

Predictive system may ease lift failure woes; will be used in some towns next year

November 26, 2016



A man reading a Straits Times article pasted at the lift lobby of Blk 317 Ang Mo Kio Street 31, after an Indonesian maid was trapped by a faulty lift (left) on March 7, 2016. PHOTO: ST FILE

It was tested on lifts in several town councils and successfully predicted two breakdowns

Imagine a system which can predict which lift will fail, and when. This would help town councils perform preventive maintenance before a problem breaks out, said a spokesman for Surbana Jurong (SJ).

Several town councils are hoping to achieve this by tying up with the infrastructure consultancy, which monitors more than 24,000 lifts in HDB estates, and which believes it may just have this predictive system.

The consultancy said it worked with multiple town councils to place sensors in 720 lifts, of varying models and ages, in HDB blocks. The sensors detected and recorded lift speed, acceleration and deceleration, and jerky movements. SJ declined to name the town councils.

After collecting the data, SJ put it through an algorithm, and predicted the specific days for two lift breakdowns, two weeks before they actually happened. SJ also predicted three other breakdowns but those lifts underwent scheduled maintenance beforehand.

The consultancy said it can do even better. As more data is collected over time, the algorithm will improve, allowing breakdowns to be predicted even earlier, said a spokesman.

Smart City in a Box

Besides predicting lift breakdowns, Surbana Jurong's Smart City in a Box includes other digital applications such as:

ENERGY MANAGEMENT

This app gathers and analyses data on energy usage, and provides advice on how to reduce energy use.

SMART LIGHTING

Sensors and remotely controlled lighting allow lights to be dimmed if no one is around, saving energy.

SMART CCTV

CCTV footage can be automatically analysed for various purposes, such as counting people, detecting intruders, spotting unattended objects and recognising vehicle plates.

FIRE AND SMOKE DETECTION

Fire and smoke can be detected through automatic analysis of camera footage.

PUBLIC FEEDBACK

A mobile app allows residents to take photographs of municipal issues and submit feedback easily.

SJ declined to say how much its predictive system will cost.

Lift maintenance came under the spotlight recently after a series of incidents, including a case where a woman's hand was severed by lift doors in October last year. In March this year, a lift in Ang Mo Kio abruptly shot up 17 storeys because the brakes were not functioning well.

The Government announced in September that it will set aside \$450 million to modernise public housing lifts. Under the new Lift Enhancement Programme, town councils will get 90 per cent funding to install safety features recommended by the Building and Construction Authority after the lift incidents.

SJ group chief executive officer Wong Heang Fine said the lift-monitoring system, along with other solutions such as smart lighting, will be rolled out in some town councils from next year.

The lift system is one of several digital solutions SJ offers to building owners and town councils on a platform it calls "Smart City in a Box". The platform, comprising different customisable applications (apps), was launched in July.

There are 14 apps available under the first batch of solutions, with another 13 currently under trial. The apps can track public lighting, water tanks and pumps, and electricity supply.

The platform can be used in managing a building or a town. SJ said it is versatile enough to suit mayors and town councils, and condominium management committees.

It is also possible to automate responses to a problem. If a light goes out somewhere, for instance, an alert can be sent automatically to an engineer to fix it.

The consultancy signed a memorandum of understanding with Microsoft yesterday and will use the tech giant's Azure cloud-computing platform to improve "Smart City in a Box".

SJ taps Azure, which comprises a network of Microsoft-managed data centres, to deliver the apps. By using Azure, users do not have to invest in powerful computing hardware of their own.

Microsoft's technology will also be used to improve the apps. For instance, its predictive analytics were used to improve SJ's prediction of lift breakdowns.

Microsoft also has the video analytics capability to automatically detect a passenger who faints in a lift, using CCTV footage.

SJ's background in urban planning gives it an advantage over technology firms in developing the apps, said Mr Wong. The consultancy was formed by the merger of Surbana International Consultants - previously part of the HDB - and Jurong International Holdings, part of government industrial developer JTC Corporation.

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