

The Lafayette Windows-Avian Collisions (LAFWAC) Project

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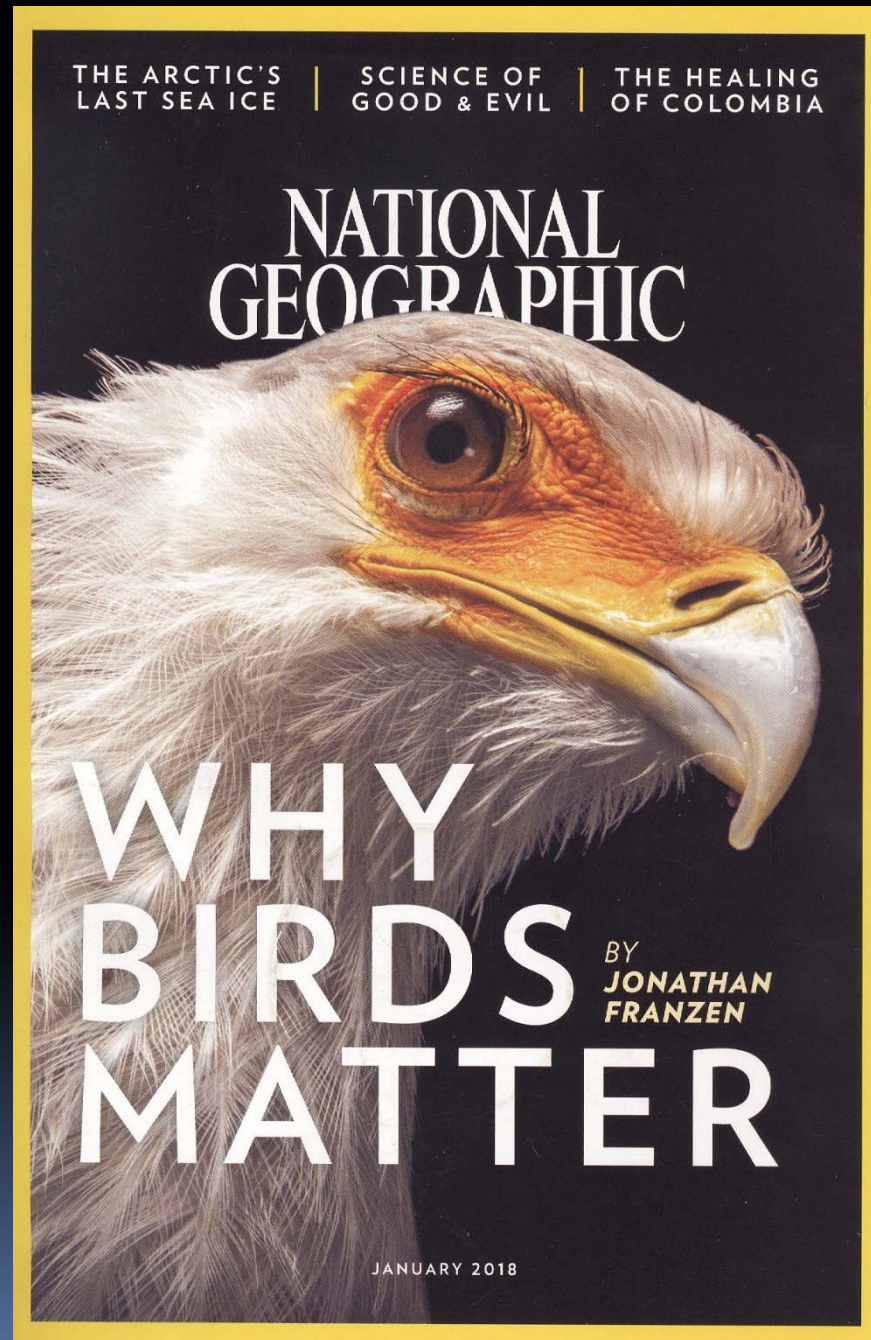
Blackburnian Warbler, May 9, 2016

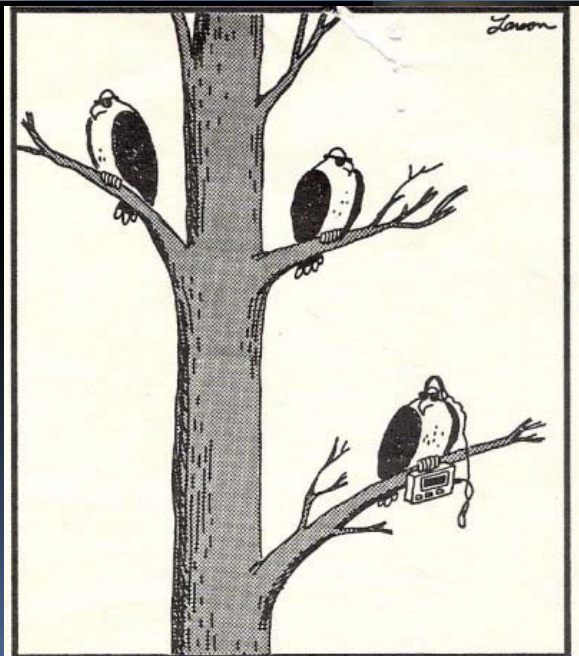
What is *campus sustainability*?

- Climate Action Plan
- Energy, Food, and Water Systems
- Waste Management & Recycling
- Social/Community Responsibility

- AND – our stewardship of “nature”, i.e. the local ecology & biodiversity
 - Lot of components but focus of talk on Birds & Windows
 - Why do it? Is it expensive? Are there practical benefits?

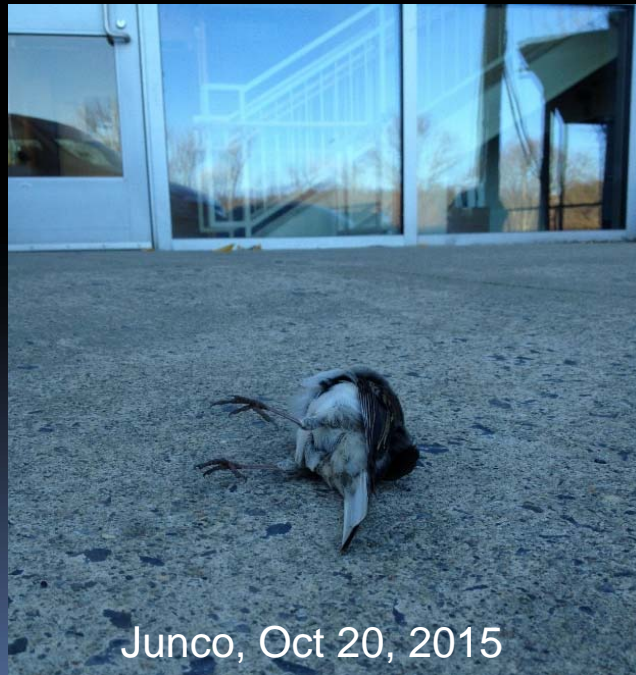
- “It’s not just what they do for the environment – it’s what they do for our souls”
- “*The great bird will take flight above the ridge...filling the universe with awe*”
– Da Vinci
- MBTA of 1918
 - no legal responsibility
 - but an *ethical* responsibility?





Birds of prey know they're cool.





"We can be *ethical* only in relation to something we can see, feel, understand, or otherwise have faith in." -- Aldo Leopold



Does Green Building Come up Short in Considering Biodiversity?

LESLEY EVANS OGDEN

Focus on a growing concern.



The bodies of over 2400 migratory birds that died in collisions with buildings while trying to navigate through Toronto in 2012, displayed at the Royal Ontario Museum in the Schad Gallery of Biodiversity, in March 2013. Photograph: Kenneth Herdy, Fatal Light Awareness Program.



LEED-Gold Certified 2017

\$1B building with 200,000 square feet of reflective glass: now the deadliest building in Minneapolis for migratory birds (and Patriots)

Scale of the problem

- 0.5-1B birds killed annually in US (Klem, 2009), second greatest direct threat after outdoor cats (1.5-3B) (Loss et al, 2013)
- ~225 species of birds in the US and Canada have been documented killed
- Occurs year-round, but many during spring and esp. fall migration periods. Often a daytime event



Window glass is a rather recent development (< 1000 yrs) in the evolutionary history of birds (~100 million years)

or trees through glass?
or a reflection?

- Birds don't get the concept of windows - to a bird... trees

"Bird's-Eye" view
of campus



Lafayette College

- 147 carcasses collected since fall 20



More unusual victims



Mike B with Belted Kingfisher



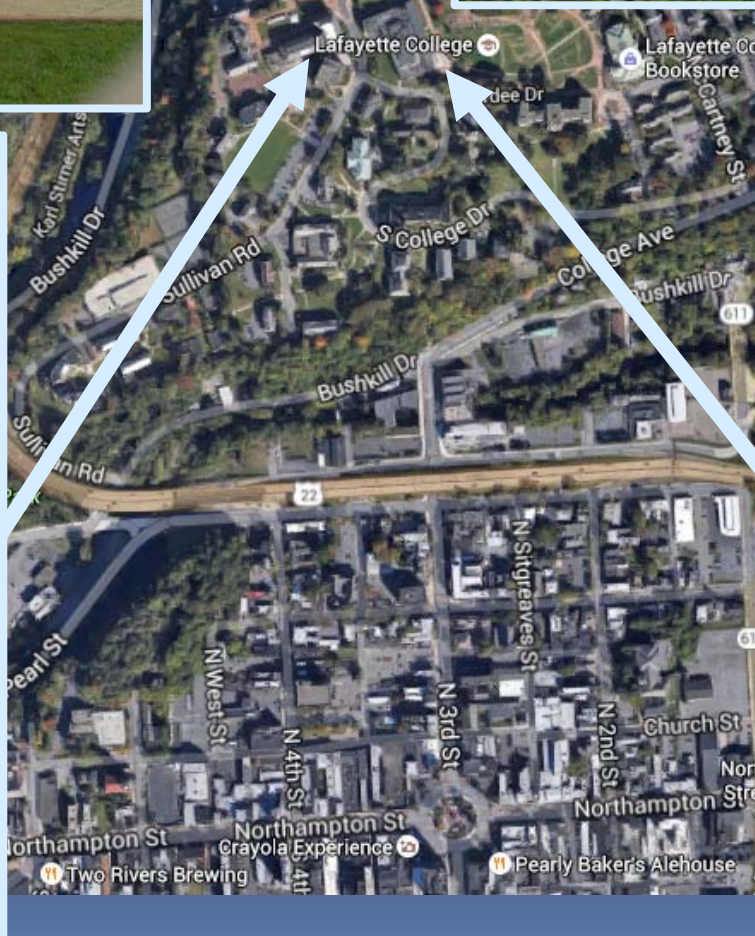
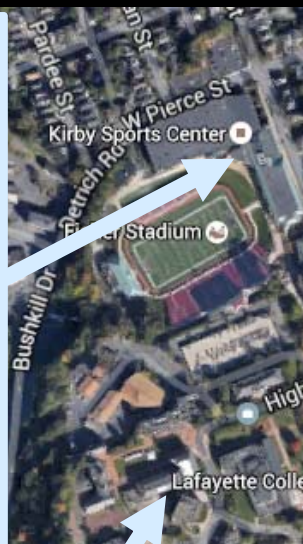
Black-throated Green Warbler



Lincoln's Sparrow



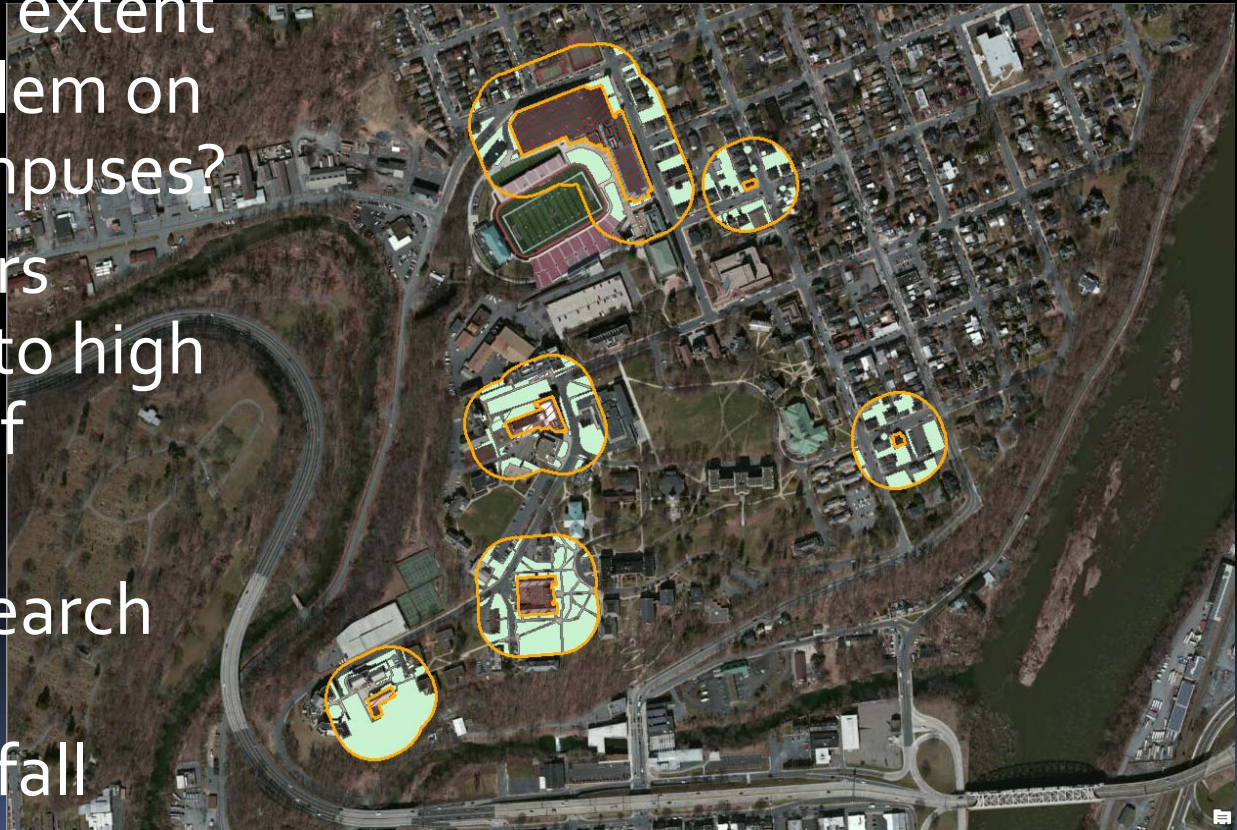
Canada Warbler



Collaboration with 40 other Universities



- What is the extent of the problem on college campuses?
- What factors contribute to high incidence of strikes?
- Standard search protocols: afternoon, fall season, two passes





Contents lists available at ScienceDirect

Biological Conservation

journal homepage: www.elsevier.com/locate/biocon



Continent-wide analysis of how urbanization affects bird-window collision mortality in North America



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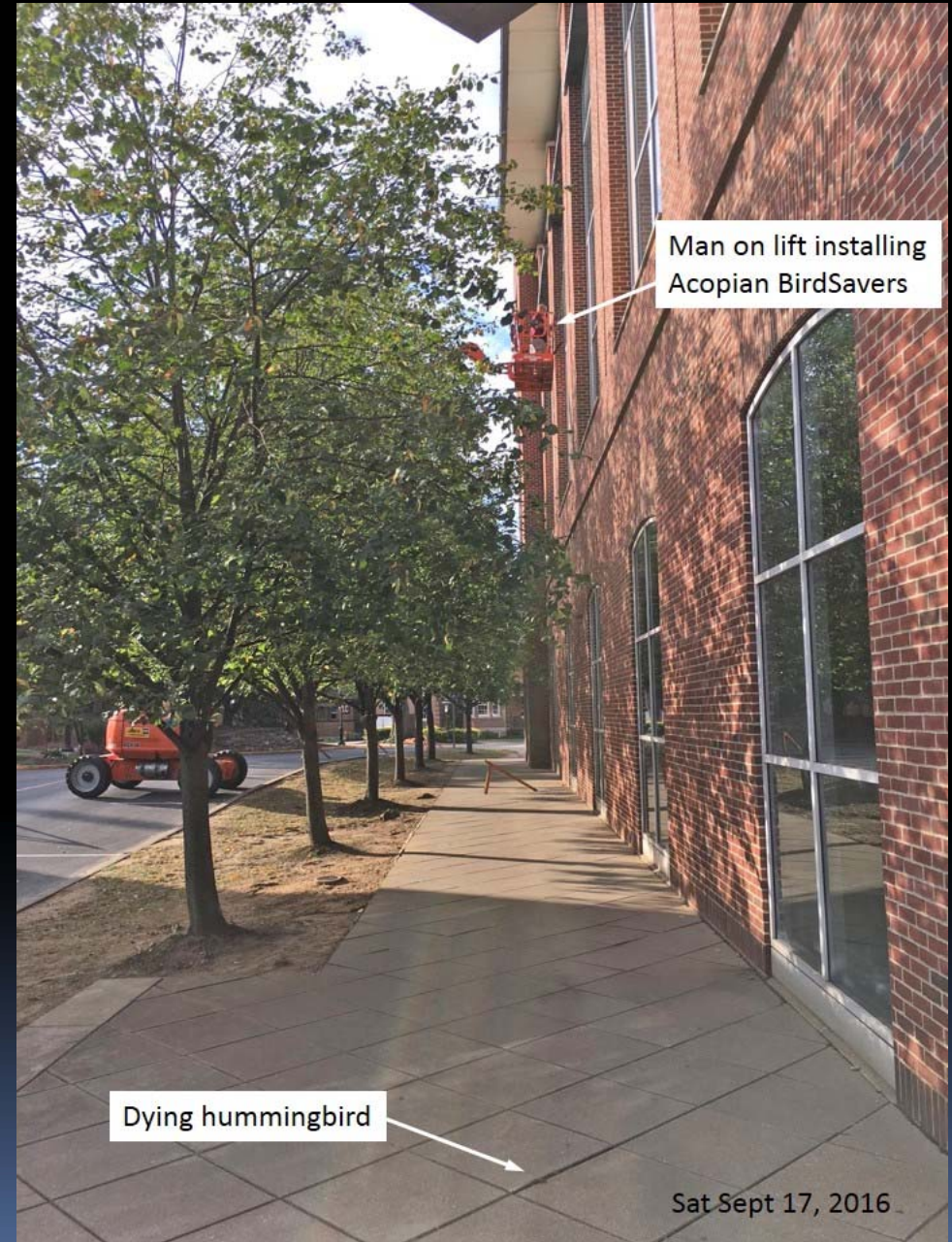
- ✓ Size and relative isolation of building
- ✓ Amount of glass
- ✓ Proximity of vegetation to windows

Retrofit Solutions

- Important to treat the *outside* surface (break up reflections) – 2 X 4 rule
- Window screen, bird netting
- Decals – not very effective
 - UV markers, tape – but not all birds have UV vision
- Films/tape: Feather Friendly – adhesive with dots or stripes; CollidEscape (3M)
- Acopian BirdSavers – vertical cords at 4" spacing (smaller than wingspan)
- Duke, Temple, Penn, Swarthmore, Vassar, many others have done retrofits or bird-safe design

Hugel case study

- 40+ dead birds in 4 years
- BirdSavers installed along top row of windows (too late for one hummingbird)
- 4 dead birds in 2 years
- BirdSavers now installed along bottom row
- Zero dead birds since



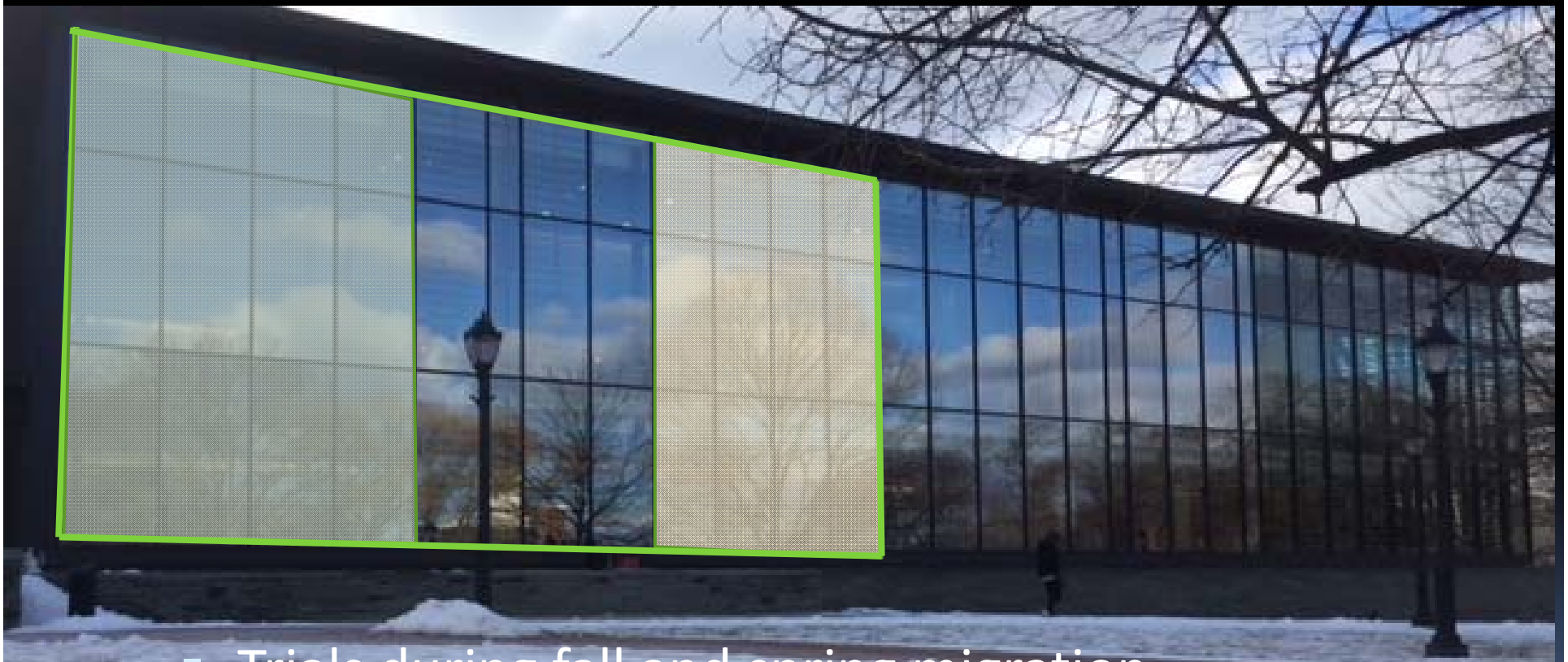
Rockwell ISC design measures

- Reduced total area of glass (27% vs 40-50 typical)
- Glazing to reduce reflectivity
- Fritted glass (embedded dots) for main courtyard area with vegetation
- credit for Bird Collision Deterrence as part of LEED Gold application



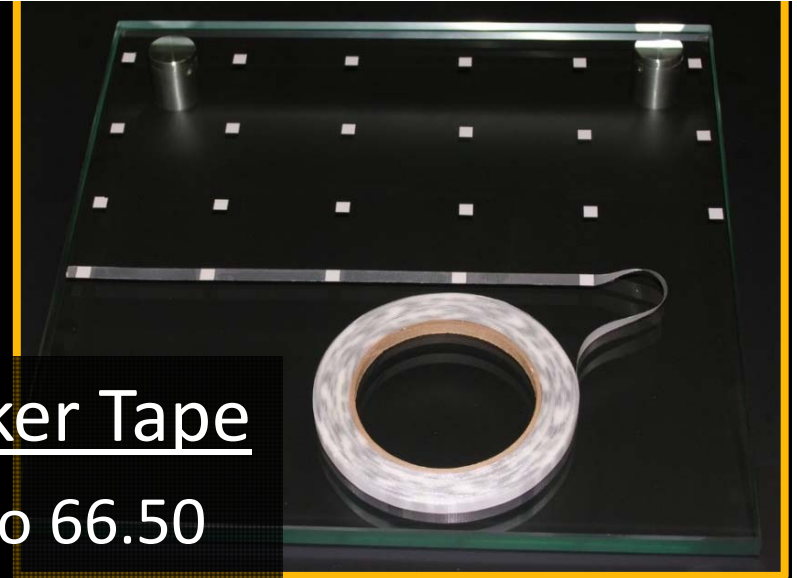
Proposal for more window retrofits

- Skillman Library



- Trials during fall and spring migration
- Placed along ramp for ease of searches

Treatment Methods



Feather Friendly® Marker Tape

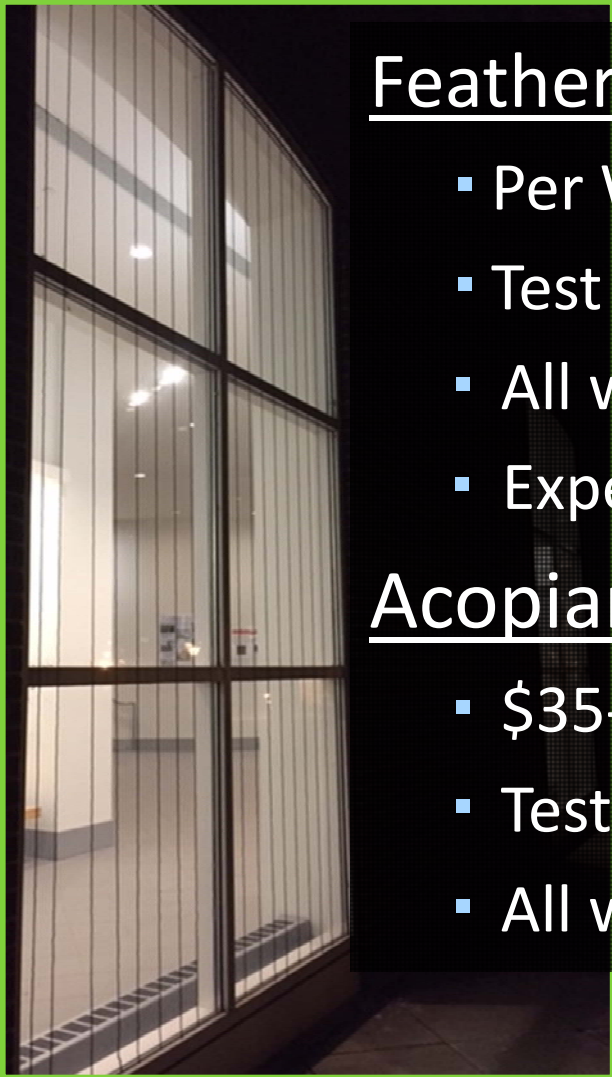
- Per Window: \$36.75 to 66.50
- Test section: \$735
- All windows: \$3503.50
- Expected to last 6-8 years

Acopian BirdSavers

- \$35-43/window
- Test section: \$516
- All windows: About \$3921

American
Bird
Conservancy

Total Test Cost: \$1251

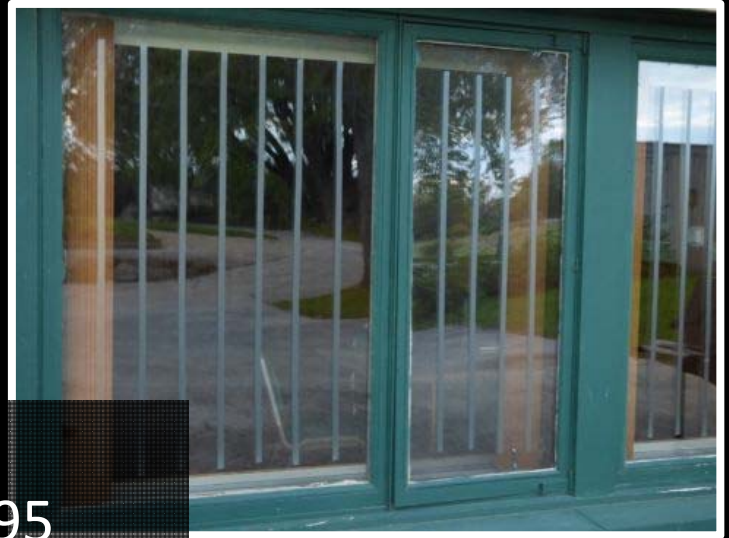


Treatment Methods

- More costly methods

ABC Bird Tape

- Per window: \$39.98 to \$99.95
- Expected to last 4 years



Solyx® Bird-Safety Film

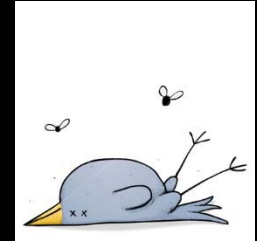
- Per window: up to \$328.46

CollidEscape High Performance™

- Per window: up to \$270



Summary



- Birds play important roles ecologically, and are source of inspiration, connection to nature
- Dead birds are often highly visible, unpleasant to campus visitors, and encourage scavengers
- Reflective window glass is root of the problem
- Relatively inexpensive retrofit solutions are available and underway here at Lafayette
- New buildings (e.g. Rockwell ISC) can be designed to minimize problems

More info:

- <http://collisions.abcbirds.org/>
- www.nycaudubon.org/pdf/BirdSafeBuildingGuidelines.pdf
- Dan Klem, Acopian Professor of Ornithology and Conservation, Muhlenberg

Acknowledgements

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