



Hennen

*1-10: Number of birds killed annually by collisions with a typical building, including residential.
1,000: Number of birds killed annually by collisions with an all-glass building.*

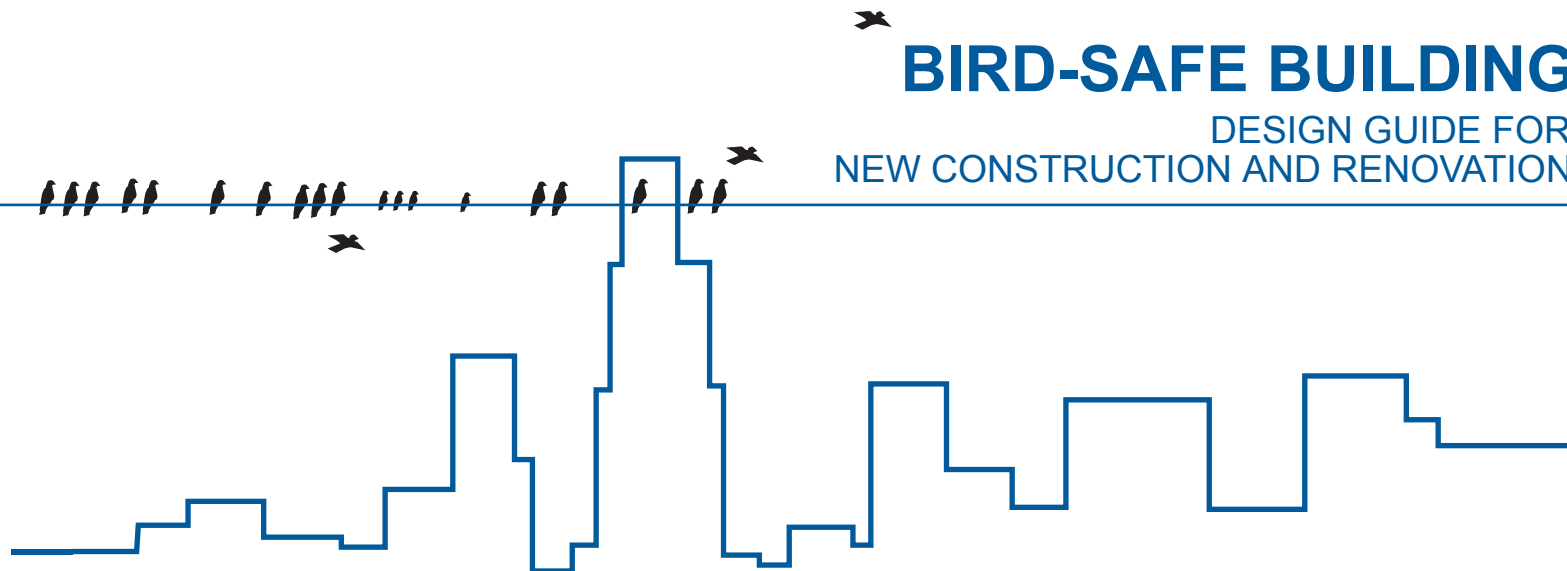
BIRD-SAFE BUILDING
DESIGN GUIDE FOR
NEW CONSTRUCTION AND RENOVATION

DESIGN TO PROTECT

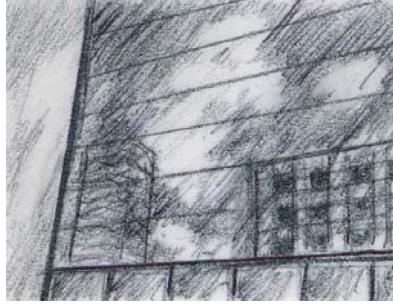


Richard M. Daley, Mayor
Chicago Department of Environment
Chicago Department of Planning and Development

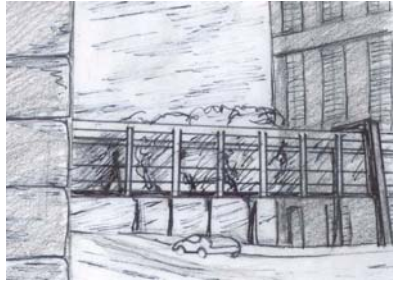
Birds and Buildings Forum



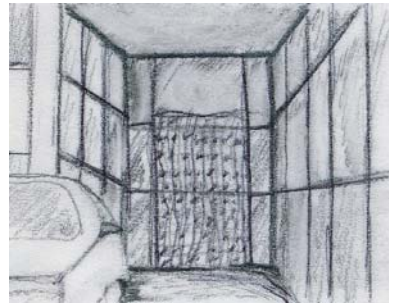
FACTS



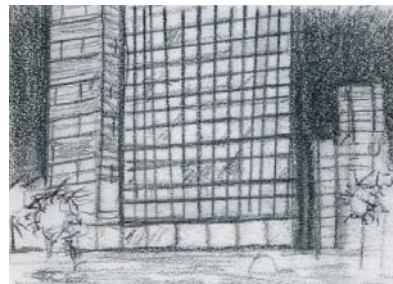
Birds do not understand that reflections are false



Birds do not understand that glass is a solid barrier



Birds are easily trapped in niches, courtyards and other recessed areas



Birds are attracted to light and try to fly into lit spaces

RESOURCES

Chicago's Bird Agenda (www.cityofchicago.org/Environment)
Birds and Building Forum (www.birdsandbuildings.org)
Chicago Bird Collision Monitors (www.birdmonitors.net)
Fatal Light Awareness Program: FLAP (www.flap.org)
New York City Audubon (www.nycaudubon.org/home)
Light's Out Chicago (www.lightsout.audubon.org)

DESIGN GUIDE FOR BIRD-SAFE BUILDING

NEW CONSTRUCTION AND RENOVATION

A bird-safe building can be a cutting-edge design, meet LEED standards and protect important species.

SITE STRATEGY/ LANDSCAPE

- Analyze surroundings to identify location and angle of birds' approach to the building; modify glass on this approach facade
- In small exterior courtyards and recessed areas, define the building's edge clearly with opaque materials and non-reflective glass

COMPOSITION

- Create visible details that birds will recognize
- In general design facades with balconies and visible structural details such as columns and lintels
- Angle glass toward ground or sky so that the reflection is not in a direct line of site (optimum angle: 40 degrees)
- Avoid flat reflective openings larger than 2" x 4"

EXTERIOR

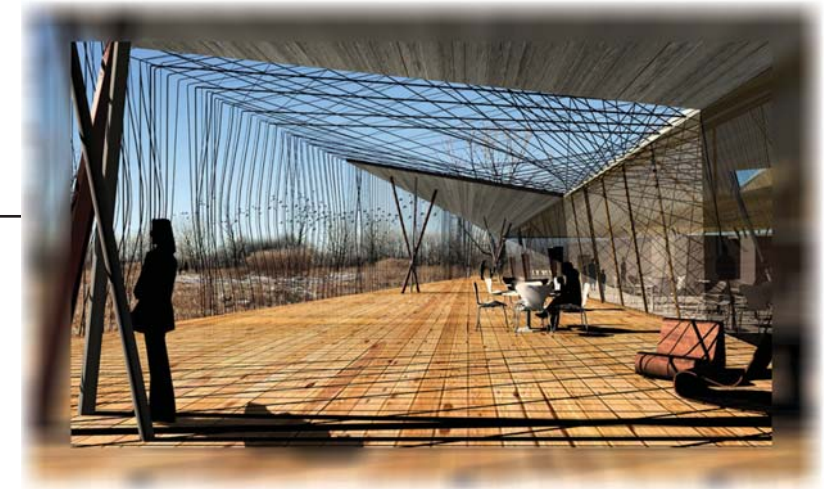
- Design facades so that glazing is enhanced by elements that are visually interesting as well as functional, i.e. vertical greenery/ vines, vertical or horizontal sun shades
- Integrate awnings to cast shadows and mute reflection

MATERIALS

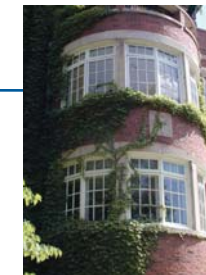
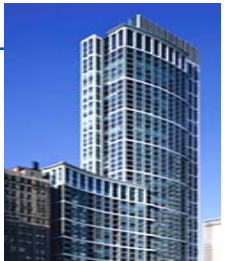
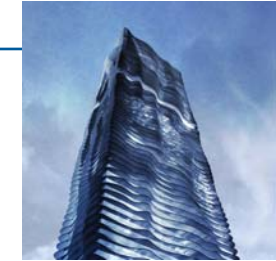
- Specify non-reflective glass
- Select glass that is transparent to humans but not to birds (In the research pipeline as of Summer 2006)
- Use fritted glass, window film, decals, decorative paint and grills to minimize clear window area
- Attach external screens to operable windows

INTERIOR / LIGHTING

- Use design elements in a way that mutes reflections, such as blinds with vivid slats and vertical tape, drapes hung close to exterior glass, perforated shades and artwork
- Select pattern and material of window coverings to create a visible barrier for birds
- Interrupt views through parallel glass facades with objects such as sculptures and furniture
- Install motion sensors on interior lights to ensure they are not left on overnight



Jeanne Gang, Studio Gang Architects



OBJECTIVES: CREATE VISUAL SIGNALS · MINIMIZE REFLECTIVITY · MINIMIZE LIGHT AT NIGHT