

The crazy-cool of building technology

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Portland firms are tapping into technology to design, build and manage projects — one tweet and app at a time. (Photo illustration by Sam Tenney/DJC)

Picture this: Within the next 12 to 18 months, artificial intelligence will have completely taken over the building industry.

Power tools formerly used in construction will be replaced by what will appear to a layperson to be lightsabers. These lightsabers will be wielded by androids, each capable of doing the work of 1,000 men. Computer algorithms will be advanced enough to make deals between real estate

moguls without the companies having to bother checking that they got the best possible deal. While the computers are in sleep mode, their dreams will create architectural renderings, effortlessly solving every problem that plagues mankind.

None of that is true, of course. However, technology has and will continue to dramatically change the world of building – from the way structures are created, sold and maintained, to how social media is used to attract top employees.

“There’s not any downside to the technology advances that have gone on during my 30-plus years of building buildings,” said Dan Kavanaugh, vice president and general manager at **Turner Construction**. “Every ounce of it has been to our benefit.”

THE CUTTING EDGE

With computers, smartphones and tablets being ubiquitous in today’s world, it is easy to forget that they can be used for much more important things than checking Facebook.

“You can’t do anything unless you’re set up with a computer, smartphone and iPad,” Kavanaugh said. “You have to have all of those tools these days. There’s no way around it. You can no longer be without any of that stuff. What we have at our fingertips is so far beyond what we had 15 years ago.”

Those devices have dramatically improved communication in the construction industry.

“Communication is instantaneous,” Kavanaugh said. “Our ability to communicate has just gone through the roof as to how we can communicate about the processes of building a building. It’s becoming a paperless process to a fair extent.”

Social media is another ubiquitous technology, but it is vastly important.

“Social media is really relevant,” said Susanne Orton, vice president of marketing and corporate communications at **Harsch Investment Properties** and the chair of the social media committee for Portland chapter of **Construction Real Estate Women** (CREW). “We use it a lot in supporting our tenants. We use it a lot in supporting our events. It’s a way to make connections. For example, LinkedIn is a great resource to provide thought leadership and connect industry leaders.”

Being on the cutting edge of technology has become essential not only to doing business, but also for companies to convince the most talented people to work for them.

"Technology helps us recruit talented employees and it helps us retain top talent," said Eddy Wagoner, chief information officer for JLL Americas. "I don't think people always felt real estate was cutting edge. But when our clients are cutting edge, that means we have to be right there with them."

COMPUTERS, SOFTWARE AND DRONES

Kavanaugh believes one of the most important technological advances in construction is Building Information Modeling (BIM), which utilizes software to model buildings.

"BIM represents a whole category of software," Kavanaugh said. "It's a whole movement in the construction and design industry. You're basically using the computer to model buildings. It goes through the entire building and models it so that we can work through how the building goes together. We can avoid conflicts that we might not otherwise realize. We can see a myriad of things, like if a beam or a footing conflicts with underground utilities.

"It's a very impactful transformation in the construction industry. It ties together everybody from the developer conceiving their vision of the building, to the architect who is designing it, to us in construction and the subcontractors who are building it. Everyone is using BIM these days."

While a project is being built, drones have provided an entirely new avenue for marketing.

"The drone technology is really helpful because during construction you can show actual views from the point in the sky where your glass will be while the building is constructed," said Vanessa Sturgeon, president and CEO of **TMT Development**. "People won't have to guess what their views will be like; they'll know. It's a huge sale factor."

Once a structure is built, companies have the ability to control maintenance systems with computers.

"Now, all of your maintenance systems are online," Sturgeon said. "If someone has an issue with their air conditioning, my engineer can log in and turn that on from home. We can get problems dealt with in real time."

THE BOTTOM LINE

As interesting as technology can be on an academic level, companies would not use it unless it benefited them financially.

Sturgeon said that handling emergency maintenance issues with computers can save huge amounts of money, while also improving customer service.

"With something like a water issue, every minute makes a difference," Sturgeon said. "You can get that system under control before it becomes a massive damage problem. And those solid customer service experiences drop down to the bottom line."

Businesses are able to use the digital age to promote transparency and maintain the faith of the public.

"Everything is available on your iPhone," Orton said. "When something comes out in media, whether it's social media, whether it's on your website, whether it's a broker flyer, the facts are available for anyone to check. That's really been a transformative moment for us in the real estate public relations field. It's a huge deal.

"The life of a Tweet is about an hour. And we're constantly having to generate content. But because of the nature of social media and because of the nature of the digital space that we live in, the content has to be accurate. Everything has to be transparent. If you put something out there that's not transparent, someone will find out and you'll lose your credibility."

Technology has not necessarily made building a structure faster, but it has improved the quality of what is being built.

"I don't know that we necessarily build faster," Kavanaugh said. "At times I know we do and at other times, not really. There are a lot of things that impact a schedule of whether we build faster.

"But, our buildings have become a fair amount more complex. When I first started, we built more straight forward

buildings. These days, buildings are sophisticated pieces of construction and design. Technology has certainly enhanced our ability to do things in a more communicative and collaborative way that produces more quality.”

It is safe to say that there will not be androids working with lightsabers and computers selling property with algorithms while designing buildings in their sleep anytime soon. However, the advances in technology over the coming decades are certain to be astounding.

“We’re in our infancy with technology,” Kavanaugh said. “Where technology goes in another 30 years, it will be just amazing. Where it’s come in my 30 years of work has been crazy-cool. It will be tenfold cooler in the next 30 years.”

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