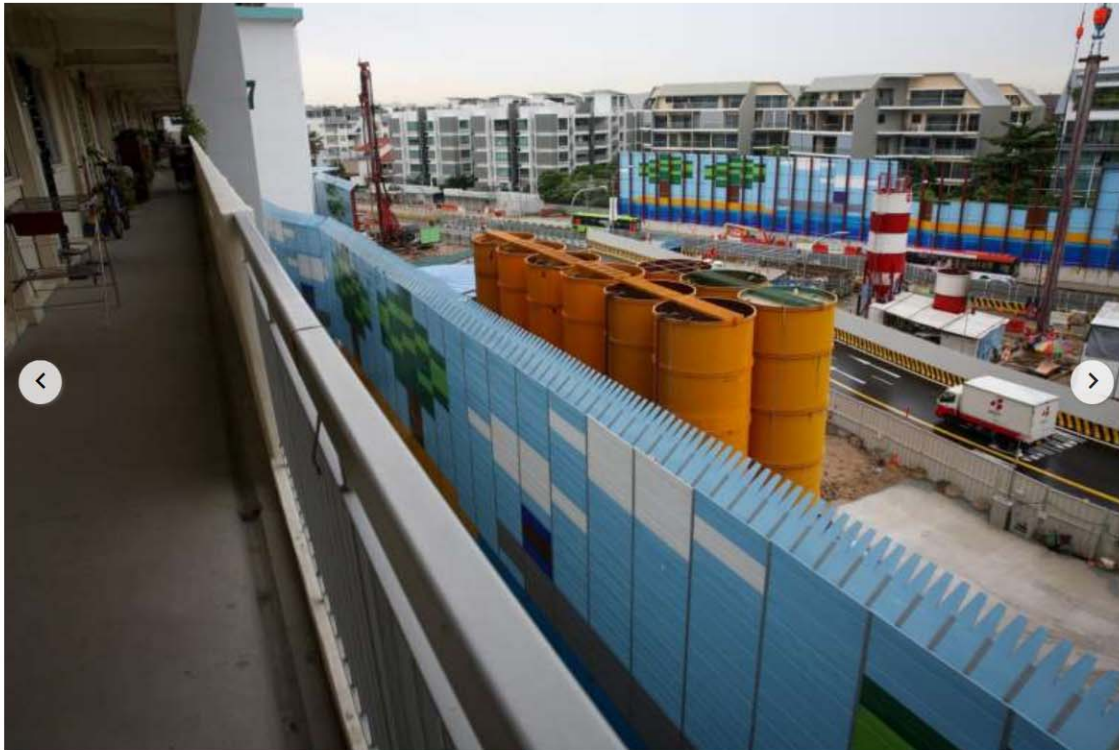


## LTA-NUS noise barriers wins award for reducing noise from construction sites by up to 30%



1 of 6 LTA's new jagged, flat-tipped noise barriers design have won a merit award at the upcoming MND R and D awards. ST PHOTO: ONG WEE JIN

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SINGAPORE - Studying an owl's silent flight led to an innovation that helped reduce noise pollution for some residents living near the Land Transport Authority's (LTA) construction sites along the upcoming Thomson-East Coast Line.

The new noise barrier design, which has been implemented at the East Coast stretch of the Thomson-East Coast Line since September last year, reduces loudness of the noise by up to 30 per cent.

There are also plans to use the new design at future work sites for public transport infrastructure.

The innovation clinched a merit award at the Minister for National Development's Research & Development Award, given out by National Development Minister Lawrence Wong on Thursday morning (June 29).

Associate Professors Lee Heow Pueh and Lim Kian Meng from the National University of Singapore's department of mechanical engineering worked with LTA on this project, which spanned 1-1/2 years.

Taking inspiration from the comb-like structures along the leading edge of an owl's wings responsible for the bird's silent flight, the professors experimented with a sharp-tip design, which also reduced noise but was not aesthetically pleasing.

The team then made the tips flat, and found that this design led to a further reduction in noise.

Mr Alvin Soong, deputy director of safety at LTA, said: "As LTA continues to expand our rail network, we have been looking at better and more innovative ways to reduce the impact on nearby stakeholders.

"We are constantly looking for better noise solutions that could be readily implemented at a marginal cost."

Both the older cantilever design and the new jagged-edge version are 12m in height, but the new design provides more interference to cancel out noise from construction work, such as from boring machines and excavators.

"The basic idea is that the serrated edge, or the flat-tip jagged edge, will enhance the destructive interference of the noise when the noise flows over the edge of the barrier," said Prof Lee, 56, who led the study.

The team's data found that the jagged edge barriers decreased sound pressure levels by up to 5dbA, when measured from different storeys of a nearby housing estate.

With the new design, more residents will benefit from the noise reduction. Measurements showed that noise reduction could be experienced up to 36m high, or about 12 storeys of a HDB flat.

LTA plans to implement the new design at all its future work sites, such as the Circle Line 6, which will start later this year (2017), and the North South Corridor expressway.

However, many Marine Terrace residents The Straits Times spoke with said the noise from the construction of the Thomson-East Coast Line near their block was still loud.

The barriers with the new design that can reduce noise pollution were installed at the beginning of construction works.

Mr Azin Taj Mohammed, 67, a former security guard, said: "Even after closing the doors and windows, the noise can still be heard, and we cannot watch TV or sleep well at night."

The noise barriers are about 10m from the Marine Terrace block where he lives.