Introducing BirdSecure® Pro

kuraray Trosifol® SentryGlas®

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Ornithological Challenges with modern building design

Factors that are dangerous to birds when using glass

Light

Reflection

Transparency

Black Hole or Passage Effect

Building Size

Reflected Vegetation

Why birds matter

- Birds consume vast quantities of insects
- Key for crop protection and disease transmission
- Birds pollinate plants and disperse seeds
- Bird watching is a human hobby and economic driver as an industry worth over $40B

Photo: © shutterstock 614487812

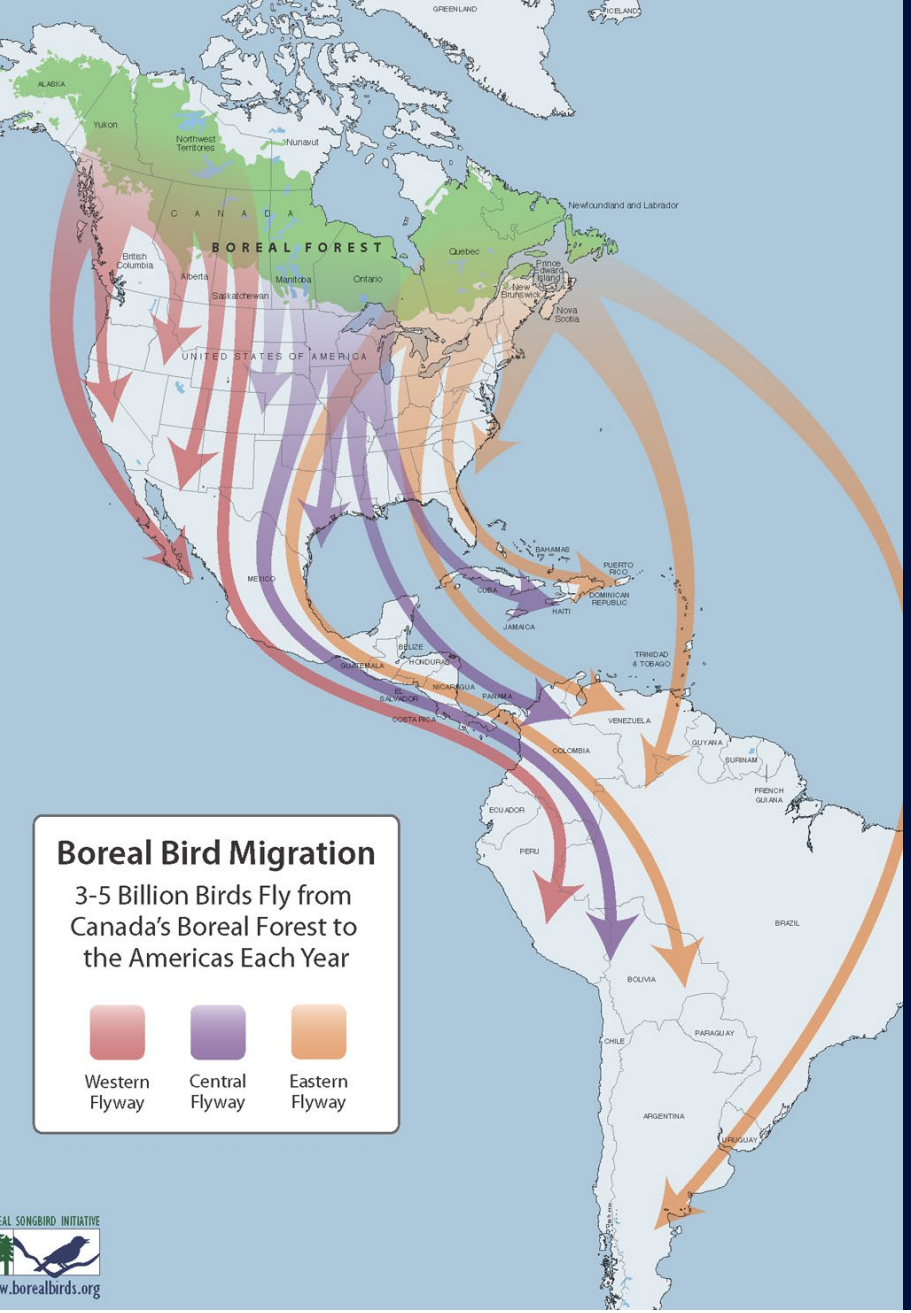
Scope of problem and regulations

Threats to birds

Collision – Building glass ~ 600 million
Collision – Vehicles ~ 215 million
Collision – Electric lines ~ 25 million
Collision – Wind turbines ~ 235 thousand

Cats ~ 2.4 Billion!

Source – U.S. Fish & Wildlife Service



Americas migratory routes

Large cities in migratory routes

- Toronto
- New York
- Chicago
- Minneapolis
- Seattle
- San Francisco

BUT, bird strikes can occur at any time of year in any location.

Where are there regulations

Bird ordinances in several locales

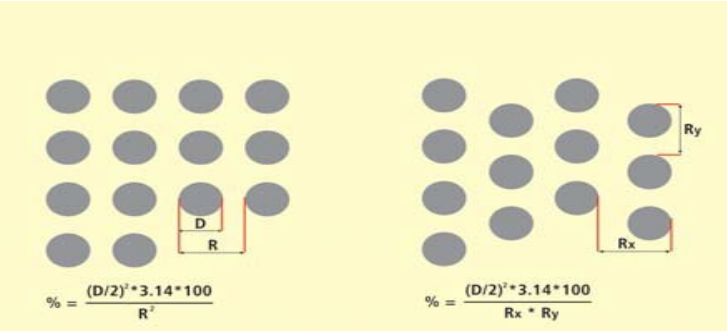
- New York City
- Chicago
- San Francisco
- Minnesota
- Toronto
- San Jose
- Madison
- Others

LEED Bird collision deterrence pilot credit

- If all materials have threat factor of 15 or below, Bird Collision Threat Rating does not have to be calculated

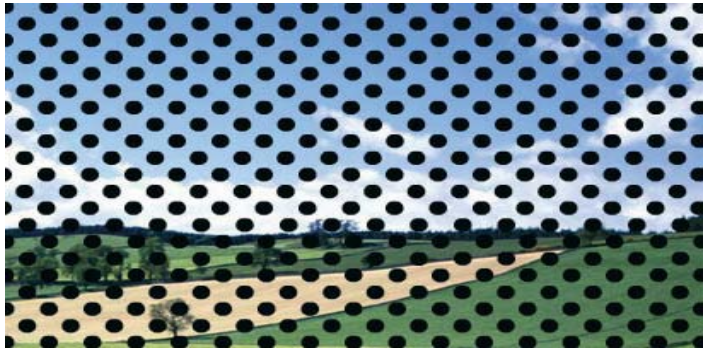
Design solutions with glass

Design solutions with glass



Calculation of the coverage afforded with a dot grid

Variations on a theme are permitted! Small breaks reduce the severity of vertical lines



Dot pattern with 27 % coverage, Ø 7,5 mm

Horizontal black lines, 2 mm in diameter and with a 28 mm interval had very good Flight Tunnel test results – against all expectations. Where it is important to have the best possible visibility, in front of light backgrounds, this is an acceptable compromise.

Linear patterns are established prevention, crystal. Colored film contrasts well against most backgrounds

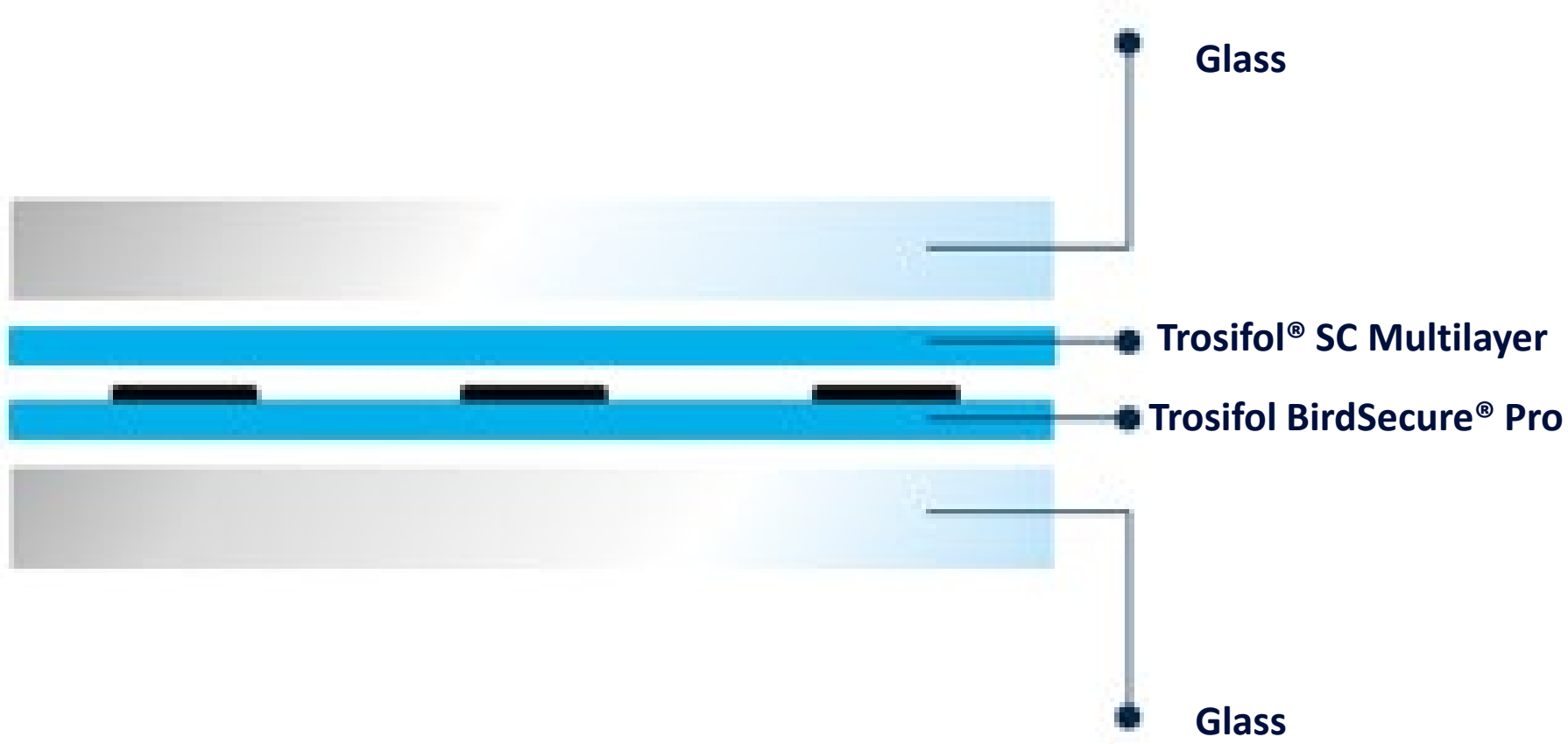
It is not necessary to make the lines strictly vertical

The Challenge Balance bird safety with aesthetics

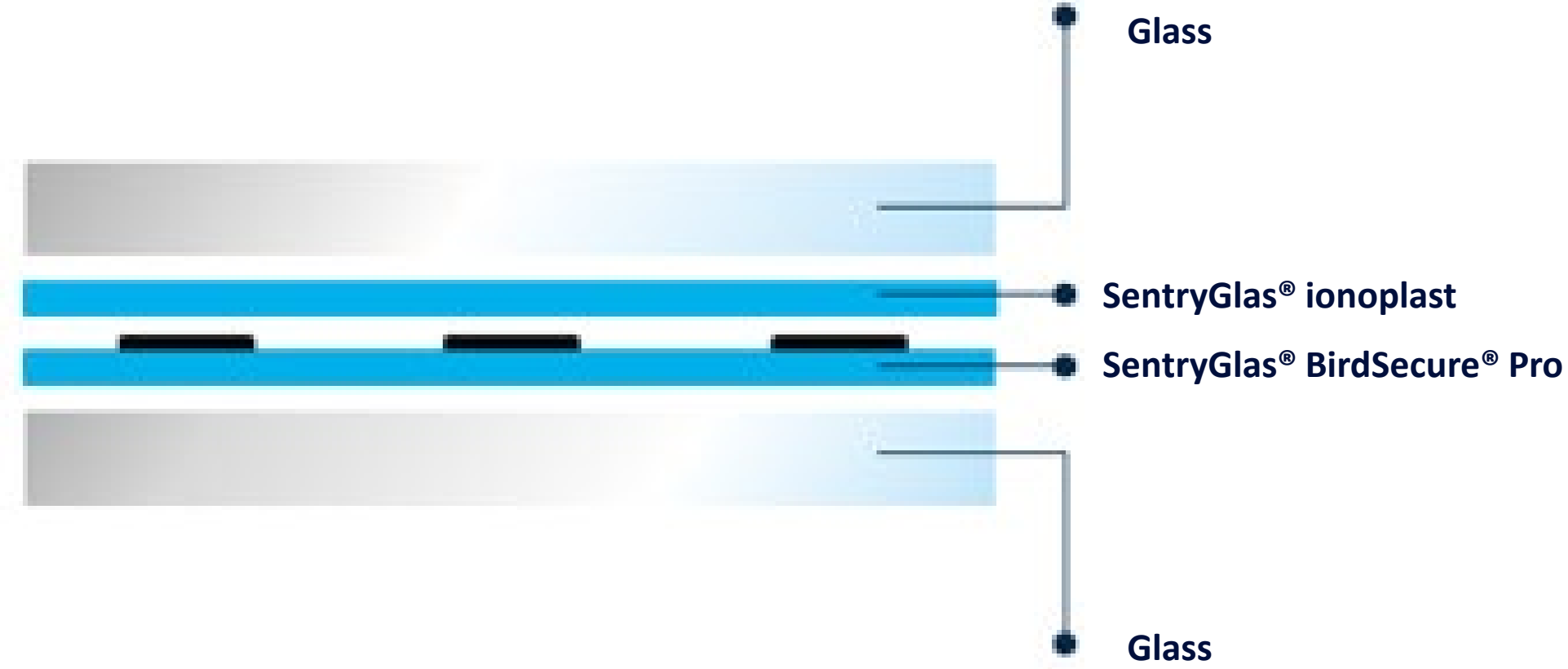
Minimal dot coverage

- Two new pattern offerings in the BirdSecure® Pro portfolio. Available in Trosifol® PVB and SentryGlas® ionoplast versions.
- Both products have less than 0.5% dot coverage to minimize aesthetic impact.
- Dot sizes of 6mm and 3mm are available.
- Both patterns received “Bird-friendly” rating in American Bird Conservancy testing.
- Can be combined with other Trosifol® and SentryGlas® interlayers for multiple benefits.

BirdSecure® Pro acoustic solution



BirdSecure® Pro structural solution



A History of Kuraray BEC Conference Take 5 Presentations

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2016 – “Dave”

2017 – The Interlayer Fashion Show

2018 – SentryGlas® 20th Birthday

BirdSecure® Pro Demonstration starring “Melanie”

Visit us at table 30 to pick up a bird and get a picture with Melanie and her friends

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