



BIRD FRIENDLY DESIGN GUIDELINES - CONSIDERATIONS FOR DEVELOPMENT PERMIT

*Adopted by City Council in January 2015
Effective April 24, 2015*

1 Application and Intent

These voluntary guidelines follow from the Vancouver Bird Strategy. Their use is encouraged in the design of buildings and landscaped areas on private and public property, and in the review of such proposals in conjunction with a district schedule of the Zoning and Development By-law or Official Development Plans for development permit applications. These guidelines should be considered along with other policies and guidelines which may be applicable to the proposal, including provincial and federal legislation protecting birds. For further information, refer to *Bird Friendly Design Guidelines: Explanatory Note*.

2 Landscape Design

2.1 Problem: Habitat Loss

According to The State of Canada's Birds, 2012, habitat loss due to human settlement, industry and forestry has caused a 35% decline in a representative sample of bird species in the Pacific Coast region of Canada since 1970.

2.2 Landscape Design Goal

To protect, enhance and create bird habitat in the city, as well as reduce threats to birds in the urban environment.

2.3 Design Process

(a) Survey

the site for birds and existing bird habitat features. Developers should consider hiring a qualified environmental professional to survey and document nesting sites and any bird supportive habitat, in order to inform design choices such as building location and vegetation retention.

(b) Reduce threats

to manage the impact of urbanization on birds. Aim for net zero reduction in bird habitat, mimic hydrological systems through storm water management, restore riparian habitat through day-lighting streams and pursue traffic calming to reduce noise pollution and bird deaths due to vehicle collisions.

- (c) Create
bird habitat to increase bird diversity and abundance. Providing opportunities for food, shelter, nesting sites and water, creates or restores habitat for birds throughout Vancouver.
- (d) Maintain
new and existing bird habitat to increase bird diversity and abundance. Create a long term management guide that informs maintenance staff and land owners with strategies and best practices for their new bird friendly landscapes.
- (e) Monitor
changes in bird populations and adapt site design. For large public sites such as parks and other government lands, monitoring programs should be established to identify problems and allow for adjustments. For private lands, property owners are encouraged to seek the help of qualified environmental professionals and local birders to assess the success of their landscape installations.

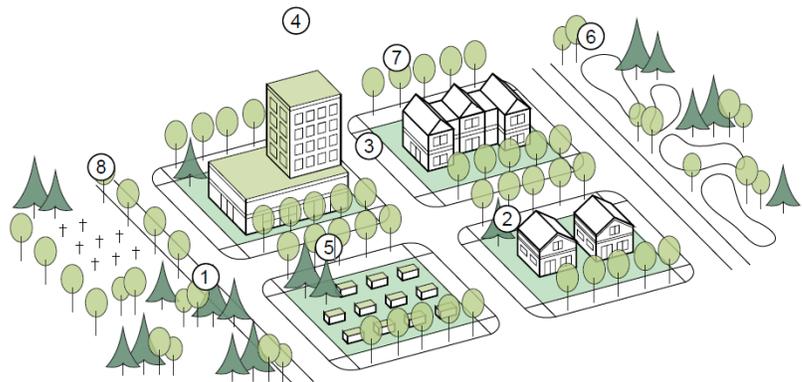
2.4 Landscape Design Guidelines

- (a) Protect and enhance large patches of habitat.
- (b) Green the urban landscape by planting native trees and shrubs for birds.
- (c) Incorporate a mix of habitat types including: coniferous forest, deciduous/mixed forest, shrubland, meadow, freshwater wetland, riparian and coastal shoreline.
- (d) Increase vertical vegetation structure by planting and maintaining native trees and shrubs.
- (e) Select a diversity of native and non-invasive plants.
- (f) Control invasive plants without disturbing breeding birds.
- (g) Minimize direct disturbance from humans.
- (h) Reduce light pollution.
- (i) Minimize lawn area.
- (j) Incorporate snags and downed wood.
- (k) Provide water for birds to drink and bathe.

NOTE: It is your responsibility to be aware of and comply with provincial and federal legislation protecting birds including the BC Wildlife Act and the Migratory Bird Convention Act.

Diagram 1: Opportunities for Bird Friendly Development on Public and Private Land

- ① Parks and Gardens
- ② Residential Gardens
- ③ Green Streets
- ④ Green Roofs and Walls
- ⑤ Community Gardens
- ⑥ Golf Courses
- ⑦ School Grounds
- ⑧ Cemeteries



3 Building Design

3.1 Problem: Collisions with Buildings

Windows are considered to be one of the largest sources of direct human-caused mortality for birds in North America. Glass, whether reflective or clear, is effectively invisible to birds. Birds collide with windows because they are trying to fly into the habitats they see beyond or reflected by the glass. It is estimated that across Canada, 16-42 million birds are killed annually by collisions with buildings. Bird collisions with windows are indiscriminate; they can occur anywhere, at any time, day and night, year-round, across urban and rural landscapes, affecting migratory, resident, young, old, large, small, male and female birds.

3.2 Building Design Goal

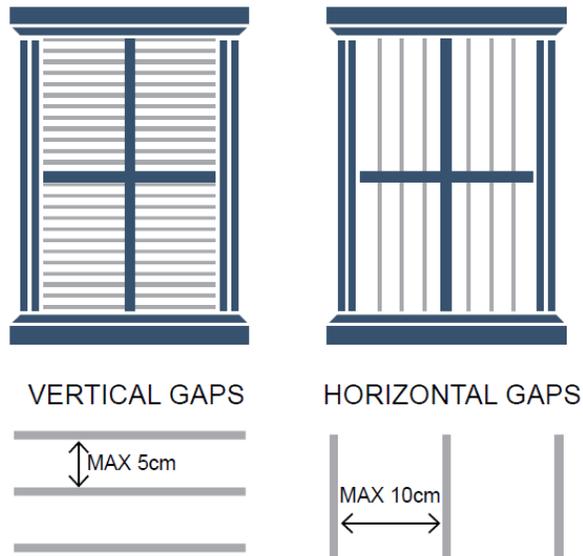
To help reduce bird deaths caused by collisions with buildings.

3.3 Building Design Guidelines

- (a) Increase visibility of glass.
 - (i) The height that presents the highest collision probability is up to mature tree height, or up to the fourth floor of a building, whichever is highest.
 - (ii) Apply visual markers to the exterior of glass surfaces (markers on the interior surface of glass are less effective). Gaps between markers should be no greater than 5 cm vertically or 10 cm horizontally. Applied visual markers are not an optimal solution for all building types; visibility may be better improved with greater use of (ii) and (iii).
 - (iii) Interrupt reflective glass by increasing the density of external visual markers including spandrel panels and mullions.
 - (iv) Other strategies can include adapted fenestration patterns, external blinds, shutters, sunshades, grilles, louvers or artwork.
 - (v) Design corner windows, glass walkways, glass railings, and other similar features to reduce the appearance of clear passage to sky or vegetation.
- (b) Dampen reflections.
 - (i) Use canopies or sunshades to cover windows at ground level.
 - (ii) Use screens, drapes or blinds to increase the opacity of clear glass.
- (c) Reduce the dangers of attractants and landscape reflections.
 - (i) Ensure outdoor landscaping is at appropriate distance from glass, to reduce reflections. If this is not possible, landscaping should occur directly (0-1 m) adjacent to glass or measures should be taken to make glass visible.
 - (ii) Avoid interior landscaping near windows.
 - (iii) Locate bird feeders 0-1 m from windows.
- (d) Reduce light pollution.
 - (i) Reduce unnecessary light-spill through shielding, targeted lighting and reduction of vanity lighting.
 - (ii) Down lighting should be selected over up lighting and floodlighting should be avoided.

- (e) Reduce the dangers of open pipes, ventilation grates and drains.
- (i) Ventilation grates and drains should have openings no larger than 2 by 2 cm or 1 by 4 cm to ensure that birds cannot be trapped within.
 - (ii) Cap the ends of all open pipes, large and small, so that birds do not become entrapped when investigating these openings for nesting opportunities.

Diagram 2: Apply Visual Markers to Exterior of Glass



Note: Diagrams are not to scale.