

Guidelines aim to reduce collisions between birds and buildings

NParks' guidelines include measures such as use of decals to enhance visibility of glass

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Used to taking their cues from the stars, migratory birds flying through urban areas at night can get confused by other sources of light, such as those from buildings, and end up colliding into them.

In a 2017 study, bird scientists and researchers from institutions such as Nature Society (Singapore) and the National University of Singapore (NUS) found that 237 migratory birds crashed into buildings between 1998 and 2016. Of these, 157, or about 66 per cent, died.

But Singapore's concrete jungle could soon become more conducive for these feathered travellers, now that the National Parks Board (NParks) has developed a set of guidelines.

Published on NParks' website last month, it spans three broad categories – measures that can be implemented on building facades, in indoor areas and in the development of monitoring programmes.

For example, the guidelines recommend that building owners add visible structural details – such as columns, balconies and sunshades – to windows and glass surfaces.

Said Mr Ryan Lee, group director

of NParks' National Biodiversity Centre: "This will help to hide glass facades from the birds' view and minimise reflections, preventing birds from flying into buildings."

Using decals and stickers or treated glass surfaces can also enhance the visibility of glass to birds or reduce light transmission, the guidelines say.

Examples of treated surfaces include glass with ultraviolet-reflecting patterns, ceramic patterns, or those made of low-reflectance materials, like frosted glass.

Mr Lee said night-migrating birds rely heavily on natural cues, such as starlight, to navigate.

"Since they are inclined to fly towards point sources of light, bright city lights and spill lights that escape from buildings can disorientate them," he told *The Straits Times*.

The increased use of glass in modern architecture could also contribute to bird and building collisions, he said.

"The glass facade reflects the sky and surrounding greenery, creating an illusion of a continuous natural environment, causing the birds to fly into buildings," he added.

So, on interior design elements, the guidelines suggest the use of blinds, sunshades and hanging artwork to minimise reflections, decrease the transparency of glass



Frosted glass film and decals applied to the windows of the Hands-On House at HortPark. This minimises reflection and reduces light transmission, which will, in turn, prevent birds from flying into the windows. A 2017 study found 237 migratory birds crashed into buildings here between 1998 and 2016. ST PHOTO: KELVIN CHNG

and enhance the building's appearance as solid structures to birds.

Commercial buildings can use technology, such as automatically controlled light fixtures, to reduce the amount of indoor lighting at night too, said Mr Lee.

"Lastly, building managers can devise a programme to monitor collisions and identify potential hot spots around their buildings before taking any action to modify existing buildings.

"They can then apply low-cost measures, such as adding non-reflective tinted screens and applying decals on glass surfaces, if the building is found to be a collision hot spot."

NParks said on its website that these guidelines are non-prescriptive – which means they are not mandatory – and are meant to pro-

vide information on how the built environment can be more bird-friendly.

The 2017 study found that 73 per cent of all reported collisions in Singapore took place in a number of hot spots – the Central Business District, a few residential areas on the fringes of the Central Catchment Nature Reserve and places with heavy industrial use on the edge of the Western Catchment area.

One of the authors of the study, Mr David Tan, who was formerly from NUS, said the set of guidelines is "very, very good".

"It covers most of the salient issues, such as the need for glass treatment and mitigating indoor light pollution," he said. "There is some mention of changing lighting strategies so that's a very good start."

Mr Tan, now pursuing a doctorate in ornithology (the study of birds) at the University of New Mexico in the United States, noted that scientific data suggests that light pollution attracts birds towards the source.

He said: "So it is likely that having brightly lit buildings will increase the chance of a collision by drawing a bird closer to the building."

Overall, though, the guidelines are a good first step, added Mr Tan.

Mr Lee said NParks will review the guidelines to ensure they remain updated and effective.

Ms Joelle Chen, sustainability director at Lendlease Singapore, said, in response to queries, that the property developer is committed to implementing innovative sustainability initiatives that can transform the built industry.

"Bird-safe guidelines from NParks are fairly new and we will consider best practices and interventions to improve biodiversity in urban areas, and improve the resilience of our built environment," she said.

"These include planting fruiting trees that support bird habitats. We will also seek to further integrate international best practices in future developments."

In Singapore, Lendlease manages malls such as Jem, 313@somerset and Parkway Parade.

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• More details on bird-safe building guidelines can be found at <https://www.nparks.gov.sg/biodiversity/urban-biodiversity/bird-safe-building-guidelines>