



We visit a spectacular Genelec/Stewart Filmscreen home cinema room in Melbourne, which shows how screen technology has evolved alongside new video standards to allow truly immersive fields of view. Also one of the cleanest-sounding cinemas we've ever experienced, we'd say this is...

Even better than THE REAL THING

We are often invited to visit home cinemas — sometimes high-value installations, sometimes flagship installations, invariably rooms which showcase the skills of the installation team, as well as the quality or value of equipment therein. It's a privilege to visit what are usually private homes, and often wildly impressive homes too, in which the owners value privacy and anonymity. Sometimes there are compromises from budget constraints, or room design. But it's always a pleasure.

Well, if there were compromises in this theatre, we couldn't pick 'em; it's among the best we've ever seen, and ever heard. It's in Melbourne, with Steven Spurrier of Studio Connections responsible for the concept and design, working with a team that included Paul Kutcher of Visual Fidelity (the Australian distributor for Stewart Filmscreen) and Andrew Steel of Ultrafonic. It features a reference-quality audio system fronted by a Genelec speaker system, and a 212-inch Stewart Filmscreen Cinecurve Jumbo screen filled with the native 4K brilliance of a high-end Sony projector fitted with an automated Schneider Kreuznach anamorphic lens. And particularly notable is the field of

view from the prime seating positions in this eight-seat room. This is one of the widest, home cinema experiences we've ever enjoyed. Steven and Paul showed us round the room and allowed some leisurely demonstration time. The 212-inch curved screen is not only vast and immersive in its domination of your field of view, the film content is impeccably rendered in terms of colour and brightness. Whether offering realistic skin tones and detail for screen-filling close-ups in *Deep Water Horizon* (Kurt Russell has never looked so craggy), or the splashes of brilliant colour that shine above the desert palette of *Max Max: Fury Road* (both from UHD Blu-ray), or a burst of brilliance as rockstar

grandpa Roger Waters smashes his Wall during *Comfortably Numb* (on Blu-ray), the projector and screen in this room delivered the perfect level of light and contrast to take you out of the room and into the experience. Given how artificially created movies are, one can't call the delivery 'real', as you might with music through a fine hi-fi, but the clarity here was entirely convincing — a uplifting combination of screening-room image quality and audio suite reference sound combining soundtrack slam with dialogue clarity.

In the beginning

And one of the many surprising things about this home cinema is how long ago it was originally built. "The client came to me roughly 15 years ago," we were told by Steven Spurrier. "HD was still in its infancy then, HDMI had just come out. So we were looking at various video options, and at that time projector brightness was really quite low. So as always I rang



◀ MAIN IMAGE: The finished home cinema with 212-inch screen; ▲ ABOVE: The Sony native 4K projector fitted with automated Schneider Kreuznach anamorphic lens and custom lens-sled.

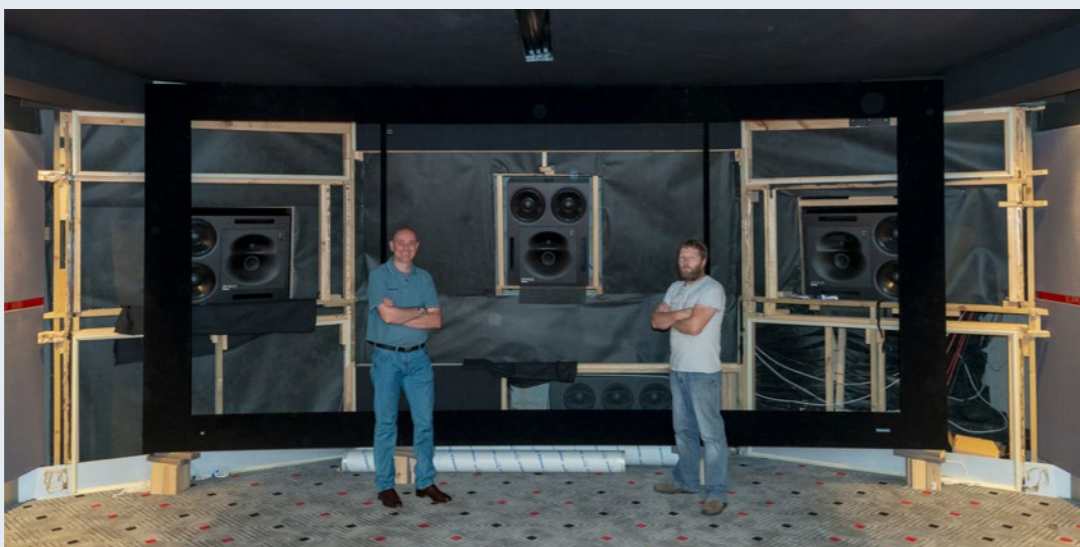
BUILDING THE ROOM

“When I first visited the site, the room was an underground concrete and brick room, with concrete floor and ceiling. The reverb time (RT) was insane — I never measured it, but I’d estimate it was 5+ seconds...” says Steven Spurrier. “So a lot of time was spent designing the space. We considered a solid front wall to soffit mount the speakers — we’re talking 2.5-metre-thick concrete at the front corners, tapering back at 30 degrees towards the centre of the room. But that couldn’t be incorporated, due to the load on the slab.

“Instead we used the same speaker locations and surrounded them in absorption, with the timber frame concealing all the acoustic treatments and cables, while the frame also positions the bottom of the speakers 1.2 metres from the floor, and angles them both horizontally and vertically back to the listening position. We chose a FabriTRAK system to dress the room — fabric stretched and then tucked into tracks. With absorption on all four walls and ceiling, we tamed the RT60 [how long it takes a sound to decay by 60dB] down to 400ms.”



▲ Framing up prior to the installation of equipment and the FabriTRAK acoustical wall system; ▼ Paul Kutcher (left) and Steven Spurrier size up the Genelec speakers behind the 212-inch screen.



Paul and we had discussions about screen surfaces, appropriate viewing distances, and it was decided in the early days to put a 147-inch 16:9 screen in here, which gave about a 40-degree field of view. And that was pushing the envelope of what projectors were capable of, back then.”

The sound system is unchanged since then. It uses a high-end Lexicon processor feeding active Genelec speakers, which have their amplifiers separated from the speakers to allow the amps (pictured opposite) to be racked outside the room. It is a 7.1-channel system which sounds so absolutely right that it would be a sin to switch stuff out just for the sake of hosting a new digital surround format, or to allow the addition of height speakers. (The rears are mounted at a height which creates highly immersive audio anyway.)

But the first issue to be tackled was getting the room right.

“Because this is underground it’s basically a combination of tilt slab and solid brick construction — concrete roof, concrete floor,” Steven tells us. “It was an echo chamber, the reverb was so horrendous we could hardly hold a conversation in here. In a way that was good — the client could understand that getting the room right was going to be the most important part. As I said to him, we could put five million dollars’ worth of gear in here and it’s going to sound horrendous. So a lot of time was spent designing the space.” (See panel above.)

Steven emphasises that keeping the client well-informed in this way, so that they have an understanding of the process, is one of the keys to a successful project.

“That’s one of the things I try to do — give all the information. I don’t want to hide anything; the client is part of the process. They may not want all the detail, but they like to understand the logic of the argument, because very few people do talk about the logic of audio — instead it’s this model was reviewed better or it’s more expensive so it’s better...”

Clients who have high visible disposable income are often very wary — and they may think ‘well he’s just trying to sell me the big speakers’. But I don’t care if you’re 20th Century Fox, Sony Pictures or a truck driver in Camden, the logic about what’s appropriate for a room is the same, it doesn’t care about your wealth. If you’ve got a room this size, then there’s a certain performance level that you require. A speaker is an air pump, and it’s got to pressurise the room, just as a screen needs to be illuminated — it’s not debatable about the projector, there’ll be a class of projector that you’ve got to look at to do the job. So there’s a logic to it that most clients will understand.

“And this client in particular was great, because once he understood the process he said ‘Alright Steve, don’t ask me any more questions, you just choose, I trust you’. And really that’s the best way it can work, because it puts the burden of responsibility back on me or whoever is doing the room. At the end of the day I’m responsible for the result, so I’ve got to work to make sure that when I turn this on you go — ‘fantastic!’”



Studio monitor sound

The speaker system Steve specified was from Genelec, best known for their active studio monitors (we reviewed the 8351 ‘The Ones’ in *Sound+Image* last year). Behind the acoustically-transparent screen is a single subwoofer and three Genelec 1034B speakers in LCR positions. The 1034B speakers (pictured above right) are active three-way designs, each sporting twin 12-inch woofers, a five-inch midrange and one-inch metal dome tweeters, fronted by Genelec’s distinctive Directivity Control Waveguide (DCW) designed to allow each drive unit to deliver a smooth frequency response both on- and off-axis.

Their amplification resides in separate 30kg power amps in ventilated cabinets accessible from outside the cinema room, with each bass, midrange and treble channel having short-term power available of 2 × 400W, 350W and 120W respectively.

“These are not coaxial speakers like the ones in *Sound+Image* recently — once you get into the need to create SPLs, there are limitations to what a coaxial can achieve,” says Steven. “The three 1034Bs behind the screen have their acoustic axes aligned, then we’ve got four 1038BC rears — well, a pair of sides and a pair of rears. These use a dual 10-inch with the same midrange and tweeter comple-



▲ One of the Genelec 1034B Studio Monitors used for LCR positions behind the screen. ▼ The rack-mounted amplification for the Genelec speakers is kept in ventilated cupboards outside the main theatre, easily accessible for maintenance.

ment as the LCRs. When I’m doing speaker layouts I usually place my rears close to the centre line of the wall — I want them to act almost as a rear centre. With a processor like the Lexicon used here we have the option to space the rears further out, but not all processors have that sort of processing horsepower.”

The rears also each have their own out-of-room amplifiers delivering 200W times two for the bass, 120W for the midrange and 120W for the tweeter.

Perhaps surprisingly there is just the one subwoofer in the room, when conventional wisdom is for two or more to combat standing waves and deliver a more even bass response in the room. But then, this is no ordinary subwoofer, nor does it have a single driver. Genelec’s 7073A is a metre and a half long with four 12-inch drivers, a -3dB lower cut-off of 19Hz, and 124dB sound pressure output capability. Besides, Steven Spurrier is not of the multiple subwoofer persuasion.

“OK we could have this discussion for days,” he says, his brow furrowing slightly. “I understand the logic of the sentiment, but setting up one subwoofer in a room to seamlessly integrate with the rest of the system is challenging to begin with... setting up multiple subwoofers is even harder. The vast majority of people installing subwoofers don’t measure the sub and they are being installed in acoustically compromised environments. Without calibration, just throwing more subs at a room is not the most efficient way of providing a solution — though it is an efficient way of selling many subs! It may sound like a good option because it is being talked about on the

internet, but unless you measure and calibrate you’re working blind.”

As always, the proof is in the pudding, and as noted above, the sound in this room is of the highest quality, and we reckon fully justifies Steven’s decision that an upgrade to the audio system based on changing technologies alone would be entirely superficial, despite the Lexicon being of an age that it doesn’t even have HDMI.

“We have talked about various upgrades to the audio,” Steven says. “But he loves what he’s got, and I’m not in a rush to sell him anything new — I’m not a believer in putting clients on an upgrade path just to keep them buying stuff. They ask ‘well what will I get?’ and I say well you’ll get a new Dolby Atmos sticker or whatever. Mind you this is perhaps one room where an Atmos system would be beneficial, because we’ve got the height, and we may do that once we talk about a new processor. But currently we’ve got the source going HDMI into the projector and coax and optical SPDIF into the Lexicon — and what the current Lexicon does, it does phenomenally well. When you experience the headroom and physicality of the sound — that’s really the main point of difference between Genelec and anything else.”

Going large

The video projection, on the other hand, became increasingly ripe for an upgrade.

“When we originally did the job we put a JVC projector in here — we were looking at Runcos, but in the end we said let’s see how the market matures, and we can replace it with something later,” Steven says. “But the market didn’t evolve very quickly, there wasn’t this massive change... and every couple of years the owner would call and say ‘Is there anything?’

“Finally when the Sony VW5000ES came out, it ticked every box. It’s bright, it’s quiet, it’s laser. We’d swapped a lot of lamps out of the JVC — you’d see the brightness ramp off quite substantially, but with the Sony the client could just come in here and not worry about the lamp.”

With the new projector locked in, it was also the ideal time to revisit screen size.

“The client was quite happy to leave the original screen in here,” says Steven, “but the Sony was easily bright enough to go for a much larger screen area. I suggested he go and watch something with a wide aspect ratio, like *The Lord of the Rings*, on his old screen. And he said ‘No I’m quite happy’... but the next weekend he calls me and says ‘Steven, you bastard!... OK, what can we do?’ So again I called Paul...”

Several times during our visit, Steven emphasised how much a project like this is a team effort — “no one person does this”, he says, waving around the room. “I’ve been selling hi-fi since the early ’80s and home theatre since the ’90s and I’ve never sold any other screen brand but Stewart. They’re the

only manufacturer that makes an optically coated screen surface that provides colour accuracy while achieving the balance of brightness and uniformity.”

Visual Fidelity’s Paul Kutcher is keen to expand on this theme.

“Yes, and they’re the only manufacturer that makes a THX Ultra 2–certified, micro-perforated optically-coated screen surface,” he says. “Both Genelec and Stewart are engineering companies, very good at coming up with solutions that work in whatever application is required. So Stewart historically started in the movie production side of the business with screens for special effects, then moved into making screens for the post-production side of the business. They do screens for simulation, visualisation — and home cinema was actually the most recent market they got into. And everything they do, they do for a reason. They respond to new technologies, so at the start of the 2000s they brought out Greyhawk and Firehawk as a response to the poor contrast of lamp-based projectors at that time.

“We look at any project and we want to know screen size, viewing distances, what projector is being used to illuminate this screen, what’s the décor of the space, the ambient light... Then we’ll say right, for that application, this is going to be the most appropriate surface.

“The original screen in this space was a ‘vanilla’ fixed-frame screen with no masking. But with the Sony projector, the discussion was always ‘how big do we go’. Ultimately we were limited by the bulkheads and the masking systems in the screen, and this was

the largest we could fit in the space.

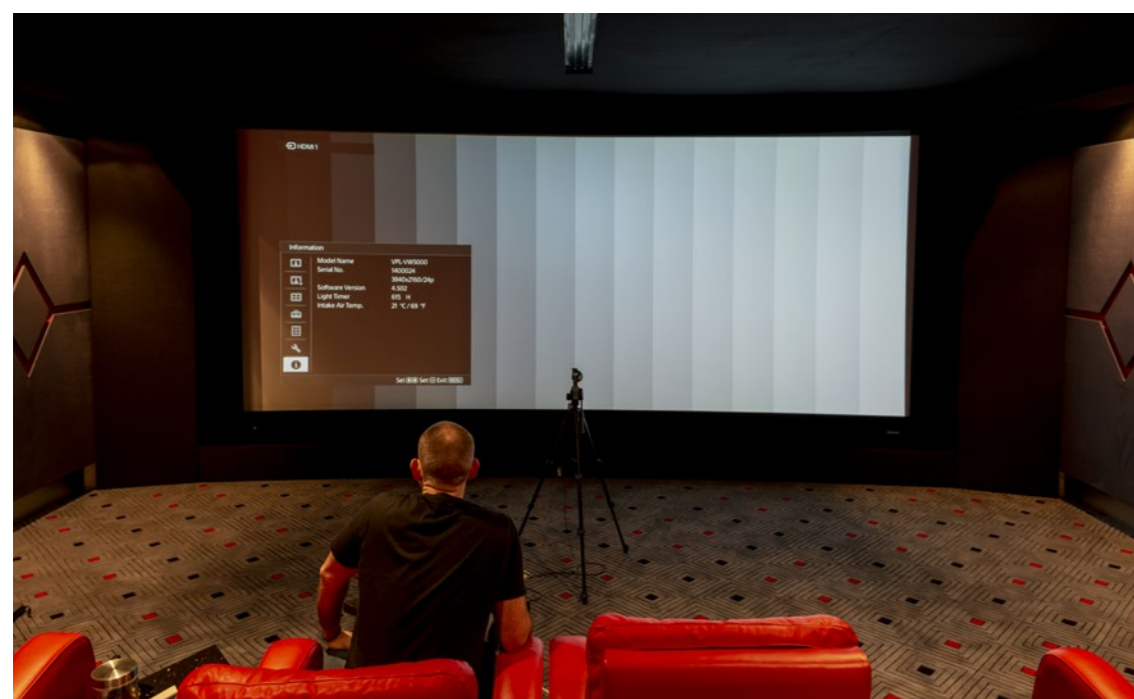
Though those small limitations turned out to be a good thing because optically we were already really squeezing to fit the light path through the large anamorphic lens — we actually just get through. So it ended up being the perfect balance in that regard.”

The final screen has the slight curve of Stewart’s Cinecurve. It operates at full constant height, natively 2.4-to-1 aspect ratio at 212-inches diagonal when fully open, but with motorised side masking “right down to 1.33-to-1 and everything in-between”, says Paul Kutcher. “It enables the client to view movies at the same image height for all content at its correct aspect ratio, fully masked off so that you’re not looking at a vast expanse of vacant screen when there’s no image on the rest of the screen.”

And for the final touch, the projector and screen were ISF-calibrated by Mick Peaker of Avical (pictured below) to ensure absolute adherence to industry standards of colour and brightness.

60 degrees of immersion

“We did consider whether it was *too big*,” adds Steven Spurrier. “Previous to this I’d done nothing over a 40-degree field of view, the maximum I’d then have recommended as a comfortable viewing experience. Of course clients always want ‘big’. And usually I’ll say ‘OK I’ll move the seats forward, it’ll give you a bigger, brighter, higher contrast image than you would get buying a larger screen — and it saves



▲ Avical’s Mick Peaker makes some final calibration adjustments to the 4K Sony projector & Stewart screen.

money’. But then I read a technical white paper for cinematography, and the discussion was that a 63-degree field of view with a 2.4-to-1 aspect ratio is the maximum recommended field of view for a truly immersive experience. And that gave me the confidence to go wider. Now I’m often bringing other dealers here just to experience a 60-degree field of view. It doesn’t have to be this big — it could be smaller and you sit closer... the field of view is the thing. But it’s beneficial to experience this, because when you’re designing a home theatre, it gives you a wider window of options.”

“I was concerned about the screen being close to the walls, about possible reflections,” admits Paul Kutcher. “I wondered about a grey screen to reject that side reflection, and in this space we possibly could have come back to Greyhawk. But in the end this works perfectly. There’s plenty of brightness, that little bit of extra kick for HDR.”

That’s extra kick for the image, and no shortage of kick from the audio either, thanks to the Lexicon/Genelec sound system. This is one of the rooms against which all our future home cinema visits will be judged. —

EQUIPMENT LIST

- Stewart Filmscreen 212-inch Cinecurve Jumbo screen, StudioTek 130 surface with micro-perfs
- Sony VPL-VW5000 projector
- Schneider Kreuznach CDA 1.33x XL anamorphic lens with custom lens sled
- Lexicon MC-12B processor
- Genelec 7073A subwoofer
- 3 x Genelec 1034B Studio Monitors (LCR)
- 4 x Genelec 1038BC Studio Monitors

STUDIO CONNECTIONS (Genelec): 03 9416 8097 www.studioconnections.com.au
 VISUAL FIDELITY (Stewart Filmscreen): 03 9338 8995 www.stewartfilmscreen.com
 ULTRAFONIC (acoustics): www.ultrafonic.com.au

▲ The entry corridor to the cinema is spectacular in itself, with marble walls, a star ceiling and bespoke acoustically-sealed door.