

### Attachment 3

## Sustainability Metrics – Metric IB-18 Bird Friendly Design (i.e Bird Safe Design) and Bird Safe Standards

IB-18: BIRD-FRIENDLY DESIGN (i.e. BIRD SAFE DESIGN)			
<b>Intent:</b>	To reduce the incidents of bird collisions and provide an urban environment where birds can thrive. The built environment can have strong negative impacts on birds. Design and system selection can result in fewer bird collisions and deaths.		
<b>Applicable to:</b>	<input type="checkbox"/> Block Plan	<input type="checkbox"/> Draft Plan of Subdivision	<input checked="" type="checkbox"/> Site Plan
	<b>Points</b>	<b>Requirement</b>	<b>Documentation</b>
<b>Good:</b>	2 points	<p>A combination of Bird-Friendly Design strategies on at least 85% of contiguous glass area greater than 2 square meters (m<sup>2</sup>) within the first 16 meters of the building above-grade (including interior courtyards) and above green roofs is applied.</p> <p><b>AND</b></p> <p>The remaining 15% of glazed windows do not need to be treated unless the glazing is larger than 2 square meters (m<sup>2</sup>) or in close proximity to open spaces, a green roof or a natural heritage feature.</p> <p>Bird-Friendly Design Strategies may include:</p> <ul style="list-style-type: none"> <li>Visual patterns on glass,</li> <li>Window films,</li> <li>Fenestration patterns,</li> <li>Angled glass downwards,</li> <li>Reducing night sky lighting.</li> </ul> <p>Visual markers provided on the glass of proposed buildings with spacing no greater than 5 centimeter x 5 centimeter.</p>	<p>On the building Elevation drawings:</p> <ul style="list-style-type: none"> <li>Highlight and declare the total area of contiguous glass, below 16m above grade that is greater than 2 m<sup>2</sup>.</li> <li>Indicate the areas treated bird friendly design strategy, noting which strategy has been used.</li> <li>Quantify the total area of continuous glass that has been treated by bird-friendly design strategies and confirm that it is at least 85%.</li> </ul> <p>Confirm that the visual markers on the glass have spacing no greater than 5cm x 5cm.</p>
<b>Good:</b>	2 points	Apply Bird-Friendly Design strategies for ground-oriented residential development that is adjacent to natural heritage systems and open spaces.	Provide a Letter of Commitment signed by an accredited professional (architect or professional engineer) and the owner/developer that confirms Bird Friendly Design strategies are incorporated for developments adjacent to natural heritage systems and open spaces, listing which acceptable Bird Friendly Design strategies are to be included.
<b>References:</b>	<p>City of Vaughan: Urban Design Guidelines.</p> <p>City of Markham Bird Friendly Guidelines</p> <p>Whitby Green Standard v1 (2020): LUN1.7 (Site Plan)</p> <p>Toronto Green Standard v3 Tier I: Ecology (EC4.1) (CF, LR, MHR); Tier II: Ecology (EC4.3) (LR), (EC4.4) (MHR)</p> <p>Thinking Green Item (2018): 10 (Site Plan)</p>		

# City of Vaughan's Bird Safe Standards

## Film, Frit and Acid Etched Markers

Best efforts should be made to treat all buildings from finished grade to 16m with Bird Safe Design treatments. Where not feasible, for 85% of contiguous glass larger than 2m<sup>2</sup> in area from finished grade to 16m should be treated. Such treatments include visual external markers in the form of stripes, dots or other patterns. A variation of patterns can be used to create individuality in building design through Bird Safe Design treatments.

Balcony railing and interior courtyards with clear glass should be treated. Green roofs can often be situated as low as the second storey of a building, these should be treated. Also, a green roof up to 4m from landscaped feature when above 16m above grade should also be treated.

## Standards for Visual Markers

- **Size:** The size of a marker pattern should be 0.32cm (1/8 inch) or greater. These visual marker standards can change based on current research observations.
- **Density:** To deter bird-window collisions for most species, visual markers should be spaced vertically at 5cm horizontally and 5cm vertically. FLAP Canada's research confirmed these standards.
- **First Surface Application:** To effectively disrupt the illusion of an environment or thoroughway to an open space beyond the clear or reflective surface, markers must be applied to the exterior (first) surface of the glass.
- **Contrast and Visibility:** Markers must have high contrast from clear or reflective exterior surfaces and be visible under varying weather conditions.
- For the 15% remaining glass surface should be applied if the area of continuous glass is greater than 2m<sup>2</sup> or is near open spaces, green roofs or natural heritage features. Such treatments include closer-spaced window mullions and decorative grills.



*Figure 1 - Image provided on page 11 of Ottawa's Bird-Safe Design Guidelines*

## Bird Safe Landscaping Principles

All building facades where trees and vegetation are proposed adjacent to the windows should be treated. If locating trees near glass, plant trees and vegetation within 1m from glass areas or further than 30m from glass areas. The use of fruit-bearing trees and vegetation that attracts birds should be minimized near untreated glass and reflective surfaces. As an alternative to planting trees near glass, plant low shrubs and groundcover.

## **Lighting Controls and Design**

Birds migrating at night may be drawn to urban areas by artificial light, especially during inclement weather. The artificial light may confuse and disorient the birds, causing birds to collide with buildings and other structures, or become exhausted and highly vulnerable to predators. The harmful impacts of interior and exterior lighting can be mitigated through lighting controls and design.

### **Interior Lighting**

Interior lighting should be shut off from 11 p.m. to 6 a.m., minimal light should be used during spring (March to June) and fall (August to November) bird migration periods, and motion sensors or an auto shutoff system with a maximum 30-minute vacant period should be installed. Automated blackout blinds can be installed and drawn for intensely lighted interior spaces.

### **Exterior Lighting**

For all exterior lighting, up-lighting should be avoided at all times by attaching cut-off shields for streetlights and external building lights. Exterior lighting should be limited to areas where lighting is needed for safety and security. Avoid creating “pools”, “spots” or “floods” of light that could attract birds. As per the City of Vaughan’s [Property Standards By-law](#), light is not permitted to spill out from the property line.

## **Best Practice Standards**

Please see the following for best practice Bird Safe standards:

- [Fatal Light Awareness Program Canada](#)
- [CSA Bird Friendly Building Design \(2020\)](#)
- [City of Ottawa Bird Safe Design Guidelines \(2020\)](#)
- [City of Markham's Bird Friendly Guidelines \(2014\)](#)
- [Toronto Green Standard v3 Tier I: Ecology \(EC4.1\) \(CF, LR, MHR\); Tier II: Ecology \(EC4.3\) \(LR\), \(EC4.4\) \(MHR\)](#)