Season 1
Episode 1: The Future of Stadia Tech

TRANSCRIPT

Sherri Privitera:
Welcome to Drawing People Together. The new podcast from Populous where we'll bring you insights, expertise, and ideas from the people at the forefront of global venue and event design.
I'm Sherri Privitera, Senior Principal at Populous, and I'm excited to be joining you for season one. Across six episodes, I'll be introducing you to my colleagues from around the globe who will lead deep dive discussions into the big issues and innovations that are shaping the design of large-scale venues and events, from stadia and arenas, to airports and convention centers, to the super bowl and the Olympic Games.

Christopher Lee:
Hi everybody, my name's Christopher Lee. I'm pleased to be joining Sherri for this episode of Populous' podcast. We have incredible guests here, joining us from around the world, day and night in their respective locations.
We have Meg McWilliam joining us from Hong Kong, where she's the Lead Architect for the Kai Tak Sports Park main stadium. Meg's an Associate Principal at Populous. Hi, Meg.

Meg McWilliam:
Hi, Chris. Thanks for having me.

Christopher Lee:
Dialing, in from New York, up bright and early is Jonathan Mallie. Jon's a Senior Principal and Director at Populous. Thanks for joining us, Jonathan.

Jonathan Mallie:
Good morning, good afternoon and good evening, Chris. Good to be here. Thanks.

Christopher Lee:
And lastly, but definitely not least, here with us in London is Maria Knutsson-Hall. Maria is a Principal here in Populous. Welcome, Maria.

Maria Knutsson-Hall:
Thank you, Chris.

Christopher Lee:
So, let's get stuck in to the future of stadia technology. I wanted to start by getting to the heart of it, all about the fans. There's only one key stakeholder and their stadium experience can make or break billion-dollar decisions. Meg, you've got a lot of experience working on high profile events, like Super Bowl and Pro Bowl, which attract huge numbers of fans in-venue and watching from home. You're also an American living in Asia, so you have firsthand insight into multiple cultures and different national experiences. My question to you, Meg, is who is the modern fan and what are they looking for in their fan experience?

Meg McWilliam:
Well, Chris, that's really hard to answer because there isn't a simple definition of the modern fan. There are diehards who love one sport and can't stand another. There are generalist fans who are up for anything that's sporting. So, we have to be really careful when we make generalizations about who our fans are, but despite all of their differences, they're looking for experiences that are immersive and unique. Something that can be posted to your socials that generates a little bit of FOMO. Serious fans are also looking to have as much information and analysis available at their fingertips in-venue as they would at home. They're looking for convenience. They're looking for instant gratification and more is more. Fans are looking for a total package, not just a game or a concert, but a total experience.

Christopher Lee:
Meg, as the American in Asia, how do you think there is, or is there a cultural difference to the way our fans approach technology in Hong Kong as opposed to Denver?

Meg McWilliam:
There's definitely a difference in terms of the level of acceptance. I think that here, in Asia, technology evolves more quickly than anywhere else in the world. The big tech companies exist here. The big gaming companies exist here. And when we talk about the crossover between the real space and the virtual space, everyone should be looking at gaming. Everyone should be looking at platforms like Twitch as an indication of what's coming and what's already here and the types of interactions and experiences we need to be considering.
Now, that said, fans from here in Hong Kong, across China, in India and Singapore, lead in the adoption and acceptance of emerging technologies in sports. 71% of Asian fans say they'd be willing to pay more to attend an event that has new technology if it enhanced their experience. Now, this is compared to 40% in North America, 34% in Europe and 33% in Australia *(Capgemini 2020)*. So, not even a half in leading Western nations are interested in fusing technology and their live experience in new and innovative ways. Whereas nearly three-quarters here in Asia are interested and willing to pay for that level of integrated experience.

Christopher Lee:
Jonathan, tell me about the at-home experience. I mean, we've all got amazing setups at home, you know, social media at our fingertips. How do you think that the in-stadium experience stacks up against the home experience?

Jonathan Mallie:
I think, when we think of fans of the next generation, the future of sport, the future of entertainment, we need to focus on millennials, we need to focus on Gen Z. And when millennials and Gen Z (and I've got a few at home, at least Gen Z, that is), they're switching between devices, they're checking out different things all the time. I can barely get my son to focus on the match, right? He'd rather watch the RedZone in the NFL and the information is constantly changing. So that's been a clue for us over the past five years or so. And it's really starting to dovetail nicely now in terms of how we think about the future of stadia design and creating flexible, shared experiences that are different in and around our stadia. How can we begin to break down the norms of what a traditional seating bowl is to provide for experiences that will keep the attention both in-seat and around-venue for those next generations?

Christopher Lee:
I think we all know that fans are really seeking out greater levels of connection and I think greater levels of personalization within the stadium. And I think also beyond the stadium and the stadium experience, all the way back to booking tickets when you decide to go to an event, and the tech possibilities are ultimately endless.
So, I'm interested in hearing your perspectives on stadia and innovations and the way forward. Maria, you led a key role in the design of Tottenham Hotspur Stadium, which is globally recognized, I think, as one of the most innovative and certainly one of the most fan focused designs. You also worked with National Geographic in developing the 'Stadium of the Future'

research and development thought piece. What stadium technologies do you think are driving the hyper-personalized fan experience?

Maria Knutsson-Hall:
I think we're seeing two strands of technology, really, that's going to be very important in tomorrow's stadiums and firstly, it's a sort of micro level. We see wearable tech becoming more and more important. So, anything from something that can make your personalized experience unique, from the goggles to sort of wearables where you can feel, and haptic devices connect you with other people in the stadium, but also perhaps the players or who you're actually there to watch. I also think we see technology that, on a much larger scale, connects you. So, things like VR means that you can do the hybrid virtual/physical world where we can actually get 300 million people under the one roof suddenly. And that's sort of the two sizes, it's either very micro or very macro, which is very exciting.

Christopher Lee:
Maria, do you want to talk about the relationship between the remote audience and the live audience?

Maria Knutsson-Hall:
I mean, I think it's very exciting to the prospect of being able to, no matter where you are in the world, that all the fans can come together and see a live event. Now, just because you're there physically doesn't mean that the experience can be as powerful. I think the hybrid is important because I think we're going to see a lot of pure virtual events in the future. But the idea of, actually, the hybrid version of you see 300 million people under one roof and 60,000 of those are physical, I think that can be very powerful. And the connection between fans, you know, all the Barcelona fans in the world can see that game together, which has essentially never happened in that way before. And for the fans to understand, and perhaps be able to move around where you're actually viewing the live game from virtually can be just tapping into this super personalized experience again, where you can fully choose the way you watch something by enabling that. So, it's exciting.

Christopher Lee:
Jonathan, you've worked with some amazing people in your time around the world, innovators like Dassault Systems, Boeing, Tesla. Here's the trickiest question, where do you think the future of stadium tech is going and how do you think it will enhance venues like never before?

Jonathan Mallie:
Yeah, I mean, similar to some of those software companies that are leveraging visualization, and this goes outside of the industry of building, talking about the automotive industry and aeronautics and the way that those industries have captured visual information and utilize it to leverage their businesses. I think the way that we start to leverage that 3D information inside the match, how that can start to translate, as Maria mentioned, the VR and AR experiences. In-seat three-dimensional experiences that have a relationship to the match at hand, but also another activity happening simultaneously. Some of the tech that we're starting to explore and look at really taps into some of the athletes that are on the pitch or whatever the sport may be, and some of the statistics and the way that their history could begin to pop up in a VR/AR environment while the actual match is occurring in real time. And, so, bridging that gap could start to be some of the elements in the future of stadia design that begin to satisfy the next generation.

Christopher Lee:
But you see it as an augmentation of the experience rather than a replacement?

Jonathan Mallie:
I think it has to be, it really needs to be both. I don't think for a second we should be promoting the replacement of or taking your eyes off of the actual event. I think that, especially in today's

days and times and what we're going through as a world, there should be an interest to be together in person and just have your experience enhanced by technology.

Christopher Lee:
I think that's very pertinent as our respective countries open up in different ways. I had the great pleasure of going to my first football game in over a year and it's phenomenal. I think people desperately want to be together and share experiences communally. And I do think tech is part of that, but I think it's an augmentation and a supplementation to the live event, which I don't think will ever be replaced. So, I think the benefits to fans are clear, and I think as we talk about multi-generational, it's become even more apparent.
Let's talk next about how the business case stacks up. There's different sources, but many are pointing to the smart stadia opportunity being worth something more like $18 billion in the US by 2025, which is about eight and a half billion dollars more than it's worth in 2020. Jonathan, why do you think a tech-savvy, smart stadium is good business? And what do you think the important commercial drivers are?

Jonathan Mallie:
I think the way that we're thinking of tech and the way that our clients, most importantly, in some cases are thinking about tech is that it really is a vehicle for connectivity and that connectivity is what can bring businesses together. So, it's not just the sport that is happening at the moment. It's the way that brands tie in, sponsorship ties in, outdoor experiences connected to the stadium. There's a way to leverage data in order to advance the revenue model, the proforma around a live event. And you know, this is going to be the next 10 years of what we do, is thinking about connected revenue models through technology.
I think it's up to us as architects and designers to bring in the right people, which we traditionally in building over the past decades, don't necessarily do. Technological integrators might come on too late in the game and we need to think about bringing them on much earlier, connecting them with our clients in terms of their business models, their market strategies, what types of fans and demographics they're connecting with, and think about how that not only creates a connected model, but how does that influence the architecture? How should the architecture evolve and be flexible enough to handle cross-business platforms in a single moment?

Christopher Lee:
Meg?

Meg McWilliam:
As part of a real-world example, leveraging what Jonathan was just talking about, the stadium at Kai Tak is part of a much larger precinct, 26 hectares to be exact, including community level sports and retail. So, we've spent a lot of time exploring digital navigation and also how mobile devices can be leveraged to provide things like targeted offers and advertising in-stadium and across the precinct to build synergies. Thinking about these things in the design process allows us to put in the infrastructure to allow it to happen down the road.
Now, imagine this, it's 6:00 PM on a Friday, and you're headed to the stadium for a Blackpink concert and you've got your digital ticket on your mobile device. As you pass by the Pure Plaza retail building, your phone pings you with a notification that a special cross collaboration between H&M and Blackpink just dropped 250 meters away. Would you like navigation guidance? I think moving towards targeted advertising like this not only enhances the fan experience, but can also help generate revenue in new and novel ways. And it's happening now, this isn't future technology and things that can't happen, they are happening and they will continue to happen.

Christopher Lee:
Maria, how do you think this level of tech integration and commercial value for our stakeholders is considered at the very outset of a major design, like for a stadium like Tottenham, and where do you think it fits into the design conversation?

Maria Knutsson-Hall:
I think it's important that we think of this as a complete moving target going forward as well. Tech is evolving at such a speed, much faster than the physical nature of the buildings that we're doing. So, what we need to really design in is flexibility, and that's key for those spaces and key for being able to operate them in a much more efficient way in the future. Many of the technologies that we've talked about, they influence actual operations, as well as the physical spaces. Now, what's tricky, is to always design for flexibility might also mean that you sometimes design the, sort of, ultimate blank canvas. Where I think we, as designers, need to be really clever in how we deal with that. We can still design very bespoke places. And, you know, these designs need to still reflect what the core fan is expecting when they come to the stadium and they need to have character and be authentic to the club or to the sports that they are actually facilitating.

Christopher Lee:
Jonathan?

Jonathan Mallie:
Something to add to what Maria was saying there. In terms of flexibility, you know, in many ways what needs to be there from the outset is really the technology stack that then enables the infrastructure to be there for future plug and play. And some of our clients are going about their building projects and thinking about this. That is always the issue, the speed of technology versus the speed of building design, that they can be in opposite, or a building in general, they can be in opposite directions. So, we have to find ways to keep up with it. And it's about developing and instituting an infrastructure that can allow for future growth and expansion from a technological standpoint.

Christopher Lee:
Okay, so I want to shift slightly. We've picked up on some of the discussions about operations, and I want to have a quick discussion about risk management and security and how this technology influences those areas or can support them in those design aspects.
Meg, you're working on one of the major venues, as we've discussed, in Hong Kong, that can host everything from major international rugby to concerts, to even having exhibitions on the field. With such a diverse range of uses, different operational modes, how do you think stadia tech can support risk management and security?

Meg McWilliam:
From the outset of the project, we've worked really closely with the operations team to understand what they're implementing in their international venues, both front of house and back of house. When we're talking about technology and stadiums and infrastructure, it's not just about the fan experience, but we also need to make sure that the infrastructure that's being incorporated meets the backend operations needs, both at opening and over the long haul of these buildings that sometimes go decades without any major upgrades or improvements. So, when we think about risk management and security, integrating technology allows us to use the internet of things and the many sensors available. Smart surveillance and cameras for counting and tracking people and monitoring capacities to ensure that the operators have all of the information that they need at their fingertips to effectively manage an event, regardless of whether it's sports, entertainment or otherwise.
When we also think about risk management and security, we can look into things like how technology can allow us to decrease entry times, allowing the building to load faster. That means fans are happier, the operator reaps the benefit because they're getting people in safely faster, which means that fans are in the venue for longer. It also has implications for their abilities to redeploy their staff, to cover multiple assignments, potentially reducing staffing costs without compromising safety and security.
So, the technological implications of risk management and security are really twofold. You still absolutely have the staffing solution and you have to have people on the ground, but the more sophisticated technology and monitoring becomes the more effective the people in the control room are going to be at being able to make decisions in the best interest of safety and security,

because they're able to gather even more information about the operations and any incident that may come up, and react to it more promptly and with more information.

Christopher Lee:
And Jonathan, that vast quantity of data we're potentially collecting from smart stadia, from security and surveillance technology, how do you think this sort of data-driven design, a much overused word, influences our future decision-making, in our design processes, how people move, in wayfinding or even upgrades?

Jonathan Mallie:
Yeah, on the one hand you have real-time data collection during a match, during the actual event, but how can we actually leverage that during the design process? And I think one of the ways that we need to be thinking about it is in terms of an internet of things within the building itself, and how data can be utilized to create, again, these hyper-personalized moments or experiences. I think most of us have seen the movie Minority Report, and when Tom Cruise is walking through the mall there, and there's hyper-personalized advertising, right, and it's directed right at them. And that ties into wayfinding and branding and sponsorship opportunities. I think we're on the cusp of that. That's not only a hyper-personalized technological experience, but it's also a visual one. And it's going to create a digitized visual atmosphere that's going to change the look and feel of our buildings in a really exciting way. I think the more that we think about digital content, media lighting as a building material, all driven from the data that's collected from buildings and utilized in the next design or within the moment, that's a future aesthetic, let alone a way of connecting information and people to place.

Christopher Lee:
Meg?

Meg McWilliam:
I think we can also look to organizations like the NFL that have used digital data collection to inform their activations at events like the Draft, using a variety of metrics like check-ins, dwell times and impression counts to reinvent their experiences year in and year out. As venues create and leverage their unique digital and mobile platforms and their own digital fingerprints in everything that they're doing, I think that venues can increasingly tap into this data and these metrics to understand things like which concessions and activations are driving interactions and which are falling a bit short. This can allow them to make adjustments and tailor their offerings and iterate ideas much more quickly to find the best fit. Instead of waiting for the off season to generate new ideas about this concession that's failing, there's an opportunity to implement, much more rapidly, new ideas, test them and have the data to support them moving forward.

Christopher Lee:
Fascinating. I think the whole piece of data feedback and data-driven design and actual live-time amendments to space, whether that's changing the gender of toilets based on demographics on concourses, or opening or closing concessions or bars or restaurants based on real or live-time data, I think is fascinating.
So, I think the technology is constantly evolving. I think the amazing people out there are constantly looking at different ways of using that technology. Who knows where the future will take us, but I think really, the lesson learned from the development of massive projects like Tottenham or Kai Tak, is that it's really about designing for flexibility and having a robust infrastructure that allows future technology to be integrated into our facilities.
Maria, let's change a little bit. You're a senior teaching fellow at the Bartlett School of Architecture here in London, one of the great schools of architecture. I wonder if this features in any of the conversations that you have with your colleagues and future emerging architects. How do you think the design of such large pieces of social infrastructure can be flexible enough to allow for future technology innovations? And how do you think they are changing the architectural dialogue in relation to large-scale social infrastructure?

Maria Knutsson-Hall:
It's very much something that we often discuss with the students. And in fact, my students are just about to start this year with very similar sort of discussions on how technology throughout history has put us in many difficult situations that we're tackling now. If we're looking at our environment, the earth is not necessarily aligned with many of these technological innovations that humans have created, right, and in the future, how do we create these sustainable, very smart machines, or tech essentially, that can help us create a better healthy environment rather than just making it more efficient? That's something that the students are very, very interested in.

And I think from the large-scale stadiums and projects that we're working on, another aspect that we often talk about is that the flexibility is not just in the building itself, but those buildings need to have the flexibility of being able to integrate in their own communities. So, when there are events on the building has one function or face, essentially, and then when there are non-events, these buildings are very much integral to their neighborhoods, to their communities, and they have the ability to constantly flip between modes. Some functions, even within events itself, they can cut down from large scale to smaller scales, maybe potentially live, as you mentioned, via AI, et cetera. But, the importance of actually seeing those as integral social buildings, that everyone has an opportunity to use, I think, is very important for the future generation of architects, and how they are then going to be able to sustainably do that.

Christopher Lee:
Very interesting. Meg, you're working on one of the largest developments, certainly inside Hong Kong. I mean, a phenomenal piece of social infrastructure being designed and built at the moment. How do you think stadium technology presents new opportunities for us to engage in our urban environment?

Meg McWilliam:
Well, I think Maria is exactly right. Stadia don't stand alone. Gone are the days of a massive building in a field of parking. That just doesn't exist anymore. It's not sustainable, and it's not the experience that people are craving. I think that regardless of how the stadium itself physically relates to its surroundings, we always have to be aware of safety and security in these large-scale venues. But, even considering those things, a stadium's dark days (non-event days) don't have to be dark. They can be dim. When you think about newer developments, like The Battery and SunTrust Stadium in Atlanta, there's a master planned community around the stadium that has lived work. And the stadium itself has amenities that are open on non-event days to the public, both in season and in the off season. My favorite being Terrapin Brewing, a great place to stop and have lunch and a pint, if you're ever in the neighborhood.

Stadia also have a really unique capacity to support large-scale learning events. Every spring, back home for me in Denver, Coors Field, our MLB ballpark, hosts a weather and science day that brings hundreds of Metro area students into the ballpark for an educational event that incorporates physics and math and meteorology into unique stadium-sized science experiments. These kinds of events expose future fans to their local teams while providing a unique community benefit. We're seeing this in all sorts of places, health and fitness integration with stadiums, with adventure races going in, around, over and through stadia. High-performance training, giving you access to the facilities that the teams are using to train and recover. I think about working on Superbowl 51, in Minneapolis, in the dark days of winter, and knowing that on Tuesdays and Thursdays, we had a hard stop for our works because the venue opens one night a week to runners, and one night a week to roller skaters on the main concourse, bringing people in, letting them use the building in a non-typical way and engaging them outside of the typical sports environment.

I think our digital interfaces have the potential to blow that out of the water and make it even more poignant. I think about when I travel and when you go halfway around the world, sometimes you're really jet lagged and you're awake at 2:00 AM. How cool would it be for a stadium or arena, let's say in New York. I'm staying down the street from Yankee Stadium and it's 2:00 AM and I'm jet-lagged and I'm awake. How cool to be able to take myself on a self-guided AR tour of Yankee Stadium from the outside, where I can point my phone camera at different parts of the stadium and learn stories about its design, about its construction, about the team, about what's happening where I can't see it. I think there are lots of ways to engage

from both within and on the outside of a stadium that can enrich people's experiences, even if they aren't directly related to the team or the events that the stadium hosts.

Christopher Lee:
Self-guided tours for insomniacs, I love it. Well, we're almost at an end, it's been a great conversation. I think we're all super interested in seeing and understanding the future of stadium technology. Jonathan, quick question to you, what's on your tech radar?

Jonathan Mallie:
Coming off what Meg was just discussing, really thinking about our communities and the surrounding environments around our stadium. I think that this can't be stated enough. How do we really draw in our communities? And, through technology, create even more of a viewing experience, a match time experience between what's happening in the stadium and around the immediate area. Think about equity, inclusiveness, how we can begin to break down the traditional idea of a stadium as a monument and open it up to our environment, our communities. And, so, what does that mean in terms of technology? I think it ties into a lot of what we were speaking about on the talk so far, just relative to visual and data. So, it's our job to bridge those gaps and create opportunities for our communities to be drawn directly to the match, not just during match time, but all the time.

Christopher Lee:
What an interesting discussion. Thanks, guys. Been great hearing your thoughts on the integration of smart technology and the future of smart stadia, and technology in our designs around the world.
I think there's a whole lot more interesting things coming. I think the one thing we know with technology and stadium development is that there will be some phenomenal developments which will come from left-field, which will alter the way we think about live events.
It's been great. Thanks very much. Thanks Jonathan, thanks Maria, and thanks Meg.