

Existing Bird-Safe Building Standards

Year	Jurisdiction	Form	Applicability: Location	Window Treatment	Landscaping	Outdoor Lighting	Indoor Lighting	Free-standing glass
2011	Calgary	Design Guidelines	City-wide, especially near nature, first 4 levels, building corners	Visual markers, mute reflection, awnings, curtains or blinds, angled glass	Away from clear glass	Minimize near bidding	Turn off, task lighting, close curtains or blinds, timers or motion sensors, day cleaning	
2011	San Francisco	Ordinance	Within 300 feet of 2-acre open space, 90% of glass on first 6 stories above ground or roof garden	Fritting, netting, stencils, frosted glass, screens meeting 2x4 rule: 1/4 inch wide 4 inches apart horizontally, or 1/8 inch wide 2 inches apart vertically	-	Minimize, shield, no up-lighting, no searchlights	-	Treat 100% city-wide, panes 24 square feet
2012	Portland, OR	Voluntary Measures	City-wide	Patterns, netting, screens, grilles, exterior shades, angled, tinting	-	Shielding, no up-lighting	Lights-out program	-
2013	Minnesota	Design Guidelines	New and renovated State buildings	Meet LEED Pilot Credit 55 Bird Collision Deterrence	-	Shield from sky, no light trespass	Lights-out program	Treat railings and glass-sided walkways
2013	Oakland	Building Permit review measures	Adjacent to 1-acre open space, 90% of glass on first 6 stories above ground or landscaping, vegetated atrium	Patterns, mullions, grilles, screens, netting, or louvers meeting 2x4 rule; awnings at glass recessed on all sides; and/or opaque glass	Not near clear glass, no mirrors	No illumination of architectural features, full cut-off shielding to reduce spill lighting, no beams during migration	Time switch controls; blinds, shades, or other window coverings	-
2013	Toronto, Ontario (updated from 2007)	Design Guidelines	City-wide	Visual markers: patterns, mullions, grilles, louvers, art; mute reflections: angled glass, screens, awnings, sunshades; vent grates meet 2x4 rule; treat 12 feet above green roof	No mirrors, vent grates meet 2x4 rule	Project light down - minimize upward and spill light	Automatic system to adjust levels and turn off unnecessary light, blinds. Draw blinds, clean in daytime	-
2014	Markham, Ontario	Design Guidelines	City-wide, first 52 feet above grade. 85% primary treatment, 15% secondary treatment	Primary: stripes, dots, patterns, net, frit, etc 2x4 rule. Secondary: mullions, blinds, shades, UV, tint, angle, vegetation placement.	Not near clear or reflective glass	No up-lighting	Off 11pm-6am, sensors	Apply treatment to courtyards, atria, and free-standing glass
2014	Sunnyvale	Voluntary Design Guidelines	Within 300 feet of 1-acre open space, no transparent or reflective glass in lower 60 feet; some apply everywhere	Reflectivity < 25%; louvers, awnings sunshades; fritted or etched glass; prevent water reflections; angled glass; avoid transparent building corners	Not at reflective glass, not funnel toward glass. Interior plants not near clear glass	No up-lighting or spot lights, shield all site fixtures	Install blinds or turn lights off at night, light task areas,	Avoid skyways or freestanding glass walls
2015	San Jose	Voluntary Measures	City-wide	Reduce large areas of transparent or reflective glass	Locate away from building, reduce behind glass	Reduce spotlights	Turn non-emergency lights off at night, especially during migration	-

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2015	Highland Park, IL	Bonus Option	Commercial, industrial, multi-family buildings	Meet LEED Pilot Credit 55 Bird Collision Deterrence.	-			
2016	Richmond	Ordinance	Adjacent to 2-acre open spaces, 2-story 10,000-square-foot buildings, 80% of first 60 feet from ground or roof garden	Fritting, netting, stencils, frosted glass, screens, meeting 2x4 rule. Reflectance < 10% (exception may be granted if frit, louvres or nets are used)	-	No up-lighting	-	15 feet by 30 feet, 24-square-foot panes city-wide, treat 100% of glass
2018	Santa Cruz	Standards	Within 300 feet of coast, parks, or natural areas, treat 90% of glazing within lower 40 feet	Fritting, patterns, nets, screens, UV patterns in some locations, or measures approved by ABC or a qualified professional		No up-lighting		
2018	Alameda	Ordinance	Building 35 feet tall, façade 50% glass, panes 12 square feet: 90% of façade	Screens, blinds or curtains, opaque or translucent glass, mullions, patterns; with biologist approval layering, angled glass, louvers, overhangs, glass block, netting, grilles, embedded photovoltaics, landscape placement	-	No searchlights, lasers, mercury vapor, or very intense lighting. Shielding, no light trespass, no floodlights. Security lighting can light 8 feet high on wall, use 100-watt bulbs	-	24 square-foot panes 90%: wind barriers, skywalks, balconies, greenhouses, rooftop appurtenances
2018	Portland, OR	Ordinance	Central City Plan District - within 1/4 to 1 mile of river. 90% of glass in facades with 30% glass in lower 60 feet and within 15 feet of roof garden	Fritting, etching, UV coating, or films on ground floor 2x4 rule; upper floors those or frosting or exterior apparatus (screen, grille, net, louvers, fins or mullions) spacing = width.	-	-	-	Balcony railings, sky bridges, fences
2019	California Building Code	Proposed Voluntary Measures	90% of glass on lower 40 ft, and at green roof, gazebos, atria, avilions, passageways and corners; 60% above 40 ft	Pattern meeting 2x4 rule etched, fritted, film or laminated; or channel glass or glass block; or grilles, screens, netting, sunshades, blinds	-	-	Timers or sensors to turn lights off during migration except security and emergency lights.	-
2019	Berkeley	Proposed Ordinance	City-wide, 2+ stories, facades 50% glass, windows 8 sq ft +	Screens, blinds or curtains, opaque or translucent glass, mullions, patterns 2x4, UV, others with Director OK; recessed, angled or faceted glass, louvres, overhangs, awnings, glass block, netting, grilles, photovoltaics, landscape placement with biologist OK	-	-	-	24 square-foot panes - walls, wind barriers, skywalks, balconies, greenhouses, rooftop appurtenances