

Bird Friendly Buildings

Monday March 26, 2018



QUINN EVANS
ARCHITECTS

speaker notes in italics

Thank you for sticking around – I am the last thing between you and a snack so I will try to keep this interesting so we get to that good stuff quickly.



Katie Slattery, AIA, LEED AP
Senior Associate
Quinn Evans Architects
kslattery@quinnevens.com

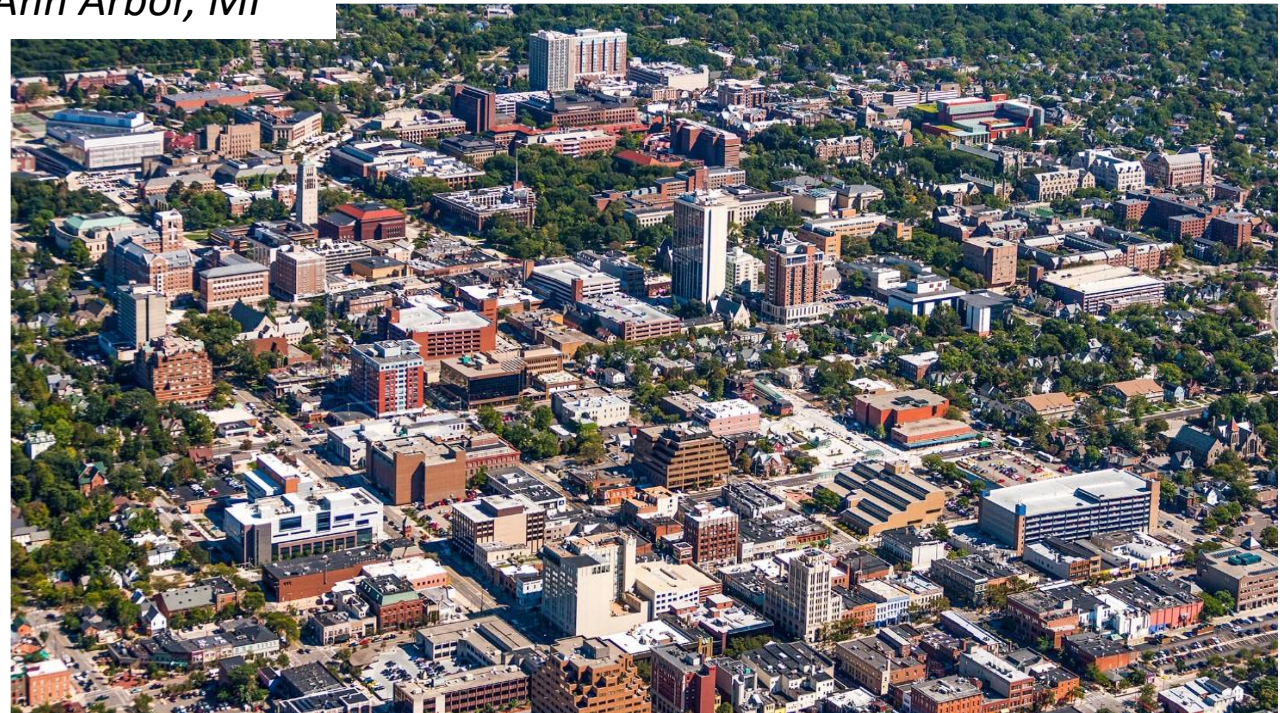
speaker notes in italics

Who I am? Why I am speaking to you?

All day we have been talking about songbirds and I am here to tell my experience in designing for birds – how you can apply this to your projects and what to be prepared to watch for.

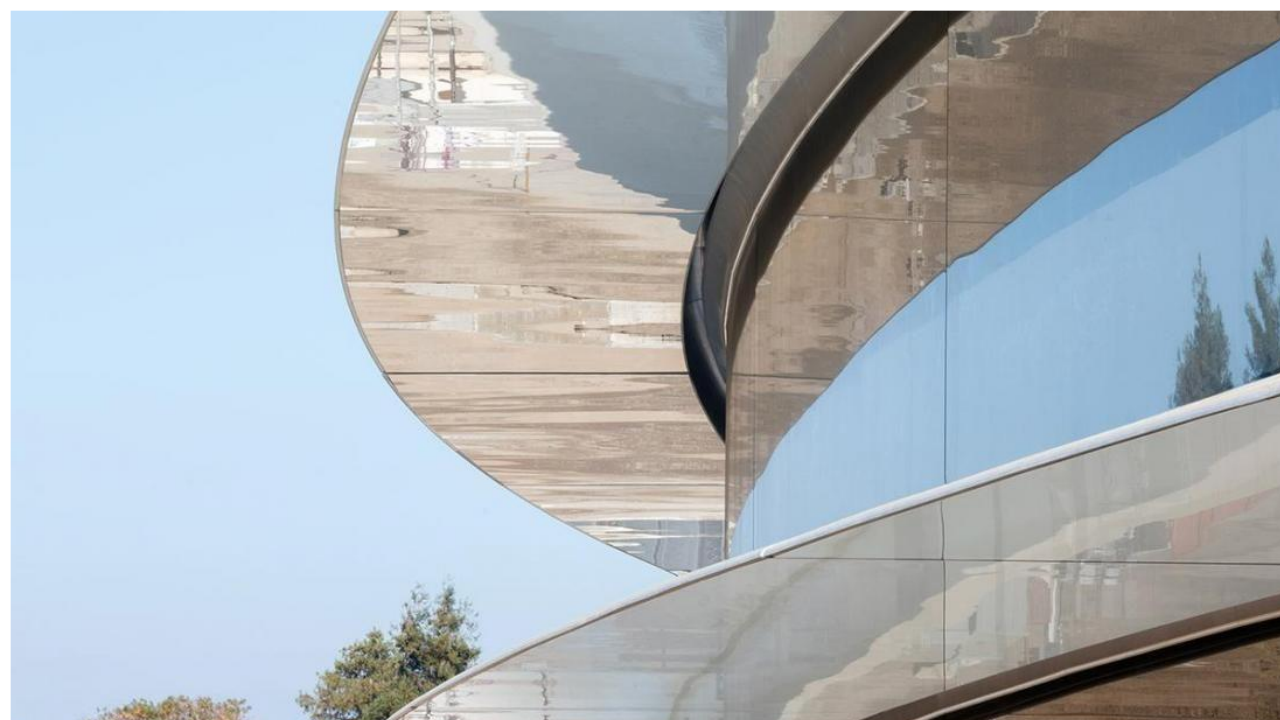


*Utah// Broward County, FL
NYC, NY // Ann Arbor, MI*



Farm, city suburbia, rural.

I am not an expert on birds, I leave that to you all, but I am an expert on buildings – that is something we all have in common - you work, live and reside in a building/house – buildings are not going away – but as you can see in all of these images – nature is right beside the built environment.



*Two Biggest issues: Glass/Glazing and Lighting –
Highly reflective
Dark pockets
Translucency*

Even impacts humans – see this project in California

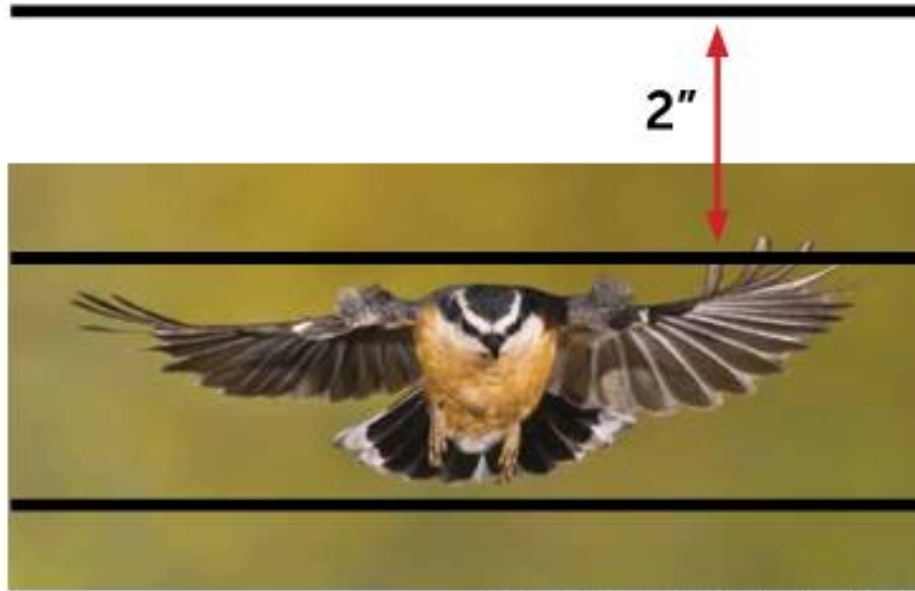
Top Line

- <https://archpaper.com/2015/11/rex-releases-additional-rendering-glassy-new-building-washington-dc/>

Bottom Line

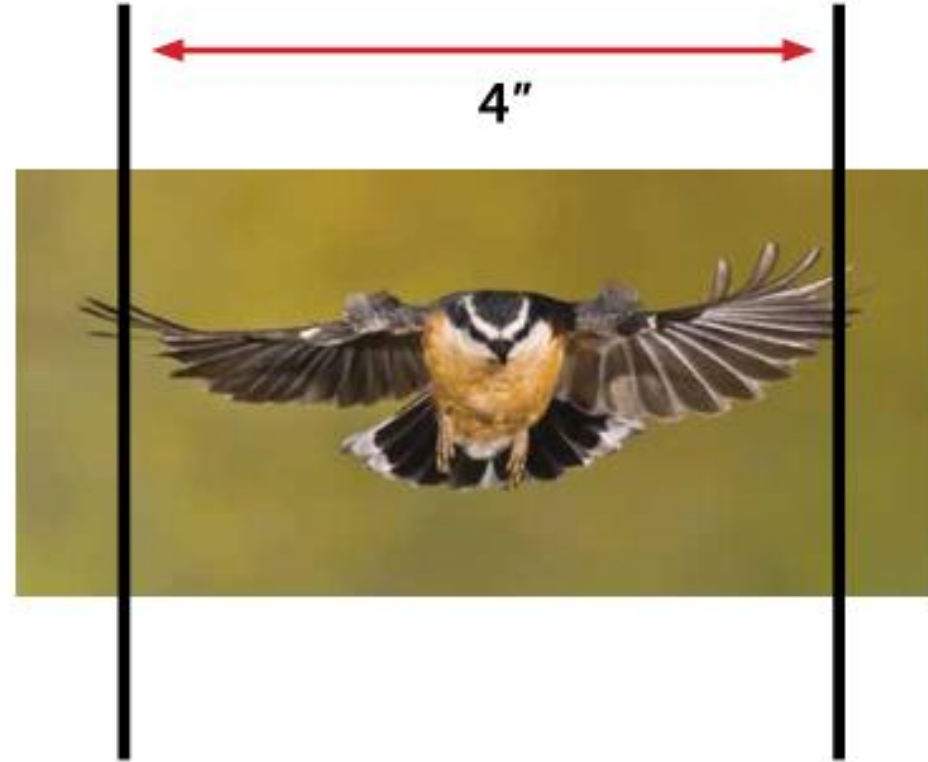
- <https://www.bisnow.com/silicon-valley/news/office/apple-park-85107>
- <https://nypost.com/2018/02/16/apple-workers-keep-bumping-into-glass-walls-at-new-hq/>
- <https://www.architecturaldigest.com/story/apples-employees-cant-stop-running-into-glass-walls>

Horizontal lines with a maximum spacing of 2 inches



Red-breasted Nuthatch. Photo by Roy Hancliff

Vertical lines with a maximum spacing of 4 inches



The 2 x 4 Rule

Christine Sheppard and Glenn Phillips. Bird-Friendly Building Design, 2nd Ed. (The Plains, VA: American Bird Conservancy, 2015), page 57

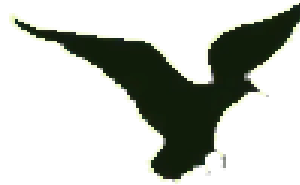
Techniques for addressing the glazing is often the most discussed but glare, and others are also impactful.

1/8" wide horizontal stripes spaced two inches apart:

- *Tape/Deacs*
- *Ceramic Frit*
- *Vinyl Sheet*
- *Interlayer*

Challenges –

- *Can't see through . While effective and an opportunity for education on the glass strike issue, they unfortunately made viewing the animals challenging.*
- *Isn't 100% effective*
- *Cost*
- *Changing in the surrounding environment may create a problem where there wasn't one.*



Patterns can either be baked on, or applied as a film. When baked on, the ceramic frit on the glass surface is applied during the manufacturing process. When applied as a thin film, the pattern can be applied to existing glass.

Glass has 2 layers with 4 surfaces. We are putting the frit where we want to protect birds from hitting so in most areas its on the outside, but in some areas (like our animal demonstration room), its on the inside. Not a lot of companies apply ceramic frit on the first surface (most do it on the 2nd layer) because its exposed to the elements but in our talks with ABC, we determined that we need it on the first layer.



experiencemigration
on bird plateau



Smithsonian
National Zoological Park
Conservation Biology Institute

At the NZP I have had the privilege to work on Experience Migration - a ground breaking project which presents migratory birds in one of the largest scales, we believe, thus far in North American Zoos.

As the design team were required by NZP to design a bird friendly building. Of course glazing was a hot topic. We had it everywhere – for good reason – but we needed to make it safe for collection and wild birds. We integrated the approach into the design solution.

Looked at the impact of the glazing on the collection animals, the users (staff, visitors) and wild birds.



Ok, so how did we do this, I know you all are already excited about birds – but we want to get the public excited about birds – in this exhibit building we are challenging visitors to look at birds and the phenomenon of bird migration from a variety of scales and relationships; and connecting the visitors with birds in new ways -- displaying the wonder of flight, survival, and just amazing beauty.



Different glazing treatments at different locations:

It was important to design the building for the safety of the wild birds as well as our collection birds - and we wanted to encourage wild birds to come to our site (like the Black Crowned Night Herons) so the landscape was designed as a bird habitat.

Site - celebrate the wild birds and make an inviting environment --- bird-friendly and pollinator-friendly habitats and integrated stormwater retention areas

Interior // exterior

Interior // interior

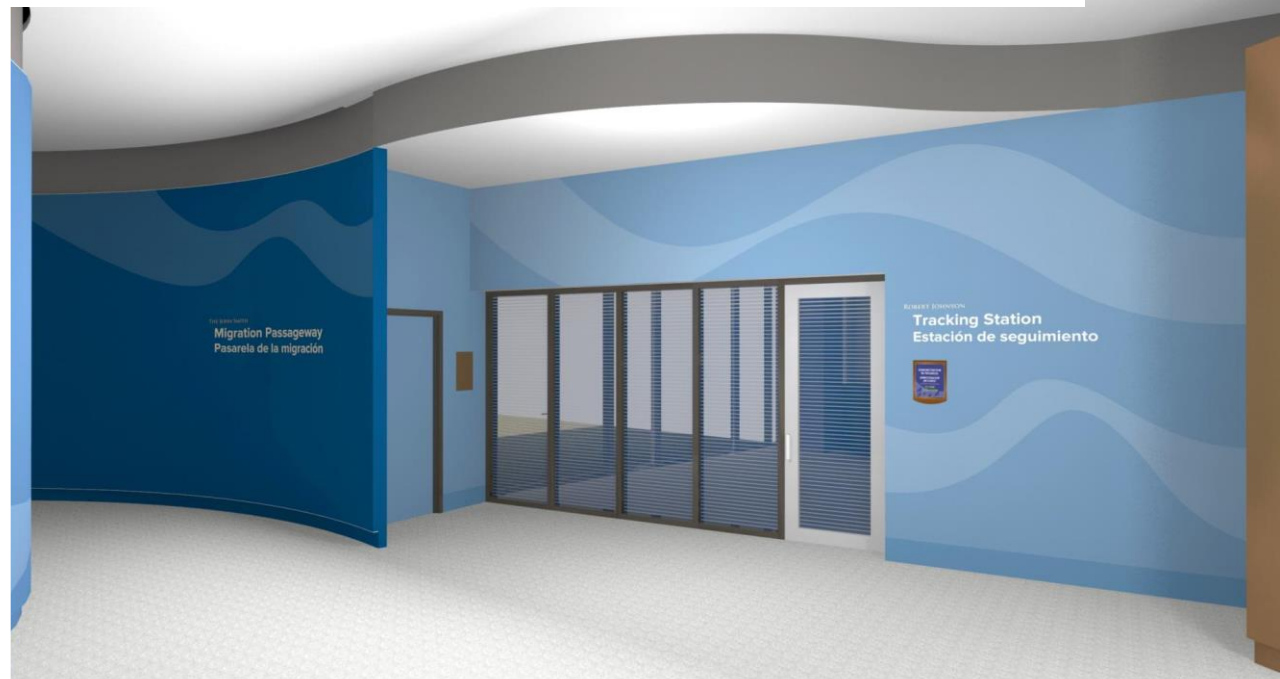


Site - celebrate the wild birds and make an inviting environment. Interior // exterior Interior // interior





Site - celebrate the wild birds and make an inviting environment. Interior // exterior Interior // interior

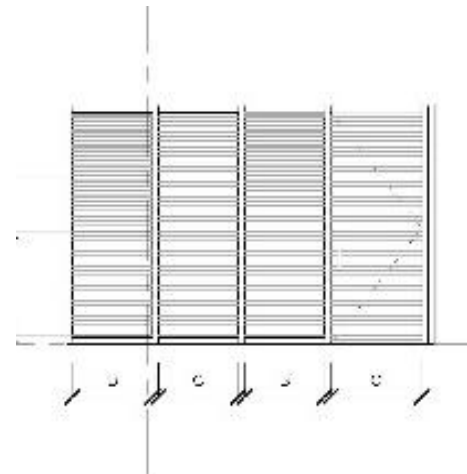


We have bird friendly glass at all interior surfaces.. Here it is shown at the large viewing window into the shade coffee aviary. (The project has three immersive walk through aviaries – you and the birds are in one space!)

Bird friendly glass is at all interior doors and windows – even those that you might not initially consider – into rooms. At storefront and sidelights.



*Site - celebrate the wild birds and make an inviting environment.
Interior // exterior Interior // interior – example at demonstration area*



Set your project Vision with Bird Friendly Design being integral to success

Project Goals:

Provide an immersive, multisensory visitor-friendly experience that orchestrates Wow! moments and opportunities for interaction and reflection.

Inspire visitors to find a connection to the wonder of migratory birds.

Provide the best avian animal care to support bird well-being, enrichment, diet, husbandry, and health maintenance of a diverse collection of species.

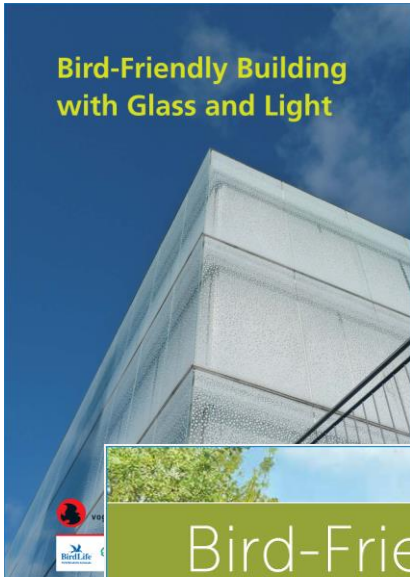
Build opportunities for special experiences and events that promote education, social interaction, and revenue generation.

Provide an efficient, durable and low-maintenance facility that demonstrates and validates sustainable principles.



Recommendations – be part of the conversation, encourage your institution to consider this aspect of sustainable design in addition to saving water and energy – save lives of migratory birds.

- *Must have Bird Friendly Glass!*
 - *Designed for both wild birds and collection birds*
 - *SI/NZP requirement*
- *LEED Gold per SI Directive: Sustainable Sites - Pilot Credit 55 (SSpc55) – Bird Collision deterrent*
- *Key Members of the Design Team*
 - *Architects knowledgeable about bird friendly design; this was part of the sustainable story*
 - *Head of SI Migratory Bird Center participated in design review*
 - *Staff familiar with success of previous glass strike studies weighed in on approach*
 - *Consulted with American Bird Conservancy early on and throughout the design process*



LEED Pilot Credit #55 –
Bird Collision Deterrence

Whether working to improve your community or to provide input on projects at your institution – this is a conversation that many designers are having and there are resources out there for you to reference

LEED credit - Bird Collision Deterrence – Pilot Credit #55 dates back 10/2015

<https://www.usgbc.org/node/4561982?return=/pilotcredits/all/v4>

Bird Friendly Building with Glass and Light, Bird-Friendly Building with Glass and Light

Hans Schmid, Wilfried Doppler, Daniela Heynen & Martin Rössler

Swiss Ornithological Institute Sempach, 2013

Bird Friendly Building Design, American Bird Conservancy and New York Audubon, 2015

<http://collisions.abcbirds.org/>

<http://www.nycaudubon.org/our-publications/bird-friendly-building-design>

Project Facts:

Welcome! I am honored to be here today to talk to you about a new bird exhibit at the National Zoo! Smithsonian's National Zoo, in collaboration with our Migratory Bird Center, is building an entire exhibit and educational program centered on migratory birds. "Experience Migration" will be a state of the art, 21st century bird exhibit that merges the science of bird migration with excellence in animal care on a scale that has never been seen in any North American zoo. The existing National Zoo Bird House is being redesigned and rededicated to the exhibition, study and husbandry of Western Hemisphere birds. Immersive aviaries will emphasize the importance of conserving stopover points, breeding grounds and wintering grounds for North American migratory shorebirds, waterfowl and songbirds. Behind the scenes, these aviaries will connect zoo-based scientists and animal care staff to collaborate on research on wild and captive populations of migratory songbirds and shorebirds. Experience Migration is designed to inspire zoo visitors to care about birds and help save them, but it is also about understanding and advancing migratory bird science and husbandry .

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