

**A PROPOSED BUILDING
AND LANDSCAPE
ORDINANCE COULD
SHAPE THE FUTURE OF
BIRD-FRIENDLY DESIGN
IN CHICAGO.**

BY JEFF LINK

ON A MILD FRIDAY in early May, Ted Wolff took a personal day and drove to the Ballard Nature Center in Altamont, Illinois, to catch a glimpse of Lewis's woodpecker, a nearly foot-long, pink- and white-breasted bird native to the western United States. Along with two other Chicago birders, Wolff, the garrulous, white-bearded principal of Wolff Landscape Architecture, was on a "twitch," an English expression for pursuing a bird in a geographic area where it is rarely seen.

Early that morning, an Illinois Rare Bird Alert reported that the woodpecker—named after the explorer Meriwether Lewis, who first saw the bird on his expedition with William Clark—had been seen at the nature center. It was reason enough for Wolff to clear his docket. Before long, the three birders were driving south to be among the first people to see the bird in Illinois, outside its historic range.

OPPOSITE
Transparent buildings
along Chicago's
waterfront have
claimed the lives of
many birds.

RIGHT
Deceased songbirds
retrieved in downtown
Chicago in May 2019.
Top to bottom:
Swainson's thrush,
rose-breasted
grosbeak, eastern
bluebird, magnolia
warbler, and ovenbird.



“THE APPLE STORE IS CHAPTER AND VERSE ON WHY YOU DON’T WANT TO DO TRANSPARENT GLAZING AND INTERIOR LANDSCAPING.”

—TED WOLFF, WOLFF LANDSCAPE ARCHITECTURE

When they entered the nature center’s indoor viewing area, the woodpecker was already perched on a platform feeder—a “walk-up,” in birder’s parlance—eating shelled peanuts in front of a one-way reflective plate glass window. They watched it peck at the platform for several minutes, then fly to a hackberry with a peanut wedged in its bill, pausing before circling back to the feeder.

“At some point, though,” Wolff told me later in his office on the sixth floor of the Old Republic Building on North Michigan Avenue, “it flies over toward the feeder and overshoots and flies into the window. I think it sees its own reflection and it sort of pulls up and touches the window lightly and is able to fly off.”

Many birds are not so lucky. Ornithologists estimate that up to a billion birds, often migratory birds listed as species of conservation concern, die in building collisions in the United States annually—collisions that Wolff says are largely preventable, and deaths that warrant a stronger response from landscape architects as advocates for bird-friendly design. “Our colleagues in real estate development and the affiliated design professions see the landscape architect as a credible voice on this subject, and I believe landscape architects have an opportunity, perhaps even an

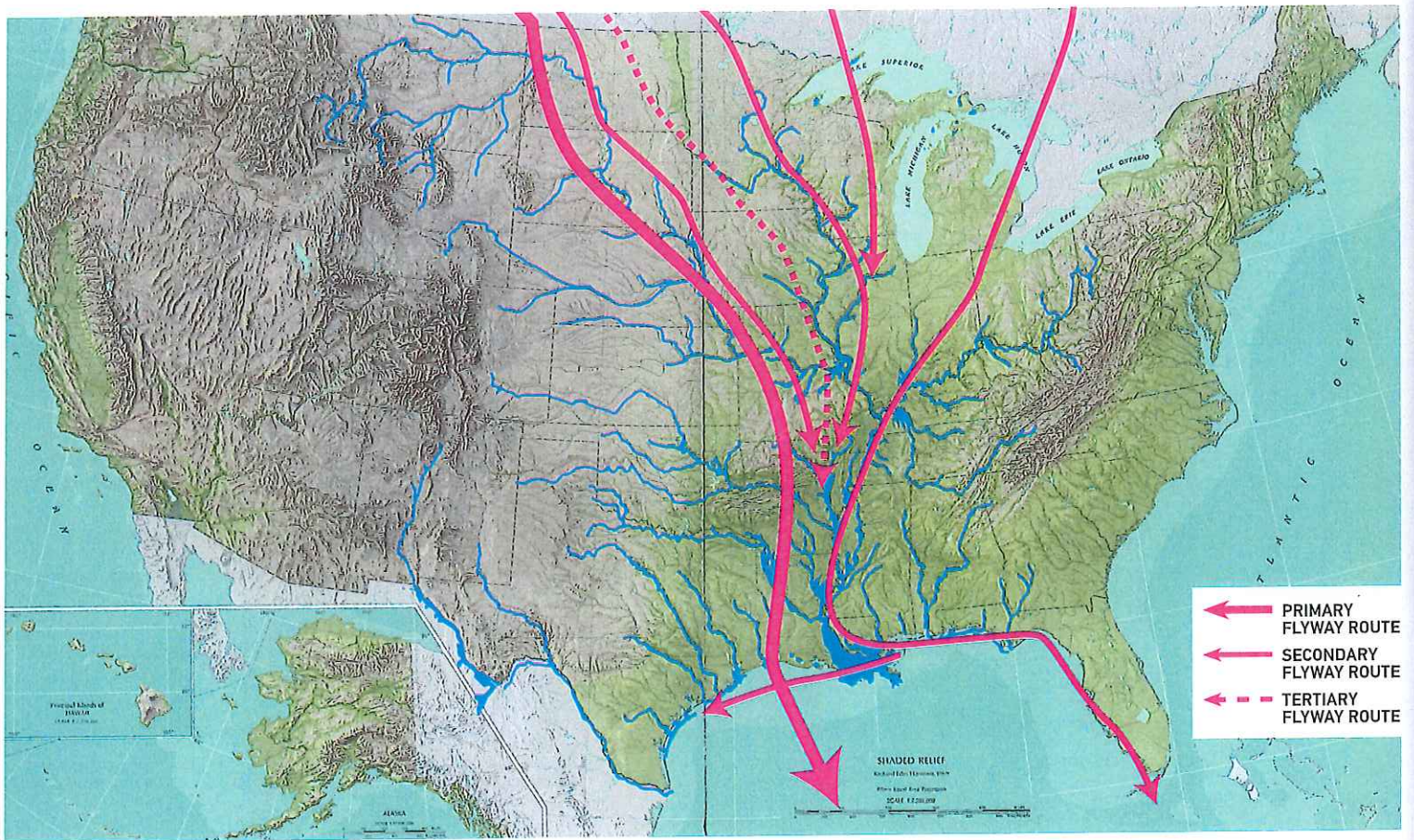
obligation, to capitalize on that perception and be advocates for bird-friendly design,” he wrote in an e-mail after we spoke.

Each year in the spring, more than four billion birds—warblers, finches, orioles, sparrows, and many other songbirds—begin their annual migration, some lifting from forests in South America to fly to nesting grounds in Canada and the northern United States before returning home in the fall.

But many become victims of the anthropogenic threats of glass-towered cities. Chicago’s combination of light pollution and location along the busy Mississippi Flyway make it particularly dangerous for migratory birds; according to a recent Cornell University study published in the journal *Frontiers in Ecology and the Environment*, it is the most dangerous city in the United States for birds to pass through.

Some, Wolff says, are killed in collisions with reflective glass windows they mistake as habitat. Others crash into clear-glass windows at building corners or soar into stylishly invisible facades, such as that on the Foster + Partners-designed Michigan Avenue Apple Store, a building where interior planters reportedly lured birds into collisions with

THE MISSISSIPPI FLYWAY



its see-through facade when it first opened. “The Apple Store is chapter and verse on why you don’t want to do transparent glazing and interior landscaping,” Wolff says.

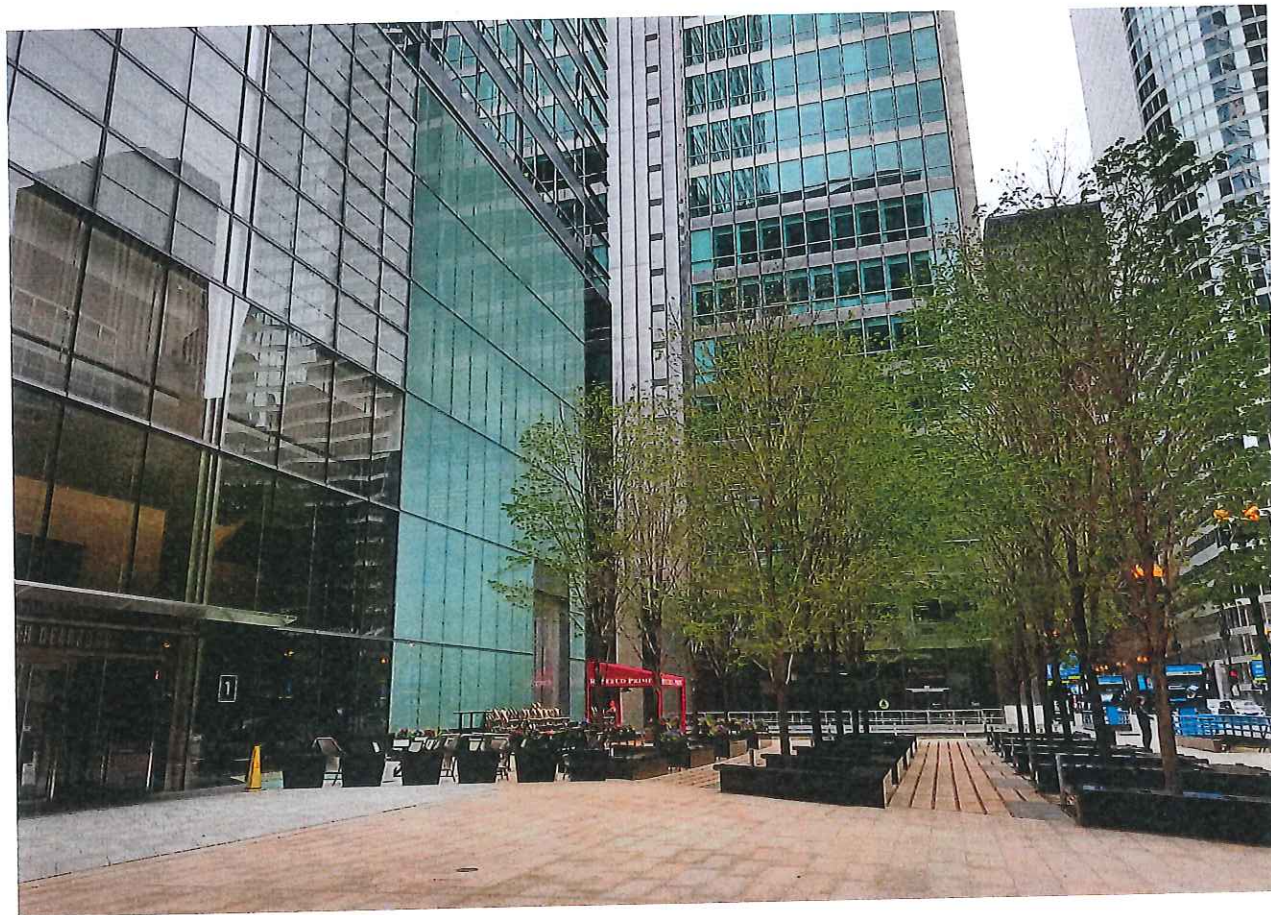
Lights from skyscrapers are another problem, says Daniel Klem Jr., an ornithologist at Muhlenberg College in Allentown, Pennsylvania, who has been studying bird collisions for 45 years. Nighttime migrating birds are drawn to skyscraper lights during periods of low cloud cover and can get trapped among buildings, at risk for fatal collisions or exhaustion and predation.

A Bird Friendly Design Ordinance recently introduced by Alderman Brian Hopkins of Chicago’s 2nd Ward aims to reduce bird strikes by addressing these problems. The proposed ordinance would amend Title 13 of the city’s municipal code to regulate exterior and interior building lighting and limit the use of transparent and reflective

glass in new buildings and rehab projects. Wolff developed a draft of the ordinance on behalf of Bird Friendly Chicago, a coalition of city and state bird-advocacy groups.

On its face, the ordinance is largely aimed at architects and developers. One measure would mandate that at least 95 percent of a building’s facade, from the ground to a height of 36 feet and the first story above any podium, not be glazed, or have bird-safe glass with etching or frosting or mounted elements such as screens or exterior shades. Another section would require that exterior building lighting “unnecessary for safety, building entrances, and circulation shall automatically shut off between 11:00 p.m. and sunrise.”

As an alternative to a series of prescriptive glazing requirements, building teams can opt to design buildings in accordance with the U.S.



RIGHT
Siting shade trees
near frosted
glass at 1 South
Dearborn reduces
bird-strike risk.

Green Building Council's LEED Pilot Credit 55, a performance-based standard on bird-collision deterrence. Residential buildings of six units or fewer are excluded from the requirements.

"Architectural design matters," Wolff explains. "Because if you design a building with fewer windows, you're going to have fewer bird collisions. We make a joke that an AT&T substation is a really bird-friendly building. Why? Because it has no windows."

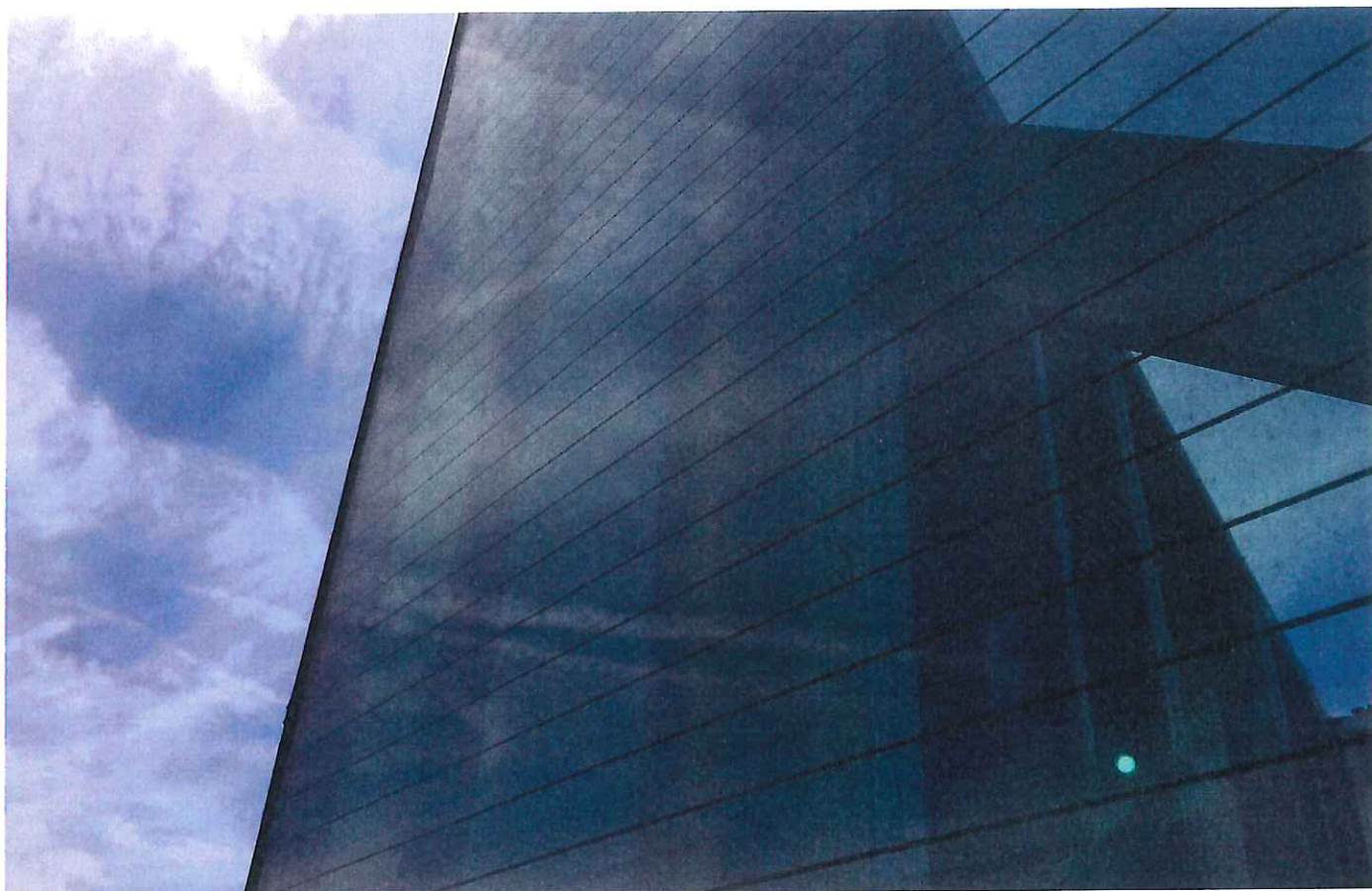
"The second thing that matters, and it matters perhaps more than anything, and possibly more than everything else combined, is glass," Wolff says. "It's the treatment of the glass that's critical."

Annette Prince, who directs the Chicago Bird Collision Monitors, a nonprofit group that finds about 5,000 birds per year in a one-square-mile part of Chicago, roughly 60 percent of them

dead, echoes this view. She says glass buildings designed with ceramic fritting—a thin, tinted pattern baked into the glass—encounter fewer strikes than those with untreated glass, because they signal to birds the presence of a wall to be avoided. Fritting works best when it follows the two-inch by four-inch rule, a gap that deters most collisions among songbirds.

Prince points to a study conducted by New York City Audubon and Fordham University that found a 90 percent reduction in bird deaths since the renovation of the Jacob K. Javits Convention Center by FFXFowle Architects (now FXCollaborative). The project used dot fritting on the inside of the outer pane—or "surface two," as it is called in technical publications.

Several guidelines in the Chicago ordinance are germane to landscape architects. One mandates that "railings, windscreens, skywalks, and bus



shelters be constructed of materials with a threat score" of 15 or less, using a material risk assessment defined by the American Bird Conservancy. (For reference, clear reflective glass scores 100, while glass with a medium-gray ceramic frit using $\frac{1}{8}$ -inch vertical lines spaced a half-inch apart scores 10. Brick scores 0.) Visible interior landscaping, deemed the greatest threat risk, "should always be behind the highest-level bird-friendly exterior glazing," the ordinance says.

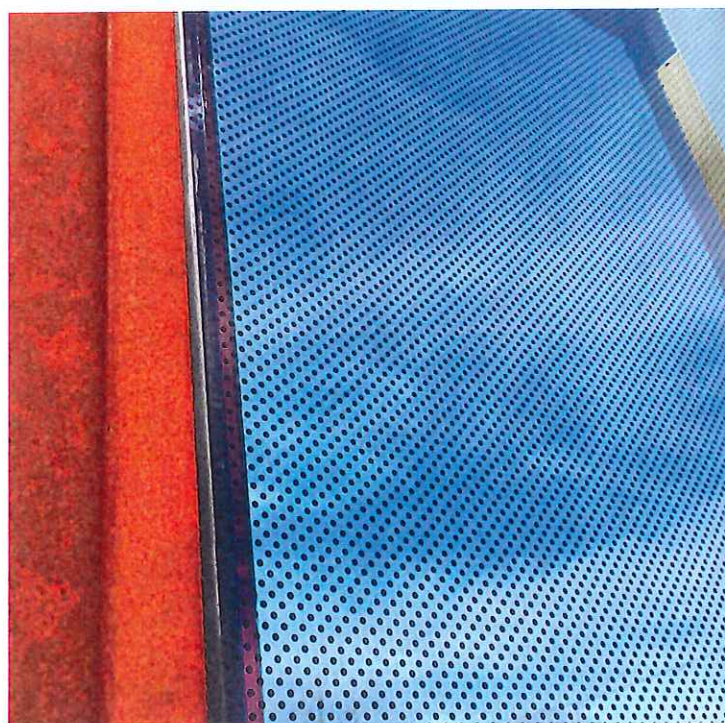
"There are really three things about landscaping," Prince says. "You don't want landscaping that can be reflected or seen in the glass. You don't want landscaping that can funnel birds toward a building." And finally, "if you can put landscaping right against the outer surface of glass," for instance a vine installation, or planters with tall vegetation, "a bird flying toward that window is more than likely to stop and land on the plantings instead of propelling themselves through the glass. Or, if they are foraging and pop up, they will bump the glass only a few inches away."

TOP AND OPPOSITE

Horizontal fritting with a maximum spacing of two inches deters most bird strikes.

RIGHT

Ceramic dots and other materials glazed, screened, or printed on glass reduce collisions.



"IT'S A TOUGH POSITION TO BE IN TO
SAY I DON'T WANT TO INCLUDE BIRD-
FRIENDLY DESIGN AND SAVE BIRDS'
LIVES BECAUSE IT COSTS TOO MUCH."

—TED WOLFF



Many times, removing an interior potted plant from a lobby or reconsidering the arrangement of plants along an entrance plaza can significantly reduce bird strikes at little or no cost. Along the Italian granite plaza at 1 South Dearborn, a 40-story office tower designed by the architecture firm DeStefano Keating Partners, a cluster of shade trees positioned in front of frosted glass facades at the building's corners, rather than at the glass entryway, has resulted in few strikes for a building of its size and location, Prince says.

At the opposite end of the spectrum is the FBI Regional Office in Chicago's Near West Side neighborhood, where an allée of planter beds channels birds toward a similar plant configuration indoors. Until a net was installed, the Chicago Bird Collision Monitors fielded near-daily reports of bird strikes.

Simply turning off lights can make a big difference. Since 1978, Dave Willard, a retired Field Museum ornithologist, has been monitoring bird fatalities at McCormick Place, the squat steel-and-glass confer-

ence center situated along Lake Michigan, where migrating birds, without a place to land, will circle back toward land. Since building managers began turning the lights off periodically in the late 1990s, bird-crash deaths have dropped by between 80 percent and 90 percent, Willard says. He estimates he has collected some 40,000 birds from 170 species along the building perimeter.

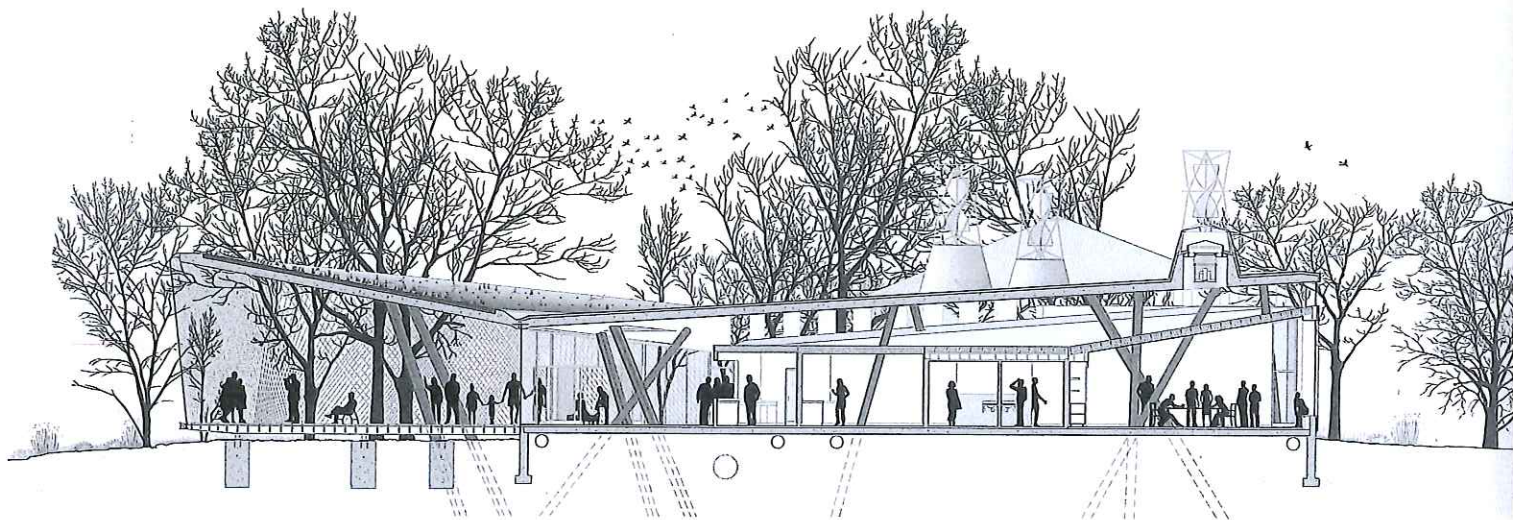
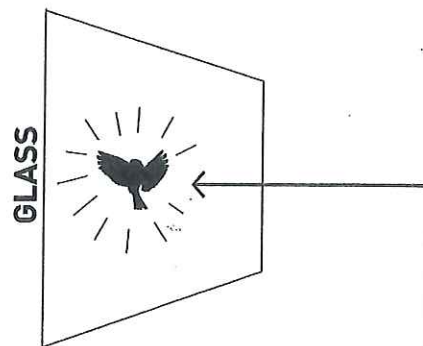
Bryan Lenz, a bird collisions manager for the American Bird Conservancy, says several effective retrofits—including a bird-safety film by Solyx applied with great success at Frances Searle Hall at Northwestern University—have been empirically vetted at the Carnegie Museum's Powdermill

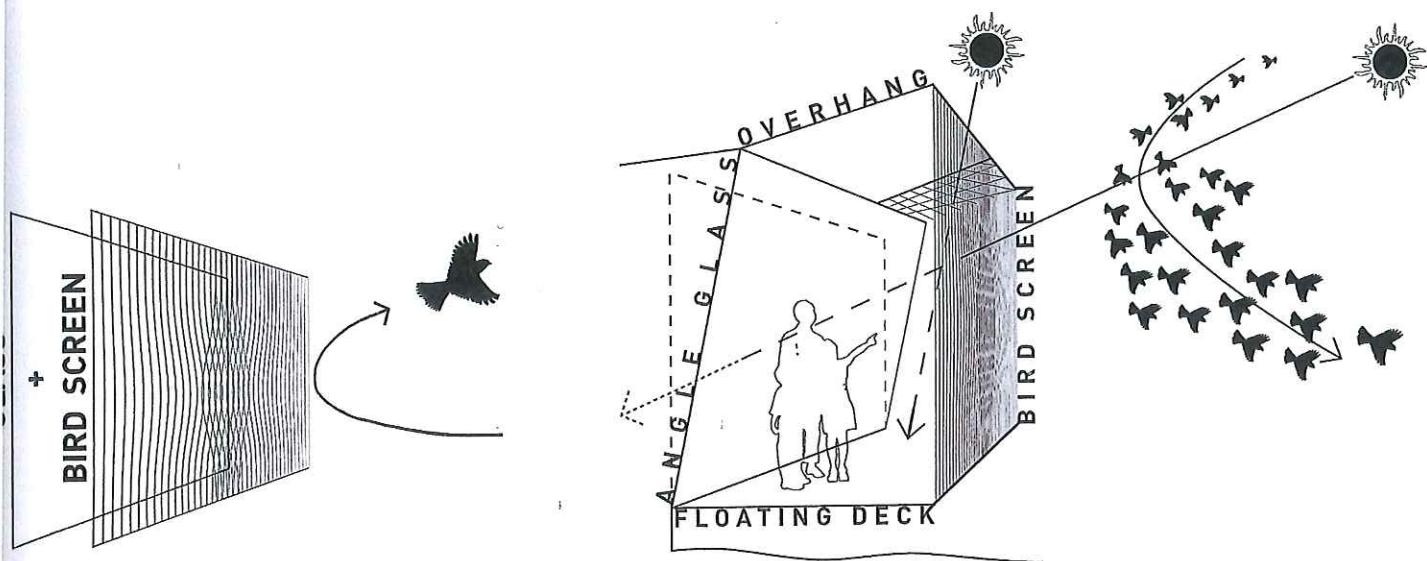
ABOVE

A 2008 proposal for the Ford Calumet Environmental Center features a structural steel bird blind to deter collisions.

BELOW AND OPPOSITE

The proposal's design uses nest-making as a model for industrial reuse. The building is naturally lit and safe for birds.

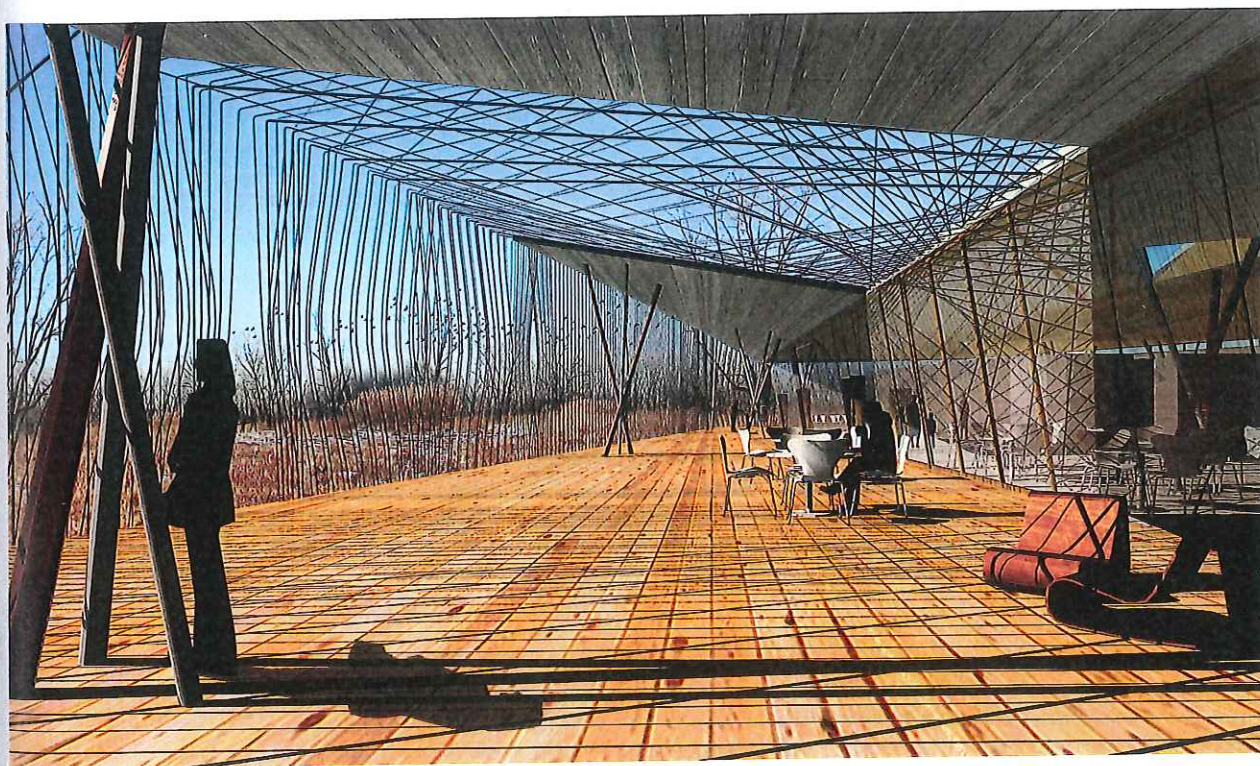




Avian Research Center in Pennsylvania or at the Hohenau-Ringelsdorf Biological Station in Austria, where wild birds undergo testing. Enclosed in a 10-meter tunnel and given the choice of two paths, birds fly toward a light positioned in front of clear glass or a treated material being tested. Products that earn a tunnel score of 70 or higher, denoting the percentage of birds that fly toward

the clear glass, are recommended on the organization's website. From 65 percent to 90 percent of birds will fly toward untreated glass, Wolff says.

The Chicago ordinance went before the city's Health and Environmental Protection Committee in late April. According to a report in *Curbed Chicago*, residents, architecture firms, and



environmental organizations offered supportive testimony for the ordinance. It was also reported that the board of directors for the American Institute of Architects Chicago made a statement that the plan needs to be further refined to earn its support.

Annette Prince, the Chicago bird-collision activist, expects it to be a hard sell. "I compare it to when they started making buildings handicap accessible [under the Americans with Disabilities Act]," she says. "There was an outcry. 'How are we going to afford this? How are we going to add ramps? How are we going to make our bathrooms bigger?' But it was the right thing to do, and we've done it, and we haven't collapsed as a society, and if anything, this is going to create new products and innovation." Keven Graham, FASLA, the president of the Illinois chapter of ASLA and a senior landscape architect at TERRA Engineering, speaking on behalf of the chapter, said, "We're encouraged to see the city looking at avian impact and health and taking an active role in pursuing an ordinance that addresses the issue," adding that unintended consequences are a concern. "We know that interior landscaping provides better indoor air quality and work environments. We don't want to lose that."

Dave Frigo, ASLA, a principal at Hitchcock Design Group, says the ecological benefits of trees, including stormwater retention, heat reduction, and improved air quality, have made street plantings a priority in many cities. But their canopies often top out between the first and third floors, a risky flight zone that puts birds in harm's way. "If we want to put trees on one side of a building to get better shading, or because that's where we want people to hang out, there has to be back and forth dialogue with architects and other professionals: Maybe that's the side of the building that has the special glazing treatment," Frigo says.

Carl Giometti, a senior architect at Chicago-based Studio GC and president of the Chicago Ornithological Society, who is working with interested parties to model cost scenarios, estimates that bird-friendly glass costs 10 percent to 25 percent more than typical varieties. Considering that glass commonly represents less than 10 percent of the total building cost, he says, this is a relatively small expense, and one that could be offset by the energy-saving benefits of bird-friendly design approaches.

But others like J. Paul Beitler, a veteran Chicago developer who is currently developing a glass-encased mixed-use building in Madison, Wisconsin, are opposed to the ordinance. Beitler says the roughly

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—ANNETTE PRINCE, DIRECTOR OF CHICAGO BIRD COLLISION MONITORS

3,000 birds the Chicago Bird Collision Monitors group finds dead each year equates to roughly 10 per day, a relatively small number. “In one square mile of the second-largest city in the U.S.? Are these numbers that constitute a threat [of] extinction?”

He adds that limiting glass or requiring bird-friendly glass in prime first- to third-floor frontages will likely deter potential retail or residential tenants and make high-rises prohibitively costly to build. “There is a real big bird that this ordinance is going to kill: the biggest bird in town, the goose that laid the golden egg in real estate.”

Although the proposed ordinance may be a bitter pill for developers like Beitler to swallow, it poses equally vexing challenges for landscape architects looking to add green space inside a densely packed city.

Brad McCauley, ASLA, the managing principal of Site Design Group, says that “in an urban environment, buildings are built adjacent to the property line, with a 10- to 14-foot right-of-way to the streetscape. If the concern is not to have trees near reflective surfaces, you’re either not going to have trees or not have glass on lower levels.”

Urging a “more robust conversation, with more people at the table,” McCauley points to an exhibit

featuring four habitats for priority bird species along the Mississippi Flyway developed by his firm for the 2017 Chicago Flower and Garden Show, and also cites the Ford Calumet Environmental Center, a 2008 proposal by Studio Gang, SCAPE, and Site Design Group that uses nest-making as a model for industrial reuse—a ribbon-like mesh of salvaged steel rebar encloses a porch and prevents birds from reaching a transparent glass facade—as examples of creative approaches to bird-friendly design.

The birder and landscape architect Ted Wolff admits that for firms like his, which uses plantings on green roofs and amenity decks to attract wildlife, principles of bird-friendly design can be a double bind. “If you have landscape at all, you’re attracting birds,” he says. “A crummy deck is bird friendly. No bird wants to go there. But if you put a beautiful flowering crabapple that has little delicious fruits close to a building, that means you’re getting the fruit-eaters—a cedar waxwing or a robin—coming to that food source. If they fly away, or are startled away, they’re at risk of hitting a window.”

Still, the firm’s unconsciously bird-friendly design of the 80,000-square-foot podium-level amenity deck for the Studio Gang-designed Aqua Tower—a building where undulating, wavelike balconies

RIGHT
The interior plantings of the Michigan Avenue Apple Store blend with the reflections of the exterior plantings on Chicago's waterfront.

are themselves designed to deter bird strikes—is evidence that a balanced approach can win out. On the highly programmed deck, which includes a 1/5-mile running track, a pool, and a fire pit, the design incorporated native grasses, shade trees, ornamental trees, and evergreens along the deck's perimeter, away from the base of the building. It's a strategy the firm is trying to replicate more broadly.

In the meantime, the Chicago ordinance is being reviewed by the Committee on Zoning, Landmarks, and Building Standards, and could come up for a vote before the City Council in early 2020. (Alderman Hopkins did not respond to several requests for comment.) Wolff and other Chicago migratory-bird advocates are waiting to see what the outcome will be.

"I don't know what the value of a bird's life is," Wolff says. "It's a hard thing, but as I think Alderman Hopkins said, it's a tough position to be in to say I don't want to include bird-friendly design and save birds' lives because it costs too much." ♦

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