



SAN FRANCISCO
PLANNING
DEPARTMENT

DESIGN GUIDE

Standards for Bird-Safe Buildings

THE FACTS

Over 100 million bird deaths annually

Reflective, transparent materials cause hazardous collisions

Birds attempt to reach shelter, food and migratory paths reflected in glass



THE CODE

Per San Francisco Planning Code Section 139, “*Standards for Bird-Safe Buildings*,” there are two types of bird hazards:

Location-Related Hazards: Buildings within 300 feet of an Urban Bird Refuge.

Building Feature-Related Hazards: Uninterrupted glazed segments 24 square feet or larger.

THE TRIGGERS

New Buildings

Additions

Alterations -
replacing 50% or
more of glazing

See back for treatment options >

Resources

Standards for Bird-Safe Buildings document
sfplanning.org/index.aspx?page=2506

Golden Gate Audubon
goldengateaudubon.org

American Bird Conservancy
abcbirdtape.org

U.S Fish and Wildlife Service
fws.gov

LEED Pilot Credit #55 Bird Façade
usgbc.org

Bird-Safe Building Treatments

Location-related hazards require treatment for 90% of glazing from grade up to 60 feet (Bird Collision Zone).

Buildings with feature-related hazards require treatment for 100% of feature.

Treatment patterns are required to be smaller than 4" tall by 2" wide (2x4 Rule).

Glazing Options

- ▶ Glass that reflects the ultraviolet light (which birds can see) such as 'Ornilux'
- ▶ Glass which has photovoltaic cells embedded such as 'IQ Glass', or 'Voltalux'
- ▶ Dichroic glass
- ▶ Fritted glass such as *Viracon Silk-screen*
- ▶ Etched Glass
- ▶ Translucent glass such as 'Profilit'
- ▶ Film
- ▶ Others

Building & Fenestration Strategies

- ▶ Layering and recessing glazed surfaces
- ▶ Louvers
- ▶ Overhangs and awnings
- ▶ Screening
- ▶ Netting
- ▶ Angled or faceted glazing - minimize reflectivity
- ▶ Opaque surfaces
- ▶ Structurally break-up large expanses of glass
- ▶ Others

Additional Precautions: Lighting & Wind Generators

- ▶ Avoid beacon effect and blind spots
- ▶ Minimal external lighting
- ▶ No uplighting
- ▶ Shielded lighting
- ▶ No event searchlights
- ▶ Wind Generators must appear solid



Art silk-screen at City College of San Francisco Chinatown Campus



Etched louvers at San Francisco Federal Building



Screening at De Young Museum



Fritted silk-screen patterns

Comparison of Different Treatments

Treatment	Upkeep	Longevity	Application	Cost
NETTING	*****	****	**	\$
FILM	****	***	****	\$
FRITTED/ETCHED	*****	*****	***	\$\$\$
UV/PV	****	*****	***	\$\$\$\$
SCREENS	****	****	**	\$\$
LOUVERS	*****	****	***	\$\$\$
5 STARS/\$ =	MINIMAL	DURABLE	EASY	PRICEY

Source: American Bird Conservancy, San Francisco Planning Department

Exceptions: Zoning Administrator Waivers

- ▶ **Bird collision zone treatment exempt for:** residential-zoned buildings less than 45 feet tall with limited glass facade (less than 50% glazing); building feature-related treatment still required.
- ▶ **More treatment required (95%) for:** residential-zoned buildings less than 45 feet tall with substantial glass facade (more than 50% glazing).
- ▶ May waive or modify requirements per recommendation of qualified biologist.