Bird-Friendly Glass

Bird collisions with glass are a significant environmental issue, causing millions of bird deaths annually. This document outlines the technologies, design principles, and benefits of bird-friendly glass.

Graphic by American Bird Conservancy

Background:

Bird-friendly glass is an innovative solution designed to mitigate the significant issue of bird collisions with buildings. Traditional glass is often invisible to birds, leading to millions of fatal collisions annually. Bird-friendly glass incorporates specific patterns, coatings, or textures that are visible to birds but minimally impact human visibility. These features help birds recognize the glass as a barrier, preventing collisions and promoting safer flight paths around buildings. Most of the documented collisions occur from ground level to 50 feet, where birds are generally most active. This height also correlates with and is relative to the natural habitat elements such as the mature tree canopy that birds are attracted to.

The use of bird-friendly glass is particularly important in urban areas where high-rise buildings and extensive glass façades are common. By integrating bird-friendly designs, architects and builders can create structures that are both aesthetically pleasing and environmentally responsible. This type of glass can be used in various applications, including windows, curtain walls, and skylights, ensuring that buildings are safer for birds without compromising on design or functionality.

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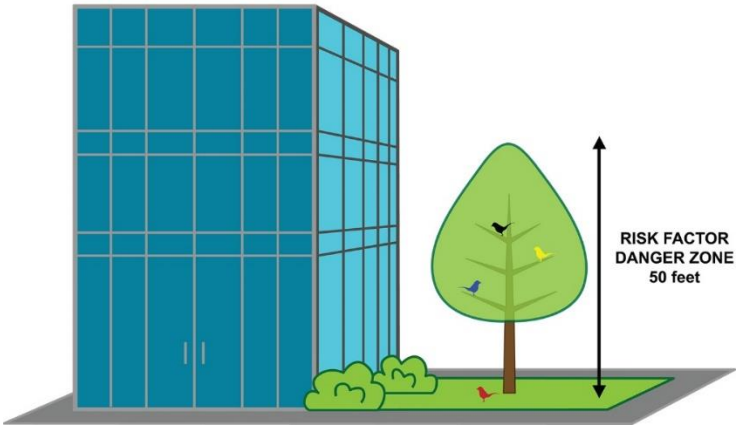

Testing and Certification:

Testing and certification of bird-friendly glass are critical processes to ensure that glass products effectively prevent bird collisions. The **American Bird Conservancy (ABC)** is a leading organization in this field, utilizing specialized testing tunnels to evaluate the effectiveness of various glass materials. These tunnels simulate real-world conditions by presenting birds with a choice between clear glass and test samples. The birds' flight paths are observed to determine how often they avoid the test glass, which helps assign a Material Threat Factor score.

Certification programs, such as the ABC Bird-Friendly Building Certification, require buildings to use materials that meet specific bird-friendly criteria. This includes incorporating glass with visible markers, UV coatings, or other deterrent patterns. The certification process involves both initial testing and ongoing monitoring to ensure continued compliance. Buildings that achieve certification are recognized for their commitment to bird conservation and can display the ABC Bird-Friendly Building Certification seal for their commitment to bird conservation and can display the ABC Bird-Friendly Building Certification seal.

Friendly Glass Solutions:

Bird-friendly glass technologies are essential in reducing bird collisions with buildings, which are a significant cause of avian fatalities.

Laser Etch Glass is an effective and aesthetically pleasing solution for making buildings bird-friendly that are permanent and resistant to weathering, ensuring long-term effectiveness. **BirdSmart™** glass produced by Vitro offers laser-etched glass products on surface #1 that meet bird-friendly design standards and guidelines, such as those set by the American Bird Conservancy.

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Acid-Etched glass is a is a process where markers are applied to the exterior surface of the glass to enhance visibility for birds and reduce the risk of collisions. Two notable examples of acid-etched projects are **AviProtek®**, used on the Markel Hall building at Lafayette College, and featured on the BioSteel Centre in Toronto. This product was selected to enhance bird safety while maintaining aesthetic appeal.

Fritted glass is a widely used bird-friendly technology that involves printing patterns of ceramic frit onto the glass surface. These patterns, which can be dots or lines, make the glass visible to birds, helping them recognize it as a barrier and avoid collisions

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UV reflective glass is another innovative technology designed to prevent bird collisions. This type of glass is coated with ultraviolet (UV) patterns that are visible to birds but nearly invisible to humans. Birds can see UV light, which makes these patterns stand out to them, signaling the presence of an obstacle. UV reflective glass is particularly useful in maintaining the aesthetic appeal of buildings while ensuring they are safe for birds.

Opaque glass and translucent glass are also effective in preventing bird collisions. These types of glass do not create reflections or the illusion of open space, which are common causes of bird strikes. Opaque glass can be used in areas where visibility through the glass is not necessary, such as certain parts of facades or decorative elements.

These bird-friendly glass technologies not only help protect bird populations but also contribute to sustainable building practices. By incorporating these solutions, architects and builders can create structures that are both beautiful and safe for wildlife.

Additional Resources:

American Bird Conservancy: https://abcbirds.org/
American Bird Conservancy Material Threat Factor: https://abcbirds.org/wp-content/uploads/2023/01/What-is-a-Material-Threat-Factor-1_23.pdf
National Glass Association (NGA) DG01-21 Best Practices for Bird Friendly Glazing Design: https://members.glass.org/cvweb/cgi-bin/msascartdll.dll/ProductInfo?productcd=BIRDGLAZING
National Glass Association (NGA) FB35-12 Bird Friendly Glass Design Strategies: https://members.glass.org/cvweb/cgi-bin/msascartdll.dll/ProductInfo?productcd=BIRDFRIENDLY
AviProtek®: https://www.walkerglass.com/products/bird-friendly-glass-solution/

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HISTORY TABLE		
ITEM	DATE	DESCRIPTION
Original Publication	03/17/2025	TD-158
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