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Lendlease launches 'digital twins' platform

Exclusive

Yolanda Redrup

Construction giant Lendlease is out to prove companies can innovate just as well as start-ups, launching a "digital twins" platform it believes can revolutionise the building industry.

Under the leadership of former General Electric chief digital officer and Cisco Systems vice-president Bill Ruh, Lendlease has developed a platform called Podium enabling it to build a digital version of its buildings before they are constructed.

The concept of a digital twin – a digital representation of every asset of a

building – has been discussed in the industry for a few years and is essentially the next generation of building information modelling.

The Podium platform lets Lendlease model design any material changes and simulate how those decisions affect things such as wind conditions around the building or how a fire might spread. It is also designed to monitor a building after construction, taking millions of data points into consideration to better optimise space, make it more sustainable and detect in advance when equipment such as an elevator or automatic door might need servicing.

In his first interview since taking on the role at Lendlease in January last year, Mr Ruh told *The Australian Financial Review* digital twins would be the greatest innovation in the construction

sector in 100 years. "The ability to go and do this is like the change you saw when Amazon shifted the whole retail market. Everyone who didn't [embrace e-commerce] 10 years ago is now crying in their beers because they're so far behind," he said.

When Mr Ruh took on the role of Lendlease Digital chief executive, the construction giant employed only half a dozen people in digital roles. That has now increased to 70 and he is pushing CEO Steve McCann for more people and a bigger budget. Mr Ruh said his goal for the platform was to improve the productivity, or savings, on new Lendlease projects by up to 20 per cent.

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Lendlease Digital chief executive Bill Ruh says big businesses have advantages when it comes to innovation.

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"This is one of the few industries in the last 50 years that hasn't had productivity gains ... it's actually down 20 per cent," he said.

"The idea with a digital twin is that with software we can automate a lot of the design with complete fidelity ... using artificial intelligence.

"At GE, we would build the aircraft digitally before it was built physically.

As a result, they built fantastic products ... because it lets you work out all the issues before you go to the physical world."

One example of how this would change construction is the Melbourne suburb of Docklands, which suffers from terrible wind tunnels. This would have been predicted and avoided with a platform such as Podium.

"Previously, the vast bulk of decisions made throughout the property's life cycle have been made in isolation of each other," Mr Ruh said.

"As a result of digitisation, everything from the orientation of the sun in winter, through to the train timetable

for the station closest to the site, the way in which employees prefer to occupy space, down to the type of bolt used in floor joists will be input into a digital twin and holistic decisions made before the first sod is turned on the project."

Lendlease has \$112 billion of buildings in its pipeline.

The digital property life cycle platform will be able to be used not just for these developments but also for "brownfield" buildings that have already been built.

For now, Lendlease will concentrate on using the technology on its own projects to help its clients, but Mr Ruh did not rule out the possibility of commercialising Podium for use by other organisations in the years ahead.

In addition to hiring his own team to build the Podium platform, Lendlease has worked with partners such as Google Cloud to bring it to life. The platform will go live today.

In May it was announced that Lendlease had helped form a global digital twin consortium alongside Microsoft, Dell, Ansys and the Object Management Group. Mr Ruh chairs the group, which is designed to create global standards for the use of the emerging technology.

Mr Ruh acknowledged there were other players also investing in this technology, including start-ups, but he believed that with the right attitudes, there was no reason why big enterprises could not innovate just as well. "For a long time there's been this belief that start-ups always win ... but big companies have their own advantages. Start-ups have speed but no scale," he said.

"The mistake digital [teams] make in big companies is they come in and pooh-pooh the culture and believe they need to be separate. But we figured out how to fit within the culture ... and also get them to understand how we do things."