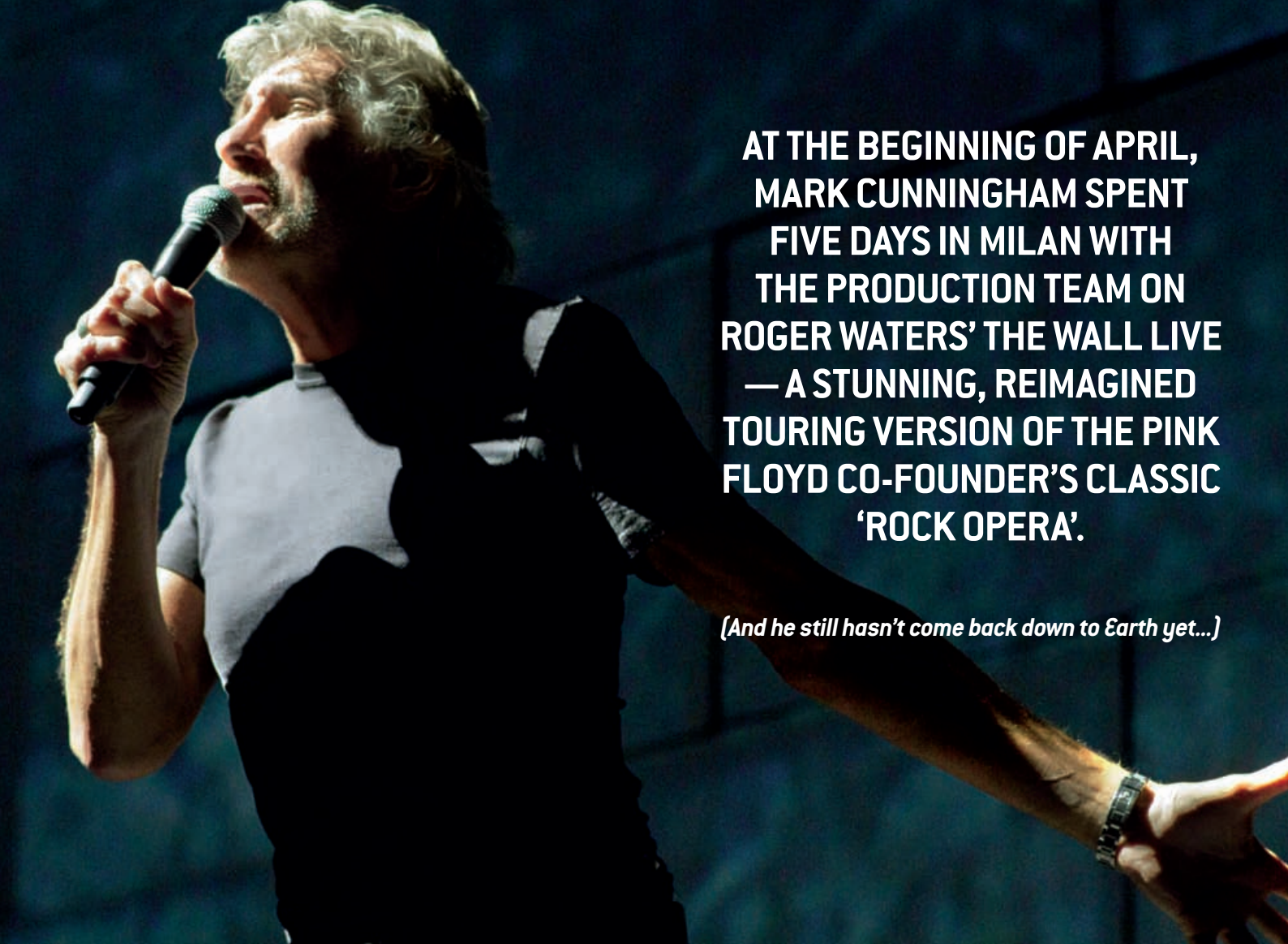


# ON THE ROAD WITH

# ROGER WATERS THE WALL





**AT THE BEGINNING OF APRIL, MARK CUNNINGHAM SPENT FIVE DAYS IN MILAN WITH THE PRODUCTION TEAM ON ROGER WATERS' THE WALL LIVE — A STUNNING, REIMAGINED TOURING VERSION OF THE PINK FLOYD CO-FOUNDER'S CLASSIC 'ROCK OPERA'.**

*(And he still hasn't come back down to Earth yet...)*

Is it a rock concert, performance art or a theatre show? The truth is, it straddles all of these genres but the end result is in a field of its own.

Whereas the original Pink Floyd shows of 1980 preceded moving lights, line arrays, hi-def video and sophisticated automation, this new live production of Roger Waters' magnum opus, *The Wall*, harnesses all of today's advanced technologies to deliver an uncompromised assault on the senses.

One might even be forgiven for thinking this was the show that all of this weaponry was waiting for. And having witnessed three performances at the Mediolanum Forum in Assago, Milan at the beginning of April, I am convinced that this is not only the greatest live show I've ever seen, it's one that I sincerely doubt will be surpassed any time soon.

As explained by Waters in last month's prelude feature, the feelings of loss and alienation that were at the core of his original narrative are still there, only the meaning has now been expanded as a wider statement on the effects of war, religion, politics and commerce on 21st century life.

Filtered through the writer's concern for the human condition, the result is as much an emotional experience as it is cerebral.

Of course, it helps if you're familiar with the 1979 Pink Floyd album or perhaps the Alan Parker-directed movie, but even the uninitiated

cannot fail to be moved by the sheer dynamic energy and unprecedented creative content in this new presentation.

Introduced by a soundtrack clip from *Spartacus*, signifying the judgement of a man who stood up to the Establishment, *The Wall Live* is separated into two Acts, each approximately 55 minutes long, with images of victims of conflict projected on to the bricks during the 20 minute intermission.

Musically, *The Wall* is recreated with pinpoint accuracy by Waters (bass, acoustic guitar & trumpet) and his highly skilled and drilled 11-piece 'Giant Big Man Band', comprising drummer Graham Broad, guitarists Dave Kilminster, Snowy White and G.E. Smith, keyboard players Jon Carin and Harry Waters (who has toured with his father since 2002 and whose voice appeared on the *Wall* album), vocalist Robbie Wyckoff (handling David Gilmour's vocal parts), and backing singers, a.k.a. the Pumpkin Launchers, Jon Joyce and the Lennons (Kipp, Mark and Pat).

The design project was headed by Mark Fisher, working alongside Stufish colleague Jeremy Lloyd, creative director

Sean Evans, and Tyler Kisera of Tait Towers whose youthful energy and vision proved to be an inspiration for all. Sensible Events' Andrew Zweck leads as tour director and Chris Kansy (Van Morrison, Janet Jackson, Mary J. Blige) is in the production management hot seat.

"There are plenty of artists touring with 25 trucks of equipment and doing their 'froth and bubble' shows, but nobody's doing a production with such intensity, depth and integrity," said Zweck, whose son Michael is tour accountant.

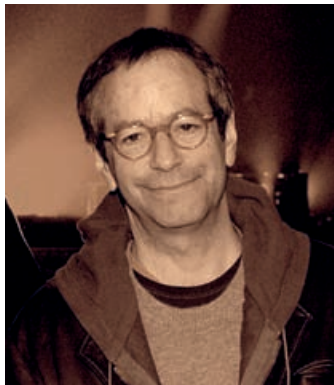
"No other artist who has the brains to pull this off, but you need the budget, and that

**"Winky [James Fairorth] says it's the most complicated show that Tait Towers has ever built. And so it's amusing to think we did the same show 30 years ago without all of this complex automation. But these days, nobody would countenance a show at this level being manually operated. We've all moved on..." Mark Fisher**



Above L-R: Production manager Chris Kansy; tour director Andrew Zweck; Stufish set design team Mark Fisher & Jeremy Lloyd.

Below L-R: Lighting designer Marc Brickman; creative director Sean Evans with video technical director Richard Turner; the Mediolanum Forum upon TPI's arrival.



came as the result of a 10-year climb. Roger revitalised his solo career in 1999 and has toured regularly since then, delivering a fantastic show every time.

"Punters now realise he is the creative heart and soul of Pink Floyd, but it's taken until now to re-build the brand name and be pretty confident of selling out every venue, and therefore mount a production of this scale."

Fisher valued the production investment at around \$10 million. "Much more," argued Zweck who, like Fisher, has worked with Waters since the mid-'70s. "I was the Floyd's Pig flyer on the *Animals* tour," he reminded us. The package of the fabled inflatable puppets cost \$2 million alone — twice the budget of the 1980 *Wall*.

### REHEARSING

The European leg opened in Lisbon on March 21 and followed one of the most successful North American tours in recent history.

Before its debut show on September 15 in Toronto, the crew undertook many long weeks of rehearsal, firstly in the Mohegan Sun Arena in Wilkes-Barre, Pennsylvania (strategically close to Tait Towers and Clair) and then at the Izod Center in East Rutherford, New Jersey where final production rehearsals were conducted, ending with a private performance to friends and family.

Tait's contributions to the show design cannot possibly be overstated. Along with the ingenious projection content, the company played the most crucial role of all.

Mark Fisher explained: "Winky [CEO James Fairorth] says it's the most complicated show that Tait has ever built. And so it's amusing

to think we did the same show 30 years ago without all of this complex automation. But these days, nobody would countenance a show at this level being manually operated. We've all moved on.

"Everything is completely new... except the artist! Whilst the concept and machinery are replicated, the control is the big difference. Tait went back to Genie Industries and bought the same telescoping masts to build the man lifts and wall stabilisers that we bought in 1980."

### BUILDING THE WALL

In its largest configuration, the wall is 35' high and 240' wide as governed by the full width of the projection. Depending on the slope of the arena being played, it can range from 210' wide to 240'.

The wall itself was the biggest focus and required the longest amount of rehearsal. It was a long process with Mark Fisher and I going to Tait Towers every few weeks to see how they were progressing with the structure building and how they were knocking the wall down. That was pretty comical at the start!

"Later on, Roger, who was routing the music with the band in a makeshift studio on Long Island, near his house, would occasionally jump in a chopper to see how we were doing. He'd stay a hour or two and then fly back to rehearsals. As you do!

"But just like any tour, all the way through there was an opening night written large on our calendar and everybody was aiming for it."

As Kansy attests, a 35' high cardboard wall cannot stabilise itself. "From out front, it's really deceiving how technical this show is," he said,

"and it's only when you go behind the wall that you appreciate what's going on.

The 10 telescoping stabilisers that keep the wall intact, the man lifts that enable the building of the wall, and hoist Robbie Wyckoff and Dave Kilminster above it in 'Comfortably Numb', and the process of tipping the wall at the show's climax all comes under the control of the Navigator automation system from Fisher Technical Services (FTSI), which shares resources with Tait and sent technicians out from its Las Vegas base to assist with the operation.

Capable of elevating crew 25' high, the man lifts are formed of five separate hydraulic elevators that make one 100' wide moving platform.

Mark Fisher, no relation of the above firm, recalled the key difference between old and new methods of wall destruction: "When we tore down the wall in 1980, I'd sit behind the stage with a bank of switches, running the electric motors to make the stabilisers go up and down. I'd control the speed at which the bricks fell and I was the only person who practiced that operation.

"It's the same result this time, only it's Alex Blais sitting in front of the Navigator computer that automates the flicking of switches." These switches activate a dual-acting pneumatic knocker system that is integrated into the top stage.

With head carpenter Denny Rich ensuring that the side ramparts are the first elements to go up, the sequence of the live build is the same as it was in 1980 but getting it right was even more important this time because as each brick is laid, video is projected upon it and the overall





projected image is masked in sequence.

Jeremy Lloyd established the brick-build pattern and that took a lot of repetition to perfect over the course of a month in Wilkes-Barre with assistant stage manager Josh Gelfond guiding the order via radio.

"Setting up the wall, knocking it down. I lost track of how many times we did it," commented Kansy. "It also took a lot of cardboard bricks.

They're semi-resilient — some of them last three shows, some only one. Each measures 5' wide x 2.5' high; they come flat-packed and it takes nearly 400 to do each show, so we slowly replace the ones that are looking worn. They're sprayed with a flame-resistant substance. They'll smoulder but they won't burst into flames. Some of those bricks are flats that are there from the start, but it's hard to tell out front."

For Europe, the flat-packed bricks are made in the UK by Smurfit Kappa of Peterborough.

#### REVEALING MAGIC

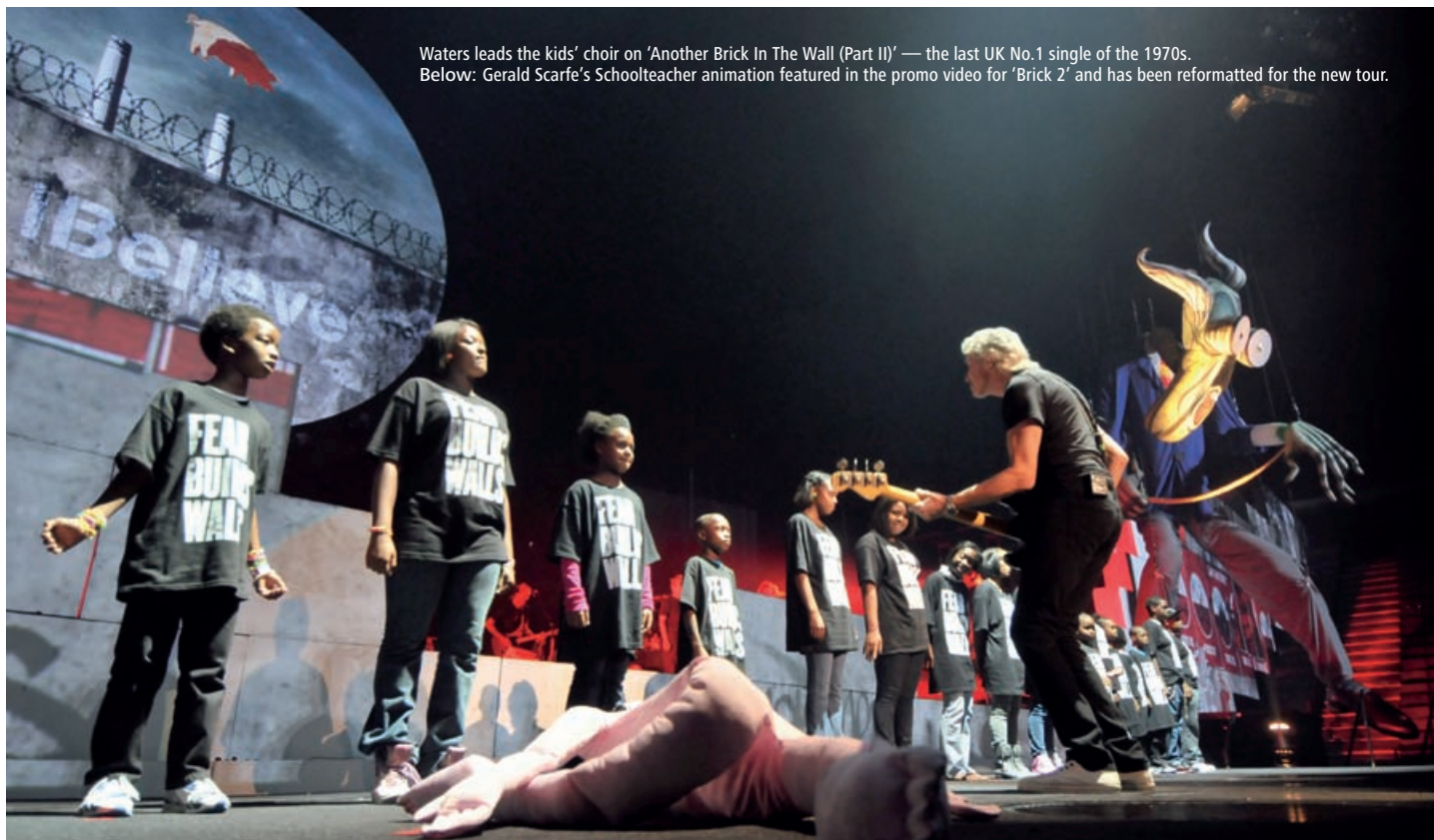
There are two sets of backline: one set is for the main, 8' high, 3,350ft<sup>2</sup> stage; the other emerges on the fore stage via subterranean elevators after 'Comfortably Numb' in Act Two, and then disappears after 'Waiting For The Worms'.

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Waters leads the kids' choir on 'Another Brick In The Wall (Part II)' — the last UK No.1 single of the 1970s. Below: Gerald Scarfe's Schoolteacher animation featured in the promo video for 'Brick 2' and has been reformatted for the new tour.

"A lot of thinking went into this," said Kansy. "Tyler Kicera, Tait's genius lead designer on this, came up with an idea rather like that of a slatted, rolltop desk which he adopted for the backline lifts, and the amps and drums seem to appear as if by magic. When the elevators are down, slip stages cover the voids.

"Tyler's vision is quite amazing in the way he can articulate his ideas and it seems that he never fails to deliver an elegant solution to any problem. He is the guy who worked most closely with Mark Fisher and I on bringing the physical wall back to life."

Another Tait Towers creation, the drawbridge of the forced perspective hotel room opens for 'Nobody Home', with a TV, chair, bed and lamp hard-mounted, and a skyline view in the background.

Just as drawbridge becomes level, Waters takes his place in the chair under cover of darkness to prepare for one of *The Wall's* highlights. But to paraphrase the lyric, you'd have thought that by 2011 there would be more than just "13 channels of shit" on his TV to choose from.

#### AUTOMATED PUPPETRY

The Teacher, Wife and Mother puppets, along with the mechanics and automation to operate them, have been supplied by Brilliant Stages while their garish inflatable skins were manufactured by Rob Harries at Air Artists.

Brilliant Stages devised a system of cradles and winches to facilitate the extensive animation required for the Teacher and Wife, which stand 9m high. The puppets are suspended by fine steel wire ropes attached to individual electric winches mounted into a compact cradle.

The winches move the limbs independently whilst the cradle carrying the winches also slews to enable the puppets to turn 180°. Customised control systems from Andy Cave of Kinesys were used for the cradles and winches.

Although the larger, 10m high Mother is perched above the wall, she moves her head from side to side — a motion created by an electric motor driving a toothed-belt pinion on to a slew ring within the neck.



Working alongside Lee Threlfall, Brilliant Stages also incorporated LED light sources to illuminate the eyes of each puppet. RGB LED light engines with custom heat sinks and enclosures were built into a customised hanging frame suspended inside the head of each puppet and containing power supplies and control modules.

In addition, the Teacher has two 600mm diameter custom light boxes incorporating RGB LED strips that represent the whites of the eyes. Power for the eyes is derived from the automation cradle using cable reelers, with data control supplied by wireless DMX.

Each of the three puppets travels in its own dolly designed for ease of transport and rapid installation.

On tour, these three puppets are looked after by Ian Macdonald and Tony Ravenhill. While Ravenhill is charged with maintaining the puppets and their motors, Macdonald operates them during the show from a Kinesys workstation at FOH.

Macdonald triggers 60 cues in total for the Teacher, over 5:50 minutes of continuous movement, while the Wife has five cues over 73 seconds — he firstly releasing them from their wrapped-up position in a Kabuki sling. Mother requires a moderate eight cues during 3:30 minutes.

The trademark black Pig, released from backstage at the start of 'Run Like Hell', is the product of Canadian specialist Mobile Air Ships' Blimp division which has been responsible for several of Waters' porkers over the last 12 years.

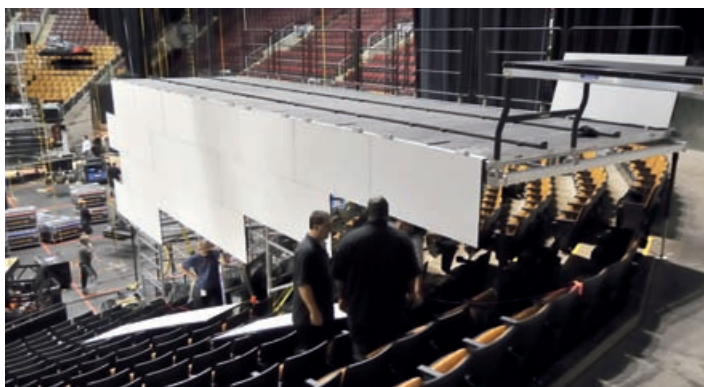
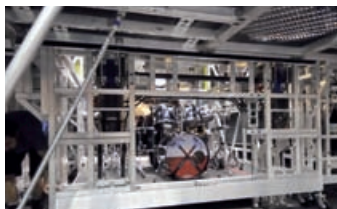
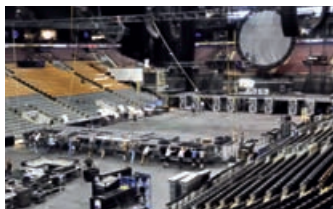
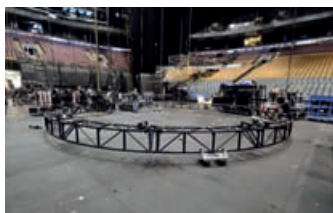
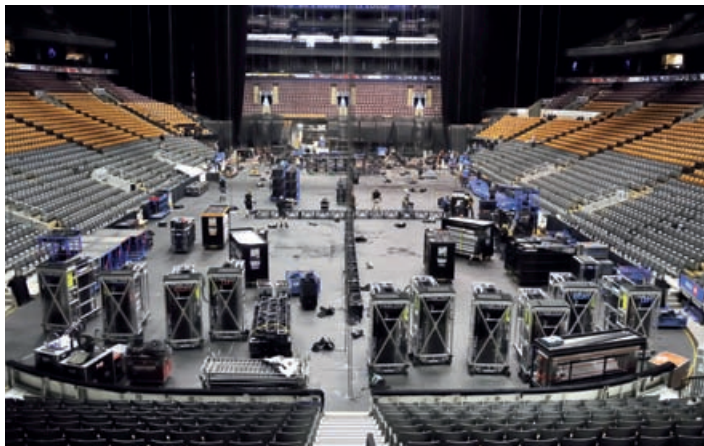
Flown around the audience for a good 10 minutes by carpenter Sean Jacobs ("a college kid who we turned into a fully-fledged road dog," said Chris Kansy), the helium-filled Pig is covered in appliquéd political graffiti and propelled by electric fans.

#### CREATIVE VIDEO

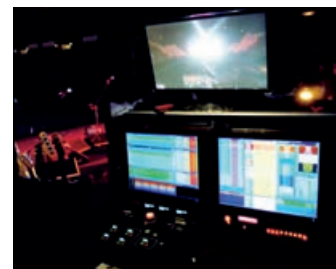
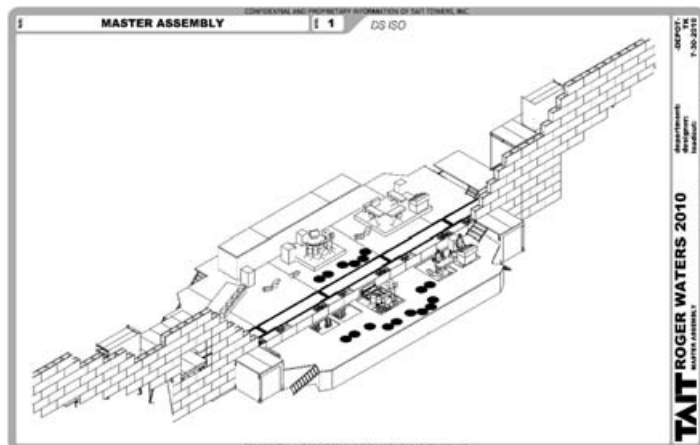
Opportunities to create video content as part of a concert production have, let's face it, been abused at times with some artists' arena shows. It's become the default quick fix when the pop star talent is somewhat lacking.

At the other extreme are Roger Waters and his creative director Sean Evans, a former album sleeve designer for Sony Records who first worked with the Floyd co-founder on his *Ça Ira*





Above, from top: Tait's stabilisers and man lifts load into the arena; Brilliant Stages' circular screen truss is moved into position; the fore stage is rolled in to connect with the main stage; the 'Hammer' drum kit in the underworld cage, waiting to rise; the wall ramparts are built in the side seating; a view from behind the wall with everything in place. Above right: A Tait set drawing; Tait stabiliser racks; the FTSI Navigator workstation.



opera in 2005.

Adding the technical wisdom of video systems guru Richard Turner to the partnership was a shrewd move, resulting in what is arguably the most mesmerising video production in rock history.

"Roger and I see eye to eye creatively and he appreciates that I'll always go out of my way to get the best solution to any idea," said Evans. "I feel that he's now at a stage in his career where everything has to be iconic and look like a million dollars, and that obviously sets the bar pretty high.

"Conceptually, Roger didn't want this new version to be about the internal struggle of a rock star; he wanted to expand the narrative to reference the social, political and religious divisions that occur in today's world," commented Evans.

"Of course, there are some aspects of the original show's more famous images that you can't mess with, and we debated long and hard about how to make 'The Trial' work in this environment. The slot machine look was a naff idea and re-animating it in 3D would have taken us a year and been financially impractical.

"So the answer was to take Gerald Scarfe's original animation, which Roger has in his vault, make very high resolution 4K scans of it and hand paint every scene out to 8K. It was a painful, laborious, two month process but it had to be done right.

"The same people who did that applied the same skills to the 'Waiting For The Worms' animation from the 1982 movie."

The hammers were re-drawn in 3D. "Even before we had our style guide locked in place, we'd started on the hammers but it all looked very 2010, very lens flarey, and inappropriate when placed in the context of the other imagery. It bent Gerry out of shape when he saw it so we went back to the drawing board."

Other original footage required subtle 'upgrades'. For example, the dramatic 'F\*\*king Flowers' sequence from 'Empty Spaces', where the flower stems were extended to fill the sides of the wall.

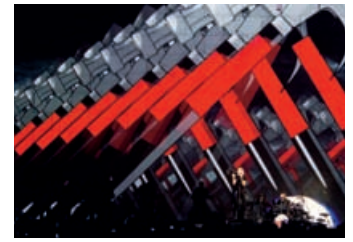
In two parts of the show, the content features a 'demented Pink' on a section of the wall which spins 180° to reveal a 3D 'Reg Troll' character, based on a caricature of Waters drawn by Scarfe in 1974. It's a harrowing sight and one of many creative and technical victories for Evans' team.

Evans explained: "I did a lot of the 3D content using Cinema 4D and the Reg Troll piece was done using Maya software with Meats Meier, a video designer who works with Tool.

"In fact, I learned a lot about the capabilities of Maxon's Cinema 4D throughout this project; it's been a hell of a learning curve!

"At various points it looks as





if there are two or more layers of imagery, but it's all one piece. It was all about f\*\*\*ing with space and people's minds, bringing really trippy aspects to the content with big sweeps, the spinning of the wall, and especially when Roger is seen to push the wall and make it 'explode'.

"But every nuance has to have meaning with Roger, so there's not a single piece of gratuitous content in the show. Each of the quotes that we project are carefully chosen by Roger and timed for effect, and we've added a few from Kafka and 'Nineteen Eighty-Four' for Europe.

"We had the wall modelled in 3D so that we could project a brick on a brick. That was a fundamental point when we brought Richard Turner in. The aim was to enable accurate projection on any given part of the wall, and once that structure was in place we could really start to mess around creatively.

Footage was gathered from all areas of the Internet as well as agencies where appropriate. One of the more moving items comes in 'Vera', when a young female student's face breaks out in tears of joyful disbelief at the sight of her father returning from war... in this case, Iraq.

"It's a beautiful scene, isn't it?" Evans remarked. "It had to be real people, real scenes, and when you find things like this it's unparalleled. We wanted it to feel global and not identified with one particular country. It happens to be an American soldier returning from Iraq, but then the U.S. does tend to go to war frequently!"

Other notable sequences include 'The Thin Ice' which begins with the famous baby cry and the image of Waters' father, Eric, who died at Anzio in '44. The theme of lost loved ones in conflict continues with photos sent in by victims' families, and also includes an image of Jean Charles de Menezes, who was shot dead by police at Stockwell tube station in 2005, after wrongly suspecting he was a terrorist. A speeding tube train and the sound of gunfire follow.

A close look at the 'Nobody Home' sequence reveals that the clip from the movie *The Battle Of Britain* that is projected across the wall is replicated in sync on Waters' hotel room TV, thanks to an Apple Mac mini. It's one of many subtleties that are simply mind-blowing.

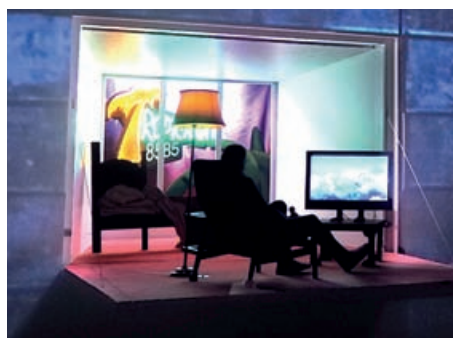
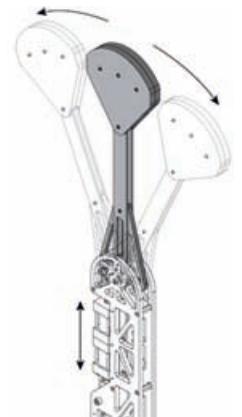
Evans' biggest challenge is perhaps the fact that, because Waters is constantly looking to underline key messages or fine-tune elements of the show on an almost daily basis, he (and the composers using Adobe After Effects) needs to respond quickly with the visuals.

"After each show, Roger watches a DVD to review the performance and he will inevitably find fault. He does understand the limitations posed by the lengthy video rendering process, so he won't expect me to perform technical miracles overnight.

"But yes, it has required serious efforts from time to time and anything longer than 30 seconds usually takes a week. That's why if you need resources and he appreciates why, he'll tell you to get whatever it is. Apple must love us."

Chris Kansy recalled one day during the Izod Center rehearsals when a "huge number" of brand new Mac Pro towers were unpacked.

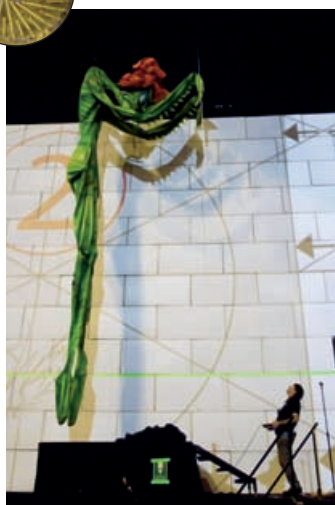
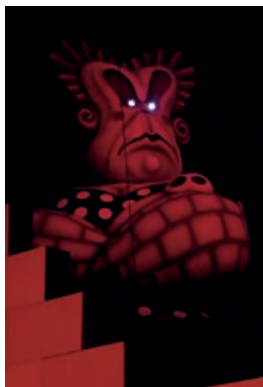
"Right now, at Breathe, the New York editing suite co-owned by Andy Jennison who worked on all of this with Roger and I for months before the tour started," continued Evans, "there are



Above: One of many practice runs at knocking down the wall; the pneumatic knocker motion; assembling the bricks; 'Goodbye Cruel World'; a rear view of the final brick being placed; front and internal views of the 'Nobody Home' hotel room.



Below: The Teacher, solo and with the local kids' choir (inset — the Teacher's LED eyes); Mother; the Pig; Tony Ravenhill 'wrangles' the Wife, Waters and Wife in 'Don't Leave Me Now'; the puppets' Kinesys motion operator, Ian Macdonald. Bottom: Roger Waters and lead guitarist Dave Kilminster perform The Wall's most popular song, 'Comfortably Numb'.



10 machines that are set up on a render farm, working on some pieces I've recently created.

"They just sit there rendering frames. I can't do it from the venue because the Internet connection is often so weak but I can log in at my hotel where it's much faster and check on progress." I wish I could have said the same about my hotel in Milan.

I spoke with Evans on a no-show day in Milan, but that wasn't to say his department wasn't busy. They were using this 'dark' day

to conduct camera tests for a proposed DVD shoot, hence the presence of additional crew including lighting chief Rich Gorrod who will be working on the DVD for real.

"Just like the original, this is a very difficult show to shoot so it requires a lot of preparation in advance. So here in Milan, where we have access to key crew, we can go to different parts of the show, look at light levels, all that kind of stuff, and make a well-informed game plan," said Evans.

The DVD shoot may happen at London's O2 next month. It may not. Ask Mr. Waters.

## XL-SIZE PROJECTION & HARDWARE

"We have a dream team video crew made up of crew chiefs!" said Richard Turner, referring to his projectionist colleagues Clarke Anderson (crew chief), Andy Joyes and Gary Beirne, and media server operator Phil Haynes.

Turner's task has been to turn all of the XL Video-supplied video kit into a Medialon-driven system that challenges the size and resolution of the world's largest IMAX cinema screen and wins hands down with a 8560 pixels wide by 1620 high canvas. Game, set and match.

This pixel count is the amalgamation of the wall projection surface and the central 9.3m diameter Gerriets Optilux projection screen, supported by the 10.75 diameter truss circle designed and supplied by Brilliant Stages.

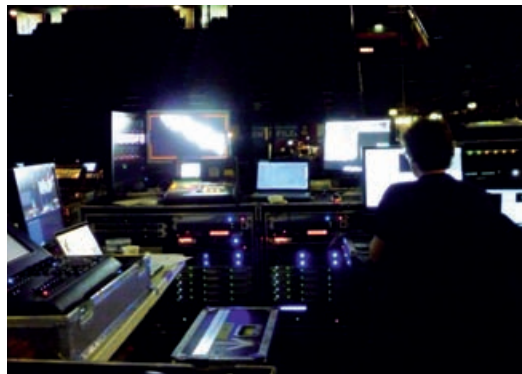
It was whilst working on a Miley Cyrus tour in November 2009 that Turner was called into a meeting with Waters and Evans. "Roger said that he wanted to tour *The Wall* and asked for my opinion on a set of technical challenges. I explained that all could be achieved with the required amounts of money, time and talent, and over the next few days I looked at Mark Fisher's drawings to calculate how many projectors we'd need for a seamless image."

Turner opted for 20 Barco FLM projectors — five groupings of three HD20s for the front projection on the wall and five R22s to rear-





Below: Andy Joyes lining up the Barco projectors (centre) with a remote WiFi tablet; the projectors in their three-way cradle with shutters; video crew chief Clarke Anderson; Richard Turner in the cockpit; the Barco Encore workstation with the projector mapping visible on the monitors.



**“Every nuance has to have meaning with Roger, so there’s not a single piece of gratuitous content in the show...” Sean Evans**

project on to the circular screen.

Show Group Production Services (SGPS) built custom three-way cradles to accommodate the FLMs to enable the best possible angles. Naturally, keystone correction was necessary for the outer screens in order to achieve accurate brick on brick mapping.

The seamless images across all five portions of the projection are enabled by a set of custom shutters — described as “reassuringly expensive gaffer tape” by Turner — made by Tait Technologies of Belgium to “serrate the projector beam edges and enable a smooth blend,” said Turner.

The Barco Folsom Encore processor triggers the ‘video black’ from a Catalyst server to mask the projection, thus avoiding imagery being fired into a void. The time-coded projection is programmed to reveal a new portion of the overall widescreen image as soon as a new brick is laid. This is particularly effective when individual images of conflict victims each occupy a brick. The accuracy over an arena-scale distance is astounding.

Having used AutoCAD 3D to identify the best possible positions for the projectors, Andy Joyes’ daily task is to sit in the arena and remotely sharpen their focus via a WiFi tablet.

Both the Catalyst and the projection shutters are controlled by a Full Boar console, operated by Phil Haynes.

The content is stored on Apple Macs and an AJA HD-SDI I/O card is referenced to the master timing signal that informs the five Apple XServe playback servers that run five points of projection for the wall. A Mac Pro runs the content for the circular screen and with back-ups for all, there is a total of 12 machines on duty.

The XServes and Mac Pro are running a Gallery program named VVTR (Virtual Video Tape Recorder) which turns a Mac into a time code-chasing hard drive. Turner previously used

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Below: Scenes from 'Run Like Hell' and 'Young Lust'.



it on the recent Gorillaz tour.

"It's turned into my weapon of choice. Because Roger's changing certain elements of the show on a virtual daily basis, we have six Final Cut Pro projects — one per machine — on the go so that we can manually write time code points for drop-ins or cuts."

## LIGHTING

The original lighting designer of Pink Floyd's *The Wall* show, Marc Brickman, completed his work and left the camp in the late stages of rehearsals. And so it fell to lighting director Mark 'Sparky' Risk to give TPI the lowdown on the illumination supplied by

PRG, whose crew is led by Ross Colledge.

Sparky, who was brought into the Waters camp five years ago for the *Dark Side Of The Moon* tour, said: "We still had some programming to do when Marc made his exit, but I've worked with him for so long [around 20 years] that I've learned how to implement his designs faithfully. We share the same taste and so it's a straightforward transition."

"This show is very much about the blending of departments whose egos are left at the door. In this case, the lighting, video and pyro are joined at the hip under the heading 'visuals', which was the

same on *Dark Side* but that used an LED screen. Here, with projection, you have to light with less intensity in order to make the video pop. It's all about creating that overall look."

It isn't the biggest lighting rig by Waters/Floyd standards, but every fixture earns its keep. The Brilliant Stages-built circular screen truss is designed to withstand the weight of 24 Vari\*Lite VL3000 washes mounted around its perimeter, and the main key lights are the Sparky-favoured 24 Cyberlights 2.0s spread evenly over eight moving 'Cyberpods'.

Vari\*Lite VLX LED wash lights are on the stage floor. "They're punchy and very reliable — I can't say enough good things about those," enthused Sparky. "The big VLX moment is on 'Goodbye Cruel World'. It's the light you see penetrating through the 'window' before the last brick is laid at the end of Act One."

The Torms (Tormentors) are a regular feature of Brickman's shows. These are the three vertical trusses at each side that are fitted with VL3500 washes to side-light the band. "It's a technique used frequently in Marc's designs because by playing with intensity levels up, down and mid-stage to give more shape to the body, you end up with more of a three-dimensional look."

Over 30 Martin Atomic 3000 strobes with colour scrollers are distributed across the set to

reinforce the drama, while a pair of Syncrolite XL10s, seated atop the upstage 'chicken run', add heavyweight search light brightness to the pyro chaos on the show opening... and then they're gone. "I like it when you have fixtures that have an impact and then go away," said Sparky.

"Of course, it's a luxury to be able to do that. There's often the temptation to overuse things because you've paid for them, but the effect can get old very quickly."

Sparky also controls the lights that are built into the inflatables. "We just have LEDs for the eyes of the Teacher, Wife and Mother, and there's also a three-colour neon used for the Wife's lips." (LEDs are also used for the Pig's eyes but they are turned on by Sean Jacobs upon release.)

Formerly a long-time Virtuoso user, Sparky controls eight DMX universes on a grandMA console. He's still fairly new to the desk. "I'd used a grandMA to programme for the Black-Eyed Peas but that was a brief dalliance. It was Cirque du Soleil's *Viva Elvis* show two years ago that gave me my first main experience of it and I really liked it."

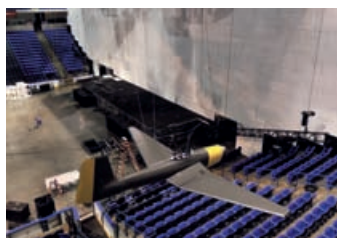
Called by Jerry 'Hodgie' Vierna, the use of spotlights is a major feature of the show, especially in the reprise of 'In The Flesh' — as indeed are 10 PRG Bad Boys (firing across the fore stage from a downstage truss) — when they follow Waters as his accusatory



Left, anti-clockwise: Milan resident Helen 'Hels Bells' Smith visited pal Sonja 'The Wardrobe' Benevidez; Roger Waters' 'Gestapo' garb; Beat The Street buses and Transam/EST trucks line up outside the arena; the catering team from Eat Your Hearts Out who kept TPI fed and watered.



Below, from top: Lighting director Mark 'Sparky' Risk; classic VL beams; one of the two flying spot pods during rehearsals; lighting motion operator Vince Gallegos; the Torms amidst much smoke and fury; Strictly FX pyro technician Reid Nofsinger wields Roger Waters' strobe-effect weapon; Next FX gerbs wait in line; flashpoint during 'In The Flesh?'; the Stuka before and during the crash.



finger points at different sections of the audience.

As well as four Gladiator FOH spots, there are two flown Lycian M2 spot pods manned by Jeremy Sorensen and Will Wilkison make their entrance at the start of 'The Happiest Days Of Our Lives', searching for the buzzing helicopter. This key ingredient of the 1980 shows is very faithfully reproduced.

Vince Gallegos of SGPS controls both the flying spot motion and the movement of the Cyberpods at FOH using FTSI's Navigator software via a laptop GUI interface and a standard FTSI Showrig console. Ironically, it's a \$30 computer joystick that Gallegos uses for manual control!

Dimming is handled by ETC 2.4kW Sensor+ racks. Technicians Barry Branford, Joe Huq and David Lancini are also on the lighting crew.

There are around 100 rigging points covering audio, lighting, props, projection, the Stuka and automation, and it's spread out right into the arena, most of which use half tonne, one and two tonne Lodestar double brake motors. Dave 'Dash' Rowe is the head rigger, backed up by Dave Brierly and Joe Anchor.

## FLESHING OUT PYRO

Led by Shane Johnson, the pyrotechnics crew from Illinois-based Strictly FX also consists of designer Reid Nofsinger and Vince Lopez. Together, as personally briefed by the artist, they unleash a torrent of explosive chaos in the opening number, as Nofsinger explained.

"All of the pyro happens on 'In The Flesh?'. It started out with less product than we're currently using but it was shot in a quicker, 10 second sequence, chasing in from two sides. Roger then decided he wanted it to last 20 seconds but without doubling the products [sourced from NextFX].

"To achieve the same drama, it made a huge difference in the way planned this out. So we started with a one-wave centre cue that split to two waves, then went out as four waves and came back in as eight to an 'all fire', with machine gun fire along the truss to make sense of the Stuka crash."

Ah, the good old Stuka! A replica of *The Wall's* original scale model warplane, its brief journey to eventual demise begins on a wire. The show clock is watched and nine seconds (average) before impact, the plane is released down the wire. As the flight path length differs between venues, the sequence has to be recalculated each time.

"That opening sequence consumes 110 comets — red 40 footers, red ultra-fast and silver tails fired as a cross for Roger's entrance — and in America we also used 560 gerbs," said Nofsinger. "But after Roger watched a video from the American tour, he said he asked if we could start it from two places in Europe. I told him we'd definitely need more product and he was fine about that."

"So now we're firing 640 gerbs. It starts in the centre but breaks away immediately, left and right and produces two semi-circles of frenetic pyro action."

The whole sequence is run to the overall show time code so that it synchs with the video and music, beat for beat. Nofsinger controls everything from a program called Fire One, which provides status and diagnostic information about every pyro product in the rig, in order to avoid misfiring or other problems. "But if we ever lost time code, I could still fire everything manually from that program," he assured.

The Stuka crash at the end of 'In The Flesh?' is a fully manual cue from Vince Lopez who is positioned behind the wall, watching for the moment of impact. He fires two lycopodium cannons — each containing 1.5lbs

**"Approval from McLaren Engineering is a respected endorsement and one you really need when you're dealing with local authorities and venue management..." Chris Kansy**



Below: Roger the Great addresses his people; images of his late father and those sent in by families of war victims reinforce the anti-war message; a centre screen CCTV camera signifies Mother.



of lycopodium powder (mushroom spore) — into the air and lights it off a hot surface igniter, achieving around five feet of flame height that is extinguished rapidly. The

effect of a war plane explosion is achieved authentically and safely. Towards the end of the show comes the bombastic, 'Neo Nazi' re-run of the same number, known

to the crew as 'Flesh 2', which sees Waters' power-crazed character randomly blast an old German machine gun into the audience. Rather than have the artist actually commit mass murder, a realistic firing effect is achieved with a small strobe light fitted inside the gun's barrel.

Said Nofsinger: "We thought about getting an AK-47 and firing blanks but that wouldn't have been very practical or safe. Blanks are actually quite hot if they hit you! It took a while to get a circuit board designed to fit into the gun so that we could adjust the flash rate. So pretty much everything in that gun is handmade."

Strictly FX's final act is to deploy 60lbs of confetti in 'The Trial' and a cryo fog effect from Le Maitre LSGs as the wall tumbles.

## HEALTH & SAFETY

Ten years ago, few people would have thought to involve an engineering company on an arena tour, but the landscape has been changed by exposure to safety legislation.

As skilled and confident as Tait Towers is, it's wise to gain an approval stamp from an organisation like McLaren Engineering, the Northumberland-based specialist in steel structures that gave Chris Kansy the green light for *The Wall Live*.

"Approval from McLaren is a respected endorsement and one you really need when you're

dealing with local authorities and venue management who might question what you're doing," said Kansy. "They put all of our machinery, rigging, truss and automation under the microscope and the result is that we all feel much more secure."

"It's been the same with The Event Safety Shop (TESS) who we brought in to oversee the execution of the show and the safety of crew. Things like, how do I know that it's safe for carps to work at 35' holding cardboard boxes in the dark with a headset on, or for them to be flag bearers up there as they are for the first song?

"TESS' Mike Herbert was with us all through rehearsals, collecting up all the risk assessments and writing the tour's safety handbook. It's an incredibly observant company and I'm sure that when we enter the O2 Arena, the mere mention of TESS' involvement will inspire much relief!

"I've never had to concern myself with these H&S issues before, but when you're doing crazy stuff with big toys, you need to get sensible and I value the input of these people."

## AUDIO TRIP

The inimitable James 'Trip' Khalaf pilots the FOH audio mix and doubles as tour manager — a duality he has become accustomed to on previous Waters tours as well as with other artists including Queen. He came into *The Wall Live* project last year at the end of a

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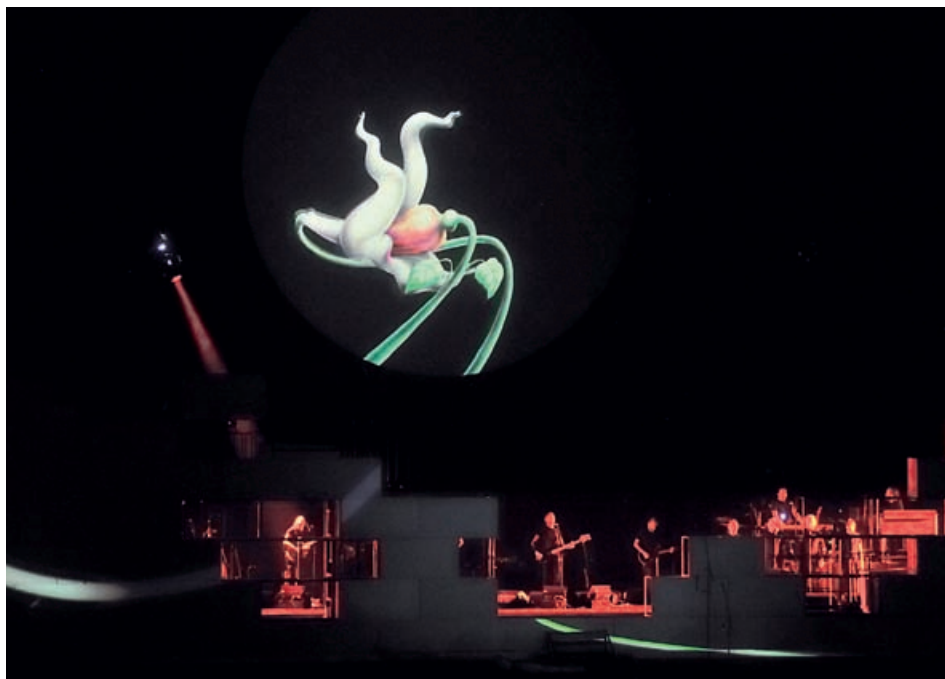


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Below: Scarfe's 'f\*\*ing flowers' animation appears during 'Empty Spaces'.



"seriously fun" summer on the road with Kiss.

Khalaf mixes the show using two Midas XL4 analogue consoles and a Yamaha PM5D digital board. The primary XL4 handles all of the live band inputs on the main stage; the secondary XL4 takes care of the band instruments on the fore stage during the 'Run Like Hell' set.

The PM5D deals not only with the surround sound FX inputs and the routing that drives the surround system, but also with orchestra playback and the returns from all the analogue FX. These are all summed and delivered back to Khalaf on his primary board.

When I made the observation that many engineers would have chosen to mix completely digitally on a show of this magnitude, Khalaf — who is notoriously loyal to the analogue medium — gave a predictable reply.

"I expect every engineer these days to go the digital route and I sit there in utter amazement, wondering why," he said. "Digital consoles don't sound good but there is a place for them. If you're mixing a 'hard disk' show where you've got a different kick drum coming at you for each song, it makes sense. But in situations where you're mixing extraordinarily good musicians playing live, it's ludicrous. Of course, every digital console manufacturer will now send me hate mail!"

Throughout the tour, Khalaf has made a number of suggestions for improving the audio, particularly the surround FX. "Sometimes, Roger takes on board what I suggest; at other times, he's told me to f\*\*k off. It's Roger's gig and that's his right.

"Through myself, James Guthrie, Mike McKnight and Roger, these sounds magically appear above the audience's heads every night."

Guthrie, the co-producer of the Floyd album, went back to the multitrack tapes to restore and digitally transfer all of the original, iconic sound effects — including the helicopter, battle

sounds, plane crash, baby cry, TV clips and the Islington Green School Choir heard on the hit 'Another Brick In The Wall (Part 2)'.

[In each city on the tour, a choir from a local underprivileged youth group is invited to join the show for this number and contribute some basic choreography. It's a nice touch.]

"We used to trigger the choir from Jon Carin's keyboard but it wasn't sounding right," said Khalaf, "so James helped us out. He re-did the orchestral parts and generally cleaned up those critical items, and did a great job. Those come to me from Mike McKnight's playback rig [see later]."

Like so many of the crew, Khalaf genuinely feels that touring can't get better. "Having done *Dark Side Of The Moon* and now this, well, the thought of going out and mixing guitars, bass, drums and some guy drooling into a microphone doesn't really cut it for me. I mean, this is such a privilege. This is the greatest f\*\*king thing in the world and I look forward to going out there every evening to ply my trade."

One might assume that on this show, a pair of XL4s would be accompanied by a massive arsenal of outboard, but it's surprisingly modest. Eventide H3000 Ultra Harmonizers, t.c. delays, Lexicon PCM91 reverbs, Summit TLA 100A tube amps (for vocals), Crane Song STC-8 comp/limiters (bass) and Aphex expander/gates for drums are the only notable rack features.

"There are two ways to approach this," advised the former author of TPI's hilarious backpage column. "You could try and make this sound as close to the record as possible, or you take a more loose view on it whilst retaining all the really crucial hooks that people will remember and expect.

"Making it sound too much like the record would rob the audience of a lot of the inherent power. Did you notice how I sneak the master fader up throughout 'Comfortably Numb'? [I

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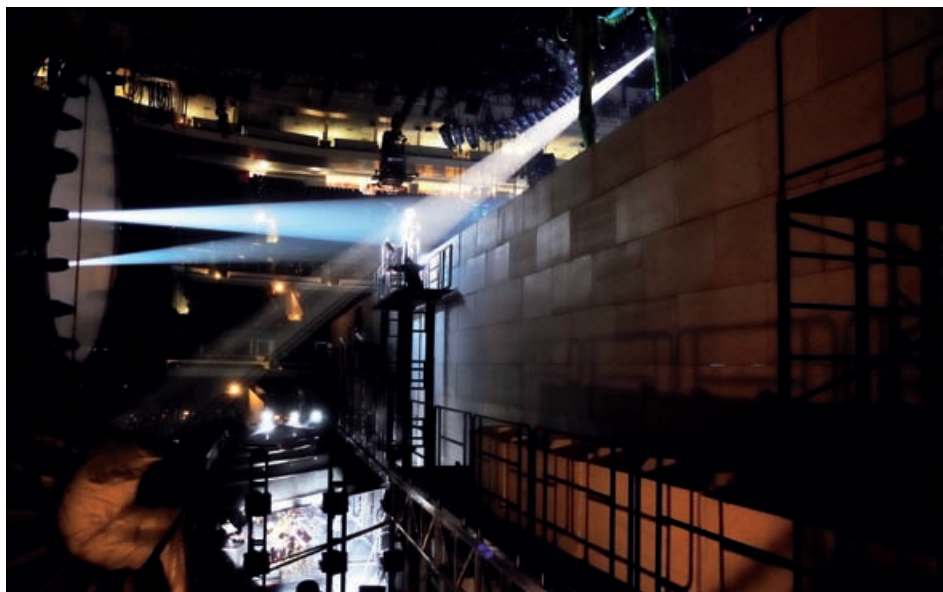
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Below: Spotlight on the man lifts.



did.) It's the only time in the show when I do that. I just love taking the audience's faces off when we do that number, and it's the highlight for me. It's incredible."

There are few surprises in the microphone spec, with the old standard Shure SM58 on vocals, and for the main and fore stage DW drum kits, further Shures are on kick drum and snare (SM91, Beta 52 and SM57s), Audix D2 are applied to the toms and Milab DC96s are paired as overheads. Audio-Technica AT4050s take care of the guitar amps.

### THE CLAIR RIG

Positioned behind Trip Khalaf at FOH is his regular accomplice, Bob Weibel who presides over the Clair audio system, supplied in Europe

by Clair's Swiss operation, Audio Rent. Matthew Scoggins and Gabby Linford are the dedicated techs.

The system on the American leg was Clair's i5-D line array which, being new, is not yet available outside the U.S. — it's currently out with Bon Jovi. Instead, the standard JBL-loaded i5 system is being deployed for Europe.

The Crown-powered rig is 14 speakers high in the front hangs with flown i5-B sub-bass cabinets. As part of a side array there's an eight high stack of i5s without additional subs. There are six BT218 subs per side underneath the front of the stage with four FF2 front fills per side.

Surround sound is treated as a separate entity, with Henry Fury taking responsibility. It's catered for with two (left/right) clusters of 16 'evolved' R4 cabinets flown midway in the arena (radiating 360°), a third R4 cluster of 16 flown centrally at the back, and Powersoft-amplified BT218 subs mounted on the floor at the rear.

At times, the thunderous resonance of the low-end FX (explosions, etc) was extremely profound, startling the audience. It took me back to Earls Court, 1980, when Stephen Court's system produced a similar 'sensurround' effect. Subtle it isn't.

Bob Weibel explained that the beauty of the global Clair network is that its clients can pick up

identical systems in each territory, removing the expense of freight. "That whole concept of worldwide service is something we've really focused on and made attractive," he said.

"Although we couldn't replicate the i5-D this time because only the single prototype exists, it will happen in the future. For now, though we have a great system with the conventional i5 model.

"I was really satisfied with the way the prototype i5-Ds sounded on the last leg. The i5 concept of having a 2.5° vertical long-throw cabinet, 5° vertical mid-throw and 10° vertical short-throw has been carried through with the i5-D. And the same drivers and elements are there, but they're arranged a little differently, and the cabinet is designed to accommodate two 18" drivers instead of one.

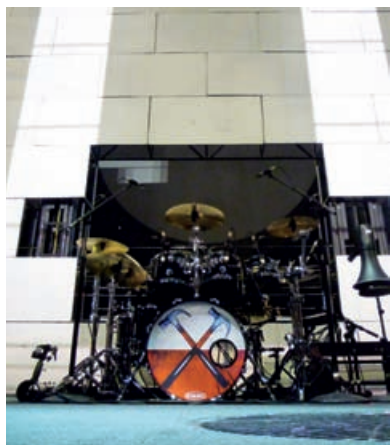
"It ends up being significantly wider and somewhat deeper, and in fact the stage hands responded very well to how easy it was to rig with the same hardware."

Using the Clair AlignArray software, Weibel is able to very accurately predict how the system's going to perform at each venue. Processing is handled by DLP controllers, the second generation product that came out of Lake Technologies after the Dolby acquisition.

"The DLP is a remarkably flexible," said Weibel. "It has the option of user-selectable I/O cards in a mainframe configuration and has tremendous capabilities when transferring from digital to analogue, analogue to digital, and any number of channels and formats, and it also supports the Dante audio networking technology. So it gets my vote."

### MONITORS

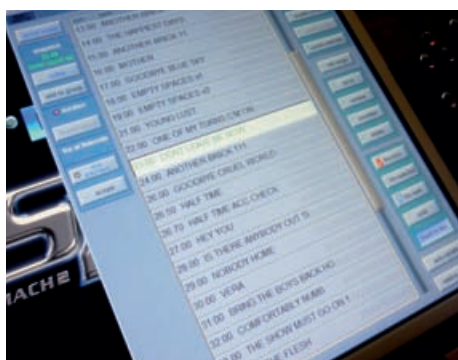
In rehearsals in Lisbon at the start of the European tour, Ian Newton arrived as the 'new boy' monitor engineer and according to Bob Weibel, "he's doing a fine job and it's noted by everyone".



Above: Graham Broad's main and fore stage DW drum kits; guitarist Dave Kilminster solos behind the wall; backline crew Eddy Butler, Tim Myer, crew chief Colin Lyon & Colin Barton.



Below: Bob Weibel directs the rigging of the Clair line array; Weibel and FOH engineer/TM Trip Khalaf; the PA rigged and ready; understage sub; Powersoft & Crown amps; a surround sound cluster; monitor engineer Ian Newton with his 'inherited' Catfish; Mike McKnight, whose playback and time code system knits all departments together; a DiGiCo SD7-enabled set list; Clair 12AM Series II wedges arc around Waters' mic position; Graham Broad's Samson sub-mixer.





Newton inherited his DiGiCo SD7 console from his predecessor, Robin Fox, a 1980 veteran. "I'd never used the SD7 before but it's behaving well, and I've found my way around it easily enough," he said.

"I just came in and took over using the equipment that Robin had. There wasn't any point in changing anything. I'm running close to 130 channels and the internal reverbs and delays tend to be quite busy on acoustics and vocals."

The fore stage looks deceptive in that it appears to be wedge-free, but there are "loads" of Clair 12AM Series IIs positioned underneath, projecting up through the grilles.

Further generous amounts of 12AM IIs (not hidden) are in evidence behind the line of the wall where the band live for most of the show — with Waters surrounded by four wedges. There's a concession to drummer Graham Broad in the shape of a single sub backing up his 12AM.

But generally-speaking, the monitoring is in-ear; this is a given, seeing as everyone is following a time code-driven click (see below) — a far cry from the headphones worn by Waters 30 years ago.

"Most of the musicians are on the new JH Audio wireless ear pieces from Jerry Harvey [ex-Ultimate Ears] and they're run with Sennheiser G3 hardware.

"They obviously all have different needs, mix-wise, but Roger has a stereo mix of everything which, for me, is fantastic to listen to. Some of the guys wear one ear piece and listen to their wedge.

"As well as the music, there are pre-recorded count-in cues, so some of the band are listening out for them and it's just so bang on. Graham has his own personal Samson mixer which allows him to adjust the level of those cues, and the rest of the music which I sub-mix over to him. For similar reasons, Jon Carin has a small Mackie mixer."

Newton is supported by monitor tech Kevin Kapler, who is also the primary RF co-ordinator — a very significant position on this production, given the amount of frequency 'negotiation' required for wireless in-ears, mics and instrument packs.

"Kevin arrives early and has a long, busy day," explained Bob Weibel. "The wireless instrument packs are Samson, as the band have a relationship with the brand, but we provide Sennheiser systems for the in-ears and that was a key choice because we needed the frequency agility to deal with the regular touring environment and give the optimum RF performance."

#### MAN IN THE MIDDLE

We've explored the roles of audio, video, lighting and pry, but now as we near the end of the story, it's time to meet the man who knits these departments together to perform as one: Mike McKnight.

At the start of the project, Waters used the Pink Floyd album and also live recordings

from the original shows as references for which versions would guide the creation of the video content. Tempos and timings varied in some cases, and the final choice informed McKnight and drummer Graham Broad's programming of click tracks.

"Graham is the band's engine room and it's a big responsibility," said McKnight. "Obviously, the band are playing live but it calls for a lot of discipline when you're being held down by a click track for the entire evening. Unfortunately there's no other way to pull off this show and it can't change because of how the show was built."

McKnight runs MOTU's Digital Performer 5.13, an integrated digital audio and MIDI sequencing production system that McKnight previously used on tours with Madonna and Mariah Carey. He described it as being "kind of like ProTools but better".

**"This is the greatest  
f\*\*king thing in the world  
and I look forward to  
going out there every  
evening to ply my trade..."  
Trip Khalaf**

"The system delivers the metronomic click track that enables the musicians to play in time with all the music we used to to help build the video imagery," said McKnight.

"I send time code to video, lighting, pyro and audio so that everything in the show occurs at precisely the correct time. Their consoles are receiving what my computer send out to them and I worked for a month figuring all this out before we got to rehearsals. James Guthrie worked for much longer."

Drummer Graham Broad programmed most of the click tracks. "Graham has a very responsible role in the band. He's the engine room when it comes to keeping on top of the rigid timing. Obviously, the band are playing live but it's very different when you're being held down by a click for the entire evening. Unfortunately there's no other way to pull off this show."

The quality of Khalaf's mix might fool some into thinking that this isn't as live a performance as it actually is. There are, however, some "live" aspects which rely on playback from McKnight's system. Things like Waters neo-Fascist megaphone delivery on 'Waiting For The Worms', for example.

"We tried to make that work for real but it was too difficult," said McKnight. "Fortunately, when it comes to the BVs, we are blessed with wonderful singers. That's not always the case

with some of the R&B tours that I do.

"I have five lines of music and surround content that I send to FOH and monitors, and along with the click there are a number of voice cues that I pre-recorded myself into the computer to count in impending show events, such as when Roger has to fire the machine gun at the wall — I say, 'Get ready to shoot... one, two, three, four, shoot...stop!'. Obviously that gun sound is coming from me!"

McKnight's final cue of the night comes when the wall tumbles. "I send out a low-end signal to the subs that makes the whole room feel like it's shaking and rumbling. It's a manual cue because it can happen at a different time each night.

"The start of the show for me is about 25 minutes before the band walk onstage. That's when I hit 'play' on my computer and start the walk-in music [classic protest songs from Dylan, Lennon and Sam Cooke], and then the time code doesn't stop until just before 'Mother', to give Roger the chance to address the audience.

"He can ad lib all he likes but there's a certain line he'll include at the end that we both know is my cue to run the time code again until the next stop."

#### ALSO STARRING...

The show is stage managed by Mark 'Kahuna' Candelario. Other key members of crew include production assistant Kim Van Loon, management assistant Simon Slater, road manager Duncan 'Pompey' Wilkinson and head of security Liam Wheatley.

Transam is supplying 25 trucks (with newly-acquired EST trailers in evidence), Beat The Street have dispatched six crew buses and Stardes has provided a single truck for the lucrative merchandising. The band and management travel by private jet, organised by Premier Aviation.

Rock-It Cargo has handled freight on both sides of the Atlantic, and Altour and ProTravel (thanks, Pepe Heath) booked hotels, while Robertson Taylor is the insurance broker.

Tour catering is in the hands of Eat Your Hearts Out. A big thank you to Marcus, Kate, Charlie, Amiria, Dean and Steven for sharing their delicious menu with me over my four days in Milan!

#### INSIDE THE WALL

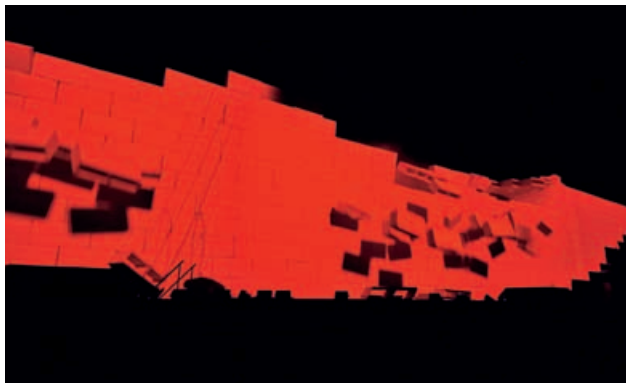
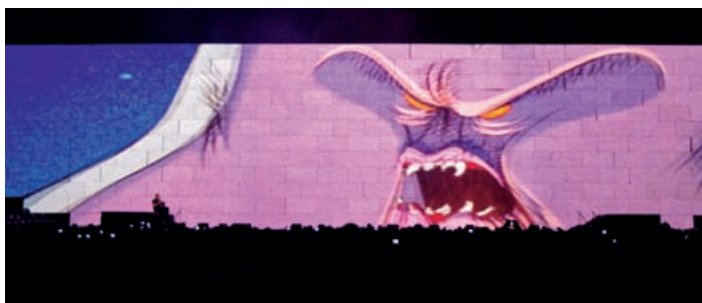
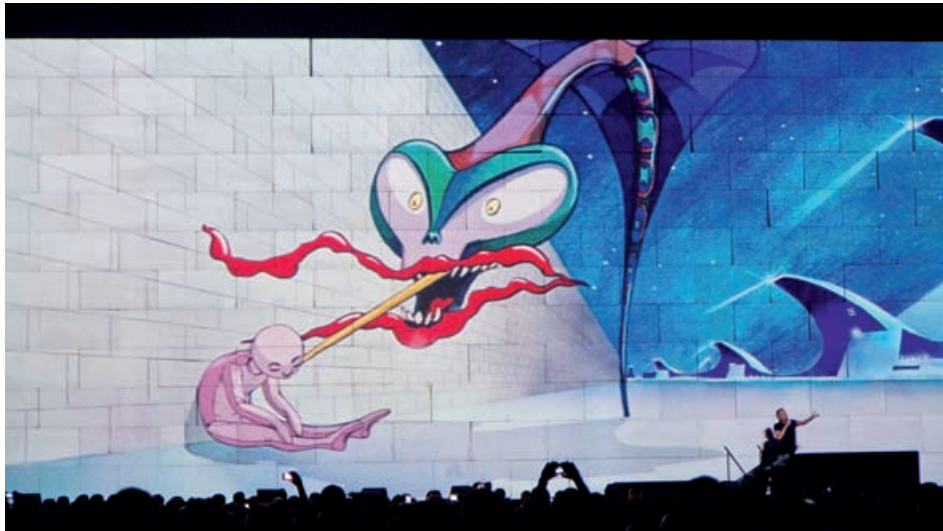
It is a myth that beyond 31 shows over four venues, the original *Wall* production was too complicated to tour in the conventional sense. The simple truth is that it wouldn't have made any money.

Mark Fisher cites the cost of tickets in 1980 as being the root of the problem. He said: "The inflation growth in the U.S. between 1980 and 2010 was 178%. A \$12.50 ticket for the Long Island Arena show in 1980 would be \$36 ticket today. On the U.S. leg of the current tour, the cheapest ticket was \$100 with premium tickets costing \$270. Those figures follow through in the UK.

"That offers a very good perspective on how



Below: Classic Gerald Scarfe animation merges with all new content for 'The Trial'; the dramatic falling of the wall, bathed in vivid red; the band return for the acoustic 'Outside The Wall' finale.



box office prices have risen over the last 30 years and, of course, it gives an indication of why sophisticated shows can tour profitably. We can hire a lot more crew and we have over 100 [119] personnel dealing with the various technical aspects of this production.

"In 1980, we had a permanent crew of around 15 which is amazing when you think about what was achieved."

*The Wall Live* — which grossed nearly \$90 million in America — continues through Europe until it returns to the Mediolanum Forum on July 6-7 for this leg's final dates.

If you can get your hands on a ticket, I recommend you do so at any cost because you'll never see anything like it.

To reiterate, as a writer and punter, I've seen an extraordinary number live shows since my first as a whippersnapper in 1972, including many of the most legendary events of all-time. I saw (and humped cases for) the original *Wall* concerts and considered for

years that nothing came close.

Thirty years later, it has taken a redesigned version of that same show to knock it off its pedestal. Its combined musical, creative and technical achievements are so colossal that it would take a miracle to eclipse them. It's an opinion shared by many of the crew, and when was the last time you heard professionals volunteer such praise?

If that presents an irresistible challenge to the world's leading artists and show designers, then so be it.

TPI

*Photography: Mark Fisher, Tait Towers, Sean Evans, Getty Images & Mark Cunningham.*

*With grateful thanks to Andrew Zweck, Chris Kansy, Mark Fisher, all of the crew and band members who made TPI so welcome in Milan, and especially Roger Waters for his unique vision.*

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