



**H. T. HARVEY & ASSOCIATES**

Ecological Consultants

50 years of field notes, exploration, and excellence

August 25, 2020

Daniel Minkoff  
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**Subject:** 100 Altair Way – Avian Collision Risk Assessment and Documentation of Compliance with City of Sunnyvale Bird-Safe Design Guidelines (HTH #4375-01)

Dear Mr. Minkoff:

Per the request of Andrew Clemenza with brick, H. T. Harvey & Associates has performed an assessment of avian collision risk for the proposed 100 Altair Way project in Sunnyvale, California. It is our understanding that the project will demolish two existing buildings on the site and construct an approximately 141,434 square-foot, seven-story office building with a roof deck and four levels of underground parking, and that the City of Sunnyvale is requiring that the project comply with Option 2 of the City's *Final Bird Safe Building Design Guidelines*. This report summarizes our analysis of bird collision hazards associated with the project, as well as documentation of project compliance with Option 2 of the City's guidelines, for purposes of submittal to the City of Sunnyvale.

## Statement of Qualifications

This assessment was prepared by Steve Rottenborn and me. Briefly, our qualifications are as follows (résumés attached):

- I am a wildlife ecologist with a B.S. in Ecology from the University of California, San Diego and an M.S. in Fish and Wildlife Management from Montana State University, where my Master's thesis focused on factors affecting the nest survival of yellow warblers (*Setophaga petechia*), dusky flycatchers (*Empidonax oberholseri*), and warbling vireos (*Vireo gilvus*). Trained as an ornithologist, I specialize in the nesting ecology of passerine birds, with a broad range of avian field experience from across the United States. I am an avid birder, and I volunteer as a bird bander for the San Francisco Bay Bird Observatory, where I have been banding, sexing, and aging resident and migrant passerine species since 2010. I have spent hundreds of hours in the field conducting nesting bird surveys for H. T. Harvey & Associates projects over the past 13 years, and have found hundreds of passerine nests as well as many nests of raptors.

- Steve Rottenborn has a Ph.D. in biological sciences from Stanford University, where his doctoral dissertation focused on the effects of urbanization on riparian bird communities in the South San Francisco Bay area. He has been an active birder for more than 35 years and has conducted or assisted with research on birds since 1990. He has served for 9 years as an elected member of the California Bird Records Committee (including 3 years as chair) and for 13 years as a Regional Editor for the Northern California region of the journal *North American Birds*. He is a member of the Scientific Advisory Board for the San Francisco Bay Bird Observatory, the Technical Advisory Committee for the South Bay Salt Ponds Restoration Project, and the Board of Directors of the Western Field Ornithologists.

In addition, H. T. Harvey & Associates ecologist Jane Lien, B.S., conducted a reconnaissance-level survey of the project site on September 30, 2019 to characterize potential bird use of the site and immediately surrounding areas.

Although the subject of bird-friendly design is relatively new to the West Coast, we have performed avian collision risk assessments and identified measures to reduce collision risk for several projects in the Bay Area, including projects in the cities of San Francisco, Oakland, South San Francisco, Redwood City, Menlo Park, Palo Alto, Mountain View, Santa Clara, Sunnyvale, and San José.

## Assessment of Bird Use

### *Existing Conditions*

Habitat conditions and bird occurrence in the immediate vicinity of the project site (i.e., on the site and on immediately adjacent lands) are typical of much of the urbanized San Francisco Bay area. The site consists of two existing commercial buildings and hardscape with narrow, interrupted areas of landscaping. This landscaping consists entirely of nonnative herbaceous plants and low shrubs; there are no trees on the site. The site is surrounded by high-density urban commercial and residential development.

Habitat conditions on the site and in immediately surrounding areas are of low quality for most native birds found in the region due to the near absence of vegetation, the lack of any native vegetation, the absence of well-layered vegetation (e.g., with ground cover, shrub, and canopy tree layers in the same areas), the small size of the vegetated habitat patches, and the amount of human disturbance by vehicular traffic and occupants of buildings on and/or adjacent to the project site, which is developed as a commercial business district. Nonnative vegetation supports fewer of the resources required by native birds than native vegetation, and the structural simplicity of the vegetation further limits resources available to birds. Nevertheless, there is a suite of common, urban-adapted bird species that occur in such urban areas that are expected to occur on the site regularly. These include the native Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), Bewick's wren (*Thryomanes bewickii*), northern mockingbird (*Mimus polyglottos*), bushtit (*Psaltiriparus minimus*), dark-eyed junco (*Junco hyemalis*), and house finch (*Haemorhous mexicanus*), as well as the non-native European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*). All of these birds are year-round residents that can potentially nest on or immediately adjacent to the site. A number of other species, primarily migrants or winter visitors

(i.e., nonbreeders), are expected to occur occasionally on the site as well, including the white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Zonotrichia atricapilla*), and yellow-rumped warbler (*Setophaga coronata*). For example, low numbers of migrants are expected to forage in the ornamental vegetation on the site. However, with the exception of an apparent nighttime American crow roost in trees along West Evelyn Avenue, no bird species are expected to occur on the site in large numbers, and all of the species expected to occur regularly are regionally abundant species. No special-status birds (i.e., species of conservation concern) are expected to nest or occur regularly on the site.

The project site is located in a highly urbanized area, and is surrounded by commercial development, residential development, and busy roadways. No sensitive habitats are located in the site vicinity. The nearest open area to the project site is the approximately 1.5-acre Plaza del Sol located directly across Altair Way from the site to the northeast. Approximately half of the park area consists of paved pedestrian pathways and a plaza, and the remaining areas are landscaped with turf grasses, low herbaceous ground cover, and a number of nonnative London plane trees (*Platanus acerifolia*), crape myrtles (*Lagerstroemia* sp.) and coast redwoods (*Sequoia sempervirens*). Due to the extensive hardscape, predominantly nonnative vegetation, and high levels of disturbance due to pedestrian traffic and adjacent roadways, as well as the highly urbanized surrounding context, the park is not expected to provide especially valuable habitat for birds or attract large numbers of birds.

The project site is not located in a landscape position that would result in high numbers of birds, especially migratory birds, to be moving past the project site. Although a number of birds move along the edges of San Francisco Bay, the site is located approximately 3.3 miles from the edge of baylands habitats and is separated from those habitats by dense urban development. Because the project site is well inland from the baylands edge, waterbirds using habitats around the Bay would not commute in the direction of the project site. As a result, waterbirds associated with San Francisco Bay are not at risk of colliding with the proposed building. Moderate numbers of migratory songbirds are often concentrated at the edge of the bay during spring and fall migration. However, they tend to use more heavily vegetated areas such as riparian corridors or large, well-vegetated parks such as Coyote Point in San Mateo, Shoreline Park in Mountain View, or Sunnyvale Baylands Park in Sunnyvale. No heavily vegetated areas or natural habitat such as riparian vegetation is present in the vicinity of the project site, and the project site is not located between two high-quality habitat areas such that birds would be flying past the site at an altitude as low as the proposed building. Similarly, the nearest urban parks that provide habitat for large numbers and high diversities of birds are the Ulistac Natural Area approximately 4.5 miles to the northeast and the Sunnyvale Baylands Park approximately 3.2 miles to the north; the project site is isolated from both locations by miles of dense commercial and residential development. As a result, there is no expectation that migratory songbirds would be particularly attracted to, or would make heavy use of, the habitats in the immediate project vicinity.

### ***Proposed Conditions***

The numbers of birds that currently use the site are expected to increase somewhat following project construction due to the proposed expansion of landscape areas and inclusion of a roof garden on the site. However, the project's planting plans include primarily nonnative trees, shrubs, and herbaceous plants, which

offer fewer resources to native birds than native vegetation. Trees, shrubs and herbaceous plants planned for the site include trident maple (*Acer buergerianum*), strawberry tree (*Arbutus marina*), eastern redbud (*Cercis canadensis*), princess flower (*Tibouchina urvilleana*), Jerusalem sage (*Phlomis fruticosa*), river wattle (*Acacia cognata*), various flowering herbaceous plants, and mixed native and nonnative grasses. This vegetation is likely to attract somewhat greater numbers of landbirds, perhaps including more migrant songbirds, than under existing conditions; however, none of the tree and plant species proposed to be planted on the site are not known to provide particularly valuable food, nesting, or cover resources for native birds. Thus, the relatively small numbers of these trees and plants, coupled with the lack of structural diversity, would not provide high-quality habitat for native birds, and any increase in bird abundance as a result of the proposed landscaping would be modest.

## Assessment of Collision Risk

Because birds do not necessarily perceive glass as an obstacle<sup>1</sup>, windows or other structures that reflect the sky, trees, or other habitat may not be perceived as obstacles, and birds may collide with these structures. Similarly, transparent windows can result in bird collisions when they allow birds to perceive an unobstructed flight route through the glass (such as at corners), and when the combination of transparent glass and interior vegetation (such as in planted atria) results in attempts by birds to fly through glass to reach vegetation. A number of factors play a role in determining the risk of bird collisions with buildings, including the amount and type of glass used, lighting, properties of the building (e.g., size, design, and orientation), type and location of vegetation around the building, and building location.

As noted above, relatively low numbers of native, resident birds and occasional migrants occur in the project vicinity, but even during migration, the number of native birds expected to occur in the project vicinity will be low. As a result, the glass façades of the proposed building at 100 Altair Way are expected to result in relatively few bird collisions, even in the absence of added bird-safe design. Further, several features of the architecture of the proposed building would reduce the potential for avian collisions. Based on the project plans, the south façade of the building has limited glazing, and numerous non-reflective fins break up glassy facades on the east and west sides of the building (Figure 1). The fins and opaque wall panels on the east and west facades would prevent these facades from appearing as unbroken panes of glass, and would break up the reflection of the sky or vegetation with the glass. As a result, birds would be better able to perceive these areas as solid obstructions to flight than if the glassy surface appeared more uniform.

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<sup>1</sup> Sheppard, C. and G. Phillips. 2015. Bird-Friendly Building Design, 2<sup>nd</sup> Edition. American Bird Conservancy. The Plains, VA, 60 pages.

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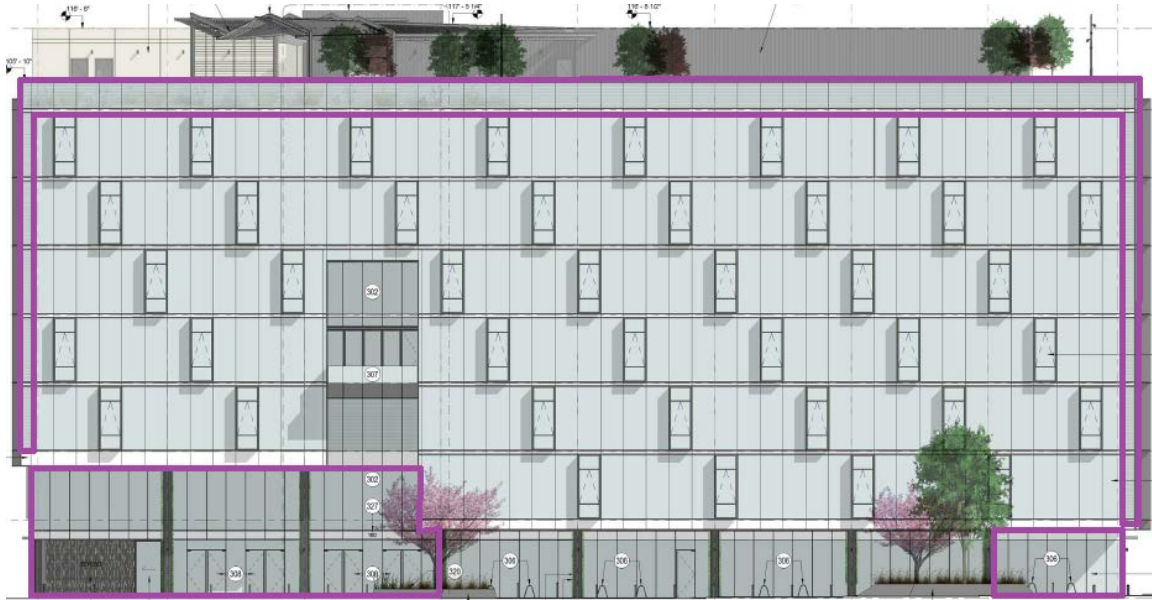
The project will incorporate bird-safe glazing with a visible or UV frit pattern on certain portions of the building to reduce the frequency of bird collisions with glazed facades. The type of bird-safe glazing and frit pattern may vary for different areas of the facades, but all vertical elements of the window patterns will be at least 1/4-inch wide at a minimum spacing of 4 inches, and horizontal elements be at least 1/8-inch wide at a minimum spacing of 2 inches to ensure that the pattern minimizes bird collisions with the glazing. The extent of the proposed bird-safe glazing treatment on the building's facades is shown on Figures 2 and 3.



Figure 1. The building's west and east facades (the west façade is shown on the left) incorporate non-reflective fins that increase the visibility of glazed areas to birds, and the building's south façade (shown on the right) has limited glazing.



Figure 2. The extent of bird-safe glazing treatment to be incorporated on the east (left) and west (right) facades of the building is outlined in purple.



**Figure 3. The extent of bird-safe glazing treatment to be incorporated on the north façade of the building is outlined in purple.**

There are some features evident in the project's plans where bird collisions are more likely to occur compared to other locations because they may not be as easily perceived by birds as physical obstructions. For example, the plans show transparent glass corners in several locations (Figure 4), as well as a free-standing glass "fin" along the margins of the building's north façade (Figure 5). Where these features are located along potential flight paths that birds may use when traveling to and from landscape vegetation on the site or in nearby areas, the risk of bird collisions is higher because birds may not perceive the intervening glass and may therefore attempt to fly to vegetation on the far side of the glass. In addition, vegetation will be planted adjacent to and behind glazing at the lobby entrance (Figure 6) as well as on the roof deck, which may potentially draw birds in towards the building where they would see vegetation reflected in the glass (or through the glass at the lobby or at free-standing glass walls) and collide with the building's facades. The glazing at locations where high-risk collision hazards are present will be treated with a bird-safe glazing treatment, as described above, which is expected to reduce the frequency of collisions with these hazards.





Figure 4. Examples of transparent glass corners (shown in red) at the building's northeast corner and at a recessed portion of the north façade. Additional transparent glass corners were identified at the building's northwest corner.



Figure 5. A free-standing glass "fin" extends along the margins of the building's north façade (shown in orange), posing a collision hazard to birds navigating around the building.



Figure 6. Birds may collide with glass surrounding the lobby at the transparent glass corner (red) or when attempting to fly in between exterior vegetation (yellow) and interior vegetation (orange).

The extensive glazing proposed on the north façade of the building also poses some collision risk to the small numbers of birds that use the site. While this glazing is visually disrupted by narrow vertical and horizontal mullions, it nonetheless presents a large surface in which birds can potentially perceive reflected sky and/or vegetation and collide with the glass as they attempt to reach those reflections (Figure 7). Collision risk with this façade is expected to be highest along the easternmost portion of the façade that faces Plaza del Sol to the northeast, and in the area within 60 feet of the ground because this is the area in which most bird activity occurs<sup>2</sup>. However, as discussed above, neither the vegetation to be planted on the project site nor the habitat at Plaza del Sol are expected to provide especially valuable habitat for birds or attract large numbers of birds. In addition, the project will use low-reflectivity glazing ( $\leq 12\%$  reflectance) on all facades, which will reduce the likelihood of bird collisions due to the reflection of sky and vegetation in glass. As a result, it is our opinion that this glazing does not represent a substantial collision hazard to birds.



**Figure 7. The proposed large expanse of glass on the building's north façade, while visually disrupted by narrow mullions and shadow boxes, will reflect the sky and nearby landscape vegetation, posing a potential collision hazard to birds.**

In summary, we expect few avian collisions with glass façades on the proposed building to occur; such collisions are likely to be most frequent at free-standing glass walls, transparent glass corners, and the building's lobby, as well as within the lower 60 feet of the building's north facade. We expect collisions to be less frequent with the building's east and west façades, which incorporate fins that increase their visibility to birds, and with the south façade, which has minimal glazing. However, due to the overall low abundance of birds on and immediately adjacent to the site, we expect the overall frequency of such collisions to be low. In addition, the identified high-collision-risk areas on the building's facades will be treated with a bird-safe glazing treatment, which will reduce the potential for collisions. As a result, avian injury or mortality due to bird collisions with the proposed building would not meet the threshold of having a substantial adverse effect on populations of common, urban-adapted bird species that use the site, in our opinion. Thus, we consider this impact to be less than significant under the California Environmental Quality Act (CEQA).

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<sup>2</sup> San Francisco Planning Department. 2011. Standards for Bird-Safe Buildings. Planning Department. July 14, 2011.



## Documentation of Compliance with the City of Sunnyvale's Bird-Safe Design Guidelines

It is our understanding that the City of Sunnyvale is requiring the project to comply with Option 2 of the City's *Final Bird Safe Building Design Guidelines*. The City of Sunnyvale identifies nine bird-safe design guidelines under Option 2. The following section provides our assessment of the proposed project's compliance with each of these guidelines, based on both the City's requirements and our opinion regarding whether compliance with each guideline would effectively result in substantial reductions in bird collision risk.

***1. Avoid large expanse of glass near open areas, especially when tall landscaping is immediately adjacent to the glass walls.***

The only open area near the project site is Plaza del Sol, an approximately 1.5-acre park located directly across Altair Way from the proposed project. However, as discussed above, the park is not expected to provide especially valuable habitat for birds or attract large numbers of birds. In our opinion, although a large expanse of glass will be present on the building's north facade facing Plaza del Sol, the removal of this glazing, or treatment of the glazing with a bird-safe treatment, would not result in a substantial reduction in bird collisions with the building.

The project's planting plans indicate that one trident maple (maximum height 20–25 feet<sup>3</sup>) and two eastern redbuds (maximum height 10–20 feet<sup>2</sup>) will be planted adjacent to the building's north façade, which incorporates extensive glazing. However, as discussed above, none of the vegetation proposed to be planted on the site is known to provide particularly valuable food, nesting, or cover resources for native birds. In addition, the project will use low-reflectivity glazing ( $\leq 12\%$  reflectance) on all facades, which will reduce the likelihood of bird collisions due to the reflection of sky and vegetation in glass. Thus, in our opinion, the presence of these trees adjacent to the building's north façade does not create a substantial collision hazard for birds, and the removal of glazing adjacent to these trees, or treatment of the glazing with a bird-safe treatment, would not result in a substantial reduction in bird collisions with the building. As a result, in our opinion, the project avoids creating a high-risk collision hazard due to large expanses of glass located near open areas, and complies with this guideline.

***2. Avoid the funneling of open space towards a building face.***

The proposed building will be a rectangular shape, and this design does not represent a configuration that would funnel birds towards building facades. Thus, in our opinion, the project design avoids funneling birds towards building facades, and is in compliance with this guideline.

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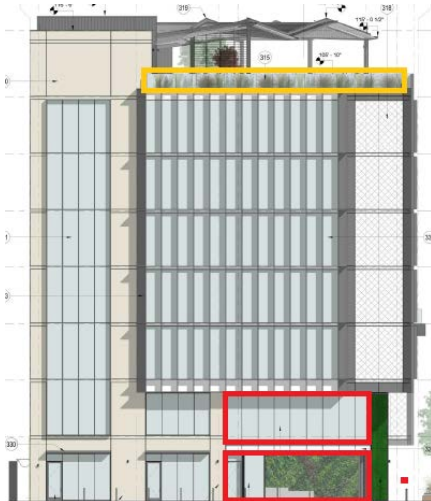
<sup>3</sup> Cal Poly San Luis Obispo. 2019. Urban Forest Ecosystems Institute SelecTree: A Tree Selection Guide. Accessed October 2019 from <https://selecttree.calpoly.edu/>.

**3. Prohibit glass skyways or free-standing glass walls.**

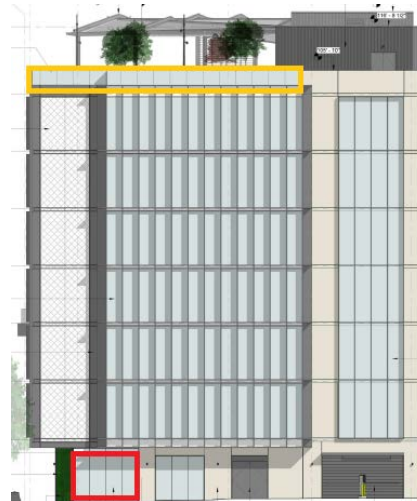
No glass skyways are included in the project design; however, a free-standing glass “fin” is proposed along the margins of the building’s north façade (Figure 6) and free-standing glass railings are proposed along the periphery of the building’s roof on the east, west, and north facades and at the Level 4 balcony on the north facade (Figures 8–10).



**Figure 8. The north facade of the 100 Altair building. A free-standing glass ‘fin’ extends along the margins of the building’s north façade (shown in orange), posing a collision hazard to birds navigating around the building. Transparent glass corners that are located along potential flight paths for birds, and hence represent potential collision hazards, are shown in red.**



**Figure 9.** The east façade of the 100 Altair building. A free-standing glass railing is present along the periphery of the roof and a free-standing glass panel is present on Level 1 (shown in orange), posing collision hazards to birds. Transparent glass corners that are located along potential flight paths for birds, and hence represent potential collision hazards, are shown in red. In our opinion, these areas should be treated with a bird-safe glazing treatment to comply with the City's guidelines.



**Figure 10.** The west façade of the 100 Altair building. A free-standing glass railing is present along the periphery of the roof (shown in orange), posing a collision hazard to birds flying to and from vegetation on the roof. A transparent glass corner that is located along a potential flight path for birds, and hence represents a potential collision hazard, is shown in red. In our opinion, these areas should be treated with a bird-safe glazing treatment to comply with the City's guidelines.

To reduce the potential for bird collisions with free-standing glass, all free-standing glass that is located along a potential flight path for birds (i.e., adjacent to or surrounding areas with landscape vegetation) shall be treated with a bird-safe treatment that will increase the visibility of this glazing to birds by allowing them to perceive the glass as a solid surface (i.e., all glazing on the free-standing glass "fin" along the margins of the building's north façade, all free-standing glass railings along the periphery of the building's roof, and the free-standing glass panel at the lobby entrance should be treated. In our opinion, the free-standing glass railing located at the Level 4 balcony does not need to be treated because no landscape vegetation is proposed at this location, and thus the railing is not located along a potential flight path for birds such that birds would be expected to collide with glazing at this balcony.

Bird-safe glazing treatments may include fritting, netting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing, or ultraviolet patterns visible to birds. As discussed above, vertical elements of the window patterns will be at least ¼-inch wide at a minimum spacing of 4 inches, and horizontal elements will be at least ⅛-inch wide at a minimum spacing of 2 inches; in our opinion, this pattern is appropriate to minimize bird collisions with the glazing. While this approach is not consistent with the City's guideline (free-standing glass walls would still be present), it is our opinion that the treatment of this glass with

a bird-safe frit pattern is an appropriate approach to reduce the potential for bird collisions with these hazards, and the project complies with this guideline.

***4. Avoid transparent glass walls coming together at building corners to avoid birds trying to fly through the glass.***

Transparent glass corners are present in several locations on the building (Figures 4 and 6). To eliminate transparent glass corners, the glazing would need to be removed from corners in the project design. Alternatively, the City may accept that this criterion has been met if the glass panels adjacent to building corners are treated with a visible frit pattern to increase the visibility of the glass to birds. While this would not comply with the City's requirement per se, it would reduce bird collisions at these locations and, in our opinion, adequately meet the objective of the City's requirement (i.e., to avoid creating a feature-related hazard that results in a high number of bird collisions).

To reduce the potential for bird collisions with transparent glass corners, glazing at corners that are located along potential flight paths for birds (i.e., corners in areas with landscape vegetation) will be treated with a bird-safe glazing treatment. Based on our review of the project plans, transparent glass corners are located along potential flight paths for birds at the lobby entrance (i.e., on Levels 1 and 2 at the building's northeast corner) and on Level 1 at the building's northwest corner. Treating glazing at these locations with a bird-safe glazing treatment will increase the visibility of this glazing to birds by allowing them to perceive the glass as a solid surface, as described under guideline #3 above. In our opinion, transparent glass corners located elsewhere on the building do not need to be treated because no landscape vegetation is proposed at these locations, and thus these corners are not located along potential flight paths for birds such that birds would be expected to collide with glazing at these corners. Thus, in our opinion, the project complies with this guideline.

***5. Reduce glass at tops of buildings, especially when incorporating a green roof into the design.***

The proposed project includes a plan for a landscaped roof with small trees, shrubs, grasses, and flowering plants. As discussed above, the potential for birds to collide with the facades of the building is limited because limited glazing is present on the south façade, the glazing on the east and west facades is visually disrupted by opaque wall panels and fins that increase the visibility of these facades to birds, and few birds are expected to be present on the project site. As a result, glazing located at the tops of buildings below the green roof is not expected to result in high numbers of bird collisions, and it is our opinion that the treatment or reduction of this glazing would not result in a substantial reduction in bird collisions with the building.

However, birds traveling in between areas of landscape vegetation on the green roof and/or between vegetation on the roof and the ground would fly past the free-standing glass railings and transparent glass fin along the periphery of the roof. Because these features are located along flight paths, they represent collision risks for birds. To reduce the potential for bird collisions with glazing adjacent to the landscaped roof, all glazing on the free-standing glass railings and transparent glass fin surrounding the roof will be treated with a bird-safe treatment that will increase the visibility of this glazing to birds by allowing them to perceive the glass as a solid surface, as described under guideline #3 above. While this approach is not consistent with the City's guideline

(a green roof will still be present near glass), it is our opinion that the treatment of these hazards with a bird-safe frit pattern is an appropriate approach to reduce the potential for bird collisions associated with the green roof, and that the project complies with this guideline.

**6. *Prohibit up-lighting or spotlights.***

It is our understanding that exterior up-lighting will be included in the project design, but no spotlights are proposed. We further understand that the project will qualify for LEED SSc8 *Light Pollution Reduction*, which includes the following requirements for exterior lighting in commercial areas<sup>4</sup>:

Only light areas as required for safety and comfort. Do not exceed 80% of the lighting power densities for exterior areas and 50% for building facades and landscape features as defined in ASHRAE/IESNA Standard 90.1-2004, Exterior Lighting Section, without amendments.

Design exterior lighting so that all site and building mounted luminaires produce a maximum initial illuminance value no greater than 0.20 horizontal and vertical footcandles at the site boundary and no greater than 0.01 horizontal footcandles 15 feet beyond the site. Document that no more than 5% of the total initial designed fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down). For site boundaries that abut public rights-of-way, light trespass requirements may be met relative to the curb line instead of the site boundary.

As discussed above, the project site is not located in a landscape position that would result in high numbers of birds, especially migratory birds, to be moving past the site. Due to the small numbers of migrant birds expected to occur on the site, and because compliance with LEED SSc8 would minimize the spillage of light from the project site outwards and upwards, it is our opinion that the project effectively minimizes the potential for bird collisions with the proposed building due to lighting despite the use of some up-lights in the project design in compliance with this guideline.

**7. *Shield lighting to cast light down onto the area to be illuminated.***

It is our understanding that not all exterior up-lighting will incorporate shielding to ensure that light is cast downward onto the area to be illuminated; however, the only lights without shielding included in the project design are City of Sunnyvale standard lights. As discussed for guideline #6 above, the project will qualify for LEED SSc8 Light Pollution Reduction. Due to the small numbers of migrant birds expected to occur on the site, and because compliance with LEED SSc8 would minimize the spillage of light from the project site outwards and upwards, it is our opinion that the project effectively minimizes the potential for bird collisions with the proposed building due to lighting regardless of the use of some fixtures that are not shielded.

**8. *Turn commercial building lights off at night or incorporate blinds into window treatments to use when lights are on at night.***

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<sup>4</sup> U.S. Green Building Council. 2020. SSc8 Light Pollution Reduction. Available: <https://www.usgbc.org/credits/retail-new-construction/v10-pilot/ssc8?view=language>. Accessed May 2020.



It is our understanding that the project will qualify for LEED SSc8 *Light Pollution Reduction*, which includes the following requirement for interior lighting<sup>3</sup>:

All non-emergency interior lighting shall be automatically controlled to turn off during non-business hours. Provide manual override capability for after hours use.

Based on the project's qualification for LEED credit SSc8, it is our opinion that the project is in compliance with this guideline.

***9. Create smaller zones in internal lighting layouts to discourage wholesale area illumination.***

It is our understanding that the project will comply with the California Energy Commission Title 24 for energy efficiency, which includes requirements for lighting controls in individual rooms, as well as occupancy sensors. In addition, we understand that the project will qualify for the WELL building standard, which requires that building occupants have control of light levels in their immediate environment<sup>5</sup>. Based on the project's compliance with Title 24 and qualification for the WELL building standard, it is our opinion that the project is in compliance with this guideline.

## Summary

Because birds are present in the vicinity of the proposed building, and the glassy façades of this building may not always be perceived by birds as physical impediments to flight, we expect some avian collisions with the proposed building to occur. However, we expect the frequency of bird collisions to be relatively low compared to circumstances in which similar buildings occur within more natural habitats or along regular flight paths between areas of high-quality habitat. We base this conclusion on (1) the relatively low numbers of birds expected to occur in the immediate vicinity of the proposed project building due to habitat conditions, (2) the low numbers of birds expected to approach the project site from more natural habitats along the San Francisco Bay several miles to the north, and (3) the absence of any features such as dense, native vegetation or water features on or immediately adjacent to the site that might otherwise attract birds to the vicinity.

Although building collisions by some migrant songbirds are likely to occur, we would expect that the majority of bird strikes would be by resident species, both because the low-quality habitat on the site is more conducive to use by urban-adapted resident birds than by migrants and because resident birds would spend far more time near the proposed building than would birds that are migrating through the region. The resident species occurring on the project site are all common, urban-adapted species that are widespread in urban, suburban, and (for many species) natural land use types throughout the San Francisco Bay area. As a result, these species have high regional populations, and the number of individuals that might be impacted by collisions with the project building would represent a very small proportion of regional populations. Therefore, the project would

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<sup>5</sup> WELL Building Standard. 2020. Occupant Control of Lighting Environments. Available: <https://v2.wellcertified.com/v/en/light/feature/8>. Accessed May 2020.

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not result in the loss of a substantial proportion of any species' Bay-area populations or any Bay-area bird community, and according to CEQA standards, we would consider such impacts to be less than significant.

Nevertheless, the project is committed to compliance with Option 2 of the City of Sunnyvale's Bird-Safe Design Guidelines. Per these guidelines, the project will treat the following glazing on the building with a bird-safe treatment that will increase the visibility of the glazing to birds by allowing birds to perceive the glass as a solid surface:

- All glazing on the free-standing glass railings surrounding the green roof.
- All glazing on the free-standing glass "fin" along the margins of the building's north façade.
- All glazing at the lobby entrance (i.e., on Level 1 at the building's northeast corner) and on Level 1 at the building's northwest corner

With the implementation of bird-safe glazing treatment at these locations, it is our opinion that the project complies with Option 2 of the City's Bird-Safe Design Guidelines. Please feel free to contact me at (408) 677-8737 or [rcarle@harveyecology.com](mailto:rcarle@harveyecology.com), or Steve Rottenborn at (408) 722-0931 or [srottenborn@harveyecology.com](mailto:srottenborn@harveyecology.com), if you have any questions regarding this assessment. Thank you very much for contacting H. T. Harvey & Associates about this project.

Sincerely,



Robin Carle, M.S.  
Senior Wildlife Ecologist/Project Manager

Attachments: Résumés