

sourceable.net

Solving the "Birds vs. Buildings" Dilemma

Justin McGar

Birds by the hundreds of millions are killed yearly by colliding with glass in the US alone. Birds cannot see glass, striking it as they fly toward reflections of clouds, sky and vegetation or as they approach real habitat seen through [glass](#).

Birds collide with glass on structures of every size, from shacks to skyscrapers, in urban, suburban and rural areas, and it is a worldwide problem.

The Fatal Light Awareness Programme (FLAP), an NGO in Canada working to prevent such bird deaths, has identified thousands of registered buildings in Toronto with the potential to kill. In New York, about 90,000 birds lose their lives to such collisions every year.

Just one [tall building](#) in Chicago caused an average of about 1,480 known deaths during migration season, according to one report.

In Australia in one recent year, glass killed about 30 swift parrots, of which only 2,000 remain worldwide.

In India, ornithologists are tabulating data on the number of avian deaths due to a changing skyline. Pune, in particular, is increasingly speckled with all steel-and-glass buildings, confusing the city's vast avian population.

In Mumbai, meanwhile, Dr Pramod Patil, environmentalist and advocacy officer of the Bombay Natural History Society (BNHS) has observed that the incidence of such collisions are more evident in the city's periphery, which is transitioning from green belt to high-rise building zones.

Between September last year and April of this year, the peak migratory period, at least 20 birds crashed into buildings in Singapore's central region, according to preliminary results of a study by that country's Nature Society.

To understand the extent of such migratory bird collisions in

Singapore, the Bird Group has started a five-year survey to document these accidents.

The survey aims to identify bird species which are prone to crashing, where and when the accidents happen, and aspects of the urban [landscape](#) that may prove hazardous.

"The bird families most vulnerable are predominantly nocturnal migrants," said Albert Low, who authored the report. "These birds are colliding with lighted structures owing to the multitude of high-rise, intensely-lit housing and office blocks, which are a feature of Singapore's skyline."

The lights, he said, can distract the birds from cues they receive from the stars and moon. Other potential causes may be that they are attracted to the light or that they might circle the buildings until they become exhausted.

NUS Department of Biological Sciences research assistant David Tan added that the glass on the buildings may be so reflective that the reflections appear to be the sky.

He said one way to reduce such accidents is to put decals or louvers on the windows to make the buildings more visible to

birds.

In 2011, New York instigated a building light dimming regime after dusk. Today, almost 90 per cent of buildings in the city have signed up to mitigate confusing the birds' navigation systems. During the migratory seasons in spring and autumn, there is a total black-out after midnight to help the situation.

The governments of the US and Canada are collaborating with the construction industry to evolve designs that can curb these collisions. The city of Calgary in Canada, for example, has bird-friendly, voluntary guidelines for buildings, including using blinds to make clear glass more opaque or angling glass downward so it does not reflect the sky.

Christine Sheppard, collisions program manager for the American Bird Conservancy, has been working with colleagues to research patterns that, when applied to glass, can prevent collisions.

"Birds don't see glass," she said. "But neither do people. However, people understand context; they understand window frames and they understand right angles."

Sheppard and her team have constructed a 30-foot blacked-out tunnel. The birds are put in at one end and at the other are two pieces of glass side by side; one is plain and the other is scored with a pattern. A mist net keeps the birds from being injured.

So what patterns deter the birds best?

“This all boils down to spacing,” said Sheppard. “We have found that the little birds we’re testing, the warblers and other passerines, that are the most common victims of bird collisions, will not fly through a horizontal slot that is two inches or smaller and they won’t fly through a vertical slot that’s four inches or smaller.”

“When they see a large space on a window, they don’t consider that there’s any barrier. But if they see lines that are providing the spacing, they’ll fly around it instead of trying to fly through it.”

There are already some patterned glass solutions on the market. Feather Friendly film, for example, has small dots evenly spaced throughout so that the birds will know the glass is there and avoid collision. It is a product that can easily be

used as a [retrofit](#) solution.



Feather Friendly window film

CollidEscape provides another engineered film which is a solid colour on the exterior but transparent from the interior and appears opaque to birds' eyes. It also insulates the glass so it doesn't heat up, thus reducing the need for air conditioning.

One challenge, however, is availability. The other, more pressing for the modern day architect is the effect on window aesthetics.

Published on 16 July 2015

At Sourceable his particular focus is on "what makes buildings work?" From structural materials to the latest energy efficiency technologies, from future trends to the latest research, he shares new ...