

CALGreen Bird-Friendly Design Workshop

WELCOME

September 9, 2022

9:00 am – 12:00 pm

[2022 Intervening Cycle \(ca.gov\)](https://www.ca.gov)

dgs.ca.gov/BSC/Rulemaking

2022 Intervening code adoption cycle, pre-cycle activities, Bird-Friendly Design



Workshop Overview

Join Zoom Meeting by Teleconference:

Teleconference #: 215-446-3649

US Toll Free Teleconference #: 888-557-8511

Conference Code: 3114051



California Building Standards Commission – YouTube

CALGreen®



Purpose, Intent & Goal

Present Draft Express Terms

PURPOSE: Fine tune our bird-friendly design express terms and provide any cost analysis

INTENT: Support the declaration to protect 30% of habitat by 2030 for biodiversity

GOAL: Minimize negative impacts to our environment, promote sustainable building practices, and preserve environmental biodiversity.



No Formal Introductions

- We will not do formal introductions at this time. If you have comments you would like to provide: Please
- State your name, organization



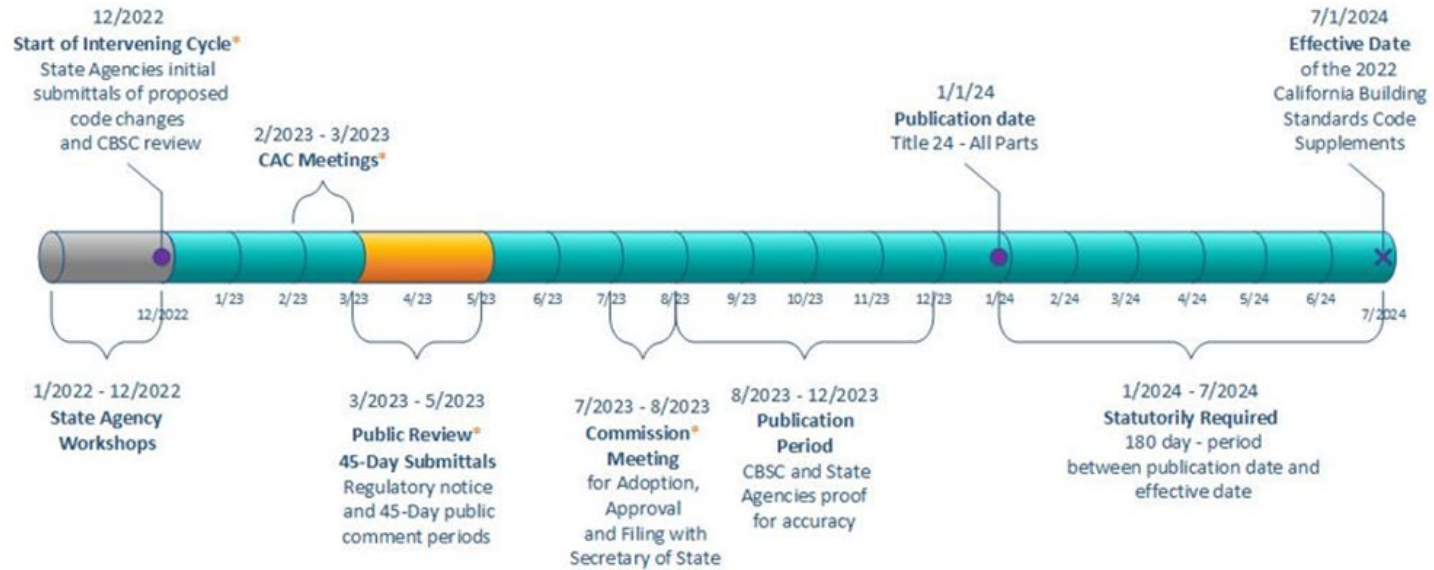
Rulemaking Timeline



California Building Standards Commission

Amendments to the 2022 California Building Standards Code,
Title 24 Supplement July 1, 2024 Effective Date

2022 Intervening Code Adoption Cycle



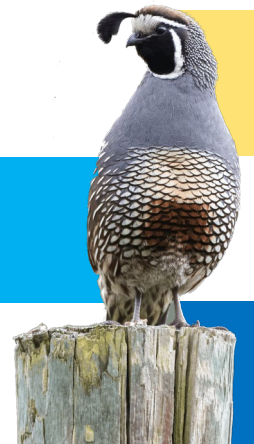
Code Advisory Committees:
 SDLF – Structural Design/ Lateral Forces
 PEME – Plumbing, Electrical, Mechanical & Energy
 HF – Health Facilities
 GREEN – Green Building
 BFO – Building, Fire & Other
 ACCESS – Accessibility

* Public Participation Opportunity

dgs.ca.gov/BSC
(916) 263-0916

Rev. 02/2022
All dates are subject to change

We are here:





California

LEGISLATIVE INFORMATION

Today's Law As Amended - **AB-2382 Light pollution control.** (ca.gov)

Currently on the third reading

- **SECTION 1.** Chapter 12 (commencing with Section 11900) is added to Part 1 of Division 3 of Title 2 of the Government Code, to read:

- **Article 1. General Provisions and Definitions**

*The Legislature finds and declares that the purpose of this chapter is to regulate outdoor night lighting to preserve and enhance the state's dark sky while promoting safety for people, **birds**, and other wildlife, conserving energy, reducing our carbon footprint, and preserving the aesthetic qualities of the night sky.*

CALGreen[®]



Threats to Birds: Collisions-Buildings with Glass

Every year nearly one billion birds collide with glass in the U.S., and most of those fatalities happen to buildings shorter than four stories tall (56% of birds hit low rise). Glass passageways with glazing cause bird collisions.



CALGreen®

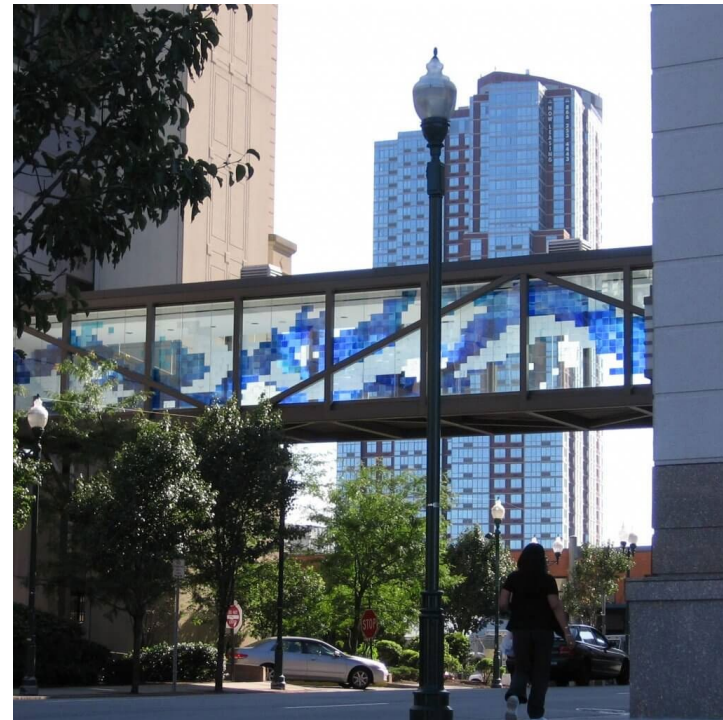


Photo: Christine Sheppard



Threats to Birds: Collisions Day/Night



There are two general broad types of bird-building collisions:

- (1) daytime collisions into buildings caused by the window effect
- (2) nighttime collisions which are most common during spring migration as birds travel from their wintering refuges to summer nesting grounds.



Comment received from AIA:



“I don’t know that bird-safe design is standard practice yet, but AIA recognizes it as an important aspect of our Framework for Design Excellence. We even highlight American Bird Conservancy’s bird-safe design guidelines on AIA’s Framework for Design Excellence, Design for Ecosystems page.”

Melissa Wackerle AIA



Comment received from CEC

“My understanding is that window treatments provided for bird-friendly design will generally mean that the window product requires separate NFRC rating, but that the ability to achieve high ratings that result in energy performance credit should not be hampered. Specifically, bird-friendly products should be equally capable of low U-factor, Solar Heat Gain Coefficient, and Air Leakage scores and are only likely to have marginally worse Visible Transmittance scores due to opaque areas.”



GUESTS

- CALIFORNIA ENERGY COMMISSION (CEC)

[Home Page-California Energy Commission](#)



- NATIONAL FENESTRATION RATING COUNCIL (NFRC)

[National Fenestration Rating Council \(nfr.org\)](#)



Voluntary regulations nonresidential

Appendix A5

A5.107 Bird-friendly building design. Newly constructed buildings, or the alteration of an existing building which includes the replacement of **all** exterior glazing shall comply with the “bird-friendly” building design elements and features in Sections A5.107.1 through A5.107.3 and the California Energy Code.

Note: Exterior treatments of buildings in high fire severity zones mapped by the State Fire Marshal shall comply with Chapter 7A of the current California Building Code.

CALGreen®



Photo: ABC Birds



Voluntary regulations nonresidential

A5.107.1 Required elevation treatment. Building elevation treatment shall incorporate bird friendly mitigation strategies. No less than 90 percent of a building elevation, measured from grade to a height of 40 feet (12 m) above grade, or from grade to the height of an adjacent mature tree canopy (whichever is greater), shall incorporate bird friendly mitigation strategies. No less than 60 percent of building elevation, 40 feet (12 m) above grade to the top of the building elevation, shall incorporate bird friendly mitigation strategies.

*Bird-Friendly Glass,
Patterned, Insect
Screen, Louvers,
Screens,
Sunshades, UV
Glass*

CALGreen[®]



*Building Height of 40 feet is
approximately 3 to 4 stories*



Photo: William Hanlon

A5.107.1 Required elevation treatment

Strategies to minimize the risk of birds colliding with buildings:

1. Glazing

Glazing with visual markers shall include, but is not limited to, the following:

- a. Etched or fritted glass with patterns of elements on the exterior having minimum dimensions of 1/4" (.64 cm) diameter for dots or 1/8" (.32 cm) width for stripes in a density of 2 inches (5.1 cm) maximum horizontally and vertically (the "2 X 2 Rule");

Note: If the visual markers are on glass surface 2, they can be effective if visible behind an exterior surface with reflectivity of 15% or less.



*Bird-Friendly
Acid-etched,
Fritted
Glass*



Photo: Walker Glass

A5.107.1 Required elevation treatment

Strategies to minimize the risk of birds colliding with buildings:

1. Glazing

Glazing with visual markers shall include, but is not limited to, the following:

- b. Interior or exterior glazing film with 2 X 2 visual markers;
- c. Laminated glass with 2 X 2 visual markers, patterned Ultraviolet (UV) coating or use of contrasting patterned UV-absorbing and UV-reflecting films;
Note: Low-e coatings shall be behind the visual markers;
- d. Glass block or channel glass;
- e. Developed glazing technologies, documented to reduce bird strikes, as tested by an independent third party and approved by the authority having jurisdiction; or



*Bird-Friendly
Building with
Window Adhesive
Film*



CALGreen®

Photo: Bryan Lenz



*Bird-Friendly
Building with
Glass Block*

CALGreen[®]



Photo: Sandra Cohen-Rose
and Colin Rose



A5.107.1 Required elevation treatment

Strategies to minimize the risk of birds colliding with buildings:

2. Slats, Screens, Netting, Louvers

Glazing protected by exterior features that create a visible barrier in front of the glazing, may include, but not be limited to:

- a. Horizontal or vertical slats of 1/8" (.32 cm) minimum face width with minimum 2" (5.1 cm) spacing that obscure 85% of glass when viewed from all feasible angles;

*Bird-Friendly
Building horizontal
& vertical
Slats/louvers*



Photo: Chris Phippen



A5.107.1 Required elevation treatment

Strategies to minimize the risk of birds colliding with buildings:

2. Slats, Screens, Netting, Louvers

Glazing protected by exterior features that create a visible barrier in front of the glazing, may include, but not be limited to:

- b. Grilles, screens or 1/8" (.32 cm) dia. welded wire mesh with openings no more than 2" (5.1 cm) maximum horizontally and vertically installed parallel to and no more than 3 ¼ ft. (1 m) from the first surface of glass (glass surface 1)



Photos:
Joanna
Eckles



A5.107.1 Required elevation treatment

Strategies to minimize the risk of birds colliding with buildings:

2. Slats, Screens, Netting, Louvers

Glazing protected by exterior features that create a visible barrier in front of the glazing, may include, but not be limited to:

- c. Netting with 1" (2.5 cm) maximum openings, installed taut at least 6" (15 cm) away from the first surface of glass; or



*Bird-Friendly Building
with Netting*



A5.107.1 Required elevation treatment

Strategies to minimize the risk of birds colliding with buildings:

2. Slats, Screens, Netting, Louvers

Glazing protected by exterior features that create a visible barrier in front of the glazing, may include, but not be limited to:

- d. Sunshades or louvers 9" (22.5 cm) deep vertically spaced a maximum 9" (22.5 cm) or 6" (15 cm) deep horizontally at maximum 6" (15 cm) spacing and parallel or angled to the glass surfaces.



*Bird-Friendly
Glass
Louvers,
Screens
Sunshades*

Photo: William Hanlon



Photo: Dana Wilson

A5.107.2 Special Conditions (glass facades)

The following special conditions shall comply with the provisions in Section A5.107.1 (as appropriate)

1. Glass facades adjacent to vegetated roof.

*Bird-friendly Glass,
Patterned, Frit Markers*

CALGreen[®]



A5.107.2 Special Conditions (railings/guardrails)

*Bird-
Friendly
Railing
Glass
Patterned
Frit*



The following special conditions shall comply with the provisions in Section A5.107.1 (as appropriate)

2. Glass railings and guardrails.



A5.107.2 Special Conditions (transparent corners)

The following special conditions shall comply with the provisions in Section A5.107.1 (as appropriate)

3. Transparent corners that extend 5.5 feet (1.68 m) on either side of a building.



*Bird-
friendly
Glass,
Patterned,
Frit
Markers,
Surface 1*



Photo: Frank Oudeman



A5.107.2 Special Conditions (glass passageways)



Photo: CollidEscape Organization

The following special conditions shall comply with the provisions in Section A5.107.1 (as appropriate)

4. Glass passageways less than 5.5 feet (1.68 m) wide.



A5.107.2 Special Conditions (auxiliary glass)

The following special conditions shall comply with the provisions in Section A5.107.1 (as appropriate)

5. Auxiliary glass building such as a glass pavilion or atria exposed to the sky.

Bird-friendly Building Material, Unpatterned, Etched

CALGreen[®]

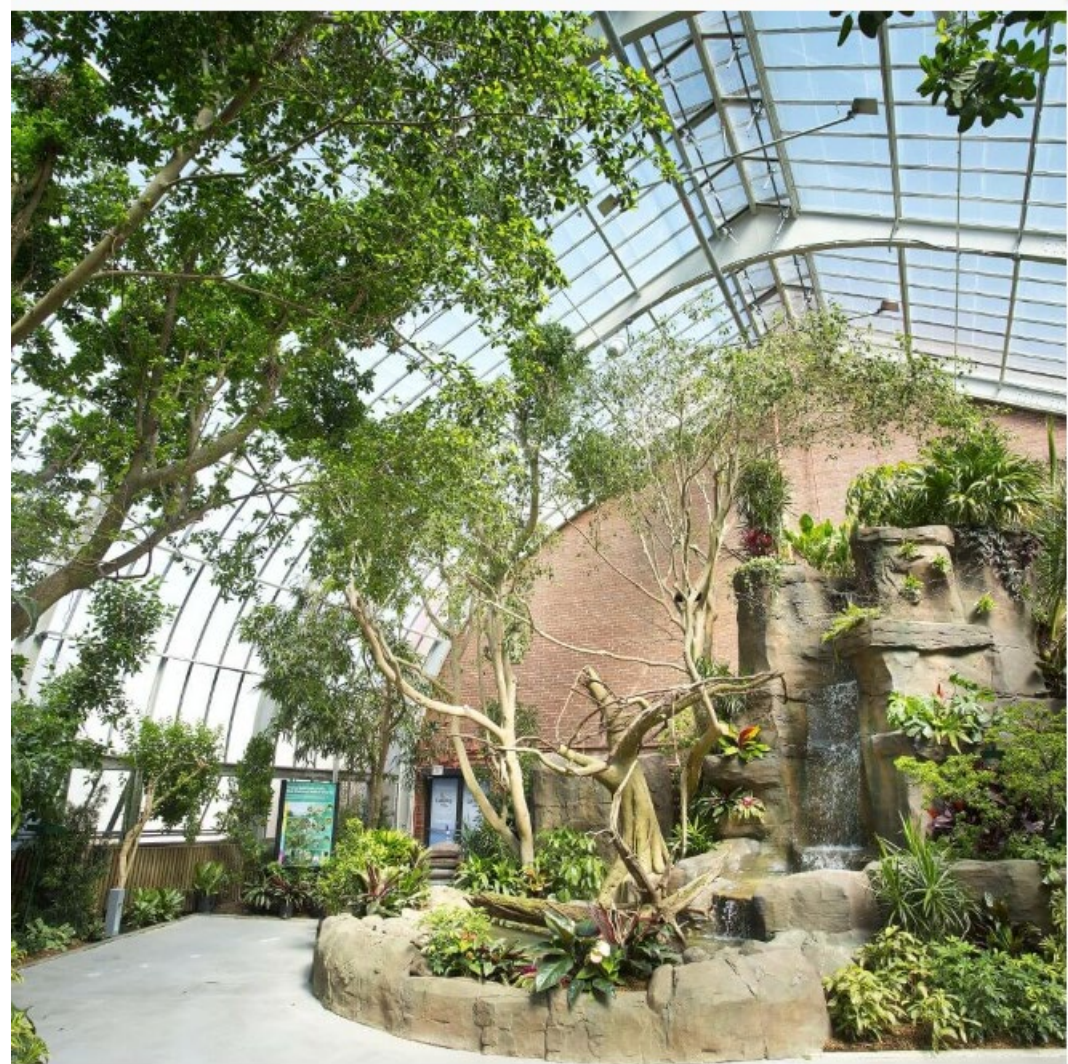


Photo: Walker Glass



A5.107.2 Special Conditions (auxiliary glass also)

The following special conditions shall comply with the provisions in Section A5.107.1 (as appropriate)

6. Auxiliary glass building such as a glass pavilion or atria exposed to a courtyard with a water feature or plants.

Bird-Friendly Glass Atria



Photo: CollidEscape Organization



A5.107.3 Nighttime conditions



Nighttime lighting at the top of the building, and in the interior of all areas visible through exterior glazing, including lobby and atria, shall be controlled with time-switch control devices or occupancy sensors complying with the current *California Energy Code*. The control device shall be programmed so the lights are extinguished from 2 am to dawn.

Exception: Emergency lighting and lighting required for nighttime security



A5.107.3.1 Systems or operation and maintenance manual

Include written recommendations that lighting is extinguished pursuant to Section A5.107.3 and janitorial services to the building are scheduled between sunrise and sunset.



Batson Building Sacramento, CA

*Bird-Friendly Glass
Assembly, Motorized
Shades, Solar
Shades, External,
Sunshades*

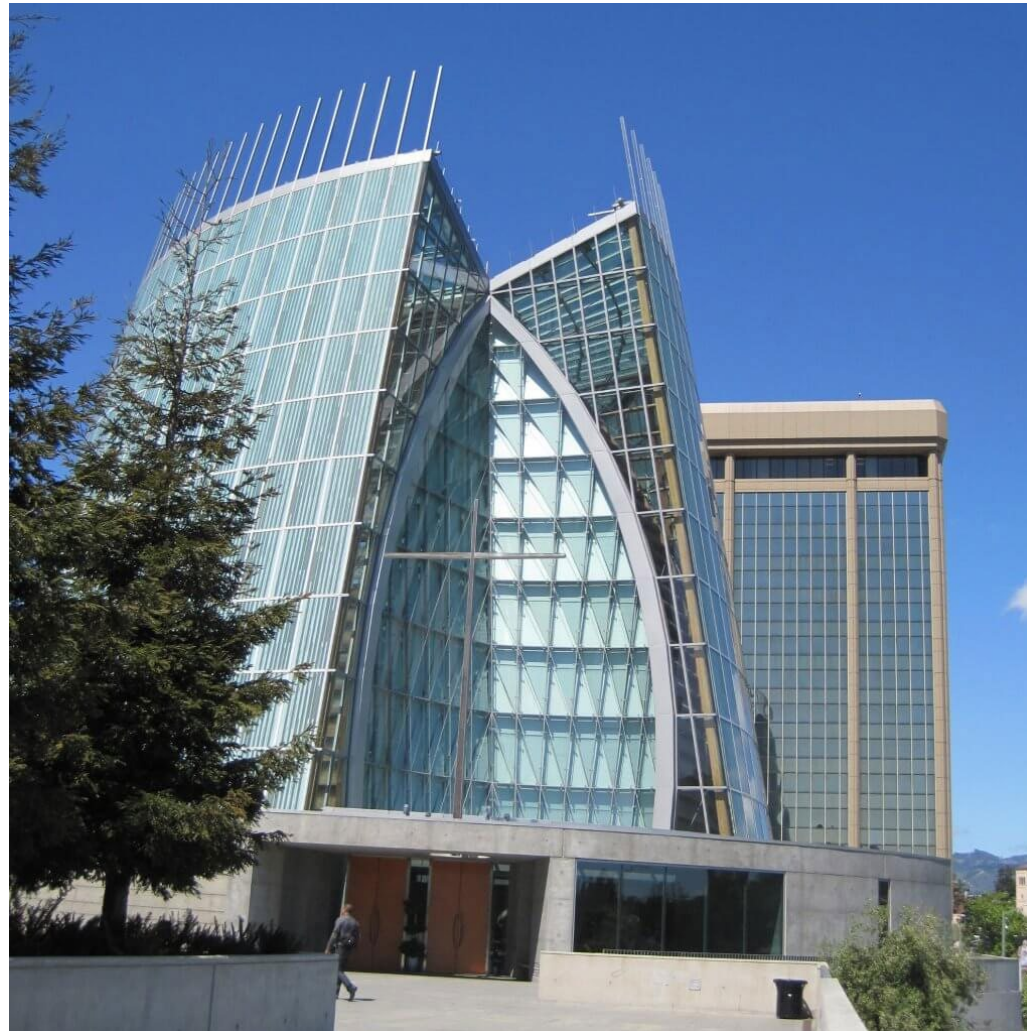


Photo: Mechoshade

CALGreen®



Cathedral of Christ the Light Oakland, CA



*Bird-Friendly Building
Glass, Patterned,
Frit Markers*

Photo: Christine Sheppard

CALGreen[®]



Intuit Headquarters Mountain View, CA

*Bird-Friendly
Building
Glass
Patterned,
Frit
Markers*

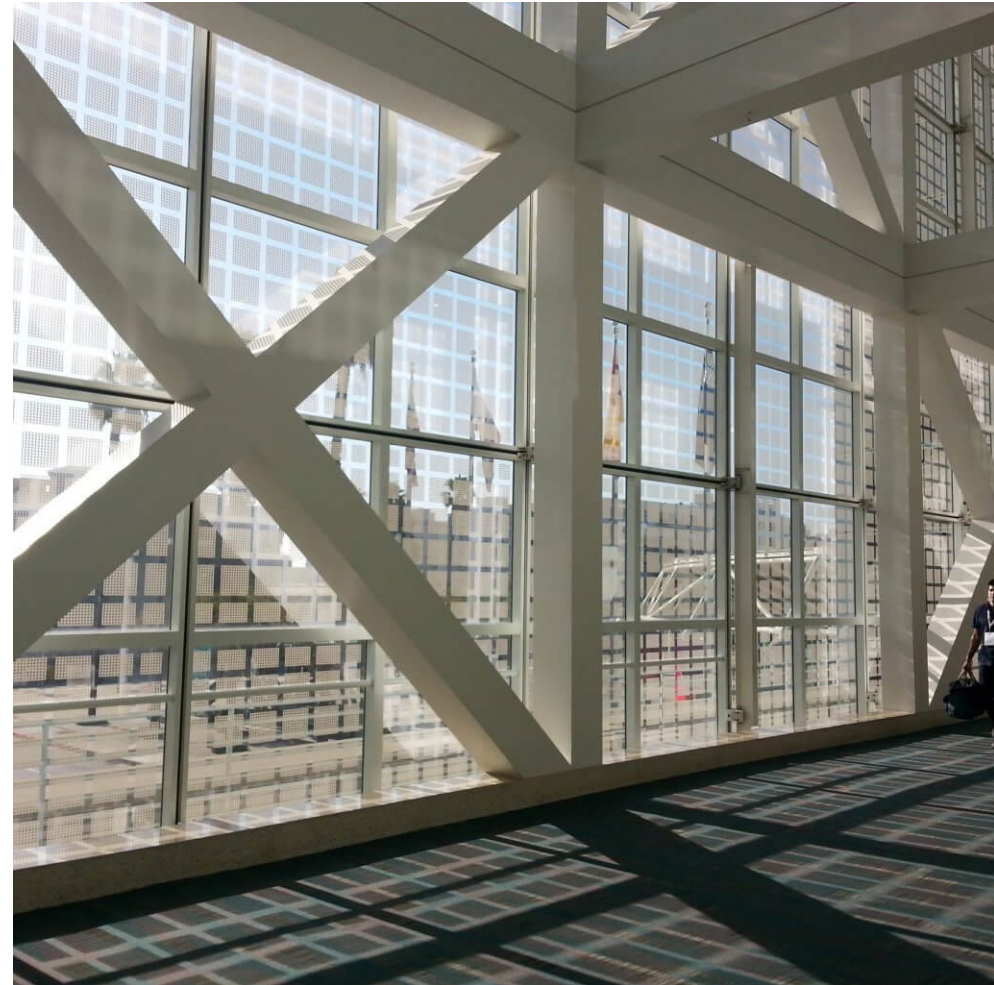


Photos: Lila Kakut

CALGreen®



Los Angeles Convention Center



Bird-Friendly Building with Frit-dot pattern



Photos: Christine Sheppard

California Coastal Commission



*Bird-
Friendly
Patterned
Glass*

CALGreen®

Photo: CollidEscape Organization



California Natural Resources Agency Sacramento, CA

Bird strikes predominantly occur within the first 40 vertical feet of a building. From DGS representative “The lowest 40’ of our project has a large variety of facade elements with less reflective materials, further helping mitigate bird strikes.”

CALGreen®



Photos: Department of
General Services





Related Items not on the Agenda

Use the
raise hand
feature



Action
Items

Cost
benefit
analysis



More action items



Sign up for listserv on Contact Us page to receive meeting notices

- [BSC Contact \(dgs.ca.gov/bsc/contact\)](https://dgs.ca.gov/bsc/contact)

Email BSC with CALGreen code change recommendations (Express Terms Language, Rationale, Cost/Benefit Analysis, etc.)

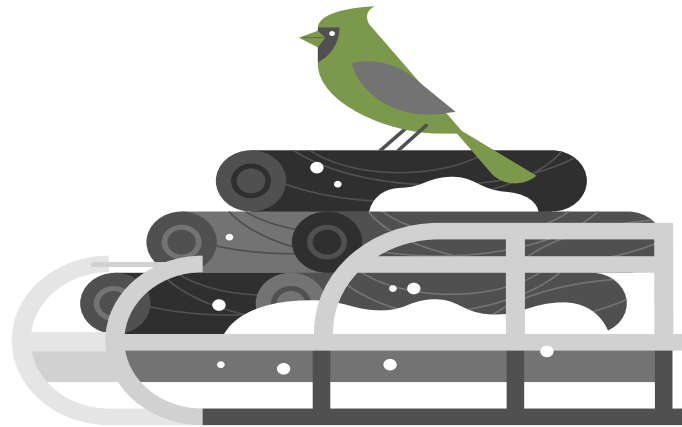
- CBSC@DGS.CA.GOV
- BSC will accept additional feedback on draft ET and any cost benefit analysis until 9/23/2022

Beth.maynard@dgs.ca.gov



Bird-Friendly Design Workshop

Thank you for attending



CALGreen®

