Nottingham at weekends to work get outs/fit ups or panto over Christmas. I even worked a little sickness



cover as stage door keeper at the Fortune Theatre, settling into a large, scratchy chair where the regular incumbent was usually planted. Others on my course worked as lime ops, helping Carol Channing sparkle in *Hello Dolly* at Drury Lane, on *Evita* at the Prince Edward or *Chicago* at the Cambridge.

The ABTT first started discussing training in 1968. Bill Besant, Lighting Director at the Royal Opera House, convened a sub-committee to investigate. Their initial focus was part-time training for existing theatre employees and summer schools. The minutes of their first meeting record that full-time training “would be considered only at a later date when the working of the less elaborate plans could be assessed”.

Things progressed over the next couple of years and, by the time the committee met on 5th June 1970, Ken Smalley, the fondly remembered, safari-suited, bicycle-clipped, Technical Officer of the ABTT had been in post for four days. Earlier in 1970, the Arts Council had approved a grant of £3,700 to help the ABTT run a training scheme for West End theatre employees, and Ken’s appointment was key to delivering that.

An ad-hoc committee to manage the London training was chaired by Ian Albery and included representatives from the Society of West End Theatre Managers, ABTT and the relevant union, NATKE – the extra ‘T’ for ‘Television’ hadn’t yet been added. They met in July 1970 and noted that applications for the course covered 20 commercial theatres, with 32 applicants for the Electrical Course.

With just 15 places available, applications had to be whittled down carefully. Even though the course was due to start just a couple of months later, discussions with Paddington Technical College, the preferred location, were still at an early stage and details of the syllabus were yet to be finalised.

Ian Albery recalls that his support for the initiation of the ABTT training was “because of the truly lamentable state of training for young people working backstage in London. Time serving in a West End theatre (for long runs) was not the best solution, unless you worked for a rare West End management that fostered training. My HODs all believed in training our younger staff, whether on the road or when new shows came into the West End.”

Minutes of the meetings and reports from that time make interest reading, not least for social history. Technicians and trainees are always referred to as ‘men’ – still reflected in anachronistic theatre job titles such as



Albery Theatre, courtesy of Theatres Trust

‘Dayman Electrician’.

Anna Bargas, who worked as the ABTT Training Officer for eleven years, believes that Michelle Dunn, who was with us in 1979, was the first ever woman to join the course.

Fred Haynes was on the first part-time course in 1970. He’d been Dayman Electrician at the Fortune for a few years by then, having joined in 1960 to operate the Grand Master on performances of ‘Beyond the Fringe’. Over the following years he worked as an informal apprentice to the long-experienced Tom Bennett, who had moved to the Fortune as Chief LX after the closure of the Stoll Theatre in 1957. Fred relates that, although he knew he would benefit from some more formal training, it wasn’t something he was in a financial position to pay for. He leapt at the opportunity of joining the ABTT’s Arts Council funded training.

Once that first course was up and running, it became apparent that the knowledge and experience of the students was more mixed than expected. Some were well-educated but others lacked basic skills in maths. A meeting of the training committee and tutors from the college acknowledged a need to adapt the syllabus. Urgent consideration needed to be given to the precise aims and future for the course. Was it to help train operators or potential chief electricians, or just to raise technical standards?



Fred Haynes on his current Royal Enfield motorbike and outside Fortune Theatre Stage Door, approximately 1969



There were also problems with absenteeism, principally because trainees were called into work, even though they were mostly attending college in their own time.

Determined that the course should provide the best possible electrical training, the first intake was eventually extended to a two-year course of seven hours a week to ensure that the college “could produce technicians worthy of the name”. Discussions also began to establish a bespoke City & Guilds qualification.

Fred recalls that those first years felt pioneering, with the training being carefully honed to ensure that students received the appropriate mix of knowledge. For years, unqualified electricians had been the norm in more junior electrical roles in theatres, but they were increasingly called on to undertake complex maintenance and installation work in addition to working shows.

Paul Taylor was a student on the first full-

time course in 1975. His original plan was to train as a building surveyor. However, he needed to return to college to improve his mark for one essential exam. With just one subject to study, his free time was called on to help with other activities in the college, including technical support for the drama course. He also took a careers aptitude test that revealed that he was “basically practical but likes working in an artistic environment”. His head was turned towards entertainment and it wasn’t long before he was enrolling in the new ABTT course.

Each year the students were a mix of green sixteen-year-olds and more mature students who may have been to university, trained for other work or previously been on a very different trajectory. My year included one student whose original calling was as a physiotherapist, and another who had a BA in Modern Iberian and Latin American Studies.

We were led there by an interest in stage lighting or sound, and those are the things we expected to be learning. It was therefore a surprise to realise how much of the content focused on electrical installation. While some embraced this enthusiastically, others were more resistant about lifting their heads out of *The Stage*, to learn how to bend conduit.

We benefited from a number of guest lecturers who were a roll call of industry luminaries: Michael Northen, Brian Legge, David Collison and others. Some of us were also able to participate in additional training offered by the ABTT, including their excellent lighting design courses that took place in regional theatres.

Disagreements about the curriculum continued long after my year. Minutes from meetings between the ABTT, tutors and student representatives record some of the concerns and are worded in a way that clearly suggests friction. The students wanted more theatre content which was alien to some of the staff. However, in November 1982 it was noted that “feedback from ex-students now working in the West End is that most of the subjects are relevant although one does not appreciate this at the time”.

That was certainly my experience in the West End. My first jobs were at Wyndhams and the Albery (now the Noel Coward), which were part of the same group, and we were very much involved in installation and maintenance work.

Many ABTT graduates were recruited to that chain of theatres. Paul Taylor recalls that the group’s Chief Engineer, Stan Coppin, believed

that his crews should be able to tackle any job he felt confident they could do. Many C&G181 graduates continued their education and gained further qualifications in electrical installation.

All those I have heard from who benefited from ABTT training have said how important it proved to be for them in their career. Those of us that have moved sideways in the industry can look back at how the course was important in shaping us and our early work.

John Mizzi, who taught electronics on the course for a number of years, remembers that “the Course was highly regarded by the college and tutors because of the high calibre of the students and industry involvement. We advertised in *The Stage* for applications. From a large number of applicants, we would select 20 students.”

John is one of the tutors remembered fondly by students. The late Charlie Martin, who taught electrical principles, craft theory and practical installation work was also much respected, as was the pipe he puffed on at the end of each day. Other tutors included Jim Forfar and Dave Hooper.

Sadly, the Arts Council withdrew its funding in 1986. Anna Bargus was made redundant and the ABTT’s involvement with the courses receded. The City of Westminster College did, however, continue with the work.

Steph Baldwin was on the very last course at the College in 2008. By then it was the C&G 2330 Level 2 with the C&G1810 Theatre Electricians’ Certificate added to it. Three days in, the students were told it was to stop, with staff illnesses and financial problems cited by the College as the cause. The students petitioned and were successful in being able to see that last year out.

Nearly forty years on, the mix of abilities was still notable. Steph says of her colleagues, “I’d take them to the library and go through the equations and the maths, which didn’t come naturally to some of them. In return, they would help me turn that damn stock and die when I was threading conduit.”

Steph also remarked about the diversity of her year: “Ages ranged from 16 to 50, we had Christian, Muslim, Sikh, Hindu. Numerous languages spoken. All different shades of skin tone. So culturally enriching.”

Not only had cultural diversity improved, Steph was one of three women on the course that year.

A comment in an online forum about the demise of the training suggests that it might

just be better for people to learn on the job from those with more experience.

Ian Albery is also of the view that the very best training in theatre is experienced out on the road touring. I agree, in terms of the specifics of theatre work,

but the ABTT training did something more: it provided students with a safe and solid education in electrics.

Trawling through a few recent job descriptions for LX staff, I found that none stipulated any requirement for an electrical qualification. I’m left wondering how much, if at all, the industry actually misses the ABTT training – that’s a real question, if anyone feels like answering it.

Finally, I’m pleased to confirm that smoking has never been a qualification for industry entry. Good man. Bad advice.

I’m very grateful to all those who have helped me with my research for this article including John Mizzi, who went on to initiate the ABTT Sound Course. Those who knew Anna Bargus will remember her tremendous support for students. It was a real pleasure to reconnect with Fred Haynes who hosted me as a trainee at the Fortune. Also with Ian Albery, whose theatres were so key to the training and to my own journey. The ABTT’s CEO, Robin Townley was himself a student in 1986-87 and went on to teach on the course. Robin is one of a number of past students who kindly responded to my questions, including Steph Baldwin, Michelle Dunn, Andy Grant, Taras Kochan, Chris McLean, Ted Moore, Mark Seaman and Paul Taylor. I thoroughly enjoyed reading about their experiences and what they are up to now. I hope I might be able to expand on that in a future article here.

Jonathan Brown has worked as a technician, stage manager, producer and administrator. He is CEO of the Society of Ticket Agents and Retailers.



Steph Baldwin

The Production Managers' Forum First Annual General Meeting

It was with some trepidation that members of the PMF committee boarded trains to London from Wales, Yorkshire, Staffordshire, Leicestershire and Kent on the morning of 17th January. We were heading for our first AGM, which was to be held at the National Theatre. But would anyone else turn up? Perhaps it would just be a face to face version of one of our monthly on-line committee meetings.

As it turned out we need not have worried. A number of PMF Members did make the effort to come to the meeting, either in person or on-line via our Facebook feed. Thank you.

David Evans chaired the AGM which:

- discussed and agreed the PMF's aims and purpose.
- adopted the PMF Constitution and approved the Committee membership.
- received the annual Financial Report.
- received the annual reports from individual committee members on all the PMF activities:
 - * Forums and Socials
 - * Job Vacancies
 - * Mentoring
 - * Newsletters
 - * Support Hub Network
 - * Social Media
 - * Website

We also took the opportunity to discuss the PMF's priorities for 2020.

Most important was getting more members on board to help run the PMF. We are delighted that Ned Lay agreed to re-join us to work on increasing our contact with the Events Industry Sector, with Peter McCabe as Associate. Mandy Ivory-Castile has agreed to take responsibility for Online Resources, along with Dan Shelley; and Ben Pugh has taken on the Media Manager role, looking after the video content of our Forums. We are still looking for someone to take on Fundraising and Sponsorship, which



is vital to keep the PMF running at no cost to our members.

We were also extremely pleased that even more of you put yourselves forward as mentors. The PMF's mentoring scheme, run by Ollie Brown, is proving even more popular than we had hoped for and is a great resource for our industry.

Forums for 2020 were also discussed (well they are part of our name). On Friday 13th March, we will be hosting a Forum with the Royal Court Theatre, (Jerwood Theatre Upstairs) discussing issues and challenges regarding Sustainability within the Theatre and Live events industries. This will be a panel discussion involving Production and Technical Managers as well as an invited group of specialists in the field of sustainability.

We are also planning a joint Forum with the Society of British Theatre Designers to debate the Production Manager/Designer relationship, and our usual Forum at the ABTT Theatre Show. As always members and their colleagues are welcome to our Forums, which are always followed by a Social. We hope to see you at one of them, or at next year's exciting AGM.

Details of everything about the PMF can be found on our website www.productionmanagersforum.org, @ForumPM on Twitter, or @ProductionManagers on Facebook.





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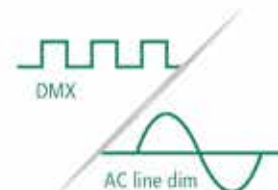
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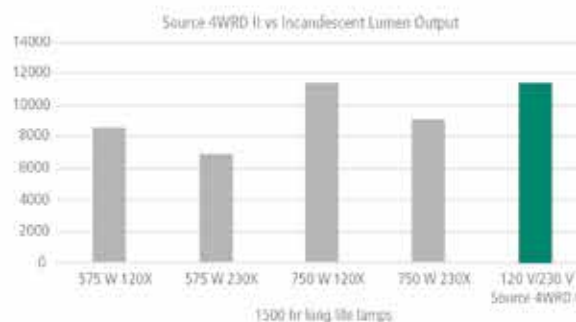
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The Sondheim Theatre

Julian Middleton,
Aedas Arts Team

The Sondheim Theatre was, until relatively recently, known as the Queen's Theatre. Facing onto Shaftesbury Avenue, it forms part of an imposing city block with the adjoining Gielgud Theatre. Delfont Mackintosh Theatres Ltd acquired the then Queen's and Gielgud Theatres back in 1999.

Sir Cameron Mackintosh, through Delfont Mackintosh Theatres, has variously restored, reimagined and rejuvenated his portfolio of eight West End theatres over the last 35 years. Spending has been in the order of £125 million – with work centred on his passion and commitment to leave these buildings equipped for the next hundred years. Prior to the recent work at the Sondheim, it is fair to say that the auditorium was surprisingly understated, lacking in architectural detail and with a rather subdued colour scheme that combined to create a relatively dull space. Re-opening its doors in January of this year, the space is now a gloriously enhanced version of its former self. The auditorium once again exudes that sense of elegant detail, subtle colouring – and that underlying sense of domesticity and warmth that characterises a Sprague designed theatre.

Development background

The architectural ensemble comprising the Gielgud and former Queen's Theatres, together with a commercial premises set between, originally presented a unified, symmetrical composition to Shaftesbury Avenue. Behind this facade the two theatres occupy the complete block, being separated only by a party-wall. The block was designed by respected theatre-architect WGR Sprague for Jack Jacobs and Sydney Marler, as a speculative development. The Gielgud (formerly the Hicks) opened in 1906 and the

Sondheim (formerly the Queen's) in 1907.

For the first thirty-three years the two theatres appeared as near identical twins, in their vigorous Edwardian Baroque style. The Queen's Theatre however, suffered severe damage during the Second World War with the loss of the foyers and street frontage. Repair was delayed for nearly 20 years and, when the theatre finally reopened in 1959, it presented a new modern face to the street. A decision not to reinstate the original design would have come as no surprise in the late 1950s. At that time the works of the late Victorian and Edwardian 'theatre architects' were unadmired and hardly any of their works (and none of Sprague's) were included in the statutory lists of buildings of special architectural or historic interest.

The reconstruction was the work of Westwood Partners (Bryan Westwood and Noel Brandon-Jones) with Hugh Casson giving advice on interior decor. They altered the symmetry of the block by substituting a glass curtain wall for the original stone façade. Behind this new frontage the foyer, grand staircase and bars (all war casualties) were replaced. The auditorium was restored rather than rebuilt, but a number of significant variations were made to Sprague's original design.

WGR Sprague

The original architect, WGR Sprague (1865-1933) was one of the leading architects of the three-decade theatre building boom which peaked at the beginning of the twentieth century. After Frank Matcham, the most prolific theatre designer of that time, Sprague and Bertie Crewe led the field. Sprague's theatres were quite different from those of either Matcham or Crewe. His designs were always architecturally well-mannered and, if he took liberties with the classical vocabulary or mixed motifs from different periods, it was done with great skill, for the sake of theatrical effect. His interiors were invariably elegant, with perfectly integrated proscenium, box and balcony front compositions.

Sprague was responsible for no fewer than eight of the present West End's medium-sized and small playhouses. The most beautiful of them, Wyndham's, opened in 1899, the Noël Coward (originally the New) in 1903, the tiny Ambassadors in 1913 and St Martin's in 1916. In 1905 Sprague designed another notable 'theatre pair', the Novello (formerly Waldorf) and Aldwych Theatres in the newly-cut crescent called the Aldwych. These eight theatres, taken together, represent Sprague at the peak of his powers.

Photography © Peter Dazeley, from his book London Theatres



The auditorium before its transformation

The auditorium has been refreshed on a couple of occasions during the ownership of Delfont Mackintosh Theatres. In 2004, working with Cameron's long-time interior designer Clare Ferraby, a first light-touch redecoration scheme was undertaken at the time the venue became home for *Les Misérables*. A further upgrade in 2009 made some modest physical alterations, including the introduction of accessible seating slips and new seating.

However the auditorium still reflected the design inconsistencies of the post-war reconstruction. In 1959 whilst some decorative elements were reinstated, others were not. Walls under the tiers were left unadorned. Modern interventions such as removing the side boxes and the introduction of sprayed ceilings to tier soffits combined to create a space that lacked aesthetic coherence.

The auditorium project

The auditorium refurbishment project took advantage of the necessary closure period required to undertake ceiling strengthening works to the main ceiling and central dome. This allowed an opportunity in which to completely refresh the interior – and the wider building.

In parallel to the auditorium work, stand-alone projects were carried out to bring the backstage areas up to standard and to substantially upgrade and increase the audience WC provision. These were run as individual projects with separate designers and contractors.

The vision for the auditorium was for a holistic interior upgrade that improved audience seating, improved the accessible seating positions, upgraded performance infrastructure and lighting and provided a comprehensive redecoration which included the addition and reinstatement of architectural elements that reinforced Sprague's original design intent. The aspiration was to return the auditorium to its former aesthetic completeness. Key components of this work can be summarised as follows:

- Re-seating to improve audience comfort and sightlines.
- Reintroduction of rear boxes at the back of the Dress Circle Level.
- Reinstatement of the Dress Circle (accessible) side boxes.
- New decorative treatment and augmentation to the side walls.
- New decorative treatment to the under tier ceiling soffits.



Rear auditorium dress circle, showing the two new audience boxes.

Photograph © Philip Vile

- Augmentation to coffering in the upper/ Grand Circle
- Integration of new followspot boxes.
- Upgrade to auditorium doors.
- New decorative scheme and enhanced lighting.

The alterations, new architectural interventions and interior decorative scheme, prepared by Clare Ferraby, all drew inspiration from the documentary evidence of Sprague's original auditorium – which is well illustrated in archive photographs. Additionally, as the owner of five Sprague designed theatres, Cameron Mackintosh brings a wealth of personal knowledge and energy to the design process.

This rebalancing of the relationship between the original Edwardian and the late 1950s components also informed the decorative upgrade to the public areas.

Dress Circle Rear Boxes

These two new boxes are set at the rear of the Dress Circle tier to either side of the main entrance doors. They play a substantial role in re-dressing the back wall and give scale to the space and recall the original sweep of rear boxes which existed prior to 1940. They occupy former storages spaces and are treated as alcoves within the back wall. The softened arched corners refer to the geometry of other new boxes, whilst the plasterwork and the plaster mouldings follow detailing from the circle front.

Dress Circle Side Boxes

When the auditorium was re-constructed in the late 1950s, the side boxes were not reinstated to Sprague's original design which left the side wall areas flat and plain and the Dress

*Auditorium central dome.
Photograph © Philip Vile*



Circle simply ending with two rows of seating against the side wall. This was a key feature in contributing to the perception that this was a relatively narrow theatre space.

The reinstatement of the two boxes opens up the outer walls of the space, giving a sense of air and breadth – allowing the auditorium both to open out, whilst simultaneously embracing the stage. This move dramatically enhances the visual perception of the room – restoring Sprague’s original composition and taking away the narrowness associated with the 1959 interior.

Dress Circle boxes

Working in collaboration with theatre consultants Charcoalblue and members of the *Les Misérables* production team, notably lighting designer Paule Constable, two new follow spot enclosures have been created at the back of the upper circle. Created to appear as rear audience boxes, these two new elements anchor the new decorative design for this upper level of the theatre. They also highlight the value of close collaboration with the production design team in helping to resolve in a practical hands-on way the technical infrastructure imperatives that underpin the decorative design work. Throughout the refurbished Sondheim, the technical installation is incredibly discrete and well curated.

Wall Treatments

In the 1959 reconstruction, the side and rear wall treatments at all levels of the theatre were minimal, plain surfaces. Mechanical grilles were clearly located for expediency with limited regard for aesthetic or compositional control. The 2019 decorative design draws heavily on the companion auditorium of the neighbouring Gielgud, with wall-moulding squeezes taken to allow an appropriate restoration within the Sondheim. The panelling layouts were refined with a more architectural, appropriately well-mannered, composition to reinforce a vertical rhythm within the room – and work around the existing lighting positions.

Under Circle Ceiling soffits

With the original fibrous plaster ceilings lost, the 1950s reconstruction to the Stalls and Dress Circle soffits was an ugly sprayed textured-plaster finish. Particularly in the deep stalls of a Sprague theatre, this was an overbearing and visually intrusive surface. Utilising archive photography of the 1907 interior, it was possible to discern that aspects of these ceilings were similar to those within the Gielgud, which once again allowed for the replication of the appropriate moulding for these surfaces. The work involved a skimming off of the stippled surface before fibre-liner paper and the new fibrous plaster mouldings were added.



Photography
© Peter Dazeley, from his
book *London Theatres*

Upper Circle

As per the conventions of the day, upper Grand Circle patrons received a more muted level of detail and finish to their spaces in the early 1900s. Beyond the main ceiling dome the back section above the Grand Circle audience was fairly utilitarian – and was little altered in 1959. There was a large plain inclined surface and some utilitarian down-stand beams. As with work at other venues in the group, one of the many Cameron Mackintosh legacies is giving theatre-goers the same quality of experience wherever they are sitting in the auditorium. Coving and recessed lighting is added to the ceiling to create a series of coffered sections bringing visual detail to these areas in line with the rest of the interior treatment. On the inclined soffit new panel mouldings are added alongside the elegant figures that are a signature of the theatre. These elements all reinforce the decorative cohesion of the space and link the plasterwork of the main ceiling with this upper section.

The decorative scheme

Clare Ferraby has worked with Cameron Mackintosh for many years on all the Delfont Mackintosh Theatre refurbishments. She has a particular understanding of the detailing subtlety of Sprague's work – alongside the colouring that is required to draw together the warmth and underlying domesticity of these interiors. At the Sondheim, she developed the concept design on site with Cameron and the team of specialist painters.

There are many achievements wrapped-up in the Sondheim project for Delfont Mackintosh Theatres – not least delivering three separate contracts and opening on time for the previews in late December. Once again they have delivered a refurbishment that utterly transforms a venue, making it a far superior version of its former self. All the audience sees, and experiences, is the perfect theatre of the new show in a beautifully restored space. As Matt Kinley's set design for the new *Les Misérables* breaks free of the proscenium and creates a delicate filigree across the restored proscenium zone – it is the perfect metaphor for what the project has achieved, that often elusive 'happy-balance' between architecture and theatre.

Client – Delfont Mackintosh Theatres Ltd

Project Manager – Devonshire Partnership

Architect – Julian Middleton / Aedas Arts Team

Interior Designer – Clare Ferraby

Theatre Consultant – Charcoalblue

Structural Engineer – Conisbee

MEP Services Engineer – Bryden Wood Ltd

Cost Consultant – Banks Wood and Partners

Access Consultant – People Friendly Design

Fire Engineering – Astute Fire

CDMC – PFB Consultancy

Contractor – Ornate Plaster (UK)

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While John Higgins considers the West End and its fashionable rise from earlier beginnings, he also looks closely at the concurrent vigorous entertainment scene around the East End and neighbouring working-class suburbs, and their subsequent metamorphosis into the prolific operation that has today become the trendy Off-West-End London Fringe.

And so as the typical famous grand 'Up West' houses are paraded in their glittering surroundings of glamour and razzamatazz, their fascinating 'Off-West' counterparts have their own exciting tales to tell ... and John says one thing is for sure: they have all been delicious to paint!

The National Theatre: A Place for Plays by ABTT 130pp £11.95 ISBN: 9781904031932

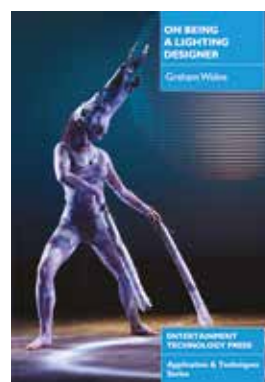
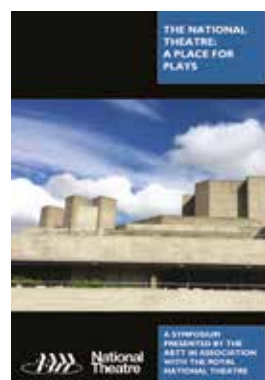
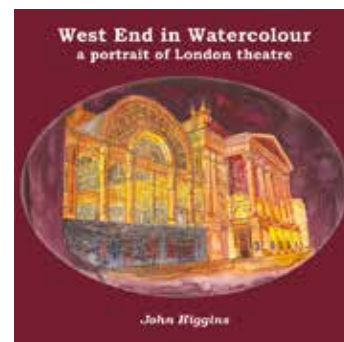
Paule Constable and Richard Pilbrow hosted a one-day Symposium on 30th October 2016 to celebrate the 40th Anniversary of the opening by Her Majesty the Queen of the National Theatre designed by Sir Denys Lasdun. The National Theatre: A Place for Plays, presented by the Association of British Theatre Technicians in association with the National Theatre, was about Theatre and Architecture: a discussion, a confrontation, a misunderstanding or a collaboration?

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Diversity in Sight?

Diversity is fast becoming an essential pillar of all institutions' recruitment strategies in the UK. These days it is generally recognised that a diverse workforce, which properly reflects the society it serves, will strengthen the talent pool and the relatability of any organisation or business.

Eighteen months ago, established lighting designer Prema Mehta wrote an article for *Sightline* on Stage Sight, the campaign project she had initiated to encourage diversity within the backstage workforce by challenging traditional work practices in the UK theatre industry.

Prema had become increasingly aware that a lack of opportunity was an issue across the theatre industry, and one which particularly impacted those from poorer backgrounds. During a conference on diversity held at the Leicester Curve in 2018, she was able to discuss this concern with a representative from Arts Council England (ACE). The outcome was Stage Sight, which was officially launched in March of 2019.

Prema's appeal met with a positive response. There was an initial sign up of thirty-five organisations, which grew to over fifty during the course of 2019. Prema found it particularly inspiring that the project committee is made up of people with full time jobs who are volunteering their time and expertise.

Stage Sight's strategy consists of three initiatives: Recruitment (changing recruitment practices to become more open and inclusive), Reaching Out (raising awareness of and improving the visibility of off-stage roles to the public) and New Pathways (developing new learning and training experiences).

Anna Coombs, Artistic Director and Chief Executive of 'Tangle', is enthusiastic about Stage Sight and its development. "The network is about identifying barriers to engagement and challenging the reasons these barriers exist, in order to change the way that talent is cultivated. By sharing ideas across the spectrum of membership we are developing models of good practice that we can all adopt and learn from."

Anna is also pleased that Stage Sight has supported Tangle's AMPLIFY scheme, which provides an ongoing programme of bursary placements and training options for African and Caribbean professionals in off-stage roles.

Kath Geraghty, the National Theatre's Workforce Development Manager, is closely involved with their Diversity & Inclusion agenda, is similarly enthusiastic about her

organisation's commitment to Stage Sight. "I disseminate all the information to our Technical Heads of Departments so that interested parties from all departments can contribute and attend meetings," she says, discussing the progress that the National Theatre has made since becoming a member. "Because of that, more individuals at the National Theatre are coming independently involved. We run a number of programmes focused on improving diversity, including apprenticeships, Young Technician and Young Maker programmes and supported placements which aims to make careers in the creative sector more accessible to a wider range of people. We run Creative Career days for secondary school pupils twice a year and also have links with Mulberry UTC in East London and have run several workshops for their students."

"Stage Sight's forums are a good space to hear other people's issues, as well as their successes and good ideas. Sharing experiences, good and bad, can prevent us all reinventing the wheel every time. I think individuals within a large organisation like the National Theatre feel positive that we are involved and that they can get directly involved themselves if they choose."

Kath also offered some interesting insight on how she would like to see Stage Sight develop in the future. "It's vital to get 'creatives' signed up and involved – a more interactive web space for Stage Sight could be really useful in achieving that."

Stage manager Alison Pottinger has developed her own project, Tech Theatre BSL (British Sign Language), which aims to encourage young deaf people to pursue backstage careers. She has spoken at a Stage

Sophie O'Neill

BAP Tangle Group
© Bettina Adela





Circle of Life, The Lion King
London. © Deen Van Meer

Sight forum to promote this work. Alison sees Stage Sight developing as a sharing platform and cites the example of 'Inspiring the Future' set up by SOLT as another example of a shared initiative. "What I value and what I think is important is being able to check in and see what initiatives have been set up, monitoring them and gauging how successful they are."

One of Stage Sight's earliest supporters is Nancy Shakerley, an education and outreach manager at Disney Theatrical Productions. "This is a positive pan-industry initiative. It's provided a platform for us to have active engagement and conversation with other industry representatives to share experience and practical ideas." Nancy gave examples; "within our education and outreach work we are providing industry placements for students from the Royal Central School of Speech and Drama and the Guildford School of Acting. We've also created a bank of resources that aim to demystify backstage roles and encourage young people from all backgrounds to consider pursuing a career in the arts. We have also been holding career insight events at every venue during the UK and Ireland tour of *The Lion King*, where young people can explore the key areas of work backstage."

Like others, Nancy believes that Stage Sight will provide a great resource for all the theatre world's organisations and individuals and that, in future, it will continue to broaden membership and raise awareness of the common goal of achieving a diverse workforce.

Technical director at the Royal Opera House, Mark Dakin is a recent Stage Sight committee member. He gives an honest and forthright opinion about diversity in the theatre.

"I challenge anyone to tell me it's any different than when I first started working. I

challenge anyone to tell me that there's more of us working backstage, and when I say 'us' I'm talking about people of colour and I'm talking about people of colour specifically. If you open that up more broadly, to include women in, if you like, *stereotypical* male roles, I think there's been some improvement, but it's roughly the same. I've sat on many a committee and been part of much of the discussion over a very long period of time, and fundamentally nothing is that different. I haven't lost hope, but I will always talk about it from a slightly cynical position."

"But I *am* optimistic about Stage Sight, because it has come so far so quickly."

Mark feels there is still a need to bridge the gap between theatre executives, producers, creative teams and technical departments, in large organisations especially. He feels there still exists a "class divide" between these two areas but that this is breaking down.

"We are part of the creative team too," he explains. "Theatre is about collaborative practice; show-making nowadays is even more collaborative than it ever was, and the artistic application of technical expertise has become even more important to the best type of show-making."

"So that's what I hope Stage Sight will do, make theatre craft visible. People don't know that you can be a stage carpenter or a lighting technician, and actually it's a pretty fun way to make a living."

It seems that Stage Sight has provided a much-needed platform to advance the cause of diversity within theatre, particularly the backstage workforce.



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Modern Theatres –

Musiktheater im Revier, Gelsenkirchen, Germany

Elain Harwood



*Musiktheater im Revier
at night
Almay Stock Photo/
Blickwinkel*

Theatre and opera offered a highly visible repository of moral conscience and cultural reflection to West Germany as it sought to claim political respectability after the Second World War. This was encouraged by the first president of the republic, Theodor Heuss, and by local politicians. The municipal theatre (Stadttheater) had held an important place in German culture from the early nineteenth century, and some 200 were rebuilt between 1946 and 1967 following war damage, with competitions providing exceptional opportunities for young, local architects to make their name. Funding came mainly from city and regional (Länder) councils, with the federal government contributing only about five per cent of the costs.

The Origins of the Design

Harald Deilmann, Max von Hausen, Ortwin Rave and Werner Ruhnau, a group of young architects working locally, won a competition in 1950 to rebuild the war-damaged Münster Theatre, but construction was delayed until 1954-6. Deilmann quickly left the team, but the other three were still nominally in partnership when in 1954 the city of Gelsenkirchen announced a competition for the rebuilding of its municipal theatre, a 1930s' building that had been completely destroyed in the war. Werner Ruhnau produced a design which was declared the winner in September, but the city council then worried that it was too expensive to build, and quietly turned to the

design placed second, by Fritz Bornemann of Berlin. When he learned of the change, Ruhnau protested and was allowed to produce a revised scheme which he proved was more economical to build.

Whereas the first rebuilt theatres, around 1950, incorporated the remains of their previous structures for reasons of economy and austerity, later in the decade complete rebuildings in a modern style took hold. As restrictions on steel and stone were lifted, the young architects took as their models the sleek modernism of the United States, and in particular the buildings by the expatriate Mies van der Rohe – one of their own to admire within the dominating, occupying American colossus. Mies himself was invited to produce a design for the Mannheim Nationaltheater as part of a competition in 1953, but his scheme suspending two auditoria within a wholly glazed foyer was passed over at a second stage in favour of a less radical and transparent version by Gerhard Weber, completed in 1957. There were local objections to so much glass, and Mies could not produce accurate costings for the scheme from the United States. The experience led Ruhnau to take the precaution of moving to Gelsenkirchen to oversee his project and he made the city his permanent home.

Ruhnau sought to regain something of Mies's radical design, whose influence is palpable in the revised scheme for Gelsenkirchen, which – although reduced from that of the



competition – retained its original layout and is very large by non-German standards. The site lies across a dual carriageway from a large open square that closes a long (largely pedestrian) promenade through the rebuilt town centre. The American magazine *Arts and Architecture* (vol.77, no.3, March 1960, p.18) commented that ‘the integration of the theater with this new plaza has been considered [as] important as the integration and spectators within the theater’. The building is 250m long, and while the competition design featured a

steel screen, as built the frontage comprises a fully-glazed foyer on two main levels raised over a cloakroom and mezzanine bar that are deliberately kept low. It surrounds the dark drum of the main auditorium, with behind it the main stage and extensive backstage facilities. Ruhnau saw the foyer as a stage for the audience, to be seen both from within and as a spectacle from outside that would attract passers-by to venture in. By day the glass is reflective, and it is possible to see in only when the foyer is illuminated from within at night.

Description of the Building

The theatre was constructed between 1957 and 1959. The main auditorium in the central drum seats 1,050 people in steeply-sloping stalls and in two balconies, revised from three in the original scheme. Each has slips formed of linked *schlitten* – the name given to the staggered sledge-like boxes that are a feature of 1950s’ auditoria, at the Royal Festival Hall and Coventry Belgrade Theatre as well as throughout West Germany. Their fronts are finished in glistening aluminium leaf to contrast with the back lining of the rest of the hall that for Ruhnau served to unite the auditorium and stage. The proscenium is 13 metres wide and 9.5 metres high but can be made smaller if required. Behind, a long slab incorporates the flytower within six storeys of dressing rooms, workshops, a scenery construction room, rehearsal space and a ballet studio. On the lowest level stores and a canteen complete a complex that operates for most hours of the day; the atmosphere backstage is somewhere between a small factory and Broadcasting House. The structural engineer was Guido

Auditorium following 2010 renovation

Pedro Malinowski/MiR

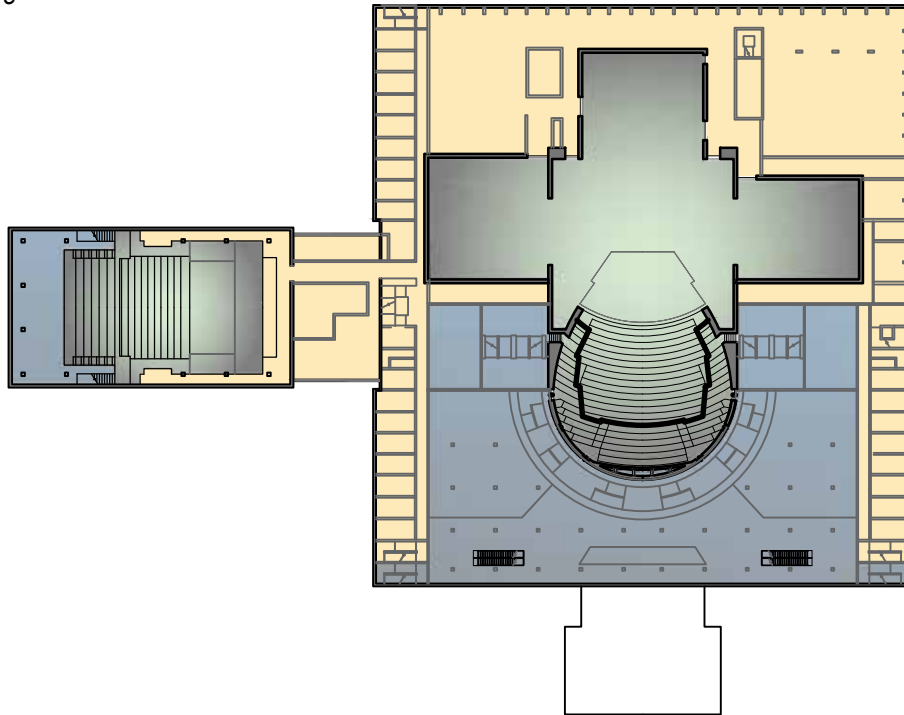


Musiktheater im Revier

Exterior

Elain Harwood

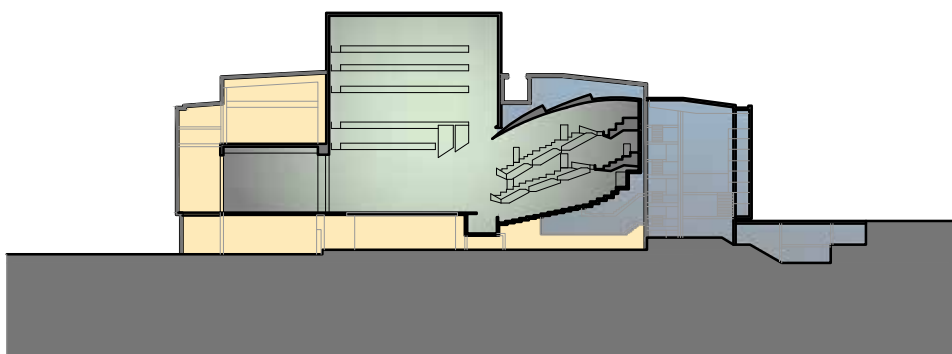
*Musiktheater im Revier,
Gelsenkirchen, comparative
plan*



Plan of theatre auditorium, stage and foyers

0 10 20 40 metres

*Musiktheater im Revier,
Gelsenkirchen, comparative
section*



Long section through theatre auditorium and stage

0 10 20 40 metres

Schoen, who devised a series of expansion joints along the frame, dividing it into separate sections as some settlement was expected across the site, with deep foundations for the flytower. The building was fully air-conditioned, also a response to the heavy industry and coalmining in the area, for the area suffered severe problems of air pollution at the time (*Architect and Building News*, vol.227, no.10, 10 March 1965, pp.463-71).

Externally the studio theatre or Kleines Haus, seating between 350 and 400 people, appears dark where the main theatre is light, but it is glazed at its far end where the foyer makes a visual link to the street as well as a physical one with the auditorium immediately behind. A bridge links it to the main building, with parking between the supporting pilotis. The form of the small theatre is indebted to Adolphe Appia's pioneering open space theatre at Hellerau from 1912 and is unusually flexible, for the stalls and apron areas can be adjusted, theoretically even in the course of a performance. There is one broad tier of seating across the rear.

Ruhnau brought in several major artists to decorate the foyers and exterior. They stayed with him and his family in a three-bedroom flat over the architect's office in a nearby former fire station, which was dubbed the 'Bauhütte' by a local journalist. There, Ruhnau claimed in his autobiography, *Der Raum, Das Spiel und Die Künste / Space, Play and the Arts* (Berlin, Jovis/ Gelsenkirchen, Stadt Gelsenkirchen, 2007, p.149), 'we achieved the ideal of engineers and artists designing a building together. It was no longer just a question of the individual artistic disciplines – we were building together.' The English sculptor Robert Adams created a concrete relief on the outer wall of the low box office wing that sits in front of the main façade, a foil to the latter's transparency. Most remarkably, Ruhnau was introduced at a gallery opening in Paris to Yves Klein, who produced six blue murals in the foyer after a formal competition was held in October 1957. Two of these are a monumental 21 metres wide by seven metres high, while two more of similar height were made at Ruhnau's behest using the sponges Klein normally used to apply his paint fixed into gypsum plaster on a wire mesh. They make dramatic splashes of colour in contrast to the deliberately monochrome auditorium. Paul Dierkes decorated the external drum of the main auditorium. Ruhnau's friend Norbert Kricke produced a relief of long, horizontal aluminium tubes for the exterior of the small hall, but his designs for fountains were never

realised. Jean Tinguely progressed from the task of acting as Klein's translator to making the mobile behind the bar of the small theatre. Ruhnau himself designed distinctive chairs for the foyer, which have padded leather seats and arms but no backs. They were remade as part of the restoration of the theatre under Ruhnau's supervision in 2008-9, when the ceiling was raised in the main auditorium to improve the acoustics and new lighting was installed. He retained a keen interest in the theatre and was a regular visitor until his death. The building has been used almost entirely for opera, musical plays and ballet since 1968, as reflected in its modern name, the Musiktheater im Revier.

Assessment of the Building

Gelsenkirchen is the most published and widely admired of Germany's post-war theatres, described by Hannelore Schubert as 'the happiest and most thoroughly integrated example to emerge during the first decade of post-war theatre-building', as well as a dramatic advance on the traditional auditorium at Münster (Hannelore Schubert, *The Modern Theatre, Architecture, Stage Design Lighting* (London, Pall Mall Press, 1971), p.7 (originally *Moderner Theaterbau*, Karl Krämer Verlag, Stuttgart, 1971)). For G. E. Kidder Smith, 'it abounds with ideas: its over-all planning which includes the eventual development of the entire area; its art which was carefully integrated with the theatre design from the beginning; its clever architectural marriage between auditorium and stage.' ('New German Theatres and Concert Halls', *Architectural Record*, vol.134, no.10, October 1963, p.183.) Victor Glasstone described the foyers as the 'finest, most successful, in Europe' ('Auditoria Galore', *Architectural Design*, vol.33, no.11, November 1963, pp.555-6). Gelsenkirchen offered a successful main auditorium that brought actor and audience close together, together with a very flexible studio theatre. It is also remarkable for the close relationship of artist and architect, for while the French and English artists were personal friends the programme is contemporary with the rebuilding of Coventry city centre using art students from Dresden. Its influence was limited, however, because of its very size – Peter Moro visited it before designing the Nottingham Playhouse in 1960-1 but found it too large and its stage facilities too technical for a British budget, although he repeated the basic concept of the auditorium as a decorated drum set within an open, rectangular foyer (personal comment, April 1994).



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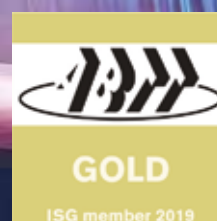
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Reflections on Candlelight

James Laws

After running candlelight workshops in drama schools for some years, it's a useful time to draw breath and question why candlelight seemed to me to be an important teaching tool for lighting designers. No-one asked me to do it but there again, no-one questioned it when I did it.

Since I started teaching, the candlelit Wanamaker Theatre has opened and there is to be a Conference by candlelight in Stockholm in August/September this year; the first such since Per Edstrom's *From Candlelight to Cyberlight* in Gothenburg some 20 years ago, which I enjoyed contributing to.

My first encounter with candlelight was in churches. Where else could you light up without a licence and a visit from the fire brigade? I loved the carol services, with cold stonework and warm faces lit by an upward glow. I began to introduce candelabra into concert lighting when appropriate. Observation then led me to think that there was a candle way to explain how artificial light works; the only way for millennia, until maybe 6 generations ago.

If you are in a lighting studio workshop, how convenient it is to have sources that:

- Do not trail wires or need batteries
- Give a constant output
- Can be put within most optical systems
- Do not glare
- Do not have fans

There are other advantages; the heat and the flicker slow down the rate at which light can be shifted or rearranged. The mental processes in light positioning become more considered.

The lack of unified control means that the whole class is often actively participating for the complete session; teamwork is essential.

My illustrations are from a light and music session with the year 2 Lighting Design students from Rose Bruford College in 2015. I find that music with narration, a song with a story, can be a very good way of giving cued candlelight a purpose that stimulates the imagination of the group.





One song that works with candle or tungsten is *Homeward Bound* by C V Stanford (no, not Simon and Garfunkel). In it, a sailing ship comes towards its home port after a long voyage. In lighting terms, it's about revealing what the crew sees as they first glimpse familiar land. The poet Newbolt strings it out very nicely for two verses, so we can usually find around 5 cue points.

Sometimes our ship rocks or moves, we always need a ship, a cliff and a lighthouse but the relentless constant is the sea, which underpins the orchestral accompaniment to the baritone soloist and male chorus.

Here is a sequence from the workshop

1: Building the set, fitting the cliffs, with backlighting candles warming up

2: Candles in a variety of reflectors

3: Ship on a very wonderful fabric sea. Mobile reflectors on ship and sea

4: "Faint on the Verge, her far hope dawns at last" Top edge of cliff, backlit

5: "The phantom skyline of a shadowy down" Faint cliff face, sidelit

6: "Like noontide ghosts" Full white cliff

7: "There lies the home of all our mortal dreams" Apologies! A pattern 750 with one candle and Lee 202 is obtrusive; we should have hidden the source.

8: Under working lights. The cliff is black!

From the pictures, I hope you see that we got a real sense of a heaving sea, we could hold back revealing features and we could fade them in a controlled way. These are some of the lessons that we drew from the workshop:

A group risk assessment before the electric light blackout is important. We had extra extinguishers and we alerted the college reception that we were running candlelight.

The blackout must be absolute as what we add to darkness is not very much. So, discipline of movement is vital

A candle flame is brightest in the horizontal

Candles do not bend from the vertical and stay lit



photo 7

Reflectors of all sorts are valuable for light collection and some are also valuable as baffles

Black-wrap is our friend!

Teamwork and understanding the story of the music is essential

Imposing concepts of 21st century lighting, such as cue points, is perfectly possible; you just have to plan ahead a bit more.

In fact, we were following in the footsteps of Phillippe de Loutherborg and his Eidephusikon. He staged shipwrecks and epic spectacles in model form with full lighting and musical accompaniment, in the late C. 18th. I hope the day gave the students a dimension to lighting that will stay with them and emerge when needed.

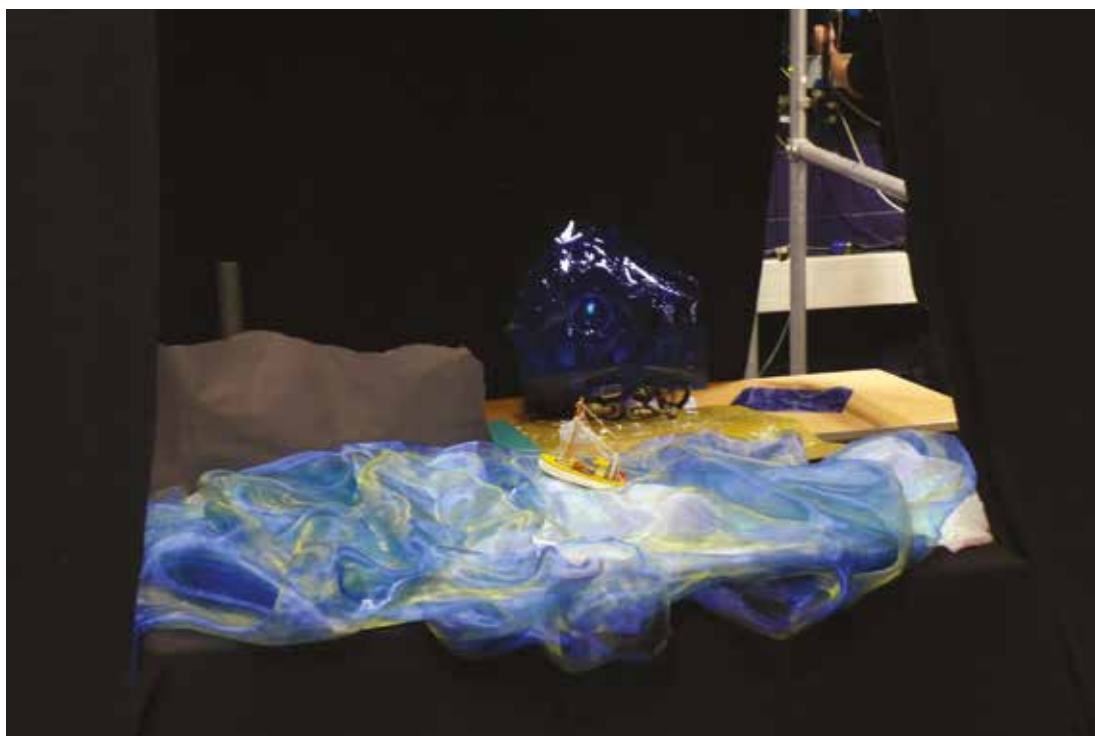


photo 8



Conservatory of Music and Ballet, Ljubljana, Slovenia

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School Theatre Support Group Conference

On Saturday 15th February, as the UK braced itself for the arrival of Storm Dennis, theatre technicians from across the country gathered in Yorkshire for the annual School Theatre Support Group Conference (STSG), hosted this year by Ampleforth College. Set in over 2,000 acres of beautiful countryside with an Abbey at its core, the college is home to reportedly the oldest purpose-built school theatre dating from 1909.

A packed programme gave delegates the opportunity to attend a variety of workshops and seminars provided by ABTT ISG members and other industry contacts. A practical scenic textures workshop was delivered by Flints, exploring techniques for creating wood grain and marbling effects. AC Entertainment Technologies demonstrated data networking options, whilst Stage Electrics spoke about how delegates can ensure their venues are complying with LOLER and PUWER regulations. White Light and ETC rounded off the day with a sneak preview of Augment3D, ETC's first integrated 3D programming environment. These suppliers were also joined by Hawthorn, Illuminate Design, Technical Stage Services and Mountview for the supplier's exhibition for delegates to network during the breaks.

STSG is a support network for anyone working in school theatres, whether in the private or state sector. Further sessions throughout the day were led by STSG committee members to enable the sharing of ideas and working practices between

members in what is a relatively niche field. We were delighted also to have Mountview in attendance, providing advice on how best to support students who wish to go to university, as well as Robin Townley, ABTT CEO, who gave an overview of the recent updates to Technical Standards for Places of Entertainment and the background to two recent high profile H&S cases involving fibrous plaster ceilings and the control of noise at work, informing delegates of important actions in their own venues.

Following the conference, delegates had further opportunities to network over a splendid dinner at Ampleforth College's very own pub, The Windmill. STSG would like to thank Michael Ramsden and the team at Ampleforth College for their wonderful hospitality, and all the industry supporters that make these conferences possible.

www.stsg.org.uk

Chris Stone,
Theatre Technical
Manager –
Mulberry School for
Girls, London.

All photos courtesy of STSG



Stephen Joseph Association AGM & Seminar

SPACE AND PLACE – theatre challenges in the 21st century.

On Friday 20th September the Stephen Joseph Association (SJA) held their second AGM and Seminar at the Playground Theatre, London. The Stephen Joseph Association was formed two years ago to remember and celebrate the work of Stephen Joseph. The aim of the association is to promote Stephen's legacy and to celebrate the centenary of his birth in 2021.

This AGM marked the official amalgamation of the SJA with the Association of British Theatre Technicians (ABTT). It was felt to be a particularly good fit for both parties as Stephen Joseph was one of the original founders of the ABTT and the SJA will benefit enormously from the organisation and expertise of the ABTT.

Peter Tate, Co-Artistic Director of the Playground Theatre, opened the proceedings with a lively presentation about the past history and present aims of the theatre, starting as a studio space for artists to explore their unique voices and creating the present theatre four years ago. There followed a discussion on how to make a theatre a local go-to destination, with a notable contribution from Philip Hedley, former artistic director of the Theatre Royal, Stratford East, in which he emphasised the importance of actors and how they relate to their audience.

Four speakers had been invited to speak to the theme of 'Space and Place' and their presentations were introduced by Richard Bunn, Chairman of ABTT.

Iain Mackintosh is today best known as a theatre producer and theatre design consultant. He gave a thought-provoking presentation on the ephemeral nature of performance but the endurance of theatre buildings, and the necessity today of a theatre company to work within the confines of a theatre building and available funding. He drew attention to the triangular relationship of actor and audience and audience with audience and how this is

influenced by different theatre buildings.

Faynia Williams has a lifetime's experience as actor, director of radio documentaries, artistic director of four theatres and is currently Artistic Director of Brighton Theatre. She worked with Stephen Joseph and sees the role of theatre as seeing and interpreting and bringing some order into what is happening now. In this way theatre can be a way to strengthen democracy.

Richard Crane, who has an eminent history as an actor and writer for stage and radio and was co-founder of Brighton Theatre, talked about the huge changes that have happened to theatre and theatre buildings in the 20th and 21st centuries. Memorably he outlined that the actors task today is to use their space and place to bring the Four Hs to their work – honesty, humanity, humour and hope.

The final speaker was David Roger, who has worked as a production designer in a vast range of TV, theatre and commercials. Ironically for a stage designer he saw the power of performance that does not depend on elaborate sets but on the interaction of actor and audience. When designing he starts by drawing the figure of the actor, and only then adding their clothes and their props. He is wide in his preferred styles of staging but only insists that, whatever the staging, it must be done well.

The presentations were much appreciated by the audience and were followed by a lively discussion, led by chairman Alistair Livingstone, on plans to celebrate the centenary of Stephen Joseph's birth in 2021, exploring links with the Orange Tree Theatre, the Central School, London and the University of Manchester. Faynia Williams emphasised the importance of looking forward and not back, something that Stephen Joseph always did, and the vitality of performance in found spaces, something that Stephen would undoubtedly approve of.



www.stephenjosephassociation.org

Young Associates

Introduction

Welcome to the eighth edition of the *Sightline* Young Members Page! In this edition we have lots of opportunities for providing feedback to the ABTT, including about a new membership category, ITEAC 2022 and ideas for reducing the carbon footprint of our Industry. We also showcase opportunities to become involved in ABTT NorthNet, ABTT Cymru and the Production Managers Forum Mentoring Scheme. If you are a Young or Student Associate and have a story you wish to share, a question you want to ask or an opportunity you want to promote, then get in contact by submitting content to sightline@abtt.org.uk (FAO: Matthew Freeman). Remember to follow @TheABTT on Facebook, Twitter and Instagram to keep up to date. Best wishes for 2020 to all of our readers!

New ABTT Membership for 26-30 Year Olds

The ABTT is working to introduce a new membership category for 26-30 year olds towards the end of this year. A lot of industry associations see a drop in membership when members transition between Young or Student membership and Associate or Full membership. The ABTT is devoted to helping young professionals transition from their training into professional work. This new category will feature a reduced rate to make the transition between membership categories easier, the idea being that people remain members during this period, giving them the benefits of ABTT membership in what is a crucial part of a career. If you have any thoughts or comments that you would like to share about the introduction of this new membership category, please send them to office@abtt.org.uk.

Feedback sought from Young Members for ITEAC 2022

ITEAC is the International Theatre Engineering & Architecture Conference. It is organised by the ABTT and held every four years, the next instalment being in 2022. If you would like to look at what was discussed in 2018, visit www.ITEAC.co.uk. Planning is already in progress for ITEAC 2022 and the ABTT would like to engage with Young and Student Associates for ideas about what should be discussed. The ABTT aims to involve a broad range of people in the event to ensure an accessible and interesting programme is developed. The input of the ABTT's Young Membership is highly valued, so if you have ideas for what should be discussed, would like to offer your

assistance or have further questions about the event, please email sightline@abtt.org.uk (FAO: Matthew Freeman).

Reducing Technical Theatre's Carbon Footprint

Coldplay's recent announcement that they would not be touring until they can facilitate carbon-neutral concerts is a reminder to our Industry that we must be considering environmental impact. I have some personal suggestions for useful websites to look at if you want to help reduce the carbon footprint of your work. Julie's Bicycle (www.juliesbicycle.com) has a number of resources available on their website about reducing the environmental impact of those working in the creative arts. If you have set pieces which you feel could be re-used on another project, it is always worth posting them on Set-Exchange (www.set-exchange.co.uk). Also, if you are looking for set, take a look at the message board and see if you can source items from there before making them. Set-Exchange also run The Props List (www.thepropslist.co.uk) which is a great resource for tracking down props in props stores around the UK. You can also list items which are in your props store and hire them out when they are not in use. For advice about how you can be environmentally friendly while touring, check out TheatreArtLife (www.theatreartlife.com) who have some good articles on the subject. Do you have some practical tips about how to reduce the carbon footprint of the Technical Theatre Industry? If so, please send them to sightline@abtt.org.uk (FAO: Matthew Freeman) for inclusion in a future article.

ABTT Regional Opportunities

Did you know that the ABTT has an active contingent in the North of England? It is called ABTT NorthNet and they are always looking for Young Members to join. Amongst other things, they host multiple visits a year to theatres and performing arts venues. Contact the ABTT Office (office@abtt.org.uk) for more information. ABTT Cymru is also being revived, if you would be interested in joining contact the ABTT Office on the email above.

Production Managers Forum Mentoring Scheme

The Production Managers Forum has recently launched a mentoring scheme aiming to help those in education, early career or wishing to start working in Production Management. More information can be found on their website (www.productionmanagersforum.org/mentoring).



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Spring 2020

COMMON QUERIES

In addition to providing information about amendments, additions and deletions to the latest edition, the Standing Committee is pleased to also use this regular column to provide answers to commonly asked questions about the use, application and implementation of the guidance contained within the *Technical Standards*. This is also the place where we shall pull together some of the commonly cited references and recommendations to provide useful "case studies" from real world situations. In this edition we discuss some of the more common questions that are received by the ABTT Safety Helpline, either by telephone, email or the contact form on the ABTT website.

QUESTION ONE

What is the status of the *Technical Standards for Places of Entertainment*?

The Code of Practice for the Theatre Industry

The ABTT produces a Code of Practice for the Theatre Industry in the United Kingdom. This Code of Practice is produced with the support of the Theatre Safety Committee.

Theatre Safety Committee

The Theatre Safety Committee is an industry forum with eleven organisational members:

- Society of London Theatre
- UK Theatre
- Institute of Entertainment and Arts Management
- Independent Theatre Council
- Little Theatre Guild
- Society of Independent Theatre
- Stage Management Association
- Equity
- Musicians' Union
- BECTU

The eleventh member of the Theatre Safety Committee is the ABTT. The first six organisations listed above are employer representative organisations and there are four employee representative organisations including three trade unions.

In contrast to any of the other ten organisations that are members of the Theatre Safety Committee, the ABTT is prohibited by the terms of its Memorandum of Association from the regulation of relations between workers and employers or organisations of workers and organisations of employers. For this reason, it is felt appropriate by the other members of the Theatre Safety Committee to support the ABTT in producing the Code or Practice for the Theatre Industry in the UK.

Status of the Code of Practice

The Theatre Industry Code of Practice is non-statutory guidance. It may, however, in accordance with the Health and Safety Executive's Enforcement Management Model (EMM), be used in a court of law as an established standard to indicate levels of performance needed to meet a general or qualified duty under the relevant statutory provisions. These provisions include Acts of Parliament and the Regulations made thereunder. Arrangements which conform to the guidance laid down in the Theatre Industry Code of Practice

are regarded by HSE as likely to achieve conformity with the relevant parts of the statutory provisions applying to health and safety at work. The Code of Practice provides guidance as to reasonably practicable methods for compliance with the law and for safeguarding the health, safety and welfare of all those affected by the production and presentation of live performance.

Technical Standards for Places of Entertainment

The *Technical Standards* is the core publication for the Theatre Industry Code of Practice. However, it is really important to remember that there are other sources of information that would also be considered to be part of the greater Code or Practice: ABTT Blue Guides, ABTT Guidance Notes, FAQs on the ABTT Website and articles in *Sightline*, in particular the Safety Matters column and this column.

Since December 2013 the HSE has specifically recognised the *Technical Standards*:

The Health and Safety Executive acknowledges that these *Technical Standards* have been developed by an entertainment industry Standing Committee to help make improvements in building, maintaining, managing and operating places of entertainment.

ANSWER ONE

The *Technical Standards for Places of Entertainment* are part of a Code of Practice recognised by the HSE as an Established Standard under the terms of their Enforcement Management Model. In effect this gives *Technical Standards* the same status as British Standards publications such as BS7671:2018 Requirements for Electrical Installations.

QUESTION TWO

When are handrails required adjacent to stepped gangways at the ends of seating rows?

Guidance in *Technical Standards*

Technical Standards for Places of Entertainment, and in particular Recommendations C2.40 – C2.46: *Handrails to Gangways* offers guidance on this subject. In *Technical Standards*, the Commentary to Section C2: *Seatways and Gangways* states that handrails, including lower [for the use of younger patrons and those of smaller stature] handrails can materially assist the elderly and infirm when walking.

The key points contained within the recommendations cited above are:

- Handrails should be provided on both sides of any stepped gangway where the rake exceeds 1 in 2. (C2.41);
- Consideration should be given to the provision of handrails on both sides of all gangways to assist the frail and infirm. Handrails should be discontinuous across the end of each row of seats to allow access. A continuous rail should be provided on any adjacent wall. (C2.42);
- Consideration should be given to the provision of non-continuous handrails in the centre of gangways, where gangways are wider than 1800mm, provided each section is at least 1100mm wide. (C2.43);
- Handrails in gangways should be between 900mm and 1000mm above finished floor level or the pitch line of the gangway. (C2.44);
- Handrails should be designed to be easily grasped and to provide firm support. (C2.45); and

- Handrails should be finished so as to contrast with their surroundings. (C2.46).

ANSWER TWO

It is a legal duty for theatre owners and managers to provide all measures that are reasonably practicable to protect both workers and visitors from hazards. *Technical Standards* provides guidance on the use of handrails adjacent to stepped gangways at the ends of seating rows which is likely to be deemed the basis for reasonably practicable measures. In some cases, this will indicate that when opportunity presents itself it will be necessary to install handrails into existing auditoria that were originally constructed without them.

QUESTION THREE

My theatre has been advised that if a fire alarm manual call point is activated anywhere in the theatre then it must cause an alert in the auditorium to automatically initiate an evacuation by the audience, is this appropriate?

Fire Safety Risk Assessment for Theatres

It is generally accepted that in any but the smallest theatre a two-stage fire alarm system should be employed when the public are admitted to the auditorium and the building is in “performance” mode. A two-stage alarm will alert the theatre management of the operation of automatic detection or a manual call point but without alerting the audience. The management may then undertake verification and initiate an evacuation if it is appropriate. There may be a need for a single-stage fire alarm system for when the theatre is in “working” mode.

Annunciation in the auditorium (sounders and/or voice evacuation and beacons) can be part of a “working” fire alarm mode so that cleaners and production staff can be alerted on the activation of automatic detection or a manual call point, but during “performance” mode this would be unlikely to be appropriate due to the risk of panic. The requirement is to affect a managed evacuation from a closely seated auditorium-felt to be best achieved by a trained FOH team.

Guidance is provided in the publication: HM Government Fire Safety Risk Assessment: theatres, cinemas and similar premises. In particular: Section 2: Further guidance on fire detection and warning systems.

Perhaps the first thing to note is that at the bottom of Page 59 it states:

- Further detailed recommendations are given in the *Technical Standards for Places of Entertainment*.

On Page 60, in section 2.1 Manual call points the following provision appears:

- If you have a staged alarm system or staff alerting system then call points in public areas may activate only the Stage 1 alarm which allows staff to investigate before the Stage 2 is initiated.

In Section 2.2 Automatic fire detection the further provision appears:

- If you have a staged alarm system or staff alerting system then the actuation of a single detector head may activate only the Stage 1 alarm, which allows staff to investigate before the Stage 2 is initiated (see 2.4 below).

On Page 62, in section 2.4 Staged fire alarms there is the following:

- You may wish to have different procedures for performances (where the public are present), during rehearsals and preparation, and out-of-hours, and different procedures for public and non-public areas. In order not to alarm an audience unnecessarily it may be advisable to replace the Stage 1 audible warning with a visual one so that the Stage 1 alarm is not audible on stage or in the auditorium.

Fire Alarm in *Technical Standards*

In *Technical Standards* the Commentary to Section H1 under Fire alert systems in the discussion of ALERT SYSTEMS it states:

Other than in small premises, a two-stage system should be provided for use when the public are present; the initial stage should warn the management and staff. The second stage is to evacuate the premises. When the system is in two-stage mode, evacuation should commence automatically after a short delay unless the alert is aborted. This delay allows management time to investigate the cause of the alert to avoid false alarms (‘seek and search’) and for staff to prepare for the possible evacuation of the premises. An acceptable delay for ‘seek and search’ will depend upon the premises but should preferably be three minutes and not normally exceed six minutes. However, this time may need to be increased in larger theatres and similar premises to enable a full ‘seek and search’ so as to avoid unnecessary evacuations; any such variation should be agreed with the fire authority.

When the public are not present the fire alarm warning system should revert to single stage operation.

Under EVACUATION SYSTEMS it states:

Evacuation of the premises is best carried out by using a live voice alarm system which will initiate the evacuation in a fire situation unless over-ridden by management. A facility for management to initiate an evacuation is valuable particularly for use in non-fire emergencies such as possible bombs. Where a non-automatic evacuation procedure is adopted a robust management policy must be assured in order to initiate and complete the evacuation.

In closely seated auditoria it is desirable that any evacuation of the audience is initiated by an announcement from the duty manager speaking from or in front of the stage or screen. A microphone should be provided for this purpose. Where a safety curtain is installed the microphone(s) should be accessible from both sides of the safety curtain to cover all possible emergencies. The use of this microphone should over-ride any other voice alarm signal in the auditorium. However, an automatic evacuation message should be broadcast unless the alert has been aborted or the duty manager has initiated the evacuation of the auditorium.

With specific reference to QUESTION THREE above, *Technical Standards* has Recommendation H1.20:

H1.20 Single stage fire alarm systems should not be installed in entertainment premises in other than small premises. Single stage systems trigger immediate evacuation upon receipt of the fire alert signal.

ANSWER THREE

Automatic initiation of an evacuation of an auditorium by the operation of a manual call point is not appropriate apart from in the smallest theatres.

MAKING CONTRIBUTIONS TO TECHNICAL STANDARDS

If you wish to contact the Standing Committee about any matter to do with *Technical Standards*, you may email standards@abt.org.uk. You may wish to suggest an amendment, clarification, new reference or explanation. The Standing Committee would be interested to consider any recommendation. Please do get in touch.

Previous editions of this *Technical Standards* column may be found on the ABTT website.

New copies of *Technical Standards* may be purchased from the ABTT website or Office and anyone with ABTT membership receives the best discount.

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Feel free to get in touch
Melvin.Sandell@finch-consulting.com

Members News

Membership Renewals for 2020

Thank you to all who have already completed their membership renewal for 2020. For those who still have to do so, please be aware that Subscriptions for this year are now overdue. Membership runs from the 1st January – 31st December.

The membership rates are as follows: *Members & Associates: £80; Early Career (26-30) £55; Young Associates (25 and under): £25; Retired: £35; Affiliated Organisations: £250 and Large Affiliated Organisations £500.* Overseas renewals should add £7.50 for postage. Please consider giving an additional donation when renewing your membership. Your donations are essential in allowing the ABTT to continue with its work and to meet its charitable objectives. Please do get in contact with the ABTT Office or renew your membership at www.abtt.org.uk via direct debit, credit or debit card to avoid losing access to your membership benefits.

ISG Members' Renewals

The ABTT is extremely grateful to the Industry Supporters who have continued their support into 2020. If you have not yet renewed, please contact the ABTT Office. New members are still able to join for 2020. It's never too late to join this "go to" list of theatre and live performance expert suppliers, service providers and supporters.

New Members

ABTT Associate Members Nick Mumford and Martin Stewart have been admitted as Full MEMBERS of the ABTT by the Council of Trustee-Directors. Congratulations!

To be admitted as a Full MEMBER of the Association costs nothing and acknowledges that you have gained relevant experience and demonstrate a manifest commitment to the technical subjects of the art of theatre. All you need do is submit a CV and contact details for two referees: please consider applying for admission as a Full Member TODAY!

Training: Successes

Congratulations to those who gained their ABTT Bronze Award following training at:

The Arena Theatre, Wolverhampton in January 2020: Joshua Burnside, Oliver Dixon, Jonathan Edwards, Jamie Harley, Alexander Jackson, Joseph Maguire, Steve Payne, Sophie Rawle and Drew White.

The Lyric Theatre, Belfast in January 2020: Jonathan Daley, Stephen Dix, Jonathan

Daley, Phelan Hardy, Kate Miller, Kerri McGimpsey, Tighearnan O'Neill, Ian Vennard, Adrian Wall and Corentin West.

The Backstage Centre, Purfleet in January 2020: Anna Apple Jack, Ben Bateman, Shaka Bunsie, Lauren Holly Cooper, Emily Mead, Jessica Nicholls, Jordan Panchen, James Pheby, Ellie Vidal and Fafner Vilela.

The Royal Conservatoire of Scotland in February 2020: Marta Drabek, Alexander Eirich, Fiona Elliott, Duncan Hendry, Ursa Horjak, Euan Jackson, Harry Jordan, John Russell and Ted Westwood.

Request a course at your venue:

Many of our courses are available to be run on-demand via peripatetic delivery. Courses may be delivered anywhere within the UK, or abroad and the ABTT welcomes interested theatres or organisations who wish to act as a host venue to get in contact. If you are interested in finding out more, please contact us on training@abtt.org.uk with the following information: 1. the course you wish to run; 2. venue location; 3. number of candidates and 4; availability in your calendar.

Training: Booking now!

30th March – 3rd April 2020, Bronze Award at Royal Northern College of Music, Manchester

Our Bronze 5-day course is now available for booking.

27th – 31st July 2020, Bronze Award, Warwick Arts Centre – Our Bronze 5-day course is now available for booking.

The following courses at Warwick Arts Centre are open to applications from any who have gained the ABTT Bronze Award or can demonstrate equivalent learning.

27th July – 1st August 2020, Silver Award for Theatre Sound Technicians – 6 Day Course open for booking.

27th July – 1st August 2020, Silver Award for Theatre Stage Electricians – 6 Day Course open for booking.

27th July – 1st August 2020, Silver Award for Theatre Stage Technicians – 6 Day Course open for booking.

27th July – 1st August 2020, Silver Award for Production Carpenters – 6 Day Course open for booking.

25th - 26th July 2020, ABTT Gold Award for Technical Supervisors and Managers – 2 Day Course

The Award is designed to support the candidate for a role in which they will have responsibility for the management of the

working environment and the practices pursued therein. The Gold Award assumes candidates have achieved equivalent skills and knowledge to those delivered by the ABTT Bronze and Silver Awards.

Visit our website or contact the office for booking forms and details of individual CPD modules as well as the programmes listed above.

Other News:

ABTT Sailing Regatta

Calling all ISG Members! Join us for the inaugural Sailing Regatta held at the Sea View Yacht Club on the Isle of Wight. 13 boats of maximum 3 sailors per race competing for the TAIT Cup. We will attempt 3 races in the morning and 3 races in the afternoon. The event is benefiting charities Backup and the Theatrical Guild.

Fee: Boat for maximum 3 people: £1500 including breakfast, lunch and evening BBQ. £50 per extra sailor/spectator, including breakfast, lunch and evening BBQ.

To register your interest and reserve a boat, please contact: regatta@taittowers.com by 31 March 2020.

EVENTS

12th May 2020, PLASA Focus, Leeds

We hope to see as many members as possible at the ABTT Stand in Leeds.

10th - 11th June 2020,

ABTT Theatre Show 2020,

Please note the dates for this year's ABTT Theatre Show which will again be at Alexandra Palace. Details: <http://www.abtttheatreshow.co.uk/>.

15th June 2020, Theatre & Touring Symposium 2020 (presented by UK Theatre and SOLT)

The Brewery, London EC1Y 4SD

A day to tackle shared issues, leading to real and practical change. See www.uktheatre.org



Safety Matters

Association of British Theatre Technicians
55 Farringdon Road, London EC1M 3JB

Tel: 020 7242 9200
Fax: 020 7242 9303

Spring 2020

FIRE SAFETY

Fire has destroyed many theatres, particularly when candles and oil lamps were used in the 18th & 19th Century for lighting effects. Following a devastating theatre fire in Exeter in 1887 that resulted in many deaths, mainly through smoke inhalation, there was an outcry. Parliament ordered a change to the numbers of exits to an auditoria and separation between stage and auditoria by means of a fire curtain.

While this legislation has saved lives by making escape easier, as technicians and stage managers we still ignore basic safety rules and do so foolishly. For example, at the Royal Opera House, Covent Garden in 2002, a leading lady escaped unharmed when a candle set fire to her dress. The audience shouted warnings to the soprano as she carried on with her performance in *The Queen of Spades*, unaware that the train of her robe was in flames. A member of staff ran on to the stage and put out the fire with a water extinguisher.

In another recent incident 'Ophelia sets down a candle on to stage' – whilst kneeling the actress was so engrossed in the part that she set fire to her nightdress.

The audience in a regional theatre was evacuated after a voltage transformer, inside an amplifier and situated in the stalls sound desk position, failed. The acrid smell and smoke soon caused panic. The Usher took control and evacuated the auditorium. It was discovered there was no CO₂ fire extinguisher set in place!

Meanwhile only a few weeks ago in Cardiff a performance of *Les Misérables* was stopped when an actor inadvertently lit part of the set during the show's revolution scene. The actor was holding a live torch, which brushed against the barricade and caused it to catch fire! The local paper reported "many believed the fire to be a part of the show – that is, until the actors playing dead bodies immediately got up and exited stage left ... a fire extinguisher was swiftly employed to save the day while the safety curtain was promptly lowered in order to localise the fire." ...Pyrotechnics have also been responsible for many unwanted stage incidents.

Why? Are we as technicians, stage managers and production managers failing in our duty?

No part of a stage set should be constructed without being made of class one material or props or hangings made out of flame retardant materials. Flame retardant hangings such as blacks are hung all over theatres – but after time, they collect dust, which is a good transmitter of flame.

It is important to check that drapes and furnishings retain their flame retardant property. Theatres should carry current proof of certification for treatment for the set etc. Remember sets which move about on tour will lose its retardant property more easily. Drapes need a check at least every five years.

Don't let yourself down – if in doubt, in controlled conditions, have a competent person do a lighter test, to check that non flammability is being maintained.

For more on fire precautions for scenery and properties, check out *Technical Standards* section K6.

RIGGER FALL AT CARDINGTON

The rigger who fell to his death at Cardington while working for ELP (Elstree Light and Power) is of interest as he was

not clipped on at height, in fact no discernible safety system or restraint was present to clip to. PLASA and NRAG have issued a press release that includes a letter to them from the Coroner – worthy of a read, it comes complete with links to the available guidance and recommended systems that should be in force in such a work place. Central to the Coroners Report is that the rigger was qualified at NRC level 2. The link is here ...

<https://www.plasa.org/wp-content/uploads/2020/02/Regulation-28-Response-from-PLASA-NRAG.pdf>

MOBILE SCAFFOLD TOPPLES OVER

A school board of trustees has been ordered to pay NZ\$100,000 (£49,338) after a teacher and student were knocked unconscious and left with brain damage after a mobile scaffold being used to set up lights in the school's auditorium toppled over.

Mobile scaffolding was erected in the School's auditorium to assist with setting up lighting for plays and assemblies. In June 2018 a teacher and student fell from the 3.9 metre high working platform of the scaffold after it tipped over as it was being moved. Both were knocked unconscious and suffered serious lacerations, fractures and brain injuries.

The New Zealand health and safety regulator WorkSafe said the school had not developed a safe system of work around the use of the mobile scaffold.

"There were no policies or procedures in place around working from heights, or for student involvement in the use of the scaffold," said chief inspector of investigations, "With no safe systems in place students and staff were exposed to a very real risk of injury and this incident could have had catastrophic consequences."

DUST HUB

The HSE website is a key resource for anyone looking to implement protection from dust; it promotes knowledge of dust-related health issues as well as outlining employer responsibilities, control principles and training.

Excessive exposure to some types has been linked to health problems including asthma and lung cancer. Occupational diseases can cause life-changing health issues or even premature life-ending illness.

Essentially there are four ways in which dust can harm health: Inhalation, skin contact, eye contact and ingestion. Breathing dust into the lungs can create respiratory problems which can sometimes take years to develop. Inhalable dust is invisible to the naked eye and can get trapped in the nose, mouth, throat or upper respiratory tract where it can cause numerous issues. Respirable dust is even finer in particle size and can be breathed deeply into the lungs causing problems including pneumoconiosis.

Dust can be a problem in almost any industry. So, how should theatres approach monitoring and controlling it? A good starting point is the 'Dust in the workplace: General

RESULTS OF A RECENT FIRE DOOR SURVEY – FIRE PROTECTION ASSOCIATION

FPA readers were invited to respond to the following question: 'Do you believe that current guidance regarding the redecorating of fire doors and frames, including ensuring that the process does not render intumescent and smoke seals less effective, is adequately understood and practised?'

Over 91% indicated that they do not believe the current guidance is adequately understood, while just under 9% felt it was.

Guidance for the specification, installation and maintenance of timber-based fire doors is provided in BS 8214:2016 with section 14 addressing on-site decoration, including the following: "Doors may be painted / lacquered as required, preferably in accordance with the manufacturer's recommendations where these are available. It is indicated that this is because fire doors are 'generally not required to provide a specific surface spread-of-flame barrier'."

Smoke seals must not be overpainted

With regards to intumescent only seals, the guidance indicates that 'there is no evidence to suggest that overpainting of intumescent seals has any detrimental effect on the ability of the seals to perform efficiently', but goes on to clarify this by indicating that 'overpainting should be avoided wherever possible' and where this is unavoidable, it should be 'limited to a maximum of five coats of conventional paint or lacquer or a maximum of 0.5mm, whichever is the greater'.

Where combined smoke and fire seals are provided, the smoke element should never be overpainted.

The use of heat or chemical strippers should be avoided as these may damage the seals, in which case the seals will need to be replaced

Other themes that have been identified from the comments include: A lack of awareness of the guidelines regarding maintenance and redecoration; the lack of identification and management of doors; a lack of regular inspection of fire doors; the possible need for clearer guidance that addresses both what should be done in addition to what should not be done; the need to use competent, third party accredited providers.

With regards to the frequency of fire door inspection, BS 8214 recommends that this can be determined from the risk assessment and the frequency of use of the doors with the examples that doors used infrequently may only need to be inspected monthly, while those with high usage may benefit from inspection on a weekly basis.

Rescommendations include: daily checks of automatic door release devices and monthly checks of automatic opening doors, doors on hold open devices and door emergency release hardware.

Six monthly inspections help ensure that: Heat and smoke activated seals are complete and free of damage; door leaves are not damaged, bowed or deformed; gaps between doors and frames are within acceptable tolerances; Hanging, securing and release devices are complete and operating correctly.

Fire door are there to protect the theatre and public – when did you last check yours?

FAULTY TELEHANDLER

The director of a waste management firm has been ordered to carry out 120 hours of unpaid work after an employee was seriously injured by a faulty telehandler.

The employee was working at the company's yard where builders' waste and soil were processed and recycled.

The worker was struggling to manoeuvre a telehandler, and it became stuck. With the engine running and the door blocked, he climbed out through the window to allow the company director to free the machine.

Poole Magistrates' Court heard that the telehandler moved unexpectedly, crushing the worker between the machine and a gate post. He was in hospital unconscious for weeks and has not fully recovered from his injuries. HSE investigators found the telehandler had several serious long-term faults, some relating to braking.

The director was well aware of the unsafe condition of the telehandler yet allowed it to be used by an inexperienced employee ... he pleaded guilty to breaching s.37 of the Health and Safety at Work Act. Under s.37, if an offence is committed by a company with the consent or connivance of a director, then the director will be guilty of that offence and can be proceeded against accordingly.

HSE promotes safe-stop procedures where drivers should apply the parking brake and turn off the ignition before exiting any mobile machinery.

METALWORKING LATHE VIDEO

A Magistrates' Court heard that an employee was applying emery cloth by hand to a lathe to smooth down a pre-fabricated shaft. His arm was pulled into the machine, sustaining an open fracture, resulting in numerous surgeries including skin grafts.

An investigation by the Health and Safety Executive (HSE) found that the company had not recognised that the unsafe method of using hand held emery cloth on lathes was custom and practice among their employees. The company failed to provide a suitable and sufficient risk assessment and so did not identify and put in place control measures, or provide training in an alternative safe method of working, such as using a suitable tool post to handle emery cloth.

The company pleaded guilty of breaching Section 2(1) of the Health and Safety at Work etc. Act 1974. The company was fined £20,000 and ordered to pay costs of £3689.60. HSE inspector commented after the hearing "This injury was easily preventable, and the risk should have been identified. Employers should make sure they properly assess and apply effective control measures to minimise the risk from dangerous parts of machinery."

Emery cloth is often used to deburr, polish or size a wide range of cylindrical, tapered and threaded metal components while they are held in the rotating chuck jaws of a lathe. Accidents occur when hand-held emery cloth is entangled in the rotating parts of the machine or where the emery cloth is snagged on the rotating component dragging the operator into the danger zone.

The method in the HSE video below uses a strip of emery cloth which is formed into a loop and clamped into a holding device attached to the tool post. This method is for external work only. This is one of the safest ways to use emery cloth on a manual metal working lathe.

<http://www.hse.gov.uk/engineering/lathes.htm>

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COLLECTIVE STRENGTH

Organisations Affiliated to the ABTT

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Any non-profit organisation is qualified to be affiliated to the Association of British Theatre Technicians. Please contact the Office to enquire about benefits and affiliation:
020 7242 9200 or office@abtt.org.uk



www.abtt.org.uk

Large Affiliate

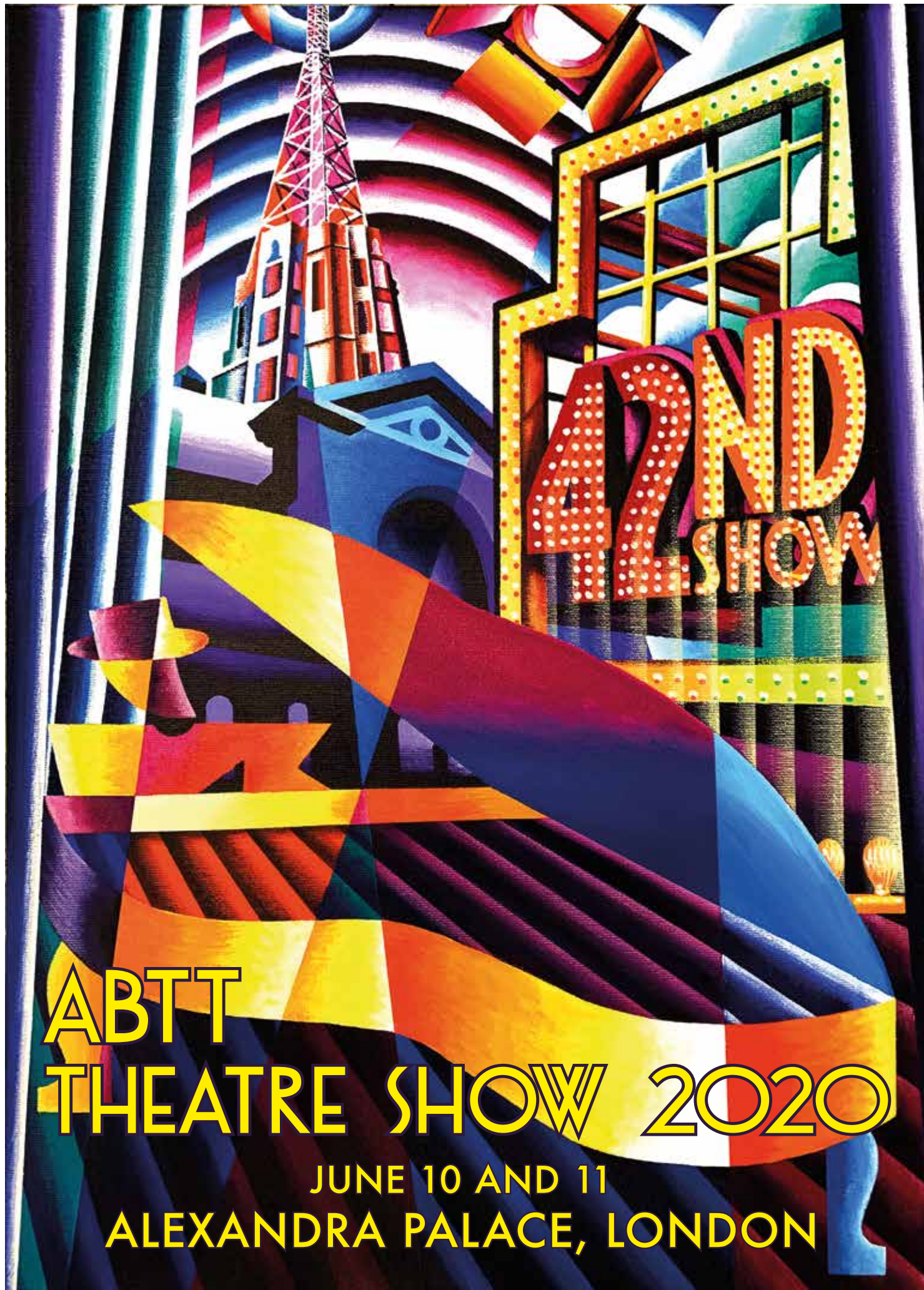


ORGANISATION	LOCATION
Abbey Theatre Trust Ltd	St Albans
Aberystwyth Arts Centre	Aberystwyth
Alhambra Theatre	Bradford
Alleyns School	London
Arts Educational Schools	London
Arts University Bournemouth	Poole
Attenborough Arts Centre	Leicester
Barbican Centre	London
Barn Theatre Trust Ltd	Welwyn Garden City
Bath Spa University	Bath
Battersea Arts Centre	London
Bedaes Olivier Theatre	Petersfield
Belgrade Theatre	Coventry
Bibliothèque Nationale de France	France
Birmingham Hippodrome	Birmingham
Birmingham Repertory Theatre	Birmingham
Birmingham Royal Ballet	Birmingham
Blackpool Grand Theatre	Blackpool
Blackwood Miners Institute	Blackwood
Bloomsbury Theatre and Studio	London
Bristol Old Vic Theatre	Bristol
Bristol Old Vic Theatre School	Bristol
Broadway Cinema and Theatre	Letchworth Garden City
Bryanston School	Blandford
Buxton Opera House	Buxton
Byre Theatre	St Andrews
Cambridge Arts Theatre	Cambridge
Cambridge Junction	Cambridge
Capital Theatres	Edinburgh
CAST	Doncaster
Central and Brook Theatres	Chatham
Century Theatre	Markfield
Chapter	Cardiff
Chichester College	Chichester
Chichester Festival Theatre	Chichester
Citizens Theatre	Glasgow
City College Norwich	Norwich
Civic Centre Craigavon	Craigavon, N Ireland
Civic Theatre Chelmsford	Chelmsford
Clwyd Theatr Cymru	N Wales
Concordia Theatre	Hinckley
Connaught Theatre	Worthing
Contact Theatre	Manchester

Cork Opera House	Cork, Ireland
Corn Exchange Newbury	Newbury
Cornwall College - St Austell	St Austell
Coventry City of Culture Trust	Coventry
Cranleigh School	Cranleigh
Curve Theatre	Leicester
Darlington Hippodrome	Darlington
De Montfort Hall	Leicester
Derby Theatre	Derby
East 15 Acting School	Loughton
Eden Court Theatre	Inverness
English National Ballet	London
Entertainment Technology New Zealand (ETNZ)	Wellington, New Zealand
Epsom Playhouse	Epsom
Equity	London
Everyman Theatre -Cheltenham	Cheltenham
Felsted School	Dunmow
Fife College	Kircaldy, Scotland
Giggleswick School	Settle
Glyndebourne Productions Limited	Lewes
Goldsmiths, University of London	London
Grand Opera House	Belfast, N Ireland
Greenwood Theatre	London
Grove Theatre	Dunstable
Guildford School of Acting	Guildford
Guildhall School of Music & Drama	London
Harrogate Convention Centre	Harrogate
Harrogate Theatre	Harrogate
Huddersfield University	Huddersfield
Hull College	Hull
Hull New Theatre	Hull
Hull Truck Theatre	Hull
Island Arts Centre	Lisburn
Kenneth More Theatre	Ilford
Kings College London	London
Kings Lynn Corn Exchange	Kings Lynn
Korea Testing Laboratory	Seoul, South Korea
Lakeside Arts Centre	Nottingham
LAMDA	London
Leeds Playhouse	Leeds
Leisure and Cultural Service Dept	Tsim Sha Tsui, Hong Kong
Lighthouse Theatre	Kettering
Lighthouse, Poole's Centre for the Arts	Poole
Lincoln Performing Arts Centre	Lincoln
Little Angel Theatre Company	London
Live Theatre	Newcastle Upon Tyne
Liverpool Everyman & Playhouse	Liverpool
Liverpool Institute for Performing Arts	Liverpool
Loughborough Town Hall	Loughborough
LSO Production Ltd	London
Lyric Theatre	Belfast
Lyric Theatre Hammersmith	London
Malvern St James	Great Malvern
Malvern Theatres Trust Ltd	Malvern
Manchester Grammar School	Manchester
Manchester Metropolitan University	Crewe
Marina Theatre	Lowestoft
Market Harborough Drama Society	Market Harborough
Melton Theatre at Brooksby Melton College	Melton Mowbray
Mercury Theatre	Colchester
Millfield Arts Centre	London
Mounts Bay Academy	Penzance
Mountview Academy of Theatre Arts	London
National Dance Company Wales	Cardiff

National Theatre of Scotland	Glasgow
National Theatre Wales	Cardiff
New Victoria Theatre	Newcastle Under Lyme
New Wolsey Theatre	Ipswich
North East Scotland College	Aberdeen
Northbrook Metropolitan College	Worthing
Northern Ballet Ltd	Leeds
Northern Stage	Newcastle Upon Tyne
Northumbria University	Newcastle Upon Tyne
Nottingham Playhouse	Nottingham
Nottingham Trent University	Nottingham
Nuffield Theatre	Southampton
Octagon Theatre - Bolton	Bolton
Old Vic Theatre Company	London
Oldham Coliseum Theatre	Oldham
Oldham College	Oldham
Opera North	Leeds
Palace Theatre Mansfield	Mansfield
Palace Theatre Watford	Watford
Perth College UHI	Perth
Petersfield Town Council	Petersfield
Plymouth Theatre Royal	Plymouth
Pontio	Bangor
Queen Mary University of London	London
Queen's Theatre Hornchurch	Hornchurch
Queensland University of Technology	Kelvin Gore, Australia
RADA	London
Redbridge Drama Centre	London
Regents College	London
Riverside Studios	London
Roedean School	Brighton
Roehampton University	London
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Rotherham College	Rotherham
Royal Albert Hall	London
Royal & Derngate Theatres	Northampton
Royal Birmingham Conservatoire	Birmingham
Royal Conservatoire of Scotland	Glasgow
Royal Holloway University of London	Egham
Royal Lyceum Theatre	Edinburgh
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Royal Northern College of Music	Manchester
Royal Opera House	London
Royal Shakespeare Company	Stratford Upon Avon
Rugby Theatre	Rugby
RWCMD	Cardiff
Saffron Hall Trust	Saffron Walden, UK
Salisbury Playhouse	Salisbury
Scottish Opera	Glasgow
Sharjah Performing Arts Academy	Sharjah
Sheffield Theatres	Sheffield
Sheringham Little Theatre	Sheringham
Sherman Theatre	Cardiff
Soho Theatre	London
Stafford Gatehouse Theatre	Stafford
Stockton Riverside College	Stockton-On-Tees
The Abbey Theatre	Dublin, Ireland
The Albany	London
The Albany Theatre	Coventry
The Almeida Theatre	London
The Anvil Arts	Basingstoke
The Backstage Centre	Purfleet
The BRIT School for Performing Arts & Technology	Croydon

The Broadway Theatre	Barking
The Courtyard	Hereford
The Electric Theatre	Guildford
The English Stage Co Ltd	London
The Exchange	Sturminster Newton
The Forum	Barrow-in-Furness
The Green A Team	Petersfield
The Hexagon	Reading
The Kings School	Worcester
The Kings Theatre	Southsea
The Leys School	Cambridge
The Little Theatre	Leicester
The Lowry	Salford
The Market Place Theatre and Arts Centre	Armagh, N Ireland
The Northern School of Art	Hartlepool
The Performance Centre	Penryn
The Perse School	Cambridge
The Point Theatre	Eastleigh
The Riverfront	Newport
The Roundhouse	London
The Royal Central School of Speech & Drama	London
The Royal Exchange Theatre	Manchester
The Ryan Theatre	Harrow
The South Bank Centre	London
The Stahl Theatre	Peterborough
The Town Hall	Hamilton
The Winter Gardens	Margate
The Yard Theatre Limited	London
Theatr Genedlaethol Cymru	Carmarthen
Theatr Hafren	Newtown
Theatre by the Lake	Keswick
Theatre Royal and Royal Concert Hall	Nottingham
Theatre Royal Bath	Bath
Theatre Royal Dumfries	Dumfries
Theatre Royal Norwich	Norwich
Theatre Royal Stratford East	London
Theatre Royal Wakefield	Wakefield
Theatre Severn	Shrewsbury
Trinity Laban Conservatoire of Music and Dance	London
Trinity Theatre	Tunbridge Wells
Unicorn Theatre/Caryl Jenner Productions Ltd	London
University of Central Lancashire	Preston
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Vivacity Key Theatre	Peterborough
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Warwick Arts Centre	Coventry
Wellington College	Crowthorne
Welsh National Opera	Cardiff
West Kowloon Cultural District Authority	Kowloon, Hong Kong
Whitchurch Civic Centre	Whitchurch
Wokingham Theatre	Wokingham
Woolwich Works	London
Wycombe Arts Management	High Wycombe
York St John University	York
York Theatre Royal	York
Young Vic Theatre	London
Zuni Icosahedron	Happy Valley, Hong Kong



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