

Hi-tech help to prevent leakage at estates

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The Housing Department is expanding its use of cheaper and more effective technology to protect old buildings from heavy rain, saving the city millions of dollars.

The department has successfully used a multi-pulse sequencing (MPS) system to stop water from leaking into underground concrete walls of old buildings and causing structural damage.

The system uses an electric charge to draw water away from the concrete and into the surrounding soil, using metal wires and rods installed in the wall and ground. The technology can only be used for buildings with underground levels.

Earlier this year, the department used the MPS system for the first time in lower levels at Oi Man Estate in Ho Man Tin.

Previously, heavy rainstorms resulted in water leaking into the

walls of three underground lower levels. Water flooded one area, causing serious damage and a concrete ceiling to crumble.

Department officials said the MPS system prevented further leakage.

"After the black rainstorm [last Thursday], we're happy to tell you that there's no water in the room," said Pang Hon-wah, a manager at the Housing Department. The use of the MPS system had so far withstood one black rainstorm and six amber warnings, the department said.

The system will be extended to cover a total of 51 empty lower levels at Oi Man Estate, costing up to HK\$2 million.

Pang said MPS was a better option because of its low cost and durability, and the steel in concrete would be less prone to rust.

"If we were to instead apply a waterproof membrane at the five estates, it would cost HK\$10 million."

Estates where one side faces an

open area and the other faces soil are suitable for the MPS system.

Bosco Au Lap-kei, senior structural engineer, said: "MPS can only be applied to estates with underground levels. For above-ground buildings, we need to use grouting, drainage or waterproof membrane to fix any leaks."

"We did not apply MPS previously as we did not want to be guinea pigs, but with successful instalments at the MTR and at IFC, I'm very confident of successfully installing the MPS system in estates."

Installing MPS is part of the department's structural investigation programme, which includes annual inspections of up to four estates that are more than 40 years old. The department plans to introduce the system to Lei Muk Shue (II) Estate and Lai King Estate at Kwai Chung.

The MPS system is used in other countries and was first used in Hong Kong as early as 2000.



Pang Hon-wah explains how a multi-pulse sequencing system is used to stop water leaking into buildings at Oi Man Estate, Ho Man Tin. Photo: KY Cheng

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