

XR Stories and SIGN Podcast

S2 Ep9 Virtual Production and Sustainability

[00:00:00] **Nina Willment:** Hello, I'm Dr Nina Willment and you're listening to the XR Stories and SIGN Podcast. In this series we delve into all things virtual production, meeting the experts, academics and creatives working on every aspect of virtual production, or VP. You'll hear that term a lot in this podcast.

This episode we're talking about sustainability. Virtual production offers great potential for more sustainable production practices. One example being that VP can mitigate some of the environmental costs of filmmaking by reducing transport and location fuelled usage. But, is VP the sustainability solution that the screen industries hope for? Or will the ecological costs of new sound stages and mass data transfer wipe out any potential gains?

Joining me to explore all of this and more are Phil Holdgate, Head of Production Sustainability for ITV Studios and Co Founder of SAIL - Sustainable Arts in Leeds, and Jon Swords, Research Leader at Exile Stories and SIGN and Senior Lecturer in Theatre, Film, TV and Interactive Media at the University of York.

I started by asking Phil what a traditional working day at ITV is like.

[00:01:14] **Phil Holdgate:** *Laughs* I start by saying there is no such thing as a typical day. Every day is different, which inherently is probably what makes it such an exciting place to work. We are a production group of 60 different production labels in 13 different countries. So the variety that I go through of various day to day conversations is absolutely terrific.

But there are absolutely some terrific conversations that are happening at the minute around how we can embed sustainability right across our global production business. So some of it's very varied, but some of it we've got some real consistency in terms of the topics that we're trying to focus on right now.

[00:01:54] **Nina Willment:** Fantastic, thanks. And Jon, what about you, what does a typical day look like in the XR Stories and SIGN world?

[00:02:00] **Jon Swords:** My role on XR Stories and SIGN is the research lead, but I also undertake research as well. So my day will be split between those kinds of roles.

It might be managing excellent research associates like yourself, Nina. It might be kind of managing and planning research projects that we're doing in the future, or collaborating with colleagues at other universities. Keeping on top of projects that we've funded through XR stories and SIGN, because we've been able to provide resources for a lot of other academics at other institutions to undertake. But the best bit is usually writing up results and sharing those results with people through Mechanisms like this.

[00:02:36] **Nina Willment:** Fantastic. Thank you. So, Phil what do you understand sustainability to mean in terms of film and TV? And what things are you trying to look at when you're trying to think about making more sustainable productions?

[00:02:49] **Phil Holdgate:** Yeah, I mean, it's quite a holistic approach that we take at ITV. But also the conversations that are happening right across the industry, kind of leaving no stone unturned, for very good reasons as well.

But we've been quite blessed I think, in the UK in particular, where we've had the Albert system, which is primarily a carbon footprint calculator specifically for tv and film and also an accreditation scheme as well, and that's been around for over 10 years now. So we've got some fantastic data. I used to be a production accountant when I first started work, yeah I love a good spreadsheet, I love data, and I want everything that we make in terms of our decision making to try and become a sustainable producer to be based on how we can have the biggest impact in the shortest time, and also to be fact based as well and not just based on people's opinions.

So being able to lean on a data set that's been around for a while gives us some great insight. And it means that we're really focusing on different ways of producing our shows that maybe can reduce our travel footprint primarily, which is over half of a typical CO2 emissions from a show.

And then the next section down from that is looking at power. So how can we power our shows in the cleanest ways possible, whether that's in a studio or on location or anywhere really. So, that gives us a real laser focus on the topics we really need to be focusing on. And then there's all of the other things which make up the rest of the footprint as well.

So, everything from the materials that we're using to build sets or how we dispose of things that we don't need anymore, how can we shift towards circular solutions and things like that. So yeah, having that data, I think, is the most important starting point for us. But it means that we can start to build out our strategy based on what we know we need to do, which is the perfect situation, I think.

[00:04:31] **Nina Willment:** Could you talk to us a bit about Sustainable Art In Leeds?

[00:04:35] **Phil Holdgate:** Yeah, there's a bit of crossover. So yeah, just for anyone who's listening, we started up SAIL about six, five or six years ago. It's a not for profit, but really focusing on how we can achieve or support a zero carbon, zero waste creative and cultural sector in West Yorkshire.

So very much a local and regional approach to sustainability. So I've kind of got one end of the spectrum, which is this global oversight, but I'm able to bring some of that knowledge and experience, and support what's happening with SAIL at a much more granular local level as well.

So, some of it, absolutely, there's a lot of crossover and some of it is just a world apart. But, it's nice to have the different perspectives and it helps keep me grounded.

[00:05:16] **Nina Willment:** And Jon obviously being researchers, we love a good bit of data too. So how do you see this commitment to sustainability flowing through the sort of wider studios and production companies that we have in the UK?

[00:05:27] **Jon Swords:** I think something that's been really interesting in the work that we've been doing is recognizing that film and TV have got really interested in sustainability in

the past few years. But it's taken a while to get to that point. If you look at other industries, such as construction or transport, they've had a greater... focus on these sorts of issues. But now, film and TV and wider screen and wider creative industries have acknowledged the importance of this. They've really been accelerating around it, and it's very difficult to have a conversation about the future of the screen industries, without sustainability being part of that.

And I think part of that is a recognition that this is an important issue. I think it's a recognition that... The world is on fire at the moment. But also I think a generational shift as well, as younger people are moving into the industry. They come with a concern already, they don't need to be converted to kind of thinking more sustainably, thinking about the environment, and working in better ways.

So it's a really exciting time to be looking at this sort of thing.

[00:06:27] **Nina Willment:** Phil, also do you think, for ITV I suppose in particular, do you have your current ambitions and targets, do they really drive your sustainability agenda, and you mentioned obviously this move to trying to get towards net zero, are they playing a central part in your thinking?

[00:06:40] **Phil Holdgate:** Yeah absolute front and center of our thinking. So it's brilliant. We've got our corporate targets, which gives us, you know, a sort of a point in time to aim for, but also a bit of a north star. So it guides our and shapes our decision making.

Interestingly, we're doing a piece of work at the minute, looking at who are other... so we don't, we don't only produce for ITV, the broadcaster, we produce for other networks all over the world. And so we're looking at what their net zero plans are as well, all really similar to ours, looking at 2030 date primarily. So you know, there's A, there's a risk if we don't meet some of those targets on their behalf, but also there's a great opportunity, I think for us all to work much more closely together and through a real spirit of collaboration, I think we can get there a lot quicker as well.

But looking at new technology, new innovation, new ways of working and maybe new ways of thinking as well, have a great part to play. And so being able to use the corporate targets that we've got and some of those industry wide discussions, really based around the similar or same targets, it is really, really useful. Because it just keeps us all sort of pulling in the same direction, which I think for a topic as big as this and as complex as climate and sustainable production is nothing but a good thing in my opinion.

[00:07:57] **Nina Willment:** Thank you. And I just want to go back to, you touched upon Albert. So for people that maybe haven't come across Albert, what is it? It'd be great if you could give us some insight.

[00:08:04] **Phil Holdgate:** Yeah, absolutely. So going back, well, 10, 12 years now maybe, it was a system that was created by the BBC originally. It was a need to be able to measure the impacts of our TV shows primarily. And the fact that there just wasn't any kind of carbon calculator out there, it was a lot of spreadsheet based work, it wasn't very intuitive, it wasn't particularly nice to use either. From a hearts and minds perspective, it was always going to be a bit of an uphill battle unless we found a better way of doing things.

So to their credit, the BBC, invested in and started work on the industry's first carbon calculator. And was really bespoke, it was for the industry and by the industry. So, I think that put us on a really good trajectory. Once it got to testing point, they reached out to a few colleagues and different producers, ourselves included. And very quickly the conversation shifted towards A, you know, this is way too good for the BBC just to keep to themselves, It should be an industry thing. And so they looked for an organization that would be able to host it, that was maybe a bit more independent and they found a good home in BAFTA, which is where it's lived ever since.

And they've built it out, so they refer to it as a toolkit. And that's everything from the Carbon Footprint Calculator, they've got the Albert Certification Scheme, you might have seen a logo on the end credits of some shows that have been through that process, which is essentially a sustainability accreditation program. And what we find is that having an organization like Albert is a real linchpin to bring a conversation together, where maybe you've got competitors in the commercial sense that can come together and really take the mask off, and share and learn from each other and share that best practice.

The whole point being we can accelerate if we move as one rather than trying to do it in silos and doing it individually. So I think we're really lucky to have it.

[00:09:52] **Nina Willment:** Fantastic. Thank you. So I suppose we've talked a little bit about more broader findings, potentials of sustainability across the broader screen industries.

Jon, could you talk to us a bit about how virtual production feeds into wider sustainability and climate change challenges in the screen industries more broadly?

[00:10:11] **Jon Swords:** Virtual production really got a... boost during COVID. With the restrictions on travel, a lot of productions had to kind of look for other ways in which they could produce content.

And at the time, virtual production was in its infancy. A lot of the technology was quite embryonic, but during that period where people couldn't travel, a lot of R&D time and money was invested in exploring how virtual production might enable productions to be made in a studio rather than on location.

So, various companies, particularly Industrial Light & Magic and Disney, invested a lot of money and time to working out, can we make things in a studio using virtual production with LED screens rather than travelling? And off the back of that, people recognised that you don't need to travel as much anymore, because the quality of the images and the quality of the screens are good enough that you can't really tell on camera that you're not in a real place.

There's been a lot of hype about virtual production, and a lot of that is connected to its environmental credentials, because you don't necessarily need to fly cast and crew around the world to make your programming anymore. You can take them to a studio and do it. And often, if you're doing a virtual production shoot, the actual production phase, where you're using the cameras, there's usually a shorter period than if you were shooting on location. Which again reduces the accommodation that you needed, which is quite a large contribution to the carbon that's produced when making film and TV programs.

[00:11:44] **Nina Willment:** Thank you. And Phil, how did ITV come to using virtual production?

How did it become on your radar?

[00:11:49] **Phil Holdgate:** Yeah, it was very much something that was on my radar and as John's alluded to there, you know, there was a lot of noise that came out of the back of some of the Disney filming. That was helpful when you've got Disney's budget I guess as well, but it's not a bad thing. We can all learn from that as well.

And it was really the idea of being able to avoid travel. So I've sort of mentioned previously some of the challenges we've got. I think we can find better ways to be more circular in our material usage and how we deal with waste. I think there are some brilliant solutions for clean power, but when we're looking at travel and flying in particular, that's a real challenge. How do we get past that particular obstacle? And anything and everything that we can do to try and avoid or negate the need to travel is a good thing. And here we are in a world now where we've got a whole new tool in the toolkit where we can produce some terrific stuff that looks great on screen.

But where it came to a fore for ITV was where we were producing a show for our own new streaming channel, ITVX. And we had a show, which was a Cold War thriller called A Spy Amongst Friends, starring Guy Pearce and Damian Lewis. It's one of the biggest things that we've ever shot. We had one scene in particular where the producers were really keen... it was based on a novel, they wanted to stay as close to that novel and do it justice as much as possible. But it was a rooftop scene in Beirut, which was really challenging for several different reasons. It was January, so the weather wasn't great. They did a recce with a local fixer out there and he showed us some pictures and... really, really challenging from a logistical perspective. Very narrow alleyways, difficult to get kit up and down some of the staircases. And also when they took a view out of where this rooftop bar was supposed to be, there was loads of satellite dishes and PVC windows and things like that and it's supposed to be the 1960s. So for all sorts of reasons, it was proven really challenging.

So, we had a couple of options where we could do a bit of a rewrite, which wasn't ideal. We could have cheated it and gone somewhere else. But the time of year was quite challenging for us as well. And it was our production exec and some quite innovative producers, or they were open to innovation at least, that drove the conversations. And you know, the studios, to their credit, were happy to go with it. And so we recreated that scene, in virtual production, in a big LED wall at the ARRI stage down in Uxbridge. It wasn't plain sailing, I have to say. Lots of lessons learned, but we got it in the can. It looked great and really successful by all accounts.

And so off the back of that, what we were able to do is go, okay, we've got the data. We know how much energy we used. We knew all the travel and accommodation and the set construction. We had all of that captured. And we were able to punch that information into the output calculator and give us a footprint for that particular few scenes, handful of scenes that we'd shot.

And then I took some time out with the production exec and worked through a load of what if scenarios. So, what if we'd have recreated it somewhere else? Budapest was on the menu at some point. What if we'd have gone to Beirut and filmed it on location? I couldn't believe what numbers were coming out, you know, it showed a 95 percent reduction compared to taking everyone and flying them overseas and putting them in accommodation and, you

know, Jon's already mentioned there some of the benefits about a much more condensed and controlled schedule as well. So the whole thing was done in several days less than if we would have done it on location as well. So straight away, I knew it was something that we needed to keep looking at, and we've gone on from there really.

[00:15:24] **Nina Willment:** It's great to see an example of some quantitative, so like, number data, to back up quite a lot of the claims we're seeing which are quite anecdotal, which is great to see, but it's good to have some numbers to quantify that.

Jon, why is it that we're not seeing so much quantification in terms of the evaluation of environmental impacts? Why is that a problem?

[00:15:42] **Jon Swords:** It's pretty hard to do. And it's hard to find the time to do that sort of thing. I was looking at the Green New Deal recommendations for how to increase sustainability. And one of the things they acknowledge is the need for more time and effort. To kind of try and make productions more sustainable. And time is one thing that is in the most short supply in the film and TV sector. So having the time to do it, and having the willingness to do it, having more people like Phil employed, at broadcasters and at production companies, without all those things, it's going to be constraint to see all the kind of numbers.

And getting any quantitative data on the film and TV industry is always quite difficult, just because of the range of productions, the size of them, the genres, the formats that they're used for, the inputs that go into them. It's like where do you start counting? So it's all very well shooting on an LED wall, but when do you start counting the environmental impact of the materials that went into making that wall? How do you separate that out per production?

How do you think beyond some of the environmental impacts of these things as well? The precious metals that go into a lot of the high tech equipment, are mined from Central Africa. Which causes huge damage to the environments there. And also, you know, damage to the populations as well, the conditions under which people are working to extract things like coal tar are not particularly nice.

So I think it's a question of, what can you count? Do you have time to count it? And is there, is there a willingness to count it? As we said earlier, there's an increasing willingness to do that sort of thing. And having Albert standards are incredibly important.

[00:17:22] **Nina Willment:** Just picking up on that, do you think there is enough awareness on the sustainability debates around virtual production at present, of that whole production line, thinking from the mining of precious metals and minerals that go into the technology and the hardware, all the way to what happens when these technologies become outdated and obsolete.

Do you think there's enough discussion and awareness of that at the moment?

[00:17:41] **Jon Swords:** I think it's getting better. Obviously, I used to work in a geography department. And our understanding of sustainability is quite holistic, but moving into other realms, particularly around media departments, there has been a kind of a privileging of carbon. Which is obviously only one greenhouse gas. There are others, methane in particular has a bigger impact than carbon does on the environment. But people need to think, kind of, beyond carbon and greenhouse gas emissions, what's the material waste and

pollution that's being created. Virtual production means that you don't have to use as many sets. It's amazing when you explain to people that don't understand the film and TV industry what happens to TV sets after something stops being made and just most of them just get put into a skip. So work needs to happen around that sort of area to kind of, to reuse materials, as well as reducing the materials to get used.

And yet I suspect most people in the TV industry don't necessarily think about the pollution streams, up and downstream of the equipment that they're using, and beyond what they're making. There's no reason why they should be aware of that, because they're experts in film and TV, they're not experts in sustainability, unless they're working with someone like Phil. So I think it's important to raise that kind of awareness, because you're not going to get the cultural change that's needed, if you just tell people to do things in a certain way. They need to understand why they're doing it.

[00:19:07] **Nina Willment:** And Phil, you touched on the ITV's thinking about some of those ideas in terms of circularity, of reuse.

Are you seeing that flowing through more in the work that you're doing with ITV, but also with SAIL?

[00:19:17] **Phil Holdgate:** Yeah, definitely. And it's something, I think, because it's so tangible and visible, people really associate with things like this kind of waste that we produce as an industry.

I think from an impact perspective, it's probably not as big as, like I said, travel and power and things like that, but it's not insignificant either. And you know, it's a very healthy part of our economy as well in terms of the creative industries, which is great. And we want to maintain that as well.

So we do need to do things better and we do need to do them more efficiently. But yeah, it's a conversation that comes up time and time again around I don't want to throw it away, what can I do with these materials that I've got, you know, there's some really good relatively untouched, unused timber in this set, who can I give it to, you know, who else can benefit from it?

Sad fact is we just don't have the infrastructure in the UK to deal with it effectively, but there's also some brilliant organizations out there that do fantastic work. I know there's the community wood recycling network across the UK that we're working with, with some of our sets and, you know, they break the sets down.

The challenge being that a lot of our set construction techniques mean that there's loads of mixed materials. It's not just timber, there's plaster, there's metal work, there's all sorts of different elements. And it takes time to take those things apart and repurpose them. But, you know, you could, you could attribute the same thinking to theatre or other parts of the creative industries, it's not just film and TV as well. So is there a case for more collaboration? You know, we're don't have to be all in our unique silos. We could break out of those silos a little bit and work a bit more closely together.

So that's for things like set construction, props, costumes, things like that. But when you've got real infrastructure, so the LED screens that we were talking about earlier, I think we need to be, awareness is a good thing, but I think accountability also needs to sit in the right place

as well. We need that end to end chain of the manufacturers and then the actual companies that provide the screens. We need the studios to be on board, we need the people using the studios to be aware as well, and then sort of downstream from there as well. You can't just sit with, it's not the responsibility of just one group, it needs to be everyone on the same journey as well. And if that starts with awareness, then that's, that's a good thing in my book.

[00:21:36] **Jon Swords:** I think, just to pick up on a couple of points there from Phil... I think the reuse is so important. Making film and television is incredibly expensive, so anything that you can reuse, reduces the cost for people, particularly if you've got a smaller budget. If you're an indie, if you're a small production company, it just makes things cheaper and potentially makes things more accessible for people.

[00:21:59] **Nina Willment:** Thank you. So a question for you both, what areas would you want to see companies or research institutions investing more time and effort in solving when it comes to sustainability?

[00:22:08] **Phil Holdgate:** I think just getting that real insight. So I've done a little bit of work on a couple of instances where we've used virtual technology, but I've not seen much out there in the wider realm as to, you know, the real consistent drumbeat to say that this is a really sustainable tool for us all to use, if you use it in the right way for the right iterations of it.

So I think a bit more awareness, you know, I think we should be championing the creative element as well. But if we can also package that up to say, yeah, potentially this is really good from a sustainability perspective as well, then, what's not to like, and I think we can get more people interested in the technology and go from there.

[00:22:50] **Nina Willment:** And Jon, how about from a research perspective?

[00:22:52] **Jon Swords:** I think it's important to acknowledge that for the past 25 years, policy around the creative industries has just been focused on growth. Growth, growth, growth. You hear any minister talking about the creative industries, it's about the contribution to the economy, employment numbers, how much is being exported. It's the size of the UK film industry, which is heralded and privileged above all else. It's very difficult to be environmentally sustainable if you're just thinking about growth, it's just more, and more and more. So I think there needs to be some debate about do we need to make as much film and TV as we currently do?

In that if we're going to take this seriously, do we need to make less rather than just doing things more efficiently or reducing the amount of materials? I think we need societal wide change for that kind of policy to be acceptable. At the other end of the scale, reducing barriers to entry to using technologies like virtual production is incredibly important.

As Phil said earlier, if you've got Disney's budget, great. You can build a massive wall or hire one of ARRI's massive LED soundstages. If you're a small production company with a few people, and you want to do something innovative, it's very difficult to break into the virtual production industry, because using the studio space is very difficult. But just understanding the technology is also incredibly hard. It's a huge barrier to getting into, to using this technology and therefore a huge barrier to kind of... having more sustainable working practices.

[00:24:20] **Nina Willment:** Thank you. And I'm thinking particularly of one of the massive negative impacts that I always think about when I think about virtual production. There's a huge energy usage that is required to run stages, to power render farms that create the virtual environments, that power the cloud servers that hold obviously all this data in the cloud and the ether. Phil, how can virtual production mitigate some of those concerns?

[00:24:43] **Phil Holdgate:** Yeah, I think going back to the whole point around data, I think there's very limited understanding of what the energy draw is on some of the stuff that's happening, probably thousands of miles away in some cases, or that phrase, the cloud, which sounds nice and fluffy, but actually it's probably some massive data center wearing away somewhere.

And so how do we get more insight? And how do we then try and address the issues around energy efficiency and the energy supply itself? I think that they are solutions that we probably know how to address. You can generate your own electricity. We can get renewable energy tariffs and the grid is decarbonizing over a period of time as well.

So the pace of change for energy generation that's far more cleaner than it ever has been, versus trying to travel in a really clean way. The timeframes that we're working towards are so far apart that anything we can use that maybe has a higher power footprint is okay, in my opinion, as a next best thing or a least bad thing.

And so when we're looking at the actual studio itself, you know, one of the questions that any producer going in there should be asking is, are you on a green energy tariff? Have you looked at investing in your own energy generation on site as well? So there are ways to mitigate for some of that energy.

But what I do think we need to be talking about and looking into a bit more. And maybe this is where some research can come in is around maybe some of those hidden things that are not as tangible and as front facing or customer facing. And so production teams might not have that awareness or even know what right questions to ask as well.

So, you know, I think we need some expertise and some big thinkers to figure out what the, maybe some of those hidden emissions are. But, you know, I am hopeful, like I say, that because we've got some solutions for generating clean energy, we can make this even more sustainable than it already is.

[00:26:34] **Jon Swords:** Like it's interesting to explore some of the kind of secondary benefits, someone we spoke to has suggested that Even though the LED walls are drawing a lot of power, they're producing a lot of heat, so therefore you might not need to heat the studio in the same way in which you're used to. But then that speaks to questions about the Geography of where you make things, because then if you're making something in a desert or in Arizona or in Hollywood, you might then need to cool the studio more. So, I think it's really complicated and really important to unpick some of these, some of these issues and work out precisely where these energy flows are benefiting or kind of contributing.

[00:27:12] **Phil Holdgate:** I think as well, I'd sort of add to that if I may Jon, to say there was a bit of a gold rush, it seemed, as everyone wanting to go out and invest in virtual kit so they could have their own LED arrays and their own systems in place. You know, I'd be interested to see if there was... a better way for us to do things where we could have more mobile solutions, for example, and a bit more sharing of kit.

We don't need to buy and run and maintain a huge amount of kit. We could share it around one another and cross hire and things like that a bit more effectively as well. So yeah, I just think we can probably think a little bit differently and inherently be a bit more sustainable.

[00:27:48] **Nina Willment:** Phil, how much of this comes down to good management practices? What role does that play in sustainability concerns working with virtual production?

[00:27:59] **Phil Holdgate:** Yeah, I think they're sort of the two separate things, but they're very much overlapping as well. I think the management element is one that's really interesting because you're effectively having to flip the order of doing things. A lot of the work happens in pre production, whereas as the screen industries, they've just been used to, what, probably over 100 years now, of kind of fixing things in post production. Whether that's putting CGI in or doing the editing etc. whereas now we're seeing where if you're going to use virtual production really successfully, you have to do all that planning up front, which is not a bad thing.

I think by the time you get to the actual filming you can be far more efficient with your schedule and your budget and the control elements. Something that I would imagine most production managers in the world would rejoice at the fact that they've got a bit more control. But it does mean that it requires a completely different mindset shift and just the ordering of doing things is something that people have to learn and kind of unlearn the traditional way of doing things.

[00:28:57] **Nina Willment:** Are you seeing a mirroring of that Jon? In the research that you've been involved with, that management is really important from a logistical part and a sustainability viewpoint?

[00:29:07] **Jon Swords:** I think so, yeah. As I mentioned earlier, time is such a precious resource and you have to put so much more time into pre production, than you would normally, and that's a cultural shift. People need to recognize that and budget that into their timelines of booking the talent, booking the crew, so they've got them at the right time.

I think also it kind of speaks to the opportunity for reshoots. I think generally speaking, the way that virtual production is being used at the moment, they try to get everything first time round, and you don't necessarily need to do reshoots afterwards, because you plan everything so meticulously, or at least you should.

But if you are required to do reshoots, it's easier to do in a studio, because you've got the environment saved, you've got the lighting settings saved, you don't have to wait for a certain time of year to go somewhere where the vegetation might be different, or the lighting might be different from when you originally filmed, or the weather might have changed.

So even if you aren't great at planning and you need to do some reshoots, you can do that more easily if you're working with virtual production.

[00:30:13] **Nina Willment:** Thank you. And Phil, are there economic benefits as well as environmental benefits for companies adopting virtual production to create their content?

[00:30:22] **Phil Holdgate:** Yeah, I get asked a lot about who's going to pay to be green and I can't afford the sustainable options. But, I argue till I'm blue in the face that a lot of the time the sustainable solutions are more efficient. So in theory, they should in time become more affordable, if not cheaper, the non sustainable. Yeah, and I think it's with virtual production, it's more controlled. Now, you know, that seems to be a common theme that comes through.

So you could maybe save some of the money in post production as well. So there's maybe some hidden savings. You might be able to have a more controlled budget is what I would say. So there could be some instances where it's maybe a bit more expensive, but you choose to do that because you've got very specific requirements.

But a lot of the time there's probably going to be some cost savings in there just through a more condensed and controlled filming schedule as well. You haven't got the travel cost, you haven't got the accommodation, it depends how you use virtual production, but there's definite upsides where I think sometimes, and I see this across the board with sustainability, people just compare apples with apples. So they might go, and understandably so as well, but they might say, oh it costs X amount to rent a VP studio for the day, that's really expensive when I compare it to a just dry hire in a studio space. But it doesn't end there. You know, you need to take a much more holistic overview of when you're analyzing and doing your insights around sustainability in my experience, and a lot of the time, you know, green comes out cheaper anyway.

And I'll argue that to one blue in the face or green in the face.

[00:31:52] **Nina Willment:** *Laughs* Thank you and thanks both for taking us through the challenges and potentials of sustainability in terms of virtual production. So as is tradition on the podcast now, we're going to move to some quick fire questions to you both. So the first one, why should we care about virtual production, Phil?

[00:32:07] **Phil Holdgate:** It's an untapped goldmine of possibilities.

[00:32:11] **Nina Willment:** And Jon?

[00:32:12] **Jon Swords:** Because it's the future of making film and TV.

[00:32:14] **Nina Willment:** What's your favourite TV programme or film that uses virtual production? Phil?

[00:32:19] **Phil Holdgate:** Ooh

[00:32:19] **Nina Willment:** You are allowed to use an ITV example if you'd like.

[00:32:24] **Phil Holdgate:** Yeah I didn't know if that was cheating or not. The favourite one I've been involved in was a test shoot that we did with the Emmerdale crew, which was just, yeah, it just opened up so many new ideas to people.

[00:32:37] **Nina Willment:** Thank you, and Jon?

[00:32:39] **Jon Swords:** Batman, because it was integrated so well with the use of real locations.

[00:32:44] **Nina Willment:** Thank you. And what companies are on your radar in the virtual production space at the moment, Phil?

[00:32:51] **Phil Holdgate:** Oh gosh, too many to mention probably, but we've got some great relationships with the XPLORE team right here in Yorkshire.

[00:32:58] **Nina Willment:** Perfect, thank you. And Jon?

[00:33:00] **Jon Swords:** I don't think particular companies, I think there's opportunities for many companies to use virtual production.

[00:33:06] **Nina Willment:** Very diplomatic, I like it. Jon, you might be familiar with this question. Phil, if you had a magic wand, what virtual production problem would you solve?

[00:33:13] **Phil Holdgate:** Oh, awareness, understanding, yeah. I just want everyone to see what I've seen and have the amazing... I mean, I'm not a creative person by my nature, but just the ideas that were flowing from my mind just from having a really simple conversation whilst studying that environment was incredible and I'd love to harness that.

[00:33:35] **Nina Willment:** And Jon?

[00:33:36] **Jon Swords:** To have a complete cop out. I'll just repeat what most people tell us when we ask that question. Reducing costs.

[00:33:43] **Nina Willment:** Fab. Thank you. And final question, what TV show from your childhood would you want to remake using virtual production?

[00:33:51] **Phil Holdgate:** Oh gosh, that's a really tricky one.

[00:33:54] **Nina Willment:** No pressure, but we have had some great answers so far *Laughs*.

[00:33:58] **Phil Holdgate:** Yeah my TV watching as a small child was dreadful. But I'd probably say something like Battlestar Galactica or one of the, I was a massive fan of the really cheesy American stuff in the 80s. So yeah, anything like that.

[00:34:13] **Nina Willment:** Fantastic. Thank you. And Jon?

[00:34:16] **Jon Swords:** The first one that came to mind was Red Dwarf. But part of its charm comes from its kind of clunkiness and the what now look like poor production values. Or similarly, maybe the Mighty Boosh with the kind of fantasy scenes that they have, could be improved with virtual production, but again, they've got a particular charm with the way that it was made.

[00:34:39] **Nina Willment:** Thank you both so much for giving up your time and for being on the podcast. It's been great to have you both. Thank you.

[00:34:44] **Phil Holdgate:** Thanks Nina!

[00:34:45] **Jon Swords:** Thanks Nina!

[00:34:47] **Nina Willment:** Thanks for listening to the XR Stories and SIGN podcast, exploring all things virtual production. Next time... our final episode of the series, we're looking at the future of virtual production.

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