Equipped with HTC Vive, a VR head-mounted display, George Kutner prepares for a demo day of immersive environments at SWA Group's Los Angeles office. The Vive, in conjunction with Tilt Brush software and wand controllers, enables 3D sketching on an imported Rhino model of a sculpture for LA's Beverly Wilshire Hotel. In September 2016, SWA innovation lab XL held an internal demo day for the Los Angeles office; designers were invited to test and experience different immersive technologies.

Anxiety, Advocacy and Déjà Vu

Immersive environment technologies are reshaping the way architects communicate with clients.

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Photos
SWA Group

Baby, I can smell the ocean through my laptop. And I can see a wall that I'd like to knock down. Los Angeles real estate agent John Graff is walking me through one of his prestigious listings: a two-storey ocean-view condo in Malibu. Neither of us is there, actually. We're on a virtual reality tour (or Matterport 3D Showcase) on our respective screens, and I don't even have to wear a headset. Graff is of the opinion that 'homes in LA are all expensive enough to warrant the cost of using VR as a selling tool'. For him, the payoff of investing in new technology – $700 for Matterport's 3D walk-through, including drone photos – is not just getting a buyer through the (physical) door, but facilitating a 'warm and fuzzy feeling' when that happens.

'Virtual reality gives us real estate professionals a chance to create a feeling of déjà vu,' says Graff. 'A client can walk through the door and think *wow, I've been here before. This feels like home*.' That's a stark difference from the emotional let-down that might hit a client when reality stacks up against sexy property photos. Graff emphasizes that VR gives his clients a sense of transparency and control. 'It's the 21st century, this technology is there, and it really works,' he says. 'I would be doing my clients a disservice if I didn't include it in the package.'

But hold on to your headsets: does his strategy also apply to the use of immersive environment technologies on large-scale architecture projects, even before anything is actually built? For all the murmurs about the potential of such tools to change the field, there is also anxiety about the costs involved, the learning curve for a new set of skills, and the possible loss of the handshake/hand-drawn relationship between architect and client – and between architect and project. Is failing to use new technologies a disservice to those on the receiving end of architecture?

Technology has a way to go before a 'virtual' tour of a yet-to-be realized building (let alone a yet-to-be realized city-planning project) is indistinguishable from the real thing, but a client or contractor wearing a headset and touring a virtual model is already part of the package provided by some architecture offices. Immersive environment technology is helping designers to identify structural – or other practical – issues early in the design process, potentially saving money and time down the road. None of what I'm describing is the future. It's the present.

The real-time transition towards the use of new technology is satisfying and effective for some; for others, it's intimidating. 'Old-fashioned' ways of aiding a client during the

design process will continue to be method-of-choice in some offices, without earth-shattering ramifications. So what exactly is the disservice? According to some experts in the field – including landscape designers and researchers Anya Domlesky and Emily Schlickman, and designer-cum-technologist Chris Swartout – failure to use immersive environment tools is a failure to bridge communication gaps between designers and those outside the field. New technology can give designers a better grasp of what clients and other stakeholders talk about when they talk about good design.

I've often heard architects compared to psychologists: an architect's practice requires getting to know clients, anticipating their behaviours, and inferring what they 'really want to say' when their words say something else. Immersive environment tools take some of the conjecture out of conversations that are often constructed from shaky somethings like emotion, taste, intent and preference. These technologies can (sometimes literally) bring people closer to a single vision, a shared reference point from which they can jump into the deep end of informed, even data-driven, conversation.

In San Francisco, I meet with Anya Domlesky and Emily Schlickman. They run an innovation lab called XL: Experiments in
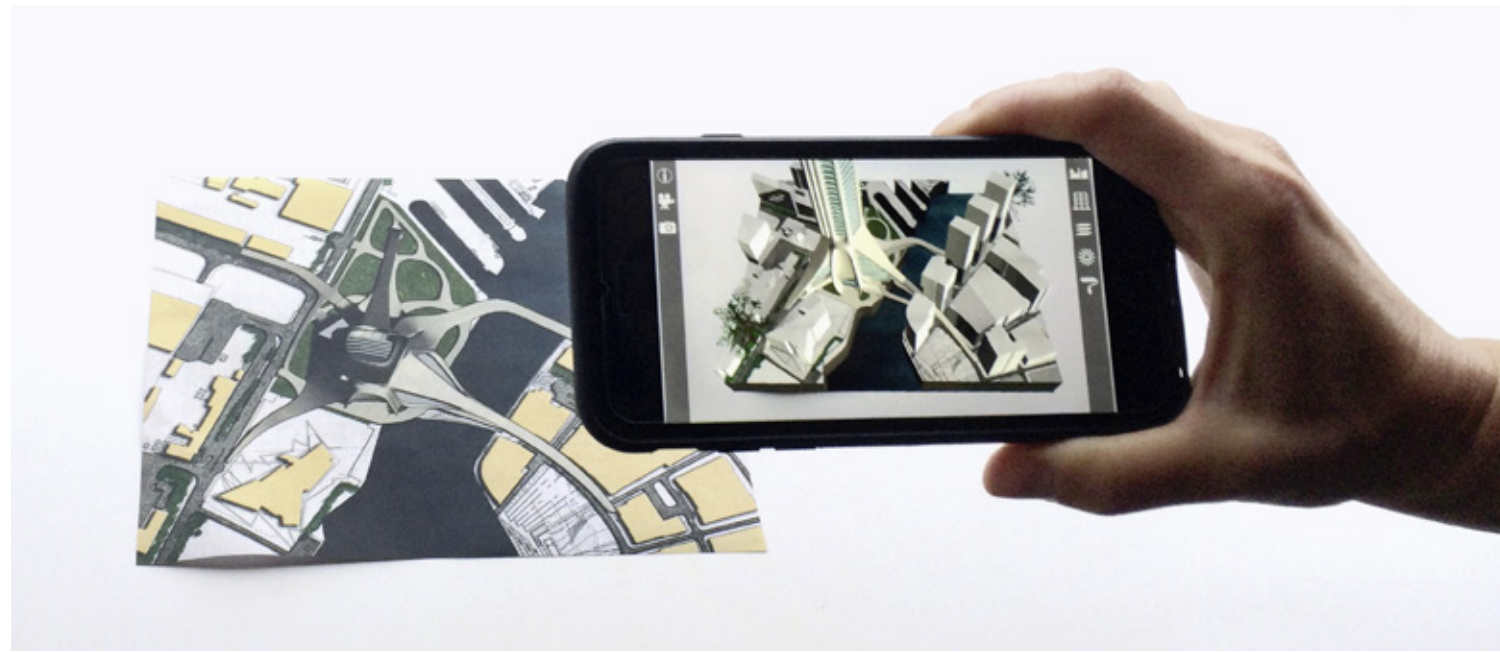
In September 2016, a demo day at SWA Group's Los Angeles office featured a mixed-reality environment. The event – organized by XL, SWA's innovation lab – invited designers to test and experience different immersive technologies. Emily Schlickman and Anya Domlesky are exploring Arki, an app developed by Darf Design. The technology overlays 3D models onto 2D plans that can be viewed on smartphones or tablets loaded with the app. Functions include a sun study and material analysis.

Landscape and Urbanism as part of their work at SWA, an international firm specializing in urban design and landscape architecture. Feeling that coverage and conversation about VR use is always 'celebratory and not critical', Schlickman and Domlesky set out to test the capacity of the technology, as well as its limitations, in planning and landscape work.

Sitting across from me at a long conference table at SWA, Domlesky and Schlickman push a written report of some of their findings at me, as if it's a pack of cigarettes and I'm being interrogated. On the first pages: a small glossary about the differences between, say,
· Virtual Reality (a modelled space, through which a user can move. Think: gaming, real estate, and headsets);
· Mixed Reality (3D models or animations overlaid onto existing conditions. Think: Pokemon Go);
· 360 Video (video format where the camera captures a sphere. Increasingly used in journalism).

Step 1, they tell me: give people the tools to talk about new tools, and make it easy. The first breaking point of immersive environment tools, says Schlickman, is language, not practice. Language, of course, can come in handy to better communication. And when it comes to practice, limits depend on the specific field in which you work. 'When you're dealing with planning, existing infrastructure and modification,' says Domlesky, 'your experience

is quite different than when you're using VR to model a "heroic tower".' The experience is also more problematic. 'Organic material is hard to model convincingly, because geometries are complex and take a lot of processing power. Landscape architects have a tradition of representing works through collage, and a 3D format reveals a disconnect with the artistry of something hand-drawn.'

Reality (not the virtual kind) breaks with expectation when designers zoom out from a building to show an entire block. In this case, the sense of 'transparency and control' can suffer for both designer and client. The technology's just not there yet, but there is a demand for it. 'More and more clients are requesting projects that are designed and presented in VR,' says Schlickman. 'And why wouldn't they?' says Domlesky. 'It sounds amazing if you don't know the technical limitations.' [She laughs.] 'In a certain way, the tech industry is trying to catch up.' The 3D model stuff is great, they tell me, but other immersive environment tools – which afford 'practical change for the way we do site analysis' – are available right now, although underused. 'For companies working on large-scale sites and complex projects in urban areas, 360 video offers a better way to talk to clients,' says Domlesky, to which Schlickman adds: 'It's a tool for public engagement.'

'A tool for advocacy,' Domlesky agrees. 'A city's not going to come out of nowhere and decide to preserve urban architecture. Change

doesn't grow from a bureaucratic arm. But if we can use technology to tell better stories, we can make a better argument for new projects or improvements.'

In real life, though, how do you go from using 360 video to encouraging public engagement or advocacy? 'Let's say you're working on a planning project for the LA River,' says Domlesky. 'With 360 video, you can take people through wet, weedy places that we'd never actually go to on a site visit. When your client and the public have a very detached view of important junctures and connections, it's more difficult to get them on board with your ideas for future change. That's where this technology is so important.'

Domlesky cites the High Line in New York as a good example 'of a project born out of advocacy'. One catalyst for that project, she says, was a series of urban-nature images by fine art photographer Joel Sternfeld. 'Another iteration of that kind of storytelling is 360 video,' she continues. 'What if someone went up to the High Line when it was still all weeds and did a 360 video that showed what this site could become? It could give new life to disused, ill-used, unloved urban spaces. Seeing these places can make people care about them.' I'm reminded of the sense of déjà vu that Graff taps into: the idea is that people are more likely to care for places that are familiar. Schlickman and Domlesky hope that familiarity will also prompt people to save or improve such places, and they encourage the use of new technology

to foster the concern that grows from recognition.

Chris Swartout, a director at M Moser Architects in New York City, has been exploring the field of virtual reality since 1999, as a researcher and a 'designer technologist', as he calls himself. Swartout believes immersive environment tools can be used to encourage clients and users to care, as well as to find out what they already care about and to design around the information discovered. As an example, Swartout points to a current project he's working on: the creation of an integrated media technology façade for a Citibank building in midtown Manhattan. 'Not only are we using VR and mixed reality to showcase the project to the executive committee; we're also having about 200 people wear VR headsets and walk through the space, so that we can capture what they're looking at and use analytical feedback to learn what attracts their gaze. This particular project is for public use, so instead of using verbal comments about what we *think* the public will react to as our point of departure, we're getting the relevant data analytically and adjusting our design accordingly.'

When I ask whether an architect's role isn't to anticipate and even generate an experience based on verbal communication with a client, Swartout counters by saying that the tools he's mentioned improve communication. Swartout believes immersive environment tools help everyone involved articulate their thoughts. 'When you bring clients, contractors, and subcontractors into a space that's somewhat real, you can actually take some of the mystery away from how design is created and allow people who might be intimidated by the process or by various computer programs to join in and comment.' He says that although technology is drastically changing the way we design, 'it will never take away the designer's role of facilitating the discussion and putting a unique perspective on good design options and solutions'.

Like Schlickman and Domlesky, Swartout takes care to define the differences between the various immersive environment tools available. He believes that people equipped with understanding are better able to get past their 'fear of the unknown' and the occasional bouts of self-consciousness that some

experience while wearing headsets. As for the question of whether it's a disservice to clients and users when architects don't take advantage of the tools available, Swartout stresses that a contractor or subcontractor who enters a space in VR long before it's built will also point out potential issues 'long before anything's built,' ultimately minimizing mistakes and unforeseen costs, involving everything from safety to comfort.

'There's a fear that technology is driving design, instead of the other way around,' says Swartout, returning to the world-popular topic of anxiety. 'So it's incumbent upon the field – and the universities that train new architects – to help people understand that we are driving what technology does, not the reverse. We have new tools to realize more advanced, better architecture. That really is a benefit to people who use or are inspired by architecture: it's a benefit to the public, to humanity and to civilization.' —

swagroup.com
mmoser.com

A stakeholder uses a headset to view areas of a proposed urban campus for Santa Clara County offices in San Jose, CA. At the engagement event, which took place in January 2017, county project managers, employees and facilities managers were offered an immersive experience of four areas of the proposed design. Organizers were XL, SWA's innovation lab, and SWA's San Francisco office. The team used several iPhones loaded with Scope, an app developed by IrisVR, to run spherical panoramas that operated in Google Cardboard viewers.