

An Accurate Preevue

By: Kate Lyon

A VR visualization start-up arrives on the big stage

“There are lots of people who hypothesize about things. There are rather fewer who just get on and do them—particularly in a way that’s practical and useful, rather than just experimental.” This opener, from *Light & Sound International* (and *LSA*) contributor Rob Halliday, seems an eloquently appropriate way to introduce the 21-year-old founder and director of Preevue, Ryan Metcalfe. The com-

pany, just three years old, is fast becoming a leader in the rapidly developing use of VR in the industry. By his own admission, Preevue did start out with a business plan, but everything on that agenda was

achieved within a few months of starting up, so this is a story of company success on a significantly accelerated scale.

Elaborating, Metcalfe says, “My background is in 3D modeling and architectural visualization. Even before I reached my teens, I was teaching myself a lot of AutoCAD-style software for buildings. I went on to experiment with 3D modeling of set designs and theatres, but it never really clicked that it could be anything more than me, as a 12-year-old, messing around on the computer. I remember watching *Wicked* in the West End and coming home to create a visualization of the set.

“Even in my initial interview at the Guildhall School of Music & Drama, I made the process entirely digital; I sat there with my laptop and showed them all my set designs...As a student, I would sit in on preproduction meetings and, as VR became more visible generally, it occurred to me that I could bring the theatre to these meetings in a way that would make concepts and designs far more explicit.

“From then on, I spent my first year at Guildhall in my room, doing programming and not giving the course as much attention as I should. That initial burst of R&D got it to a stage where the penny dropped that this could actually be a thing that could have a significant impact on this industry.”

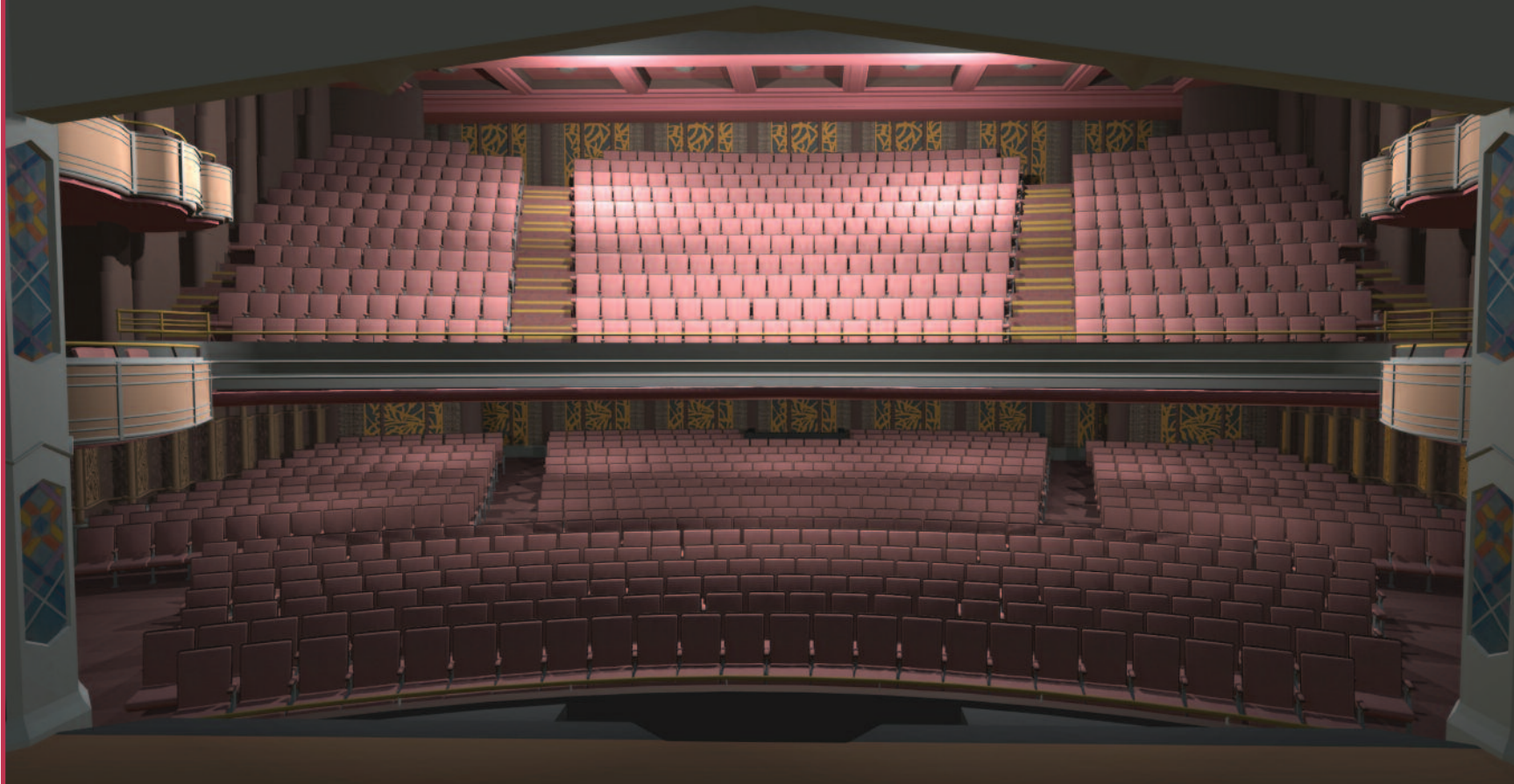
While still an undergraduate, Metcalfe’s vision evolved into Preevue, the company. “My first commercial task actually arrived, by sheer chance, a day after the company was

conceived. Simon Corder was designing an opera for a production at the Guildhall and we had a chat one day in the café. He was also designing for the [Expo 2017] in Kazakhstan and thought that my idea—I hadn’t even received my first VR headset at that point—would be a great way to make that process easier and more accessible for himself and the client. It was the confidence I



Above: Ryan Metcalfe with Andy Serkis. Opposite: Metcalfe at the PLASA Show.



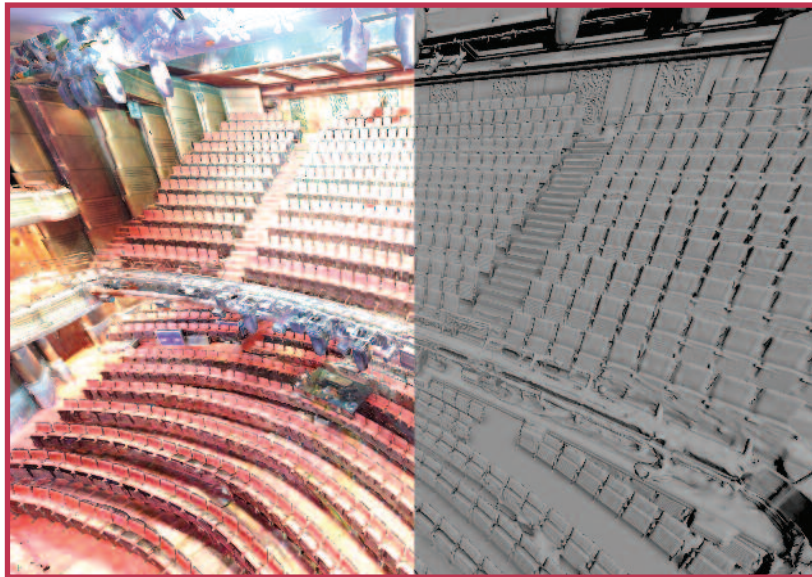


Below: The Prince of Wales Theatre, in the West End, gets the laser scan treatment. Above: The final result.

needed right from the start.”

Metcalfe’s next step was to take the smallest stand possible at the PLASA Show: “I stood there with a headset and with my Dad for moral support. We didn’t stop talking for three days; I ran out of flyers on the first day and I remember rationing business cards. In a rather cheeky move, I had Preevue’d the Victoria Palace Theatre prior to the show *Hamilton* being produced there, showing what it could potentially look like. That got a lot of attention; it was noticed by Rob Halliday, who completely championed the company on my behalf. It all essentially stemmed from PLASA: right place, right time.”

Halliday recalls how impressed he was with Metcalfe’s pitch. “Ryan’s first demo at PLASA stood out with a virtual environment that was familiar because it was a real set in a real theatre, and with a neat trick—I think he really had all lighting people hooked at this point—where we could pick up a virtual light and point it around the stage. After seeing his demo, I firstly dragged people I knew at the show,



who’d been talking about this kind of work for years, to see it in action. Then I wrote a few emails, made a few introductions. Ryan’s boundless enthusiasm took it from there, and the number of shows he’s been involved with since—including some I know he’s not allowed to talk about—really proves the value of what Preevue can do.”

As a result, the first substantial contract, *Harry Potter & the Cursed Child* in New York, was landed. “At that point, I was still a student at the Guildhall. I was attempting to fulfil my student expectations whilst working on *Harry Potter* at all hours. Something had to give; it was clearly time to make a choice: The company was making money, more work was

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arriving and, I suppose, it was the moment I had to have the courage of my convictions. A coffee with my course tutor [led to a] mutual agreement that I needed to focus on one thing or the other, and I didn't complete the course. Perhaps one day I might go back..."

Metcalfe explains how the system works: "A laser scanner captures a point cloud of data, representing measurements of a space accurate to 2mm. The scanner does around a million measurements per second, capturing each point's position in 3D space, as well as GPS and color. Then it maps millions, if not billions, of individual points, creating this big mass of data. Then the process is about turning that into a 2mm accurate facsimile of the scanned location. The VR aspect is, obviously, an important part of it, but the niche part is what Preevue builds from all this data for the client.

"We might only be on-site for three or four hours, but it takes a further two or three weeks to deliver a dead-on accurate 3D model of the venue that one can have complete confidence in without having to step into the actual building. In a typical pre-production meeting, you might have 30 people in a room—only a third of them will have a real understanding of how the show/venue is going to look once the CAD plans and designs are realized. By using Preevue, the people who aren't conversant with that type of modeling can put on a VR headset and really see and walk around the design and the space from the auditorium, the stage, grid, balconies, whatever and wherever they choose. The benefits are obvious: budget savings, design accuracy, avoiding obstructed views, assessing set feasibility.

"People who sign off on designs often found themselves in a position where they didn't feel that the end

result equated to what they had looked at in preproduction. It is so important for them to be confident at this early stage; they are the risk-takers and financiers. Adjusting a set by an inch or two here and there before construction starts can mean selling a few more seats without an obstructive view; our fees quickly become a very cost-effective investment. Although people are aware of VR and might also know that it's being used in preproduction and design, they may well feel that it's not in their budget range to access it, whereas, in fact, it has proved to be a huge asset in that area and has proved to be more than cost-effective."

Since those first jobs, Preevue's star has continued to rise. From the initial investment of a computer, the first VR headset and the hours of R&D from Metcalfe, the company now employs a couple of staff full-time. There are a number of virtual offices around the globe where clients can access VR files; these are networked together to provide a global conversation: a producer in New York, a set designer in London—both wearing headsets and walking around a set that hasn't been built yet.

Despite Preevue being very much a fledgling organization, Metcalfe is already focused on the next steps. "As far as continuing the type of projects we have already worked on, we work in a very small global village of contacts and it has only taken a bit of word of mouth to raise our profile. We are already in a position where we know the major producers in the West End and our USP of combining laser scanning and the use of VR to present a feasibility is a proven success.

"2019 is a year where we are going to expand and reach out to new people. We have already morphed into a little bit of production consultancy in areas such as new-build theatres and seat planning on touring productions.



A FARO Focus 3D laser scanner.

For a show that's touring at 20-odd theatres, we can visit each venue and confirm with absolute confidence where any seats might have a restricted view or where the set might have to be adjusted to fit. Knowing these kinds of challenges in advance can save time, money, and lots of head-scratching further down the line, when it's either too late or impossible to fix them. Preevue is also going to move towards more of an advisory position. Our portfolio of scanned theatres across the globe enables us to offer clarity to incoming productions."

If that isn't enough to keep Metcalfe busy, he is looking at what other VR developments he might offer the industry in the future. "We are keen to develop some more artistic uses with VR to give theatre users a fresh experience and become more interactive as an audience. I'm sure we will explore where we can go with it. I would quite like to peek in and see where I can go with it!" I certainly wouldn't be betting against Preevue getting there before anyone else. 📶