

New noise-cancelling windows can reduce outdoor sounds even when open

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Noise-cancelling windows – which reduce outdoor sounds even if open – have been developed by scientists.

Using the technology applied in noise-cancelling headphones, a prototype device which attaches to windows has been shown to halve the level of outdoor noise, even when the windows are wide open.

Using a small microphone, outside noise is detected and a matching “anti-noise” is generated to cancel the original sound out.

The noise is not completely removed, but a softer, less discernible sound is heard inside a room equipped with the technology.

Noise from roads, planes, trains and construction work can be quietened using the device developed by researchers at Nanyang Technological University in

Singapore, in connection with the University of Southampton and Tottori University in Japan.

The device is designed to be placed into a grid-like formation consisting of several units.

They are mounted onto window grilles and researchers say it could reduce up to 50% of noise.

“Compared to noise-cancellation headphones, what we have achieved is far more technically challenging as we needed to control the noise in a large open area, instead of just around the ear,” said Gan Woon Seng, the director of Nanyang Technological University’s centre for infocomm technology.

“Our innovation not only computes the right amount and type of ‘anti-noise’ to emit, but also does it faster than the detected noise can reach inside the building,” he added.

The energy needed to power the device is similar to that needed for a small portable Bluetooth speaker – around eight watts.

The device was tested using a soundproof chamber in a room with windows and doors, resembling a typical room in a home.

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