

City of Vaughan's Bird Safe Design Standards

Areas Requiring Glass Treatment

- Bird safe treatment(s) are applied on minimum 90% of contiguous glass panel area greater than 2 sq.m and shall be applied to glass within 16m from grade of to the height of adjacent mature vegetation, whichever is greater.
- 4m above rooftop vegetation or the height of the adjacent mature vegetation, whichever is greater, and treatment will be applied to, but not limited to, exterior glass, fly-through conditions and balcony railing.
- Treatments are applied to all glass panel areas that creates fly-through conditions and are adjacent to natural heritage features.

Primary Treatments

Visual Markers

- **Size** – a minimum of 4mm in diameter for individual elements; or 2mm wide by 8mm long for linear elements.
- **Marker Density** – To deter bird-window collisions for most species, visual markers should be spaced vertically at 5cm horizontally and 5cm vertically.
- **Contrast** - Visual markers shall be in high contrast to the glazing material on which they are present.
- **Glass surface** - Visual markers shall be on the first (exterior) surface of the glazing.



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

Fly-through Conditions

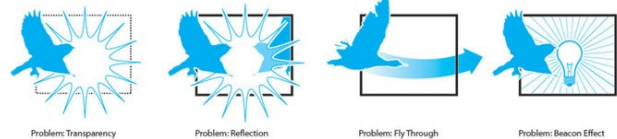
- **Glass corners** - Glass corners shall be treated for 5 m in each direction, extending from the corner.
- **Parallel Glass** – All parallel glass shall be treated with visual markers
- **Balcony Railings** – Glass balcony guards/ guardrails shall be treated with visual markers.

Secondary Treatments

Building-Integrated Structures

Shades - Exterior-mounted shades that create a visible barrier on the glazing and are intended to protect the building from solar radiation or to act as an aesthetic element shall be considered effective in preventing bird collisions if they are:

- a) parallel or angled to the glass surfaces;
- b) made of architectural wire mesh, lattices, trellises, or any opaque or translucent non-reflective material that:
 - i. has been perforated in a pattern with holes no greater than 50 mm; and
 - ii. has a solid-to-void ratio not less than 50%; and
- c) placed so that the material surface is not more than 1 m from the parallel plane of the glass.



Screens, Grilles, and Mesh

Screens, grilles, and mesh elements designed to prevent the entry of birds shall be considered effective in preventing bird collisions, provided that they:

- a) are installed in front of the glazing so as to be seamless and taut; and
- b) conform to the following, as applicable:
 - i. Aviary mesh or nets shall have a maximum aperture size of 19 mm × 19 mm and shall be installed at least 50 mm in front of the glazing.
 - ii. Screens are installed on the exterior of the glazing, such as those used to prevent insects from entering the building.
 - iii. Decorative, aesthetic, artistic, or any other type of screen installation shall meet the criteria for shades.

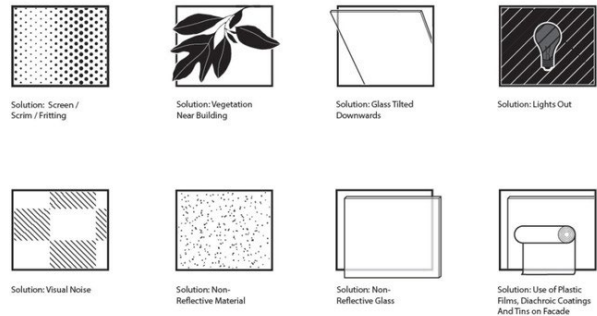


Figure 2 - Identifying the right bird safe treatment to apply to buildings is a form of climate adaptation measure.

Shutters - When stationary exterior shutters with gaps not larger than 50 mm are permanently installed on the exterior of a building, the glazing need not be treated.

Louvres - Louvers shall meet the criteria for shades.

Overall Site and Building Design

Site design - Site design should take into account nearby existing bird habitats (e.g., ravines, natural areas) or known migratory paths. Sites in proximity to bird habitats are high risk, and design on such sites shall exceed the minimum requirements of this Standard.

Ventilation grates - Grade-level building ventilation grates shall have a porosity not greater than 20 mm × 20 mm or 40 mm × 10 mm.

Lighting

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.

Interior Lighting - A building’s interior lighting should be reduced after business hours in non-residential buildings and from sunset to sunrise in all cases. Whenever possible, task lighting rather than building lighting should be used during these times.



Bird Safe Treatments for Building Design – Other References

Building owners have a responsibility to undertake reasonable measures to protect birds from harm under the *Ontario Environmental Protection Act* and *Federal Species at Risk Act*.

Bird Safe Design treatments, as well as lighting controls and design should be incorporated in building design. Bird Safe Standards are supported by CSA A460:19 as well as Planning Act, R.S.O. 1990, c P.13 Section 41 Site Plan Control Area.

Vaughan’s Urban Design Guidelines reference policies supporting the implementation of bird safe treatments for development.

Updated November 2022

Submission Requirements for new Development

In Vaughan, bird safe treatments are required to be included in all buildings to help mitigate the potential for bird-building collisions. This standard is applied to all site and draft plan applications. The implementation of the Bird Safe Design Standards into the development review process are as follows:

1. The Pre-Application Submission Checklist now includes Bird Safe Design as a requirement for Site Plan applications.
2. Implement Bird Safe Design Standards into the submission as follows:
 - In the **Urban Design Brief** – Indicate which bird safe treatment will be pursued and indicate percentages of coverage.
 - In the **Sustainability Metric tool** – identify that the bird safe design metric has been met and reference the supporting materials.
 - On the **Elevation Drawing** – Complete the Bird Safe Exterior Specification Checklist and identify the location of the treatments.
 - On the **Landscape Plan** – A secondary treatment would be required for building facades that have not been treated (15%). For secondary treatments, indicate distance (m) of all vegetation to non-treated reflective glass.
 - On the **Lighting Photometric Drawings** – Show 0 level lighting at property line.

Bird Safe Treatment Exterior Specification Checklist

Applicant to include checklist on Elevation
Drawing(s) at first site plan submission.
Drawing(s) to be stamped and signed by an
OAA member.

Mandatory Primary Treatments for all site and draft plan applications.

At Grade Condition (check to confirm the below is applied)

- Bird safe treatment (s) are applied on minimum 90% of contiguous glass panel area greater than 2 sq.m, and within 16m from finished grade or to the height of the adjacent mature tree canopy, whichever is greater.
- Treatments are applied to all glass panel areas that creates fly-through conditions and are adjacent to natural heritage features.
- Treatments are identified and redlined on the elevation drawing(s)

Roof Landscape Conditions (check to confirm the below is applied)

- Development contains no glass panel within 16m from roof level finished grade.
- If glazing is adjacent to green roofs and/or rooftop vegetation, bird safe treatment is applied at a height of 4m from the surface of the green roof or the height of the adjacent mature vegetation, whichever is greater



Civic Centre Resource Library

At-grade visual markers, fritted glass, 50% tinted

Public building





Angus Valley Montessori

Visual Markers, brick façade providing contrast, cut glass panes less than 2mx2m.

Private Building





KPMG

Etching pattern on all tower glass; fenestration contrast.

Private Building





101 Eagle Rock Way

Visual Markers 5cmx5cm; Canopy coverage,
cut glass panes

Private Building



Maple District Centre

Brick façade providing contrast, cut window panes,

Private Building





David Braley Vaughan Metropolitan Centre of Community

100 x 100mm, 3mm frit dots to 16m
above grade.

Public Building



Best Practice Standards

Vaughan's Leadership in bird safe treatments

Sustainable Development Goals 15: Life on Land. Death of birds due to building collisions affects biodiversity and extinction of bird populations. Adapting through building design aligns with the UN's SDG #15 to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Green Directions Vaughan – GDV Policy 2.3.1 directs the implementation of the performance metrics of the Sustainability Metrics. Bird safe treatments and dark skies compliance are elements of the Sustainability Metrics performance measures. Council's approval to make bird safe treatments for new development applications mandatory supports the Green Direction Vaughan.

Urban Design Guidelines – UDG Performance standard number 5.3.13 outlines design criteria for the installation of bird safe treatments.

Sustainability Metrics Program – The Sustainability Metrics is a requirement for all new development through the planning process since 2018. In 2022, the bird safe design standards were updated. The bird safe treatment performance measures set out in the Sustainability Metrics Program 2022 are required as a matter of exterior design. This is applicable to rezoning, plan of subdivision and site plan control.

The following are best practices for Bird Safe Standards for new development:

- [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 \(EC4.3\) \(LR\), \(EC4.4\) \(MHR\)](#)

How can you, as a resident, protect birds?

There are many design-based solutions that can be used to reduce bird-window collisions on existing buildings. By making buildings more visible to birds we can all assist in eliminating unnecessary migratory bird deaths.

Learn more about tips and tricks to help Vaughan become a [Bird Friendly City](#).