ORDINANCE

By Gordon and Palmisano

Amending Title 20, Chapter 525 of the Minneapolis Code of Ordinances relating to Zoning Code: Administration and Enforcement

The City Council of the City of Minneapolis do ordain as follows:

Section 1. That section 525.520 of the above-entitled ordinance be amended to read as follows:

525.520. Authorized variances.

Variances from the regulations of this zoning ordinance shall be granted by the board of adjustment, city planning commission, or city council only in accordance with the requirements of section 525.500, and may be granted only in the following instances, and in no others:

(1) To vary the yard requirements, including permitting obstructions into required yards not allowed by the applicable regulations.

(2) To vary the lot area or lot width requirements up to thirty (30) percent, except for the following uses, where the maximum variance of thirty (30) percent shall not apply.

a.To vary the lot area or lot width requirements up to fifty (50) percent for schools, grades K-12, located in the OR2, OR3 and commercial districts.

b.To vary the lot area or lot width requirements up to fifty-five (55) percent for newly constructed two-family dwellings located in the R2B District, provided the surrounding properties are primarily two-family dwellings developed on lots similar in size to the proposed development.

(3) To vary the gross floor area, floor area ratio and seating requirements of a structure or use.

(4) Unless otherwise controlled by conditional use permit, to vary the height requirements for any structure, except signs, provided that the total floor area ratio on the site shall not be exceeded, and provided further that the maximum height of any accessory structure shall not exceed sixteen (16) feet or sixty (60) percent of the height of the structure to which it is accessory, whichever is greater. The maximum height of a detached accessory dwelling unit may be varied, provided that the height of the detached accessory dwelling unit shall not exceed the height of the principal structure.

(5) To permit an increase in the maximum height of a fence.

(6) To vary the applicable minimum and maximum number of required off-street parking, stacking or loading spaces.

(7) To increase the percentage of required parking spaces that may be satisfied by providing compact spaces.

(8) To permit parking that cannot comply with the location requirements for on-site parking, as specified in Chapter 537, Accessory Uses and Structures, and Chapter 541, Off-Street Parking and Loading.

(9) To increase by not more than five hundred (500) feet the maximum distance that required parking spaces are permitted to be located from the use served, and where off-site parking is prohibited, to allow off-site parking up to five hundred (500) feet away.

(10) To vary the location of off-site parking, as specified in Table 541-5 Location of Off-Site Parking, provided such off-site parking is not located in a residence or office residence district.

(11) To increase the maximum number of vehicles permitted to be parked outdoors.

(12) To vary the minimum width of single or two-family dwellings and multiple-family dwellings of three (3) and four (4) units provided the dwelling is located on a zoning lot existing on the effective date of this ordinance that is forty (40) feet or less in width.

(13) To increase the maximum allowed length of a recreational vehicle, or to permit the parking of such vehicle outside the rear forty (40) feet of the lot, as regulated in Chapter 541, Off-Street Parking and Loading. In no case shall the variance allow such vehicle to exceed thirty-five (35) feet in length.

(14) To reduce the minimum required width of parking aisles or to increase the maximum width of driveways in any zoning district, as regulated in Chapter 541, Off-Street Parking and Loading, or to reduce the minimum required width of driveways in the residence and OR1 Districts from ten (10) feet to eight (8) feet, provided there is no alley or alternative public access to the lot.

(15) To vary the maximum lot coverage and impervious surface coverage requirements.

(16) To vary the surfacing requirements of Chapter 541, Off-Street Parking and Loading. Factors to be considered in varying the surfacing requirements for the industrial districts shall include but not be limited to the following: The yard and parking uses are in the same area; use of heavy equipment will cause excessive hard surface breakup; parking movements are infrequent; the area is distant from other nonindustrial zone uses; or water infiltration is ecologically desirable.

(17) To permit development in the SH Shoreland Overlay District on a steep slope or bluff, or within forty (40) feet of the top of a steep slope or bluff.

(18) To permit development in the SH Shoreland Overly District within fifty (50) feet of a protected water.

(19) To permit alternative forms of flood protection for uses and structures located in the FP Floodplain Overlay District, provided no variance shall permit a lower degree of flood protection than the regulatory flood protection elevation for the particular area or permit standards lower than those required by state law. In areas designated as AO zones on the flood insurance rate map, a variance may be granted to the requirement that buildings be elevated to one (1) foot above the elevation of the ground surface prior to construction next to the proposed walls of the building, provided the application

includes a detailed hydraulic analysis that supports such variance as sound floodplain management and a letter of map revision from the Federal Emergency Management Agency.

(20) To vary the standards of any overlay district, other than the SH Shoreland Overly District or the FP Floodplain Overlay District.

(21) To vary the number, type, height, area or location of allowed signs on property located in an OR2 or OR3 District or a commercial, downtown or industrial district, pursuant to Chapter 543, On-Premise Signs.

(22) To vary the development standards of Chapter 536, Specific Development Standards and Chapter 537, Accessory Uses and Structures, except that specific minimum distance and spacing requirements may be varied only to allow for the relocation of an existing use where the relocation will increase the spacing between such use and any use from which it is nonconforming as to spacing, or will increase the distance between such use and any protected boundary or use from which it is nonconforming as to distance. Further, the owner occupancy requirement for accessory dwelling units shall not be varied.

(23) To vary the limit of one (1) principal residential structure per zoning lot for structures located in the R2 District existing on the effective date of this ordinance, provided at least one (1) of the structures shall have a minimum of six thousand (6,000) square feet of floor area.

(24) To permit development on a zoning lot existing on the effective date of this ordinance that cannot comply with the requirement of frontage on a public street, where it is determined that there is sufficient access to the property without such frontage.

(25) To vary the screening and landscaping requirements of this zoning ordinance.

(26) To vary the enclosed building requirements of this zoning ordinance.

(27) To vary the minimum sign spacing standards and nonconforming sign area credits requirements of Chapter 544, Off-Premise Advertising Signs and Billboards, to allow the relocation of an existing off-premise advertising sign of the same or less square footage, where removal of the sign is necessary to allow a development that includes not less than thirty (30) housing units that meet the definition of affordable housing, or to allow a mixed-income development of not less than thirty (30) housing units that receives city financial assistance, or to allow a capital improvement project of a governmental agency. An existing off-premise advertising sign shall include but not be limited to a sign existing on June 17, 2002.

(28) To vary the width and location restrictions on attached garages facing the front lot line for residential uses.

(29) To vary the development standards of Chapter 535, Plazas <u>and Skyways.</u>

(30) To vary the requirement for enclosed off-street parking for new single- and two-family dwellings established after November 1, 2009.

ORDINANCE

By Gordon and Palmisano

Amending Title 20, Chapter 535 of the Minneapolis Code of Ordinances relating to Zoning Code: Regulations of General Applicability

The City Council of the City of Minneapolis do ordain as follows:

Section 1. The chapter 535 of the above-entitled ordinance be amended by adding thereto a new Article XIII to read as follows.

ARTICLE XIII. SKYWAYS

535.880. Purpose. Regulations governing new skyways are established to provide for appropriate location for skyways and to ensure the design of skyways contribute to the built and natural environment.

535.890. Definitions. As used in this article, the following words shall mean:

Bird-safe glazing. Bird-safe glazing includes:
(1) Façade materials with a LEED Material Threat Factor less than or equal to twenty-five (25); or,
(2) Vertical physical structures or glass patterns that are at least one-eighth (1/8) inch wide at a maximum spacing of four (4) inches or horizontal physical structures or glass patterns that are at least one-eighth (1/8) inch wide at a maximum spacing of two (2) inches; or,
(3) A visible glass pattern that is white to medium gray on the inside surface of the exterior pane, also known as surface number two (2). The glass pattern shall meet at least one (1) of the specific standards below:

a) Horizontal line patterns shall be one-eighth (1/8) inch wide with two (2) inch on-center spacing; or,
b) Vertical line patterns shall be one-eighth (1/8) inch wide with four (4) inches on-center spacing; or,
c) Dot patterns with dots one-quarter (1/4) inch wide with two (2) inch on-center spacing; or,
d) Dot patterns with dots three-eighths (3/8) inch wide arranged in horizontal lines with two (2) inch on-center spacing or vertical lines with four (4) inch on-center spacing.

Skyway. An enclosed, elevated pedestrian bridge extending from building face to building face that spans a public street, public alley, or is located within private property.

535.900. Permitted uses subject to administrative review and approval. Skyways shall be subject to administrative review and approval by the zoning administrator, as specified in section 535.910, and shall comply with the standards of section 535.920.

535.910. Administrative review process.*(a) In general.* The zoning administrator shall approve or deny such application prior to the issuance of an encroachment permit. The zoning administrator may impose such conditions and require such guarantees deemed reasonable and necessary to protect the public interest and to ensure compliance with the standards and purposes of this zoning ordinance and policies of the comprehensive plan. If proposed as part of a project that includes a separate land use application, a skyway shall be reviewed concurrently with said application.

(b) Submittal requirements. The applicant shall comply with the general application requirements of Chapter 525, Administration and Enforcement.

(c) Appeals. Notwithstanding the provisions of Chapter 525, Administration and Enforcement, decisions of the zoning administrator regarding the administrative review of permitted skyways shall be subject to appeal to the city planning commission.

535.920. Development standards for all permitted skyways. New skyways shall comply with the following standards and all other applicable regulations of this zoning ordinance:

(1) *All skyways*.

a. At least eighty (80) percent of the exterior sidewalls of the skyway shall be glazing that allows views into and out of the skyway. Glazing shall have clear or lightly tinted glass with a visible light transmittance ratio of six-tenths (0.6) or higher.

b. At least eighty-five (85) percent of the glazing area of the exterior sidewalls of a skyway shall meet the bird-safe glazing definition.

(2) *Skyways that cross a public street or a public alley*.

a. Skyways will be considered for uses in downtown zoning districts and for regional sports arenas, office campuses of at least one (1) acre, hospitals, and college or university uses outside of downtown zoning districts, subject to the standards of this article.

b. Skyways shall only be allowed on the second floor of a building.

c. Skyways shall run perpendicular to the public street or public alley that they cross.

d. Skyways shall be designed to be horizontally level with the street. Changes in grade shall be accommodated so that the skyway appears level from the exterior.

e. Skyways shall not be allowed within fifteen (15) feet of a street intersection. Skyways are encouraged to cross public streets and alleys in the middle portion of the block.

f. Skyways shall be a single story.

g. The bottom of skyways shall be a minimum of sixteen (16) feet six (6) inches above the public street or public alley.

h. Skyways shall comply with the requirements of subsections (1) and (3) of this section as applicable.

(3) *Skyways within the downtown skyway system*.

a. Skyway width shall be carefully considered in relation to each skyway's relative location within the system and the projected intensity of use for that skyway and shall be subject to the following conditions:

1. Skyways and connecting corridors shall have a minimum interior clear width of twelve (12) feet between handrails.
2. The exterior width of skyways shall be no wider than thirty (30) feet.
3. Skyways and connecting corridors within the core of the downtown skyway system are encouraged to have a minimum interior clear width of eighteen (18) feet.

b. Access to skyways shall be facilitated between street and skyway levels. Such access shall be subject to the following conditions:

1. A public entrance that is clearly defined and emphasized through the use of architectural features, such as an awning, glazing, or other details, shall provide street access to the skyway.

2. Exterior signage shall be provided at the street-level entrance noting the skyway entrance location.
3. Elevators, stairs and escalators linking the street and skyway level shall be clearly identified with directional signage. For new buildings, elevators, stairs and escalators linking the street and skyway level shall also be conveniently located.

c. Skyways shall remain open to the public Monday through Friday, from 6:30 a.m. to 10:00 p.m., Saturday, from 9:30 a.m. to 8:00 p.m., and Sunday, from 12:00 p.m. to 6:00 p.m. Property owners are encouraged to keep their skyways, connecting corridors, and vertical circulation elements open beyond standard hours of operation.

d. Skyway bridges shall be used exclusively for pedestrian movement. Other uses such as retailing, permanent seating, vending, and display shall be confined to spaces off the skyway bridge.

e. Skyways shall comply with the requirements of subsections (1) and (2) of this section as applicable.

ORDINANCE

By Gordon and Palmisano

Amending Title 20, Chapter 549 of the Minneapolis Code of Ordinances relating to Zoning Code: Downtown Districts

The City Council of the City of Minneapolis do ordain as follows:

Section 1. That section 549.220 of the above-entitled ordinance be amended to read as follows:

549.220. Floor area ratio premiums.

The following floor area ratio premiums shall be available as specified in Table 549-4, Maximum Floor Area Ratio Premiums in the Downtown Districts, subject to the provisions of this article, provided all other requirements of this zoning ordinance are met:

Urban open space, outdoor, subject to the following standards:
a.Outdoor open space shall comprise at least fifty (50) feet of street frontage. Small outdoor open space shall contain not less than five thousand (5,000) contiguous square feet. Large outdoor open space shall contain not less then seven thousand five hundred (7,500) contiguous square feet.

b.Outdoor open space shall be easily accessible from the adjacent sidewalk and shall contain lighting for nighttime illumination.

c. Outdoor open space shall be located near building entrances. Not less than forty (40) percent of the first floor façade facing the outdoor open space shall include windows of clear or lightly tinted glass that allow views into and out of the building at eye level.

d. Outdoor open space shall be paved with materials that exceed city standards for sidewalk finishes and shall be landscaped with not less than one (1) permanent canopy tree and not less than five (5) shrubs for each one thousand (1,000) square feet of open space. All landscaping shall comply with the plant material and installation standards as specified in Chapter 530, Site Plan Review. Outdoor open space may include additional sidewalk area where the existing sidewalk is less then fifteen (15) feet wide. The remainder of the area shall be covered with turf grass, native grasses or other perennial flowering plants.

e.Outdoor open space shall be open to the sky and located to maximize the access of sunlight, except that up to thirty (30) percent of the space may include a covered arcade with a minimum height of twenty-eight (28) feet.
f. Outdoor open space shall be designed to encourage use by the general public through the provision of facilities and features including convenient and comfortable seating at a rate of not less than one (1) seat per two hundred (200) square feet of open space, tables, trash receptacles, plants, water features, and areas for public entertainment or public display of art or cultural exhibits
g. Outdoor open space may contain tables and facilities for food service, but a majority of the space shall be available for general public use without charge.

h.The outdoor open space shall be open to the general public at least during the normal business hours

of the surrounding area.
i. The outdoor open space shall be maintained in good order for the life of the principal structure.

(2) Urban open space, indoor, subject to the following standards:

a. Indoor open space shall be located at street level and shall be not more than three (3) feet above or below the level of the sidewalk. Small indoor open space shall contain not less than five thousand (5,000) contiguous square feet. Large indoor open space shall contain not less then seven thousand five hundred (7,500) contiguous square feet.

b. Indoor open space shall be clearly visible and easily accessible from adjacent sidewalks or streets. Walls of an indoor open space area facing sidewalks or an outdoor open space area shall provide a clear view between interior and exterior space.

c.Indoor open space shall include an average height not less than thirty-five (35) feet and a minimum height of twenty (20) feet, and shall include natural light through a glazed roof or windows at a level sufficient to sustain a variety of plants and trees.

d. Indoor open space shall be designed to encourage use by the general public through the provision of facilities and features including convenient and comfortable seating at a rate of not less than one (1) seat per two hundred (200) square feet of open space, tables, trash receptacles, plants and trees, water features, drinking fountains and toilet facilities, and areas for public entertainment or public display of art or cultural exhibits. Not less than twenty (20) percent of the open space shall consist of landscaping or landscaping and water features.

e. Indoor open space may contain tables and facilities for food service, but a majority of the space shall be available for general public use without charge. Food preparation areas shall not qualify as required space.

f. The indoor open space shall be open to the general public at least during the normal business hours of the surrounding area.

g. The indoor open space shall be maintained in good order for the life of the principal structure.

(3) Interior through-block connection, subject to the following standards:

a.The connection shall connect two public streets on opposite sides of the block, or shall connect a public street to an urban open space on the opposite side of the block, or shall connect two urban open spaces on opposite sides of the block, or shall connect to another interior through-block connection. In addition, on developments involving less than one-half block, the interior through-block connection may connect two public streets on opposite sides of the block in combination with corridors in one (1) or more buildings.

b. The connection shall be located not more than three (3) feet above or below the level of the sidewalk, shall have a minimum interior clear width of twelve (12) feet and a minimum height of twelve (12) feet. The maximum interior through-block connection premium shall be increased by one (1) where the interior through-block connection has a minimum interior clear width of sixteen (16) feet.

c. The connection shall be open to the general public at least during the normal business hours of the surrounding area.

d. The connection entrances shall be clearly visible from adjacent sidewalks or streets.

e.The connection shall be maintained in good order for the life of the principal structure.

(4) Skyway connection, subject to the standards of Chapter 535, Regulations of General Applicability, and the following standards:

a. The skyway shall connect two blocks on opposite sides of the street.

~~b. The bottom of the skyway shall be a minimum of sixteen (16) feet six (6) inches above the street. If street lights are removed, street lighting shall be provided at the bottom of the skyway.~~

~~c. Skyways and connecting corridors shall have a minimum interior clear width of twelve (12) feet. Skyways shall be no wider than thirty (30) feet.~~ The maximum skyway premium shall be increased by one (1) where the skyway and connecting corridor have a minimum interior clear width of sixteen (16) feet.

~~d.Skyways shall be single story and designed to be horizontally level with the street. Changes in grade shall be accommodated so that the skyway appears level from the exterior.~~

b.~~ e~~. Except where crossing streets and alleys, skyways shall be located within private property.

~~f.At least eighty (80) percent of the vertical enclosure of the skyway shall be glazing windows of clear or lightly tinted glass that allow views into and out of the skyway.~~

~~g. Skyways in new buildings shall be designed to facilitate access between street and skyway levels with a public entrance on the exterior of the building or access lobby. Elevators, stairs and escalators linking the street and skyway levels shall be conveniently located with clear directional signs.~~

c.~~h~~. Skyways shall be heated to a minimum of fifty-five (55) degrees in winter and ventilated to not exceed outdoor temperatures in the summer.

~~i.The skyway shall be open to the general public at least during the hours recommended by the skyway advisory board and approved by the city council. Skyways that are part of the downtown skyway system shall remain open to the public Monday through Friday, from 6:30 a.m. to 10:00 p.m., Saturday, from 9:30 a.m. to 8:00 p.m., and Sunday, from 12:00 p.m. to 6:00 p.m.~~

d.~~j.~~ The skyway shall be maintained in good order for the life of the principal structure.

MINNEAPOLIS SKYWAY SYSTEM - Standards and Procedures Manual

Section 1.0 Background

The Minneapolis Skyway System is a second-level pedestrian movement system connecting downtown office, retail, hospitality, residential, and parking uses. The system consists of over seventy bridges and it connects nearly as many downtown blocks. Except for connections to public buildings and public parking facilities, most of the Skyway System has been privately developed, owned, and operated.

The Minneapolis Skyway Advisory Committee is a committee of nineteen members representing downtown property owners and skyway users that serves in an ad hoc basis and reviews all skyway plans prior to the City's granting of encroachment permits for construction in the public right-of-way. Skyway Advisory Committee members are appointed by the Downtown Council for two year terms. Committee appointments are subject to approval by the Minneapolis City Council.

The purpose of the Minneapolis Skyway System Standards and Procedures Manual is to assist developers and architects in their design for additions to the Skyway System, and to ensure that new skyway development contributes to the success of the system as a whole. In addition to the guideline set forth herein, all skyways, tunnels, and connections concourses are subject to the Minneapolis Code of Ordinances and all relevant building codes.

Section 2.0 Architectural Design Standards

2.1 Location in the Public Right-of-Way

2.1.1 Skyway bridges shall be developed at only the second level of the building.

2.1.2 Except where crossing streets and alleys, skyway bridges and corridors shall be located within the property lines and shall not encroach over public right of way

2.1.3 All skyways should run perpendicular to the sidewalks, streets, and alleys that they cross.

2.1.4 Where ever possible, all skyways should cross sidewalks, streets, and alleys in the middle portion of the block rather than at the extreme ends of the block.

2.2 Architectural Form

2.2.1 *Minimum and Maximum Height above the Street or Alley*: The bottom of skyway bridges must be a minimum of 16 feet - 6 inches (16' 6") above the street or alley.

2.2.2 *Minimum and Maximum Width:* Skyway bridges and corridors shall have a minimum interior clear width of 12 feet (12' 0") between hand rails. Skyways shall be no wider than 30 feet (30' 0"). Skyway width (interior clearance between handrails) should be carefully considered in relation to each skyway's relative location within the system, and the projected intensity of sue for that skyway. Wherever possible, skyway ridges and corridors within the Downtown Core should have a minimum interior clear width of 18 feet (18' 0") between hand rails.

2.2.3 *Horizontal and Vertical Alignment*: In elevation, skyway bridges shall be designed to be horizontally parallel to the street surface and vertically perpendicular to adjacent buildings. Changes in grade shall be accommodated within the skyway such that the skyway appears visually level from the exterior. In plan, Skyway bridges shall be designed to be perpendicular to tech alignment of the street or alley they cross.

2.2.4 *Transparency*: Skyway bridges shall be designed to be transparent in order to provide views into and out of the skyway. Clear glass shall be used for the purpose of maintaining security within the Skyway System.

2.3 Access

2.3.1 Skyway corridors shall be designed to facilitate clear and easy access between street and skyway levels. Elevators, stairs, and escalators linking the street and skyway levels shall be located in such a way as to provide convenient, visible links to the skyway level from the adjacent street and sidewalks.

2.3.2 Skyway bridges and corridor (including but not limited to doors, ramps, and signage) must meet the Americans with Disabilities Act (ADA) requirements.

2.3.3 Comprehensive design solutions that incorporate interior grade changes through the construction of all-purpose ramping are favored over design solutions that include stairs and chair lifts. Satisfying ADA requirements through and ad hoc combination of solutions is discouraged.

2.3.4 All access doors between skyway bridges and the corridors of new buildings shall be power operated and shall open in a sliding, side-to-side direction.

2.3.5 All access doors between skyway bridges and the corridors of existing buildings shall be power operated and should open in a sliding, side-to-side direction. In cases where a new skyway connects to an existing building and side-sliding doors are not possible, power activated doors shall open in the prevailing direction of pedestrian traffic.

2.4 Public Safety

2.4.1 All access doors between skyway bridges and building corridors may include hold-open features which are integrated with the fire/emergency systems in the buildings that are adjacent to a given skyway bridge.

2.4.2 All building doors leading from skyway level corridors to street-level building doors and all doors between skyway bridges and building corridors may include hold-open features which are integrated with the fire emergency systems.

2.4.3 Emergency lighting shall be installed within the skyway bridge.

2.5 Building Systems

2.5.1 *Heating and Ventilation*: Skyway bridges shall be heated to a minimum of 55 degrees Fahrenheit in winter and ventilated not to exceed outdoor temperatures in summer.

2.5.2 *External Lighting*: If street lights are removed for the construction of a skyway, replacement street lighting must be provided on the bottom of the new skyway. Lighting should be replaced so as to provide the same level and character of illumination as street lighting in the surrounding block. All lighting shall be provided in accordance with the City of Minneapolis ordinances regarding street lighting.

2.5.2 *Internal Lighting*: Internal lighting should be consistant and seamless between skyway bridges, corridors, and vertical circulation elements (elevators, escalators, and stairs) in order to eliminate sharp contrasts in lighting levels.

Section 3.0 Signage Design Standards

3.0 Signage

3.1.1 Unless otherwise noted, all signage will adhere to the policies and procedures contained in *Minneapolis Skyway Signage Standards* (dated September 2000), which was authored by the Skyway Advisory Committee and the Building Owners and Managers Association (BOMA) and is administered by the City of Minneapolis Public Works Department. Specifically, all buildings that incorporate new skyways into the system shall adhere to the "Blue Waters Signage Package."

3.1.2 Directional signs and signs indicating hours of operation (approved by the Minneapolis Skyway Advisory Committee) shall be incorporated in the design of skyway bridges and corridors.

3.1.3 Building entrances shall include clear directional signage as per the Skyway Signage Program.

3.1.4 Elevators, stairs, and escalators linking the street and skyway levels shall include clear directional signage as per the Skyway Signage Program.

3.1.5 All buildings that incorporate new skyways into the system shall be responsible for buying and mounting a standard Skyway System Map and Directory Panel on the skyway level of that building.

3.1.6 All buildings that incorporate new skyways into the system are strongly encouraged to install the standardized electronic information kiosk for the Skyway System on the skyway level of that building.

3.1.7 Signs attached to skyway bridges that are intended to be read from the public right-of-way shall not be permitted.

Section 3.2 Skyway System Off-Premise Signage

3.2.1 Purpose

The Skyway Advisory Committee recogniezes the increased demand in the marketplace for off-premise signage (advertising and other) within the skyway system. The purpose of this policy is to provide guidance to skyway owners and building owners as to where off-premise signage should be permitted and not permitted.

3.2.2 Definitions for the Purposes of the Section

Off-premise signage: Any sign (regardless of form or media) used for the purpose of displaying, advertising, identifying or directing attention to a business, service or activity, including products or services sold of offered for sale on the premises other than on the premises where such a sign is displayed.

Skyway Bridge: Any part of the skyway system that is located over the public right-of-way not including any segment that shares at least one common wall with a building or is located over an alleyway.

Skyway Corridor: Any part of the skyway system that is not a Skyway Bridge.

3.2.3 Policy

Off-premise signage shall be permitted in any Skyway Corridor only to the extent that the signage cannot be viewed and/or is not intended to be viewed from a Skyway Bridge of public right-of-way.

Sound emitting from or for the purpose of drawing attention to off-premise signage is no permitted within any Skyway Bridge or Skyway Corridor.

Section 4.0 Operation Standards and Public Safety Standards

4.1 Skyway Use

4.1.1 Skyway bridges shall be used exclusively for pedestrian movement. Other uses such as retailing, permanent seating, vending, and display shall be confined to spaces off the skyway bridge.

4.1.2 Some skyway bridges and corridors may be used for seating and public gathering during special events so designated by the Skyway Advisory Committee (such as the *Holidazzle Parade*). All uses of skyways for such events will adhere to the public standards outlined by the Minneapolis Fire Marshall.

4.2 Standard Hours of Operation

4.2.1 Skyway bridges and corridors shall remain open during the following hours:

Monday - Friday.....6:30 a.m. - 10:00 p.m.

Saturday.....9:30 a.m. - 8:00 p.m.

Sunday.....Noon - 6:00 p.m.

4.2.2 Property owners are encouraged to keep their skyway bridges, corridors, and vertical circulation elements open beyond standard hours of operation, particularly during the holiday season.

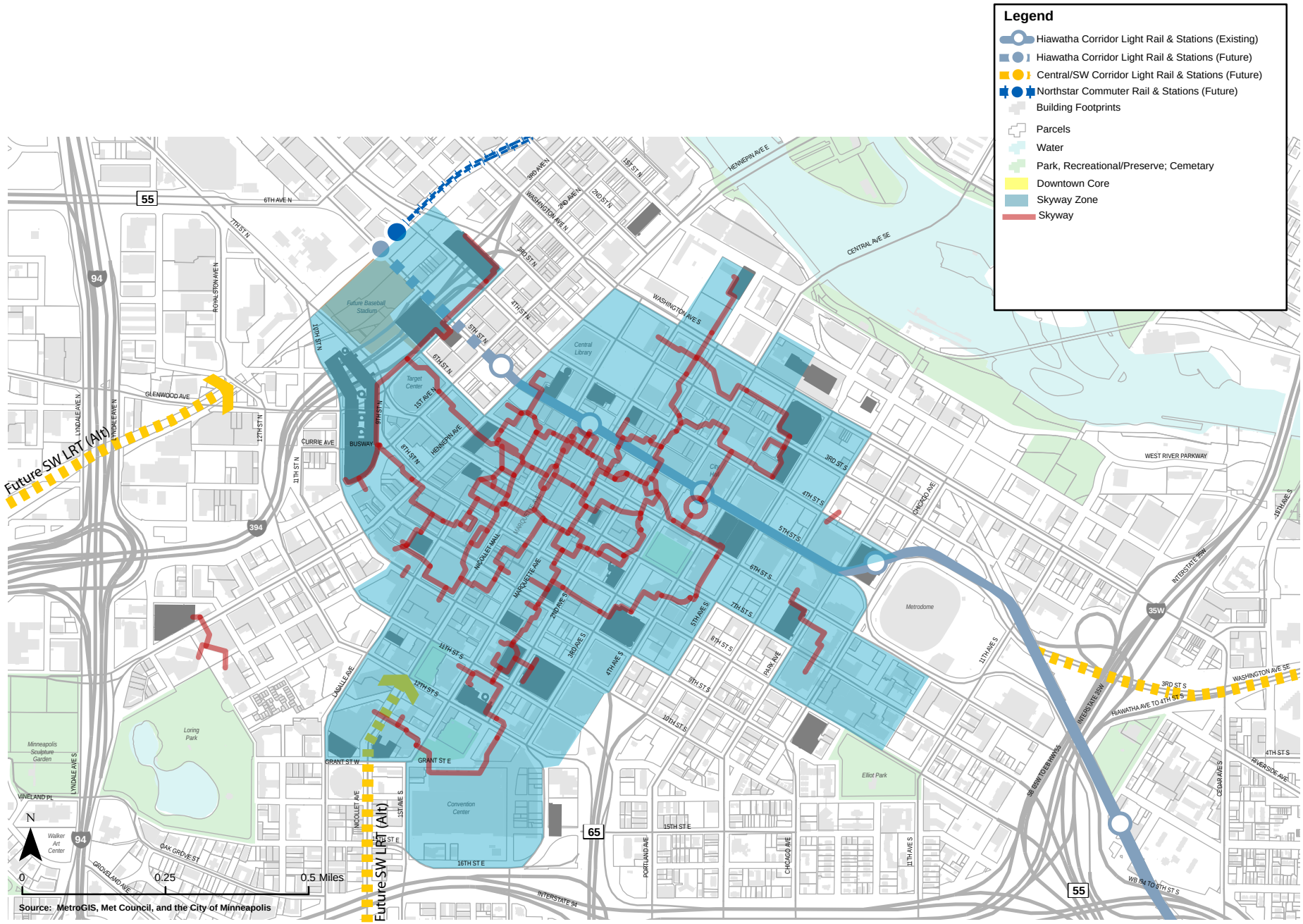
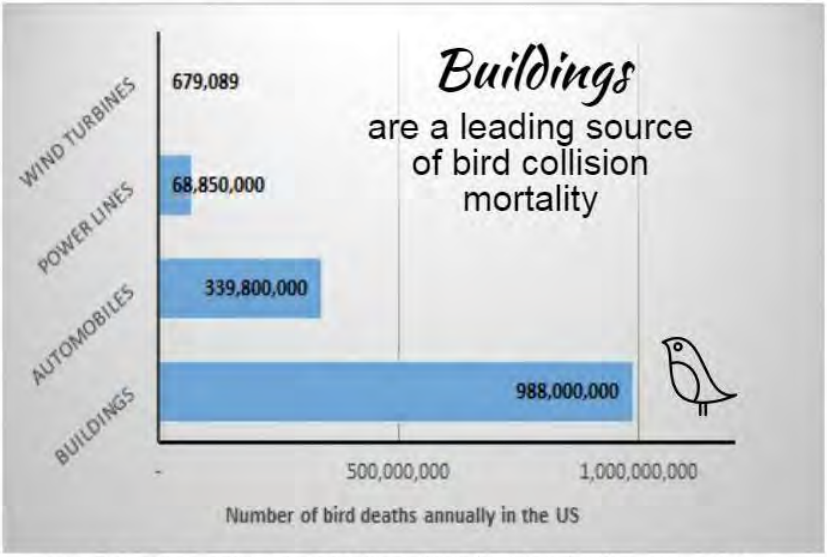


Figure 6: Skyway System

Understanding Bird-Window Collisions



Loss, S. R., Will, T. and Marra, P. P. (2014). Direct Mortality of Birds from Anthropogenic Causes. Annual Review of Ecology, Evolution, and Systematics. 2015, 46:99–120

Why Collisions Happen

REFLECTION of habitat and sky in window glass

SEE-THROUGH to habitat and sky on other side of glass (ex. Skyways)

LIGHT POLLUTION draws migrating birds towards buildings

BIRDS ARE IN DECLINE nationwide due to habitat destruction and hazards like window collisions and cats

In Minnesota

25%

of Minnesotans identify as birdwatchers

Mississippi Flyway

A key migration and stopover area for birds

Audubon MINNESOTA has monitored bird-window collisions since 2007

130+

BIRD SPECIES found in monitoring just a small number of buildings and skyways (including Minneapolis)

nearly **1/2** of all Minnesota bird species

Nashville Warbler
a frequent collision victim

Minneapolis
City by Nature

PROTECTING BIRDS through the planning process aligns with the city's environmentally progressive policies and sustainability initiatives

- MINNEAPOLIS is a nationally recognized leader in developing efficient, sustainable practices and facilities
- URBAN BIRD TREATY CITY Recognized by the US Fish and Wildlife Service for its importance to bird conservation

Bird Safe Building in Minneapolis and St. Paul

Hanauer, Aaron M.

From: msbghelp@umn.edu on behalf of B3 Guidelines Support <guidelines@b3mn.org>
Sent: Tuesday, December 15, 2015 12:32 PM
To: Hanauer, Aaron M.; Richard Strong
Cc: B3 Guidelines Support
Subject: Re: bird-safe buildings in Minneapolis and St. Paul

Aaron,
The following building are required to meet the Bird-Safe criteria in Minneapolis and Saint Paul based on their schedule and project type:

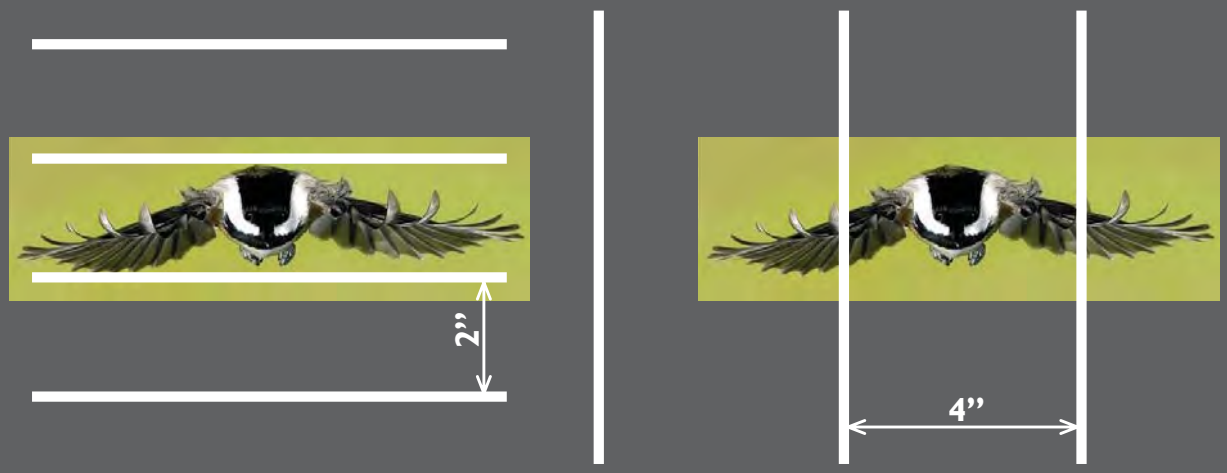
Project Name	Type
UMTC VCRC 1st Floor Renovation	Renovation
DOA Capitol Campus Parking Facilities – Ramp F	New Construction
UMTC Ambulatory Care Center	New Construction
Dept of Vet Affairs New Building 22 at Minneapolis Veterans Home	New Construction
DOA Legislative Office Building	New Construction
DHS Higher Ground Saint Paul	New Construction
Palace Community Center	New Construction/Renovation
St Paul Fire Station 19 Renovation & Addition	New Construction/Renovation
UMTC Tate Science and Teaching Renovation	New Construction/Renovation
UMTC Bee Research Laboratory	New Construction
UMTC Athletes Village Center for Excellence	New Construction
Jemne Building Restoration	Renovation
Hennepin New Webber Park Library	New Construction
DEED Minnesota Museum of American Art	Renovation
MET Minneapolis Sculpture Garden Reconstruction and Cowles Conservatory Renovation	New Construction/Renovation
Phillips Community Center Aquatics Facility	New Construction/Renovation
DHS Minneapolis YWCA Early Childhood Education Renovation	Renovation
UMTC Bell Museum and Planetarium	New Construction
UMTC - Veterinary Isolation Facility	New Construction
DHS Dorothy Day Place	New Construction
Metro Transit Police Department Facility (MTPD)	New Construction
DEED The Family Partnership	New Construction
UMTC Health Sciences Education and Learning Center	Renovation
Centennial Office Building	Renovation
UMTC Pillsbury Hall Rehabilitation	Renovation
UMTC Andrew Boss Laboratory of Meat Science Infrastructure Improvements	Renovation
St Paul C&E Flats	New Construction/Renovation

Note that some of these projects are renovations - in which case the guideline is only applicable if glazing is being replaced. Some of the above are also catching up on their compliance or are still in early design phases. These projects are also subject to variances depending on specific circumstances of the building, which can effect whether the appropriated agency requires specific criteria,
see http://www.b3mn.org/guidelines/downloads_v2_2/B3_VarianceGuidance_20140624.pdf for specifics.

Pat

Bird safe glazing treatments

Audubon



Horizontal lines with a maximum spacing of 2”

Vertical lines with a maximum spacing of 4”

> “Handprint rule” ▪ 2 x 4 rule

Bird safe glazing treatments

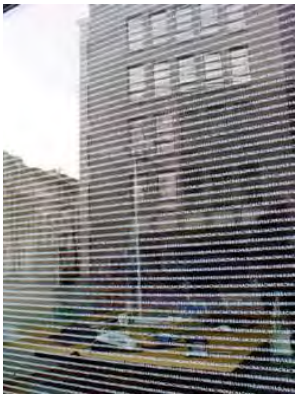
Audubon

Fritted Glass | Vernon Hills City Hall | Illinois

Judith Dobrzynski

Fritted Glass | Brooklyn Botanical Gardens | Brooklyn, NY

Bird safe glazing treatments



The glass facade of SUVA Haus in Basel, Switzerland, renovated by Herzog and de Meuron, is screen-printed on the outside with the name of the company owning the building. Photo: Miguel Marqués Ferrer

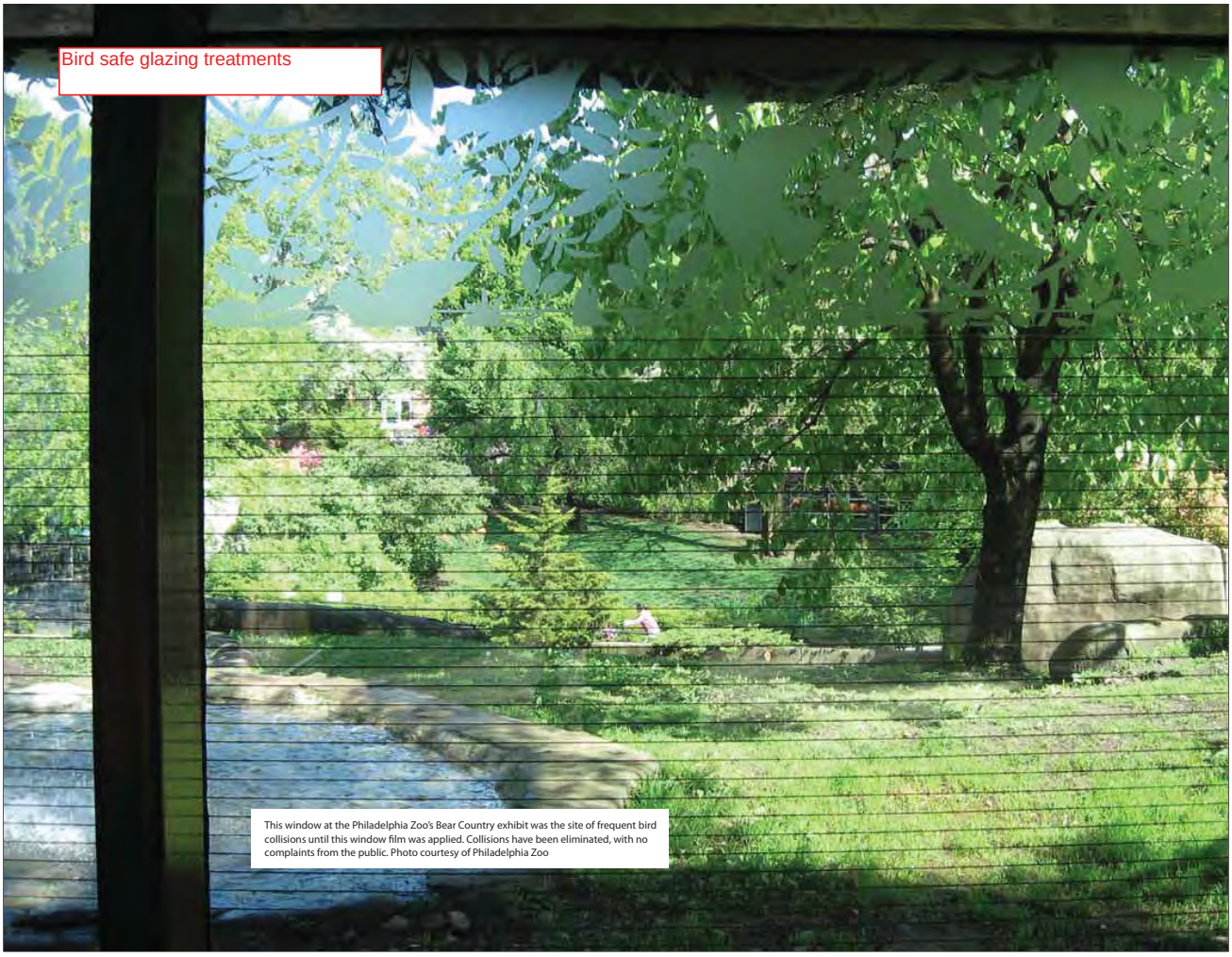
Dense stripes of internal frit on University Hospital's Twinsburg Health Center in Cleveland, by Westlake, Reed, Leskosky will overcome virtually all reflections. Photo: Christine Sheppard, ABC

Patterns on Glass

Patterns are often applied to glass to reduce the transmission of light and heat; they can also provide some design detail. When designed according to the 2x4 rule, (see p. 17) patterns on glass can also prevent bird strikes. External patterns on glass deter collisions effectively because they block glass reflections, acting like a screen. Ceramic dots or 'frits' and other materials can be screened, printed, or otherwise applied to the glass surface. This design element, useful primarily for new construction, is currently more common in Europe and Asia, but is being offered by an increasing number of manufacturers in the United States.

More commonly, patterns are applied to an internal surface of double-paned windows. Such designs may not be visible if the amount of light reflected from the frit is insufficient to overcome reflections on the glass' outside surface. Some internal frits may only help break up reflections when viewed from some angles and in certain light conditions. This is particularly true for large windows, but also depends on the density of the frit pattern. The internet company IAC's headquarters building in New York City, designed by Frank Gehry, is composed entirely of fritted glass, most of high density. No collision mortalities have been reported at this building after two years of monitoring by Project Safe Flight. Current research is testing the relative effectiveness of different frit densities, configurations, and colors.

The Studio Gang's Aqua Tower in Chicago was designed with birds in mind. Strategies include fritted glass and balcony balustrades. Photo: Tim Bloomquist



This window at the Philadelphia Zoo's Bear Country exhibit was the site of frequent bird collisions until this window film was applied. Collisions have been eliminated, with no complaints from the public. Photo courtesy of Philadelphia Zoo

Fritted Glass and Louvers | SUNY Brockport | New York

What requirements apply to a "featured-related" hazard?

Treatment of Feature-Related Hazards - Regardless of whether the site is located inside or adjacent to an Urban Bird Refuge, 100% of building feature-related hazards shall be treated.

Bird safe glazing treatments

LEFT: A transparent glass skywalk poses a "feature-related" hazard.

Image courtesy of Lightsoutindy.org

LEFT: This skywalk was intentionally treated with fritting by the Indiana Museum to avoid creating a "feature-related" hazard.

RIGHT: The fritting maintains transparency for pedestrians.

Images courtesy of Lightsoutindy.org

Bird safe glazing treatments

Solution: Glass

Numerous examples of bird-friendly buildings exist, which were primarily designed to be functional and attractive, and incidentally pair well with bird-friendly objectives. These buildings may have screens, latticework, grilles, or other visual noise either outside the glass or integrated into the glass that helps to reduce collisions.

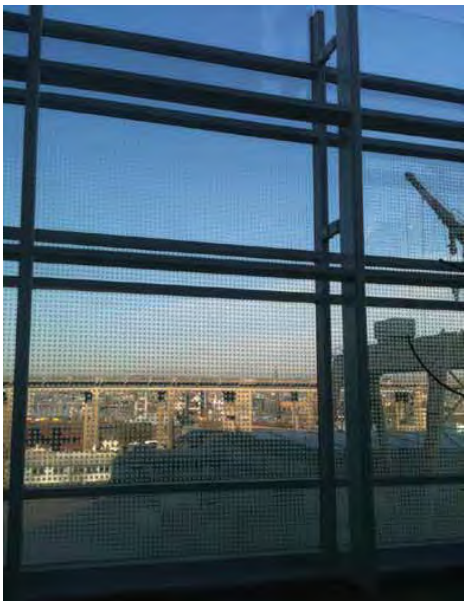
Identifying glass treatments that eliminate or greatly reduce bird mortality while minimally obscuring the glass itself has been the goal of several researchers, including Martin Rössler, Dan Klem, and Christine Sheppard. Their research, discussed in detail in Appendix I, has focused primarily on the spacing, width, and orientation of lines marked on glass, and has shown that patterns covering as little as 5% of the total glass surface can deter 90% of strikes under experimental conditions. Most birds will not attempt to fly through horizontal spaces less than 2" high, nor through vertical spaces 4" wide or less. This concept has become known as the 2" x 4" Rule.

Research on human vision shows a striking ability to complete partial images in order to compensate for missing visual information. This linking of visual fragments and filling-in by our brains means it is possible to design patterns on windows that alert birds to a barrier while minimally impacting views out.

Designing a new structure to be bird friendly can be imaginative, innovative, sustainable and cost-neutral. Architects around the globe have created fascinating structures that incorporate little or no unmarked glass. Inspiration has been born out of functional needs, such as shading in many climatic zones, and/or aesthetics; being bird-friendly was often secondary or incidental. Retrofitting existing buildings can often be done by targeting areas where strikes are known to occur, rather than entire buildings.

Local Victories

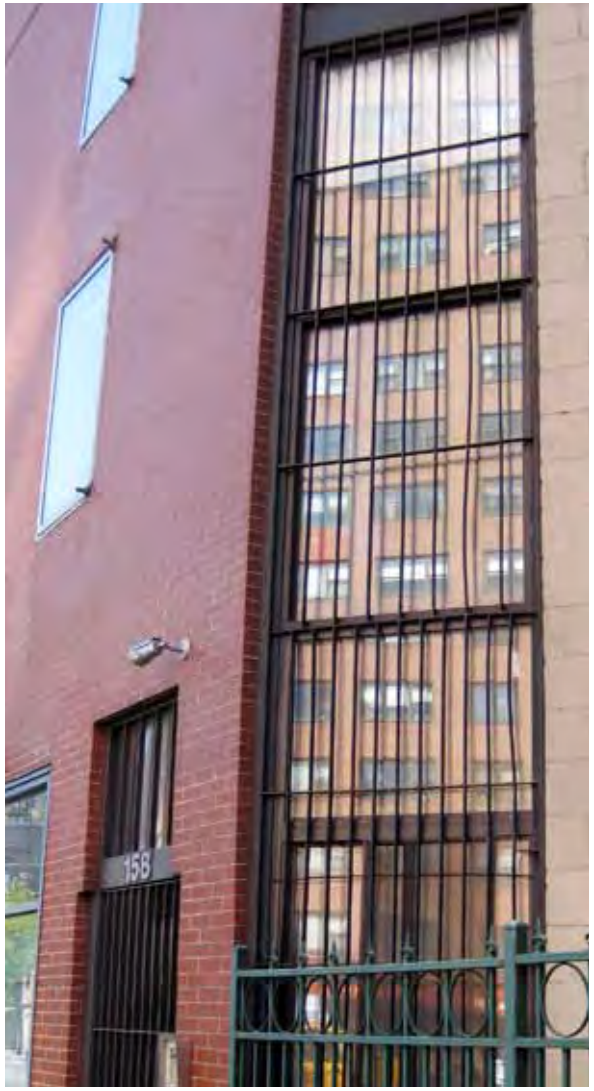
Bird-friendly considerations are just beginning to gain traction in the Portland area. An exterior screening project at Lewis and Clark Law School *(pictured on page 15)* demonstrates a local commitment



View of fritted window pattern (above) at the OHSU Center for Health and Healing demonstrate how frit patterns can be designed to afford views out (Photo at left is a close-up). Frits can synergistically reduce solar heat gain, afford privacy, and provide visual cues to approaching birds. No collisions have been documented at this building in four seasons of monitoring. Photo: Mary Coolidge

Most birds will not attempt to fly through horizontal spaces less than 2" high, nor through vertical spaces 4" wide or less. This concept has become known as the **2" x 4" Rule**.

Both increased height of trees and increased height of vegetation increased the risk of collisions in fall. Ten percent increases in tree height and the height of vegetation corresponded to 30% and 13% increases in collisions in fall. In spring, only tree height had a significant influence, with a 10% increase corresponding to a 22% increase in collisions. Confusingly, increasing "facing area" defined as the distance to the nearest structure, corresponded strongly with increased collisions in spring, and with reduced collisions in fall. Presumably, vegetation increases risk both by attracting more birds to an area, and by being reflected in glass.

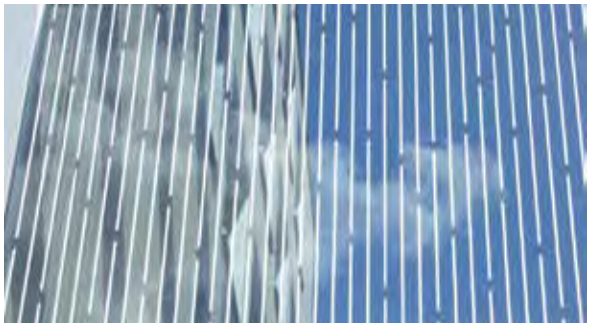


This security grille also creates a pattern that will deter birds from flying to reflections. Photo: Christine Sheppard, ABC

Research: Deterring Collisions

Systematic efforts to identify signals that can be used to make glass visible to birds began with the work of Klem in 1989. Testing glass panes in the field and using a dichotomous choice protocol in an aviary, Klem (1990) demonstrated that popular devices like "diving falcon" silhouettes were only effective if they were applied densely, spaced two to four inches apart. Owl decoys, blinking holiday lights, and pictures of vertebrate eyes were among items found to be ineffective. Grid and stripe patterns made from white material, one inch wide were tested at different spacing intervals. Only three were effective: a 3x4 inch grid, vertical stripes spaced four inches apart, and horizontal stripes spaced about an inch apart across the entire surface.

In further testing using the same protocols, Klem (2009) confirmed the effectiveness of 3M™Scotchcal™ Perforated Window Graphic Film (also known as CollidEscape), WindowAlert® decals, if spaced at the two- to four-inch rule, as above, and externally applied ceramic dots or "frits," (0.1 inch dots spaced 0.1 inches apart). Window films applied to the outside surface that rendered glass opaque or translucent were also effective. The most effective deterrents in this study were stripes of highly reflective 40% UV film (D. Klem, pers. comm., March 2011) alternating


Patterns on the outside of glass, such as that shown above, are more effective than patterns on an inside surface. Photo: Hans Schmid

A dense internal frit pattern on the glass of the Bike and Roll building, near Union Station in Washington D.C., makes it look almost opaque. Photo: Christine Sheppard, ABC

A pattern of narrow horizontal stripes has proven to be highly effective at deterring bird collisions, while covering only about 7% of the surface of the glass. Photo: Hans Schmid

Downtown Minneapolis Skyways

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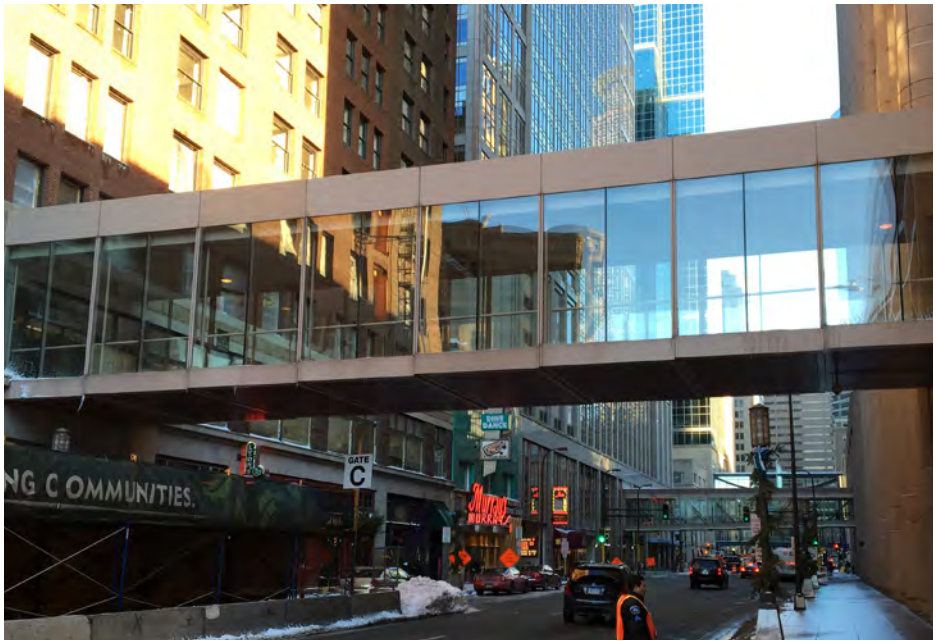

Downtown Minneapolis Skyways

Downtown Minneapolis Skyways

Downtown Minneapolis Skyways

Downtown Minneapolis Skyways

Skyway between IDS Center and Macy's with bird strikes