

INFORMATION PAPER



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Planning, Building, and Development
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SUBJ: BIRD-FRIENDLY BUILDING DESIGN INTRODUCTION

Summary:

Lake County is Illinois' most biodiverse county and includes critical habitat areas including wetlands, woodlands, and farmlands along a major bird migration route, the Mississippi flyway. Twice a year, 325 bird species travel the Mississippi flyway, including 40% of all shorebirds. Over 250 different species migrate through the Chicago region alone, about 5 million individual birds in all. North American birds have encountered multiple threats in the past 50 years and have declined by 29% or 3 billion birds. Birds face major threats to continued abundance, including habitat loss, hunting by domesticated cats, and building collisions. This paper reviews the threat posed by glass in the built environment and recommends solutions to reduce the use of glass in new developments and incentivize bird-friendly building design practices.

Background:

- Birds in North America have declined by 29% or 3 billion birds since 1970.
- Greenfield development (including farmlands, forests, and other natural spaces) poses a dual threat to birds: the initial habitat loss and the introduction of glass areas.
- Birds have very different vision from people. In addition to some colors, birds can see the UV spectrum; many can "see" electromagnetic fields, which they use to navigate long distances. Birds cannot see glass and do not learn the concept of glass. However, they may learn or know about an individual piece of glass they encounter often.
- The use of glass in architecture increased after the 1960s as glass production became cheaper.

Bird Strike Reduction Strategies:

- **Glass Reduction:** Reducing the amount of glass in a façade is the best way to reduce fatal collisions. Non-glass facades have low or zero threat factors for birds.
- **Glass Location:**
 - Birds are most likely to strike glass within the tree line or first forty (40) feet of a building. Green roofs and interior planted areas (such as an atrium with trees) also have increased risk.
 - Facades facing natural habitat or other attractants (even individual trees or bird feeders) can pose a greater risk. The farther trees are from the window, the less likely a bird is to collide with it.
- **Bird-friendly Glass:** Breaking up reflective or clear glass with designs containing open spaces no larger than 2 inches by 4 inches reduces the number of collisions for many birds. These treatments include:
 - **Films and tape:** films or tape apply a paint or polymer to the external surface of the glass and are temporary, lasting approximately 5-7 years.
 - **Fritted glass:** designs printed onto glass with a mix of ink and ultra-fine glass particles that last the lifetime of the glass. Designs can be unobtrusive or decorative.

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- **UV-glass:** UV-coated glass may be effective for some species of birds, including migratory songbirds. These UV-coated designs are visible to some birds, not normally visible to the human eye, and last for the life of the window.
- **Other:**
 - Screens and shutters are also effective deterrents.
 - Reducing glass area on a building will improve energy efficiency because glass has a lower insulative value than walls.

Next Steps:

The topic of bird-friendly building design regulatory options was last presented to PWPT Committee in October 2021 before being subsequently tabled pending the enactment of state enabling legislation. In early 2023, an initiative was included as part of Lake County's 2023 State Legislative Program to allow non-home rule counties to enact bird-friendly building design regulations. IL SB1997 has now passed both chambers of the Illinois General Assembly and is currently awaiting the Governor's signature which will allow Lake County to pass bird-friendly building design amendments. Following this informational presentation to re-introduce the topic, PB&D Staff will return to the PBZE at a later date this year to finalize policy options and obtain direction to draft corresponding regulations for the Committee's review and action.