



Kate Harrison
Councilmember District 4

REVISED AGENDA MATERIAL for Supplemental Packet 2

Meeting Date: June 6, 2023

Item Number: 18

Item Description: Bird Safe Building Requirements; Adding Berkeley Municipal Code Section 23.304.150

Submitted by: Councilmember Harrison

RECOMMENDATION

Adopt a first reading of a revised ordinance Adding Berkeley Municipal Code Section 23.304.150.

BACKGROUND

On April 19, 2023 the Planning Commission unanimously recommended adoption of a proposed ordinance for bird safe regulations.

The version before Council as submitted by the Planning and Development differs in some significant ways from the Planning Commission approved version with respect to Section 23.304.150 C. 2., entitled “Patterned Glazing Treatment.” These differences could have serious consequences for bird health and safety. The supplemental submitted here proposes a simplification of the Planning Commission language that still meets the goals of the ordinance.

The Planning and Development Department expressed that it is important to provide developers additional compliance flexibility using an additional compliance pathway that is not subject to third-party standards. In both the Planning Commission and Planning and Development Department versions, Sections 23.304.150 C. 1-2 provide building designers two options¹:

- a. a prescriptive pre-approved list of windows that have been tested by the American Bird Conservancy and received a Threat Factor Rating of less than 30 (23.304.150 C. 1); and

¹ Cities such as New York do not have two options, requiring developers to only use windows on the pre-approved list.

- b. a performance pathway where designers can use glass from manufacturers that have not yet tested their glass pursuant to the American Bird Conservancy Threat Factor Rating, but still meet certain objective bird safety design standards (23.304.150 C. 2).

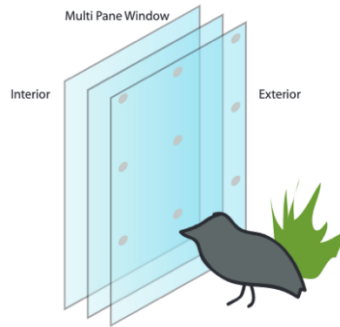
As drafted, the Planning and Development Department version provides a performance pathway that helpfully specifies pattern size and layout but does not specify how opaque the patterns need to be, limit how reflective the glass is (reflective glass even with patterns is a danger to birds), or the panes on which the bird safe features are to be applied. Without these requirements, the glass will still not be visible to birds.

The following is a summary list of the critical specifications/requirements to ensure birds can easily see the glass that were included in the version adopted by the Planning Commission in Section 23.304.150 C. 2:

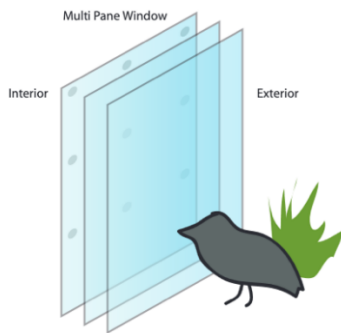
- Panes with patterns must be on the two most exterior surfaces (Surface 1 or 2) only;
- Any markers creating a pattern must be opaque;
- Visible light reflectance from the exterior surface is less than or equal to 15%;
- Bird-safe patterns must be in front of any low-e coatings used for energy efficiency.

The following illustrated diagram created by Alfred Twu demonstrates visually the importance of these specifications:

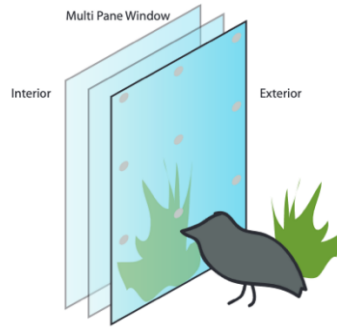
✓ Pattern on Exterior
Low Reflectivity



✗ Pattern on Interior
Not visible to birds
from outside



✗ High Reflectivity
Pattern is obscured
by reflection



The attached version of the ordinance included in this item reads these specifications into compliance pathway 2 within Section 23.304.150 C. 2.

The Planning Department is rightly concerned that the second option be clear enough that Planning staff does not need to independently interpret whether the applicant has met the requirements.

The proposed supplemental thus also clearly specifies that the onus for verifying compliance with these specifications is on the manufacturer and permit applicant, not the City. This is consistent with many requirements in the building code, e.g., the use of tempered glass to protect people and animals from broken glass. The applicant/manufacturer asserts the glass is tempered; the Planning Department is not required to independently verify that.

For reference, here is an example of manufacturer documentation that shows the light reflection of a chosen glass:

- a. Visible Light Transmittance: 62 percent
 - b. Visible Light Reflectance Outdoors: 11 percent
 - c. Direct Solar Energy Transmittance: 23 percent
 - d. Direct Solar Energy Reflectance Outdoors: 39 percent
 - e. Winter U-Value Nighttime: 0.29
 - f. Summer U-Value Daytime: 0.27
 - g. Solar Heat Gain Coefficient: 0.27
 - h. Summer Relative Heat Gain: 65
6. Edge Seals: ASTM E 2188, with aluminum spacers, dual-sealed with a primary seal of polyisobutylene and a secondary seal of silicone sealant for glass-to-spacer seals.
 7. Sealant: Approved by glass manufacturer.

This example demonstrates that it is possible for designers who want to use custom untested glass to attest to the City that they meet certain performance standards without undue burden to plan check staff.

It is in the public interest to adopt a robust compliance pathway 2 as recommended by the Planning Commission, ensuring greater visibility for birds and reducing bird injuries and fatalities.

ATTACHMENTS

1. Revised Ordinance Adding Berkeley Municipal Code Section 23.304.150
2. Comparison of Planning Department Ordinance to Golden Gate Audubon Society Version – Section 23.304.150 C. 2.

ORDINANCE NO. -N.S.

BIRD SAFE BUILDING; ADDING BERKELEY MUNICIPAL CODE SECTION
23.304.150

BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That the Berkeley Municipal Code is amended to add a new Section 23.304.150 to read as follows:

23.304.150 Bird Safe Building.

A. Purpose. The purpose of this section is to reduce bird mortality from windows and other transparent or reflective buildings or building features known to increase the risk of bird collisions.

B. Applicability.

1. *Applicability.* The bird safe building requirements apply to the following types of projects based on the primary land use when such projects require a building permit.

Table 23.304-10. Bird Safe Building Requirement Applicability

Project Type	Applicable Building Location(s)	Supplemental Standards
Non-Residential		
New Construction or Addition	All transparent or reflective material located between the ground and 100 ft. above grade.	
New or Replacement Transparent or Reflective Material on Existing Building	All transparent or reflective material located between the ground and 100 ft. above grade.	23.304.150(B)(2)(a), 23.304.150(B)(2)(b)
High-Risk Features	All High-Risk Features located at any grade.	23.304.150(B)(2)(a) 23.304.150(B)(2)(e)
Residential or Mixed Use		
New Construction or Addition, Building with 10,000 sq. ft. or more of gross floor area	All transparent or reflective material located between the ground and 100 ft. above grade.	23.304.150(B)(2)(d)
New Construction or Addition, Building with	All transparent or reflective material located between the	23.304.150(B)(2)(b), 23.304.150(B)(2)(d)

less than 10,000 sq. ft. of gross floor area	ground and 100 ft. above grade.	
New or Replacement Transparent or Reflective Material on Existing Building	All transparent or reflective material located between the ground and 100 ft. above grade.	23.304.150(B)(2)(a), 23.304.150(B)(2)(c), 23.304.150(B)(2)(d)
High-Risk Features	All High-Risk Features located at any grade.	23.304.150(B)(2)(a) 23.304.150(B)(2)(e)

2. *Phasing and Exemptions; Definitions.*

- a. *No Replacement.* The bird safe building requirements do not apply to existing windows or other transparent or reflective materials that are not proposed to be replaced.
- b. *Phase-In for Existing Non-Residential or New Smaller Residential Buildings with Lower Hazard Facades.* Buildings where every façade’s total square footage consists of less than 30 percent transparent or reflective material are exempt through January 1, 2025, except that High-Risk Features are not exempt. If one or more façade contains 30 percent or more transparent material in its total square footage, all transparent or reflective materials shall meet 23.304.150(C) (Bird Safe Requirements).
- c. *Phase-In for Existing Residential Buildings with Lower Hazard Facades.* Buildings where every façade’s total square footage consists of less than 30 percent transparent or reflective material are exempt through January 1, 2028, except that High-Risk Features as described in Table 1 – 23.304-10 are not exempt. If one or more façade contains 30 percent or more transparent material in its total square footage, all transparent or reflective materials shall meet 23.304.150(C) (Bird Safe Requirements)
- d. *Phase-In for Affordable Housing.* Residential projects, including the residential portion of mixed-use projects, where greater than 50 percent of the residential unit floor area are subject to recorded affordability restrictions, are exempt from the provisions of this section until January 1, 2025, except that High-Risk Features are not exempt.

e. High-Risk Features Defined. "High-Risk Features" shall be defined as the following transparent or reflective building components that are particularly susceptible to bird-glass collisions: Railings; Awnings; Windbreak/windscreen panels; Acoustic barriers; Skywalks; Greenhouses; Glass walls; Rooftop appurtenances; Balconies; and Exterior decorative panels or signage.

f. Low-e coatings Defined. "Low-e coatings" shall have a same meaning as "LOW-E COATING" in the 2022 Title 24, Part 6 California Energy Code Reference Appendices or successor regulations.

e.g. Surface 1 or 2 Defined. "Surface 1 or 2" shall be defined as either of the two most exterior surface layers of glass from the perspective of the outside of the building.

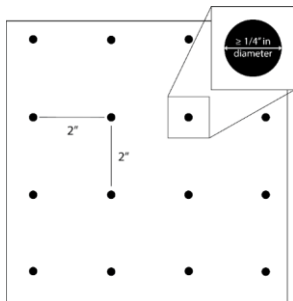
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C. Bird Safe Requirements. Any regulated transparent or reflective material must meet at least one of the following conditions:

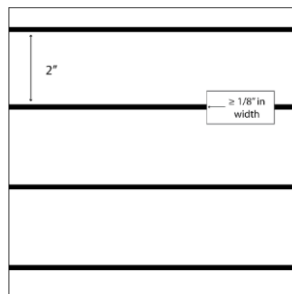
1. *Threat Factor Rating.* A product with an American Bird Conservancy Threat Factor Rating of 30 or less.
2. *Patterned Glazing Treatment.* The glass or reflective material assembly must have all the following characteristics as specified by the manufacturer and permit applicant:
 - a. Panes with patterns that are etched, fritted, stenciled, silk-screened, or otherwise permanently incorporated into the transparent material on either Surface 1 or 2 only. If the pattern utilizes dots or other isolated solid shapes, each dot or shape must be at least a ¼ inch in diameter and be no more than 2 inches apart in any direction (see Figure 23.304-2, left). If the pattern utilizes lines, they must be at least ⅛ inch in width and spaced no more than 2 inches apart (see Figure 23.304-2, left). Frit, ceramic ink, or other marker types must be opaque;
 - b. Visible light reflectance from the exterior surface of less than or equal to 15%;
 - c. As viewed from the exterior surface (Surface 1), all low-e coatings must be behind the pattern.

Figure 23.304-2 Patterned Glazing Treatment Requirements

Internal



Dots or Isolated Solid Shapes



Lines

3. External Screens, Shutters, or Shading Devices. Panes with exterior screens, shutters or shading devices installed permanently over windows, structures, or building features such that there is no gap larger than 9 inches in one dimension. Building integrated treatments include, but are not limited to, metal screens, shutters, fixed solar shading such as louvres, and exterior insect or solar screens.

3-D. Enforcement. Permit applicant shall attest to compliance with this ordinance and allow for third party verification of compliance, in accordance with Administrative Regulations promulgated by the Zoning Officer, which may be modified from time to time to effectively implement this chapter.

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Section 2. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way. Within 15 days of adoption, copies of this Ordinance shall be filed at each branch of the Berkeley Public Library and the title shall be published in a newspaper of general circulation.

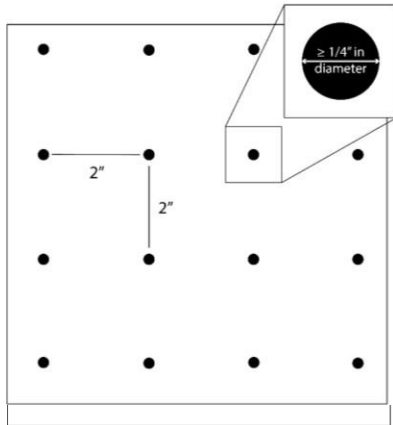
C. Bird Safe Requirements. Any regulated ~~continuous~~ transparent or reflective material must meet at least one of the following conditions:

1. *Threat Factor Rating.* A product with an American Bird Conservancy Threat Factor Rating of 30 or less.
2. *Patterned Glazing Treatment.* ~~The glass assembly must have all the following characteristics:~~ Panes with patterns that are etched, fritted, stenciled, silk-screened, or otherwise permanently incorporated into the transparent material. If the pattern utilizes dots or other isolated solid shapes, each dot or shape must be at least a ¼ inch in diameter and be no more than 2 inches apart in any direction (see Figure 23.304-2, left). If the pattern utilizes lines, they must be at least ⅛ inch in width and spaced no more than 2 inches apart (see Figure 23.304-2, left).

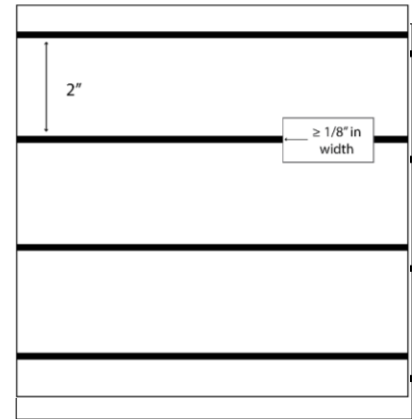
- ~~a. Visible Light Reflectance from the Exterior \leq 15%;~~
- ~~b. Frit, ceramic ink, or other marker types must be opaque (or have a Visible Contrast Level $>$.0 from BirdVis app (<http://3.140.67.204:3838/> Luro, 2021)~~
- ~~c. As viewed from Surface 1, all low-e coatings must be behind the pattern;~~
- ~~d. Clear or low-iron glass;~~
- ~~e. A pattern that is made up of one of the following elements or a combination:~~
 - ~~1. Continuous lines at least 1/8" wide, nowhere more than 2" apart, measures edge to edge (see Figure 23.304.XXX, right);~~
 - ~~2. Circular, square, or irregular solid shapes that are nowhere more than 2" from another shape, measured horizontally or vertically, (edge to edge) or 2.83" diagonally (see Figure 23.304.XXX, left). Each shape must have a minimum area of \geq 0.20 square inches, which corresponds approximately with circles of diameter ¼"; and~~

f. ~~Patterns on side 1 or side 2 only.~~

Figure 23.304.XXX-2 Patterned Glazing Treatment Requirements



Dots or Isolated Solid Shapes



Lines

3. *External Screens, Shutters, or Shading Devices.* Panes with exterior screens, shutters or shading devices installed permanently over windows, structures, or building features such that there is no gap larger than 9 inches in one dimension. Building integrated treatments include, but are not limited to, metal screens, shutters, fixed solar shading such as louvres, and exterior insect or solar screens.