

## **Background:**

Bird Friendly Site Design is an important part of creating a city wide progressive Green Development Standard and should be implemented where ever possible to include as many of the above outlined bird friendly strategies for reducing light pollution and reflective glass, along with type of ventilation grates to effectively reduce migratory bird deaths. These Bird Friendly Development recommendations have been informed by The City of Toronto's Bird Friendly Development Guidelines and contain rationales for policy and standards for City building design and development, and informative information and recommendations for businesses, residents, and building owners. Information contained in this document can be referred to in order to further understand how the following recommendations relate to reducing migratory bird fatalities in the urban cityscape.

In accordance with The City of London's Humane Urban Wildlife Conflict Policy, The Animal Welfare Advisory Committee (AWAC) recommends the City of London take measures to reduce the thousands of bird fatalities due to light pollution and reflective glass through:

- Placement of bird-friendly exterior light fixtures in conjunction with glass design elements within the parameters of proper building and safety codes.
- The adoption of a migratory bird policy (Refer to City of Toronto's Green Development Standard Bird Friendly Guidelines)
- Provision of a comprehensive list of design based development strategy options to architects, planners, urban designers, building owners and managers, tenants, and homeowners that can be applied to new or existing buildings. Strategies can be applied to all types of development (high, low rise, residential, commercial, industrial, and institutional).
- A campaign that promotes awareness of the dangers the urban environment poses to migrating birds such as the City of Toronto's "Lights Out Toronto" event coinciding with the spring and fall bird migration.
- A Rating and Acknowledgment System that recognizes and rewards participating buildings for their efforts to implement the City of London's Bird Friendly Green Standards for Light Pollution and Bird Friendly Development.
- Bird Friendly Site Ventilation Grates (Ventilation Grates with a porosity no greater than 2cm x 2cm or ventilation grates covered with netting to prevent injured birds from falling through).
- Use of Transparent Noise Barriers be avoided or treated in such a way as to create visual markers for birds to perceive them.
- Elimination of mirrors as part of exterior landscape design. Mirrors create reflected habitat which kill and maim birds as they are unable to distinguish reflected habitat from real habitat.

**The following strategies outline recommendations for achieving a Bird Friendly Green Standard for Light Pollution and Bird Friendly Development".**

**Visual Markers** are the most effective technique to reduce window strikes. The distance between patterns or applications on glass must be no further than 28cm, with a distance of 10cm or less being the most effective pattern for projecting buildings as solid objects to birds.

- Options for creating visual markers and muting reflection shall be applied wherever possible to glass features and windows for the first 12 meters above grade. (dimensions relate to typical tree heights)
- Dimensions for visual markers and muting reflection applications are subject to building design and site conditions:
- Glass treatments shall be applied above 12 meters to the height of or anticipated height of the surrounding tree canopy and vegetation at maturity in sites close to natural areas such as ravines or woodlots.

Glass treatments must also be applied to glass adjacent to or in the vicinity of elevated landscapes such as podium gardens and green roofs.

Glass treatment options must also be applied to windbreaks, solariums and greenhouses in order to create sufficient visual markers for birds

### **Glass treatment options:**

**Patterned or 'fritted' glass** refers to glass which contains opaque or translucent images or abstract patterns. The images are created by using dots in a variety of sizes and densities. Only non-reflective glass should be used when combined with fritted patterns.

**Film products** refers to external film applications or laminates which contain images or patterns and can be designed to enhance the architectural design of the building.

**Decals** with no more than 28cm of clear spaces between patterns can be used.

**Decorative Grilles and Louvres** refer to exterior grille features which if applied must be 28cm or 10cm or less.

**Fenestration Patterns** refer to multiple paned glass containing horizontal and vertical mullions. Panes must be no more than 28cm with 10cm or less the most effective visual marker.

**Art work** applied to the interior or exterior of windows can be used to provide sufficient visual markers while allowing for natural light.

### **Muting Reflections Options:**

**Internal Screens** can be installed as close to glass as is possible in order to create a visual marker.

**Awnings and overhangs** to mute images at ground floor level.

**Sunshades** refer to applications to reduce direct sunlight, while allowing indirect light into rooms. This feature mutes reflection thus reducing window strikes.

**Angled glass** refers to panes of glass angled in such a way that reflected images are projected downward. Angles of no more than 20 degrees are effective with an angle of 40 degrees being the most optimal for creating a visual marker. This application is most effective when applied at ground level.

## **Bird Friendly Lighting Guideline Recommendations**

### **External Lighting Fixtures:**

**Decorative Lighting** refers to external lighting features for the purpose of “vanity” or “architectural lighting” and should be eliminated wherever possible. For existing buildings, vanity and architectural lighting should be projected downward and turned off during migratory season.

**Advertising Lighting** must be lit from above to reduce the volume of light being projected unnecessarily into the night sky.

**Event and Festival Lighting** such as spotlights and search lights must be prohibited during bird migration season.

**Roof Top Lighting** that contributes to light pollution should be prohibited. Architectural lighting may be allowed only if the following conditions are met:

- Exterior light fixtures to prevent unnecessary light spillage must be installed.
- Architectural lighting must be turned off from 11pm-5am year round without exception utilizing an automatic device.

Overrides after hours may be provided by a manual or occupant sensing device with a limit of a 30 minute override.

### **Interior Lighting:**

**Bird Friendly Operational Systems and Practices** refers to the use of operating and system practices by residents, tenants, building owners, and managers that help to reduce migratory bird fatalities. The following strategies can be used:

**Installation of Interior Task lighting** at work stations be the recommended light source during evening work hours, increasing energy efficiency, reducing light pollution and migratory bird fatalities.

Overhead lighting be turned off at night and focused lighting such as task lighting be used during bird migration season.

**Provision of shielding from interior generated light** with less than 10% transmittance overnight for all fenestrations (windows, doors, skylights, curtained walls). Blinds and curtains are just some of the strategies which can be used.

**Motion-Sensitive Lighting** to be installed and retrofitted in lobbies, walkways, corridors, and **operating systems** that automatically turn off lights during after work hours.

**Internal Location of Greenery:** Building owners and managers must locate greenery away from clear glass and minimize lighting levels through motion sensing lighting in ground floor lobbies, walkways and corridors and retrofit glass in these areas wherever possible with bird friendly window applications in

order to meet the Bird Friendly Green Standard. (Birds drawn into cityscapes by light pollution seek safety by flying towards greenery and are extremely dangerous in these areas.)