



FACT SHEET

GREEN BUILDING SERIES

Bird-Friendly Building

Solutions for a healthy, sustainable future



Bridge for Laboratory Sciences, Vassar College
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FACTS AT A GLANCE

**NEARLY 1
BILLION**

birds are killed annually in the United States due to window collisions.

**OVER 20
CITIES**

have passed laws requiring bird-friendly building standards, including New York City and San Francisco.

DOZENS

of effective strategies for preventing bird collisions.

\$107 billion

produced by bird-watching activities annually, involving over 47 million people.

Window collisions are a major cause of bird mortality in the United States. New bird-friendly building technologies are effective and affordable, providing important co-benefits for human health, energy efficiency, ecological resilience, and savings.

VALUING BIRDS

Birds are unique in their ability to inspire us: like humans, they are smart, social, and wherever humans live, they are some of the easiest animals for us to see and connect with. We depend on birds for many ecological services, including pest control and plant pollination. Constructing buildings that support birdlife invites us into imaginative and holistic design—as well as the recognition that not only do birds have a right to exist, but their continued existence is a value to humanity.

A CLEAR PROBLEM

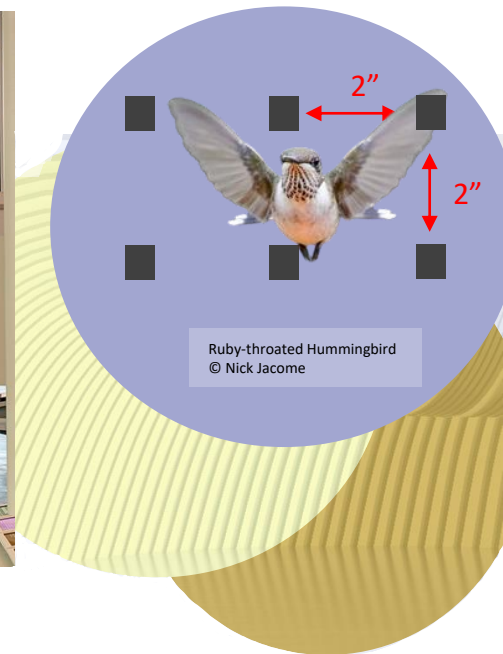
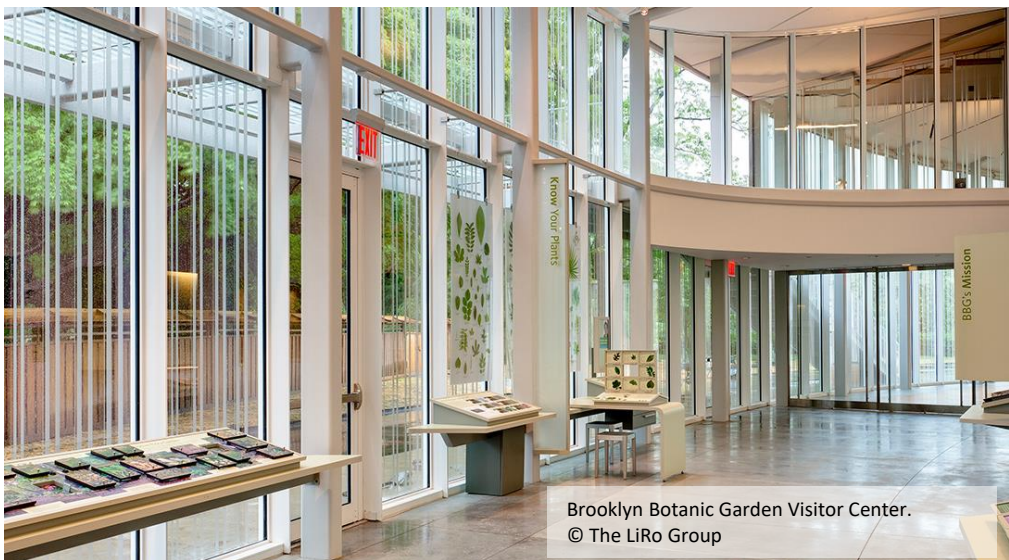
Collisions occur when birds mistake a glassy, transparent surface for habitat and fly into it, resulting in injury or death. The toll is staggering: one billion birds are killed every year due to window strikes in the United States. Collisions can happen at structures of all heights and shapes, on glazing facing in all directions, during all seasons, and under all weather conditions. But generally, the amount of glazing on a building is the strongest predictor of risk to birds. Lighting and landscaping also play a role in attracting birds to risky areas.

“A building isn’t green until it’s bird friendly.”

- Michael Measure, Founder, FLAP Canada

BIRD-FRIENDLY SOLUTIONS & TECHNOLOGIES

Fortunately, there are many ways to protect birds from collisions in both new construction and existing buildings. Strategies to make buildings bird-friendly allow for wide variety and flexibility in materials and styles, without sacrificing appearance, light, or view clarity. The cost of adding bird-friendly glazing typically adds only a fraction of one percent (<0.5%) to overall construction costs.

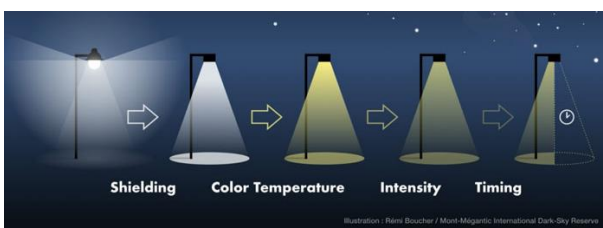


Façade & Glazing

Glass is the main culprit behind bird collisions. Strategies to make glass and other transparent/reflective materials more visible to birds can drastically reduce collisions. These include the use of glazing treatments and visual markers, such as ceramic frit, etching, colors, textures, opacity, and UV materials on glass—as well as architectural details that partly obscure glazed surfaces, such as exterior shades, screens, shutters, stainless-steel detailing, and wire mesh. Reducing the total amount and size of glass sheets helps. Glazing patterns should follow American Bird Conservancy's 2" x 2" rule. For retrofits, vertically hung twine, lightweight netting, and/or decals can be applied to existing glass. Exterior glass surfaces should be treated to at least 60 feet above grade or to the top of the mature tree canopy, whichever is higher.

Quality Lighting

Artificial light acts as a beacon for billions of birds that migrate twice yearly at night. When birds fly toward intensive skyglow, they can be lured into dangerous urban environments, where they are vulnerable to exhaustion, disorientation, and injuries like collisions. Light pollution also negatively impacts human health. Shielding lighting fixtures and responsible use of lighting control technologies reduce light pollution.

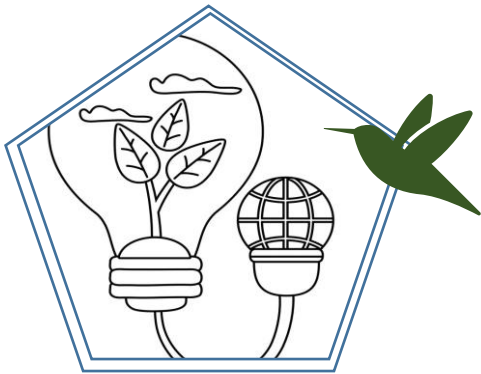


Landscaping

Vegetation-rich landscaping can provide important habitat for birds, especially green roofs, but it can also increase the risk of collisions if nearby glazing is left untreated. Improving habitats for humans, birds, and other species *without* bird collision deterrence can create traps for birds. Carefully consider landscaping plans to maximize benefits for birds and people, while reducing collision hazards. Plant trees within 3' or more than 30' of a structure.



CO-BENEFITS OF BIRD-FRIENDLY DESIGN



Whatever is good for birds is good for people—clean air, clean water, healthy habitats. Actions we take to protect birds can improve human health outcomes, while helping us meet our climate goals as we transition to Net Zero. Bird-friendly building design provides far-reaching co-benefits for energy efficiency and ecosystem stabilization. Transformational changes are needed in how we live and envision our built environments to avoid the worst effects of the climate emergency. By choosing solutions with co-benefits across threats, we can make holistic progress toward a healthy, sustainable, compassionate world.

glazing

lighting

landscaping

human

Restore Our Inter-Relationship with Nature



At the heart of green building is our desire for closer connection with nature, including use of glass that respects life.

Lower Disease Risks



Limiting light pollution can decrease elevated urban risk of obesity, depression, heart disease, and breast cancer.

Support Psychological & Cognitive Wellbeing



Seeing or hearing birds—and increased landscape biodiversity—are associated with lasting improvements in mental health and wellbeing.

Thermal Comfort



Better Rest/Sleep



climate

Increase Energy Efficiency 25%



Glass coatings reduce solar gains, heat/cooling requirements, and need for artificial lighting, while offering an effective way to reduce embodied carbon. More sparing use of glass also increases building envelope efficiency.

Reduce Energy Use 60-70%



Quality lighting design reduces energy use and carbon emissions. LEDs still carry large embodied carbon load; so, good design uses less lighting.

Strengthen Ecosystem Resilience



Birds are an integral part of a healthy ecosystem, helping maintain balance while performing crucial ecological services, such as pest control, pollination, and soil fertilization.

Social / cultural

Encourage Creativity & Innovation



Bird-friendly design lends itself to art and creativity, including invention and engineering of new glazing techniques and materials.

Promote Equity



Light pollution disproportionately burdens racial/ethnic minority and low-to-mid socioeconomic status neighborhoods.

Restore the Night Sky



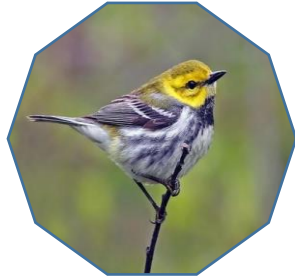
Maximize Green Spaces



Green Spaces provide access to outdoors—while increasing social engagement and a sense of community and belonging.

“Instead of trying to hide the bird-friendly part, use it, make a statement with it. It doesn't have to be dots and stripes.”

– Christine Sheppard,
American Bird Conservancy



EXEMPLARY

BIRD-FRIENDLY GREEN BUILDING DESIGNS



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Brooklyn Botanic Garden

Brooklyn, NY

Architect Firm: Weiss/Manfredi

Type: Visitor center

Sq ft: 22,000

Bird-friendly features: Patterned glass, abundant (native) landscaping

Green features: High-energy performance, natural light, green roof, rainwater harvest

Certification: USGBC LEED Gold



© Halkin Photography LLC

Loblolly House

Taylor's Island, MD

Architect: Kieran Timberlake

Type: Private residence

Sq ft: 2,200

Bird-friendly features: Screens, staggered rainscreen siding, exterior shades over glazing

Green features: Energy conservation, high-performance energy systems, solar orientation, minimal footprint, recyclable building materials



© Metro Transit

West Bank Station

Minneapolis, MN

Artist: Nancy Blum

Type: Mass transit station

Sq ft: 334 of etching

Collision deterrence: 1/8" stainless steel panels and stainless wire mesh with etched images

CERTIFICATION

To date, no sustainable building program requires the use of bird-friendly building principles for certification. However, the U.S. Green Building Council offers property owners one point towards its LEED certification program for following its "Bird Collision Deterrence" protocols, which regulate façade and lighting. The credit became part of the USGBC's permanent Library of Innovation Credits in 2022. To some, this credit is largely an appeal to enlightened self-interest, saving birds while reaping the financial benefits of green building.



LEED BD+C: New Construction • v4.1 - LEED v4.1

Innovation: Bird Collision Deterrence

Innovation catalog

Possible 1 Points

For more information, visit
Lights Out Connecticut
www.lightsoutct.org

Created by
Meredith Barges,
Co-Chair, Lights Out Connecticut

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