LIGHTING GUIDELINES FOR ARENA GREEN PROJECT

April 8, 2019

Author: Brian Orter
Brian Orter Lighting Design
5455 Wilshire BLVD suite 1210
Los Angeles, CA 90036

Riparian Corridor

Light fixtures within the riparian corridor that are visible from the water surface should be
shielded to prevent glare on the river. This ensures no ALAN (Artificial Lighting at Night),
beyond what is already present on site, reaches these sensitive natural habitats. All additional
lighting associated with the project, including additional life-safety lighting, should also be
shielded from the river’s surface and optically designed to cast light where needed. These
sources should also avoid the use of lighting that incorporates any UV wavelengths to minimize
their attraction to local insect and bat populations. These methods will prevent further disruption
to natural behaviors among the native and migratory aquatic animals, such as the steelhead,
salmon, and pond turtles.

Main Structure

The structure itself should avoid using any steady sources of light that project upwards into
migratory airspace which have been shown to attract and subsequently trap and confuse birds.
Instead, the structure should use kinetic sources of light which are less attractive and therefore
less disruptive to natural migration. Any necessary steady sources of light should be kept at the
lowest possible level of luminance. Wherever possible, especially during periods of high
migration, lights on the structure should be full-cutoff – shielded completely from casting any
light up into the sky – to prevent attracting migratory birds off their natural path, and to minimize
the project’s contribution to general skyglow.

For any necessary steady light sources projecting into migratory airspace, the project should
use as little full-spectrum white light or long wavelength red light as possible to minimize impact
to the bird’s magnetic compass. Instead, light from the shorter wavelength end of the spectrum
– greens and blues – can be used as these interfere less with the magnetic detection of the
migration path.
Finally, lights on the structure should incorporate time-clock controls. Research has shown that by turning lights off during the most sensitive times of the night or season, which can vary depending on the habitats or species in question, the most negative impacts of ALAN can be heavily reduced. This might mean shutting off any lights not necessary for life-safety after a certain time of night, like midnight or after the end of special events on site; alternately, lights could shut off during the dusk and dawn hours when many native species engage in light-triggered behaviors such as mating or hunting.

These are general suggestions based on the currently available research and current observations of the proposed site for the Arena Green project. If, during the structure design process, more specific questions are raised regarding the effect of light type, intensity, wavelength, etc. on certain animal species’ behavior, more research may be needed to address those specific questions.

Through the use of mitigating measures such as those described above, the Arena Green project can leave a minimal impact on the surrounding natural environment, while becoming a beautiful and iconic piece of the San Jose landscape in celebration of the town’s continued innovation and growth.