OUR PLANET'S LENS

"Our Planet's Lens" symbolizes Silicon Valley as a global leader in both technology and innovation as well as a reminder of how precious our planet is and how we all must continue to preserve its wellbeing.
The iconic structure gracefully soars 200 feet from the ground and overlooks both the Santa Clara Valley as well as its Santa Cruz and Diablo mountain ranges. The icon is strategically oriented and placed solely on the western site leaving the eastern site untouched.

It's impressive 400-foot diameter ring is stabilized by an array of tensioned cables anchored down on-site. Within the "lens" itself, visitors can experience an educational journey of panoramic views while listening to its unique history. At its base, an amphitheater enables visitors to experience seasonal venues, activities, concerts, farmer's markets, among other events.

Meeting the Planet 2030 initiatives has also been at the forefront of the design. It will be a net-zero destination, acting as a significant energy machine. Through both its exterior skin and its orientation on the site, the top surface of the ring, as well as its vision glass, consists of an integrated solar array that will be able to offset the energy consumption of the structure. In addition, environmentally sensitive accent lighting is also taken into consideration, respecting both the surrounding nature of the riparian corridor as well as the airport's flight path.

"Our Planet's Lens" aims to become a global landmark for generations to come.

SITE PLAN

A SYMBOL OF INNOVATION

STRUCTURAL ANALYSIS

The ring structure cantilevering from the ground rises 200 feet above ground with a diameter of 400 feet and a projected length of 345 feet on ground. The geometry was studied with different variables to understand its structural behavior:

- Study 1: Use of shell or frame elements

Displacements under self-weight were found to be virtually identical, and thus, a frame element model was chosen for easier workability.

- Study 2: Sensitivity of the angle of orientation of the halo to structural performance

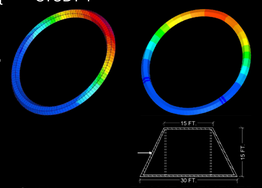
Structural performance was seen to improve when the orientation of halo was changed from the initial 30° to 45° and 60° with an improvement in steel tonnage as well.

- Study 3: Adopting a cable-stayed system to mitigate displacements

The performance improvement of implementing a cable-stayed system was studied and found to be beneficial.

Upon the conclusion of these studies, it was determined that a cable-stayed system with 12-inch diameter cables would be the optimal choice, yielding savings in steel tonnage while meeting serviceability requirements.

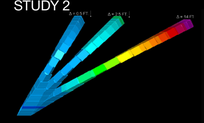
STUDY 1



SHELL ELEMENTS DISPLACEMENT

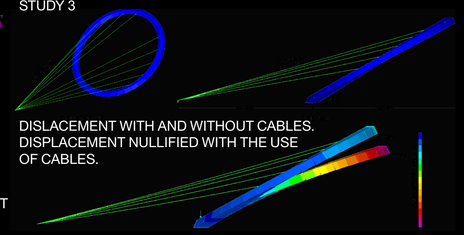
FRAME ELEMENTS DISPLACEMENT

STUDY 2

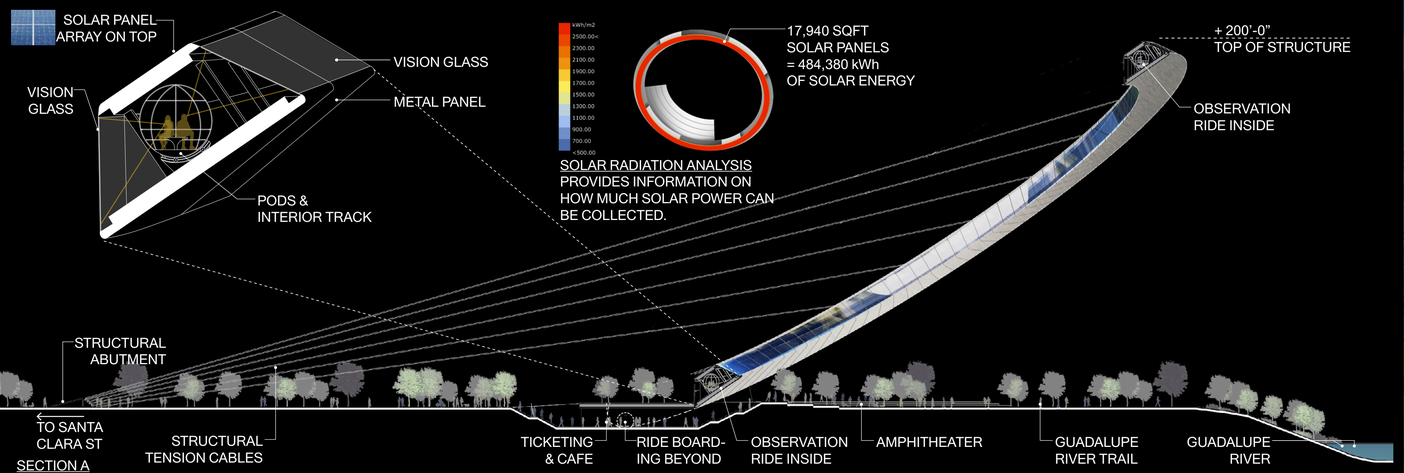


GEOMETRY DISPLACEMENT UNDER SELF WEIGHT AT 30, 45 AND 60 DEGREE ANGLES

STUDY 3



DISLACEMENT WITH AND WITHOUT CABLES. DISPLACEMENT NULLIFIED WITH THE USE OF CABLES.



SOLAR RADIATION ANALYSIS PROVIDES INFORMATION ON HOW MUCH SOLAR POWER CAN BE COLLECTED.

SECTION A

AN INTERNATIONAL DESTINATION