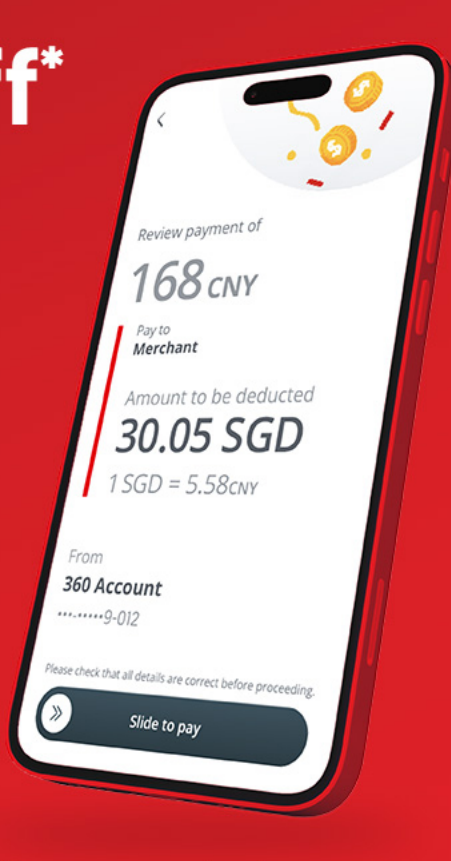


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For now, and beyond

Robot developed with S'pore partners helps Kajima stay on track for regional HQ's completion



Kajima's concrete finishing robot can reduce labour costs by up to 30 per cent. PHOTO: KAJIMA DEVELOPMENT

Yong Li Xuan

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SINGAPORE - With the help of a concrete finishing robot, Japanese construction firm Kajima Corp said its regional headquarters in Changi is on target to be completed in the first quarter of next year, despite manpower shortages amid the Covid-19 pandemic.

The robot, which smooths and levels concrete floors, can reduce labour costs by up to 30 per cent and improve quality and safety in future projects based on data collected during the construction, Kajima said on Friday (June 17).

Unlike other concrete finishing robots, Kajima said at the topping-out ceremony for the building that its version can determine the hardness and unevenness of concrete.

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When completed, the nearly \$100 million regional headquarters, called the Kajima Lab for Global Engineering, Architecture and Real Estate (The Gear), will provide room for greater collaboration with local companies, it said.

The third floor of The Gear will be open to researchers from local start-ups and small and medium-sized enterprises (SMEs) partnered with Kajima.

The Gear will have 18 test-bed zones, equipped with sensors to study occupant behaviour, and five labs.

The concrete finishing robot used in the building's construction, for instance, was developed by Kajima in partnership with JTC Corporation, Nanyang Technological University, Nanyang Polytechnic and local SME Mega Plus Technology.

On the location of The Gear at Changi Business Park, JTC assistant chief executive officer for engineering and operations Heah Soon Poh said: "It will strengthen the estate's ecosystem and help to catalyse new innovations and partnerships between companies."

Minister of State for Trade and Industry Low Yen Ling, who was the guest of honour at the launch, said she was impressed by the Integrated Digital Delivery (IDD) which Kajima developed to improve pre-construction planning and efficiency.

The company's IDD framework uses robots to reduce manpower needed and digitalisation of facilities management to merge different services into a single platform online.

Ms Low urged companies to step up transformation efforts to develop a more resilient and future-ready built environment sector.

"Today, the construction industry is on a steady path to recovery," she said, adding that the Building and Construction Authority (BCA) estimates the total value of construction contracts to be between \$27 billion and \$32 billion this year, close to pre-pandemic levels.

But she cautioned that Singapore remains exposed to supply chain risks, inflationary pressures and border restrictions.

Minister of State for Trade and Industry Low Yen Ling (in blue) viewing the concrete finishing robot at the event on June 17. PHOTO: KAJIMA DEVELOPMENT

During the event, Ms Low, or rather her avatar, took a tour around The Gear Metaverse, a digital recreation of the Asia-Pacific headquarters, that was unveiled at the ceremony.

Kajima Development head of innovation Luke Wu said: "Over the last two years, we've had a shared Zoom experience."

He added: "While Zoom did much good for us, proper, meaningful engagement was something that it struggled to address, especially in groups."

The Gear Metaverse will make it easier for users to connect with one another when working remotely, he said.

Staff and global partners can enter the virtual building as avatars through a mobile app or virtual reality programme to collaborate, starting from next week.

Screengrab of The Gear Metaverse, a digital re-creation of The GEAR building, which was launched on June 17, 2022. PHOTO: KAJIMA DEVELOPMENT PHOTO: KAJIMA DEVELOPMENT

Kajima, one of Japan's biggest construction companies, said it currently employs about 160 Singaporeans locally. The company has been in Singapore since the 1950s. Some of the recent projects it has been involved in include Resorts World Sentosa and Marina Bay Financial Centre.

When The Gear is ready, the company will look to hire more local tech talent in the built environment sector.

Apart from that, the venture arm of Kajima wants to invest in more local start-ups too.

Singapore-based construction management platform Hubble raised \$11.35 million with the help of Kajima Ventures and other investors in February.

For now, researchers from Kajima and JTC are working together to improve the quality and productivity of IDD and robots in construction.

In a virtual address delivered in The Gear Metaverse, Kajima Corp executive vice-president Keisuke Koshijima said: "We envision The Gear as a home for innovators - from both in and around Kajima - to collaborate and apply their cutting-edge solutions in local contexts."

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