



CUPERTINO, CALIFORNIA

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UIDC REPORT

Team's Video:
<https://vimeo.com/390702528/911ee74eea>

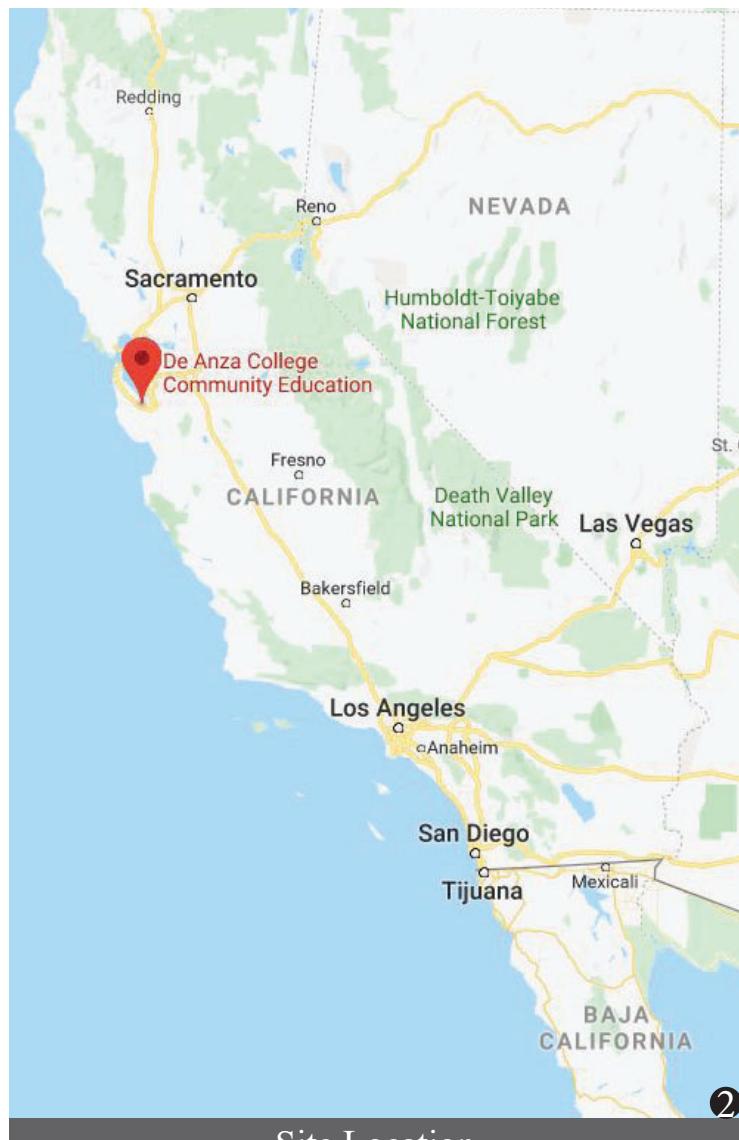
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Since the design of the automobile, vehicles have dominated urban life transforming the human experience. The culture in which humans once engaged each other and their environment has diminished as asphalt takes over green spaces. In addition, the environment has suffered from the release of green house gases fueling the urban life. It is time for communities like Cupertino, California to initiate sustainable alternatives ways of travel.

Cupertino faces many transportation challenges and records show the current infrastructure is at the expense of human life. It has also created disconnectivity between neighborhoods and green spaces. In general, the overall health of humans has declined.

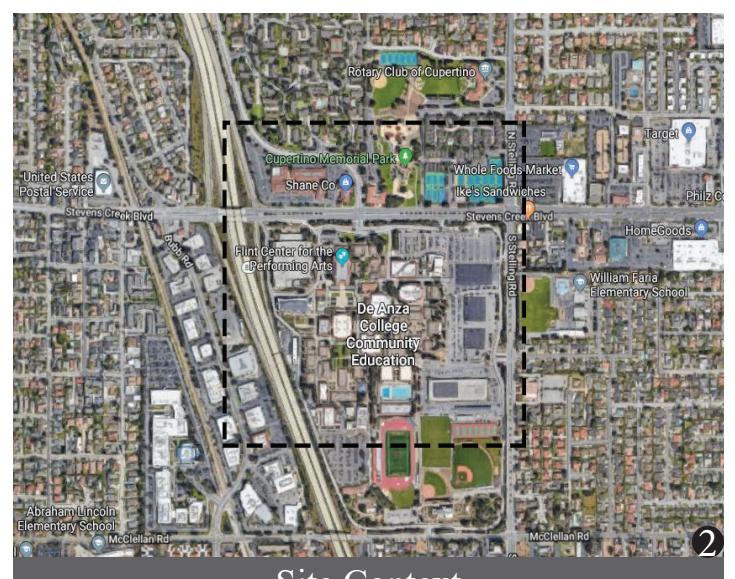
The implementation of a PRT network, a pedestrian tunnel, and a redevelopment near De Anza College can set Cupertino on a right track of reducing green house gases. The redevelopment plan increases housing for young professionals, families and independent senior citizens. This will result in a brighter and healthier future for the growing population.



Site Location



City Context



Site Context

Project and Purpose Description

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The vision for the Stevens Creek Corridor at De Anza College in Cupertino, California, is to transform the Oaks Shopping Center into an extended park corridor with multi-family housing and Senior living. Bike and pedestrian pathways will extend De Anza College connectivity to its north and west. The PRT network of podcar will bring convenience and ease of travel.

The realignment of Stevens Creek Blvd and Mary Ave creates space for a pedestrian bike tunnel crossing Stevens Creek Blvd. This also helps divide up direct access and visibility to our different areas of zoning.

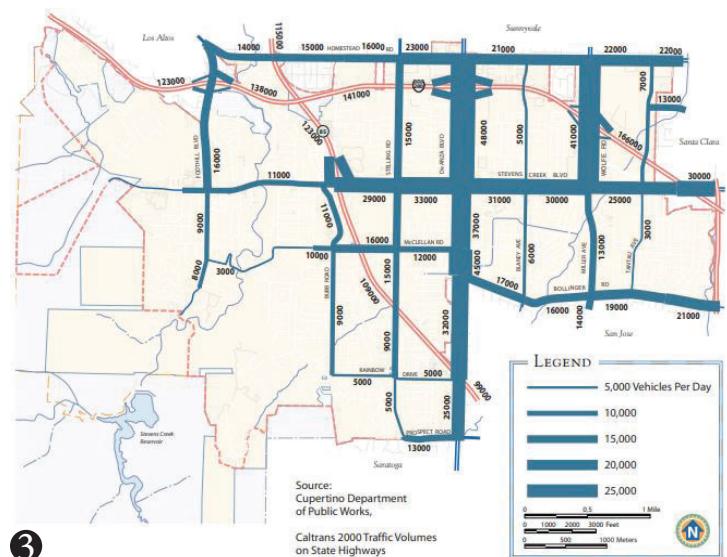
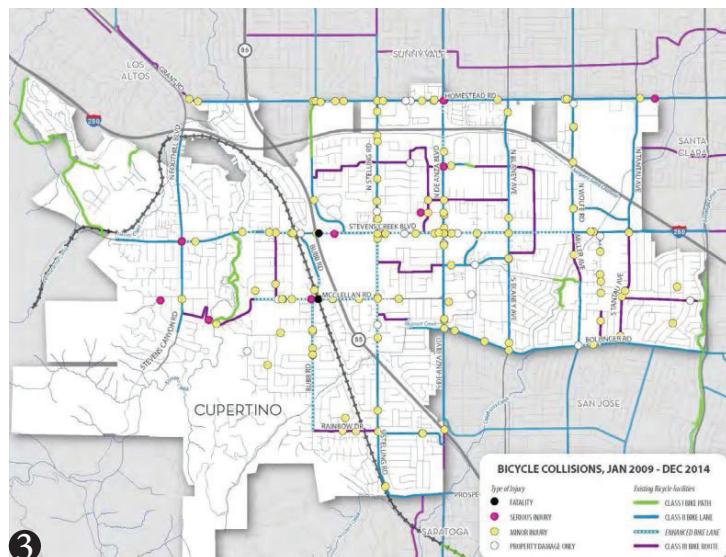
De Anza College North Entrance is moved west to be in align with the new placement of Mary Avenue. This will also allow direct access to the Flint Center by the tunnel, car and podcar. A new east entrance off Stevens Creek will allow quicker access for emergency vehicles and better flow of traffic on campus.



Motivation- why this project was chosen 5

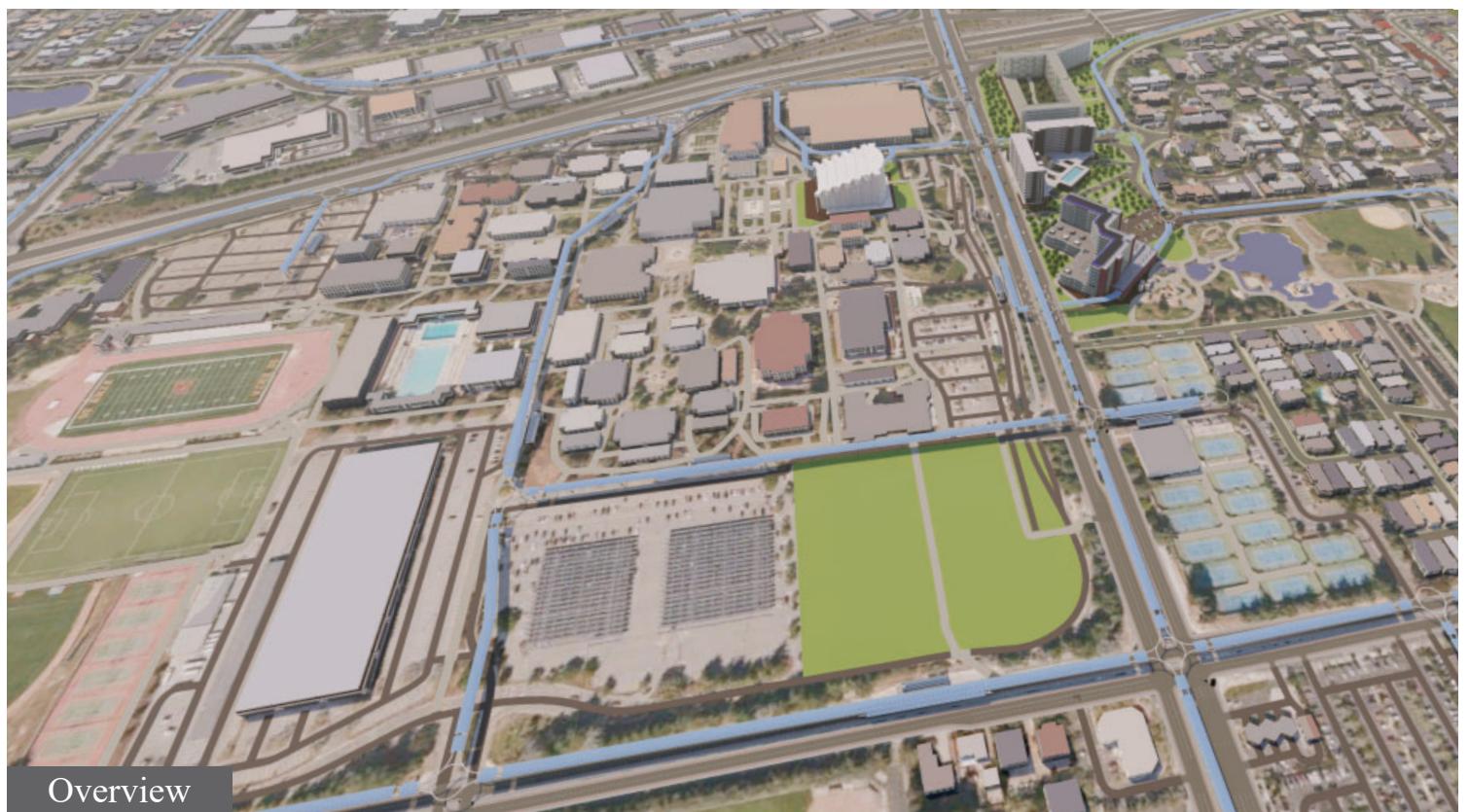
It is important, as communities grow, to assure people can travel in a safe sustainable way. The implementation of an elevated podcar transportation network would aid to benefit communities such as Cupertino, CA. Cupertino faces many transportation challenges. One of the greatest challenges is on Stevens Creek Boulevard at De Anza College. According to the Caltrans 2000 Traffic Volumes on State Highways report, twenty-nine thousand vehicles pass De Anza College daily on Steven Creeks Blvd. Many students travel north of De Anza College and must cross the seven lanes of traffic in order to reach De Anza College. The January 2009 – December 2014 bicycle collisions report shows bicycle incidents ranges from serious injury to fatality within this area.

Along with the implementation of the a podcar network, Cupertino would benefit in increasing its parks and greenways through and around De Anza College. The design proposes moving the De Anza College main entrance to the west and rerouting Mary Avenue to allow an underground pedestrian tunnel to be in their place. The design also proposes a construction of a pedestrian bridge across highway 85. The tunnel and the bridge would provide safer connectivity between the Memorial park to the green spaces within De Anza College and extend the greenway west of Hwy 85. A redesigning of the Oaks Shopping Center into a multifamily mix use zone and establishing an Independent Senior Living Center on the site of the current Senior Center would expand the demographics of the community.



Images from 4D model/video

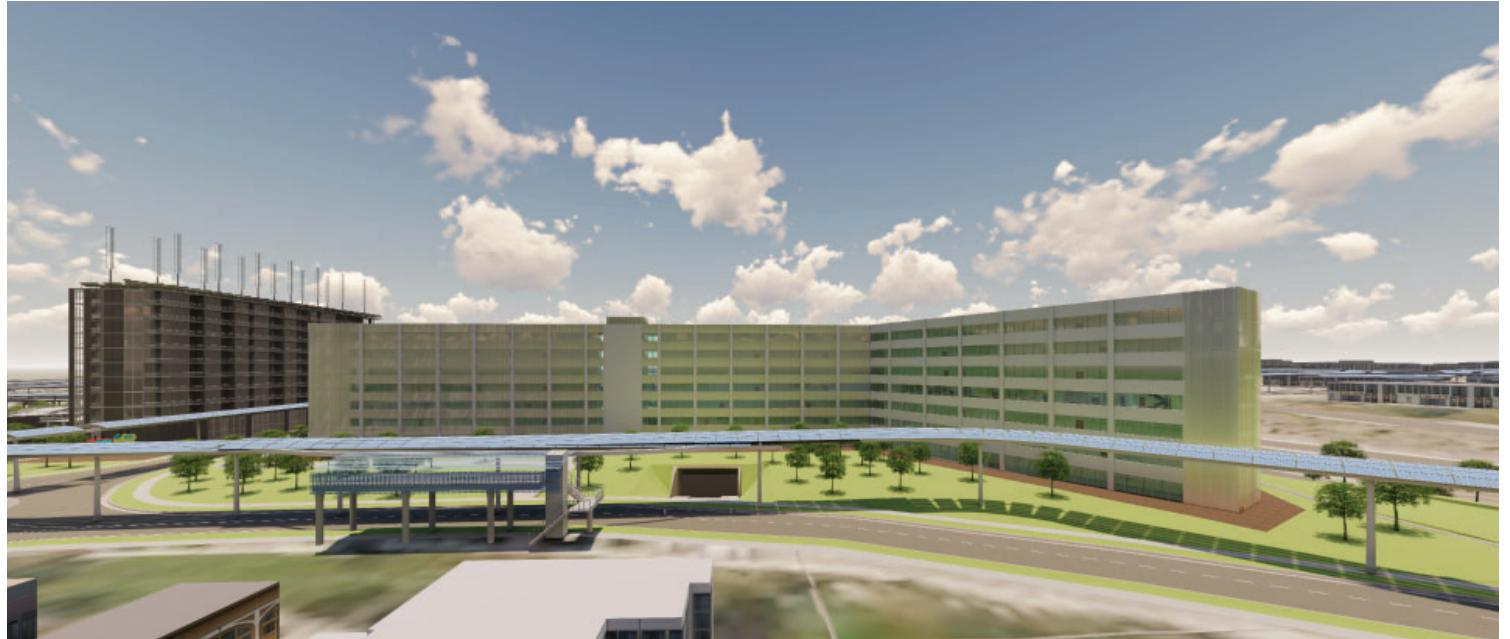
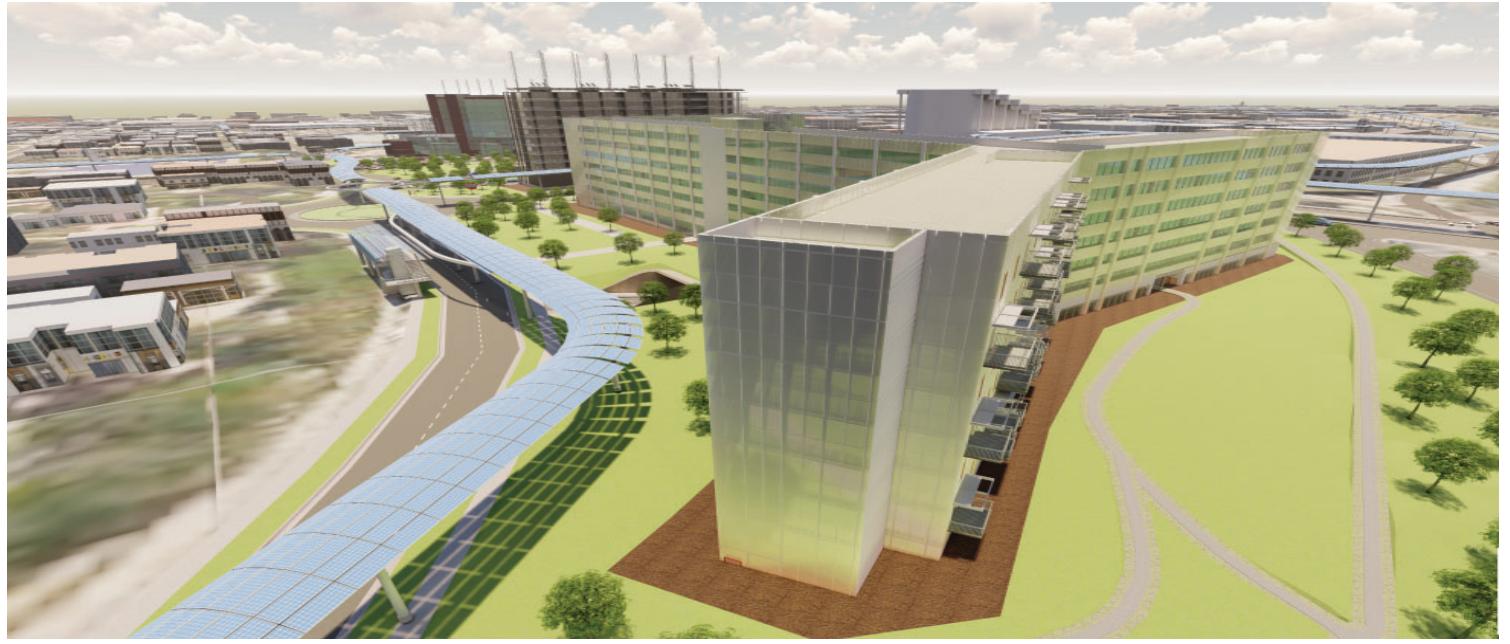
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Images from 4D model/video

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Cupertino Flats



Images from 4D model/video

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Cupertino Towers

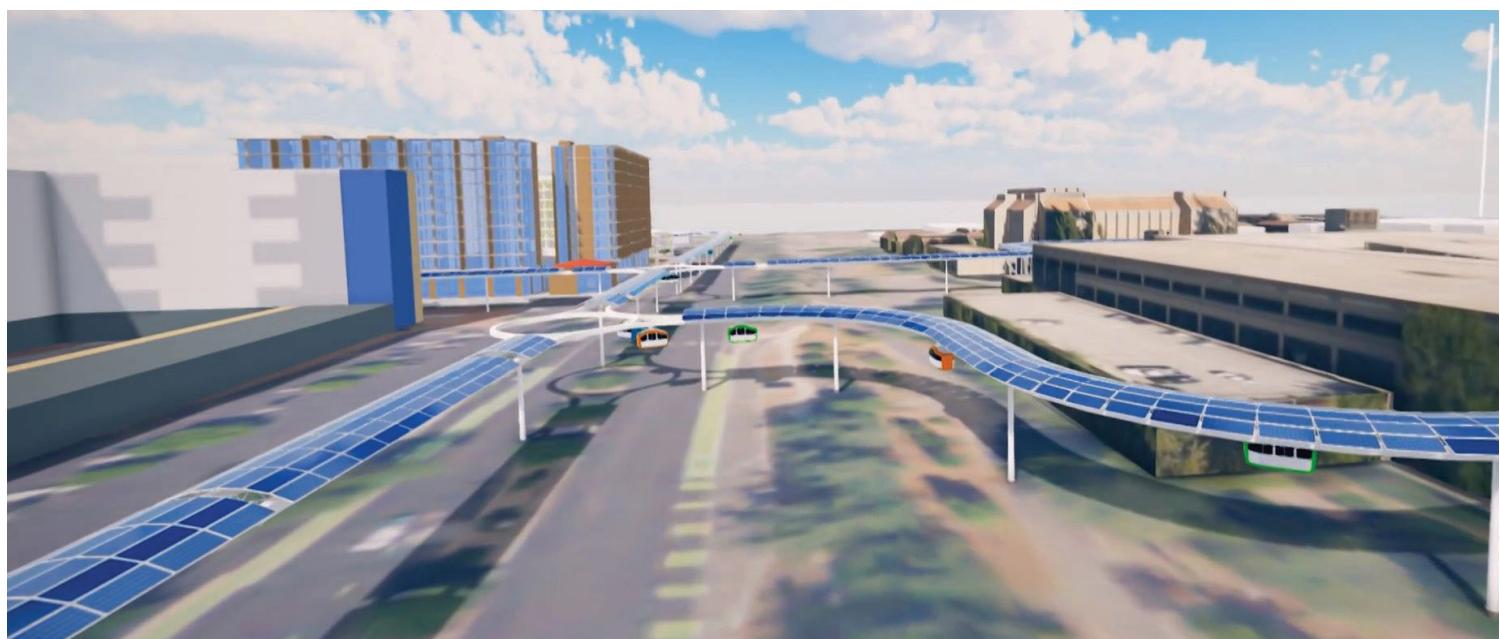


Images from 4D model/video

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Cupertino Senior Center

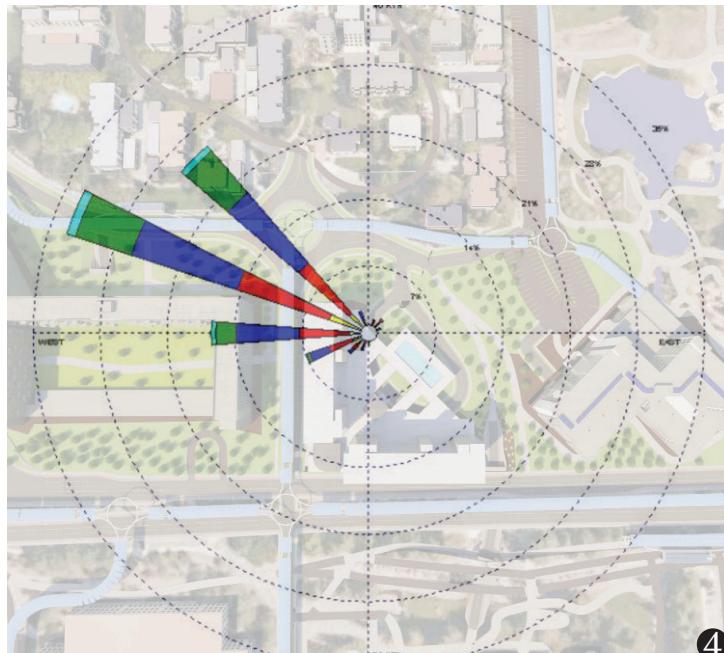




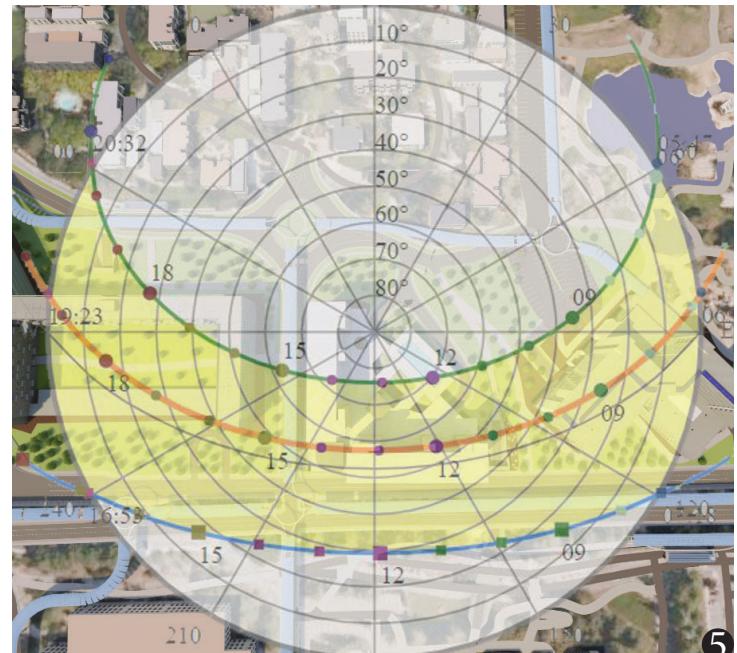
A rudimentary energy analysis

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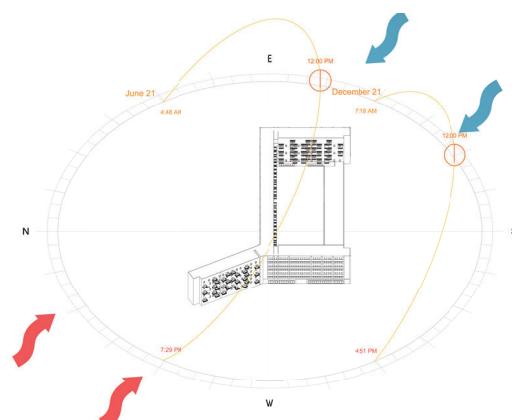
The Cupertino climate supports a built environment towards net zero energy. Sunpath and Windrose diagrams were used in building design analysis. The design of the buildings takes advantage of the dominant wind directions for ventilation and interior comfort. Overhangs are adjusted to provide shade in the summer season while allowing the sun's radiant heat to penetrate the interior spaces during the winter season. Energy systems incorporate wind spires, double skin walls, gray water recycling, and solar panels. Building sections illustrate air movement through the building and sun penetration.



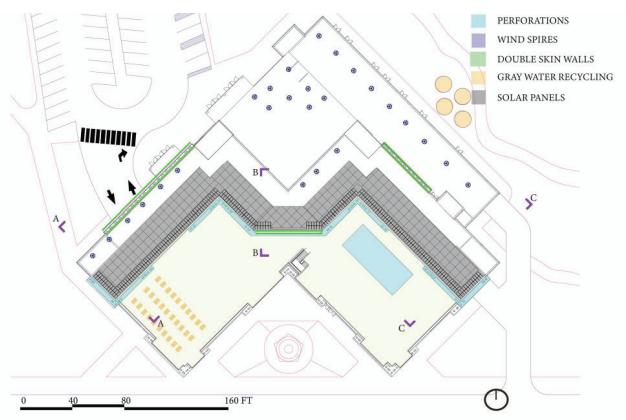
Site Wind Study



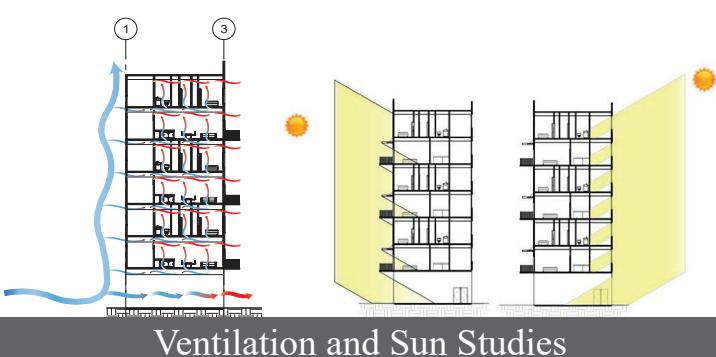
Site Sun Study



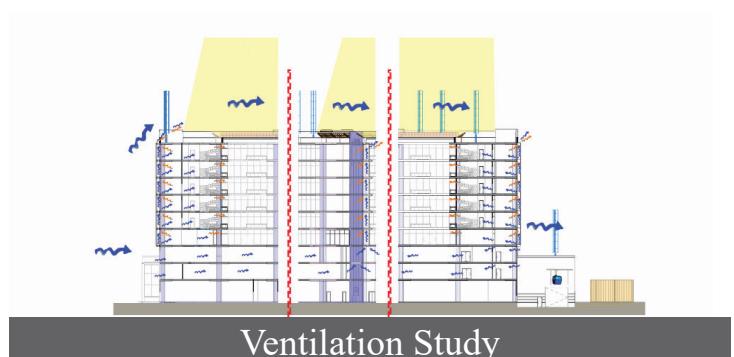
Building Wind Study



Site Plan Energy Systems



Ventilation and Sun Studies



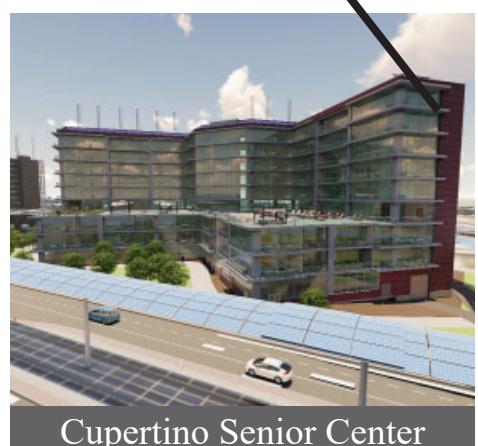
Ventilation Study

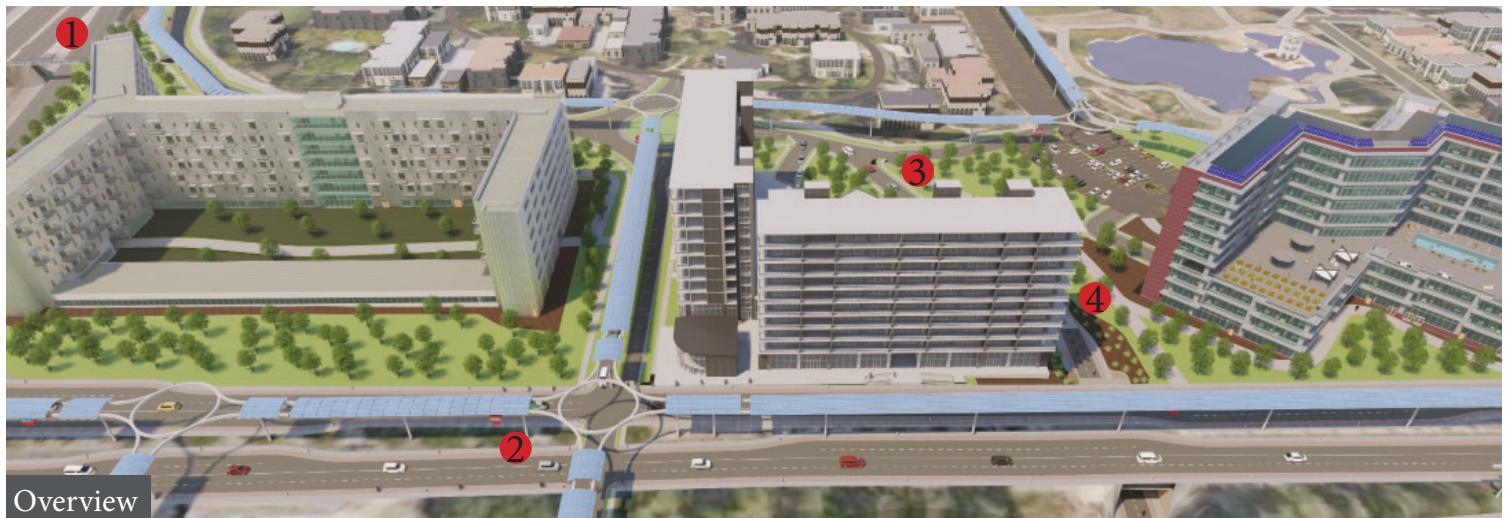
Effects on the built environment

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Current Site





Pedestrian Bridge going over HWY 85



Stevens Creek Blvd and Mary Ave Intersection



Sidewalks (around buildings and major roads)



Tunnel under Stevens Creek Blvd

Effects on social and environmental sustainability

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Social

The proposed development will have many effects on the social environment. Two examples are:

Once a month, the De Anza College hosts a flea market attracting the community to the campus. The podcar and pedestrian paths increases comfort providing a more pleasant experience. The ease of transportation would affect the number of guests bringing in more revenue to the campus. As a result, this would increase the student social body experience.



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With the Senior Living Center and the tunnel access from De Anza College to the Memorial Park would increase opportunities for students to interact with seniors. Veterans living at the Senior Living Center would add value to the Memorial Park and the experience one could have visiting the park.



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Effects on social and environmental sustainability

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There are several environmental sustainable components of this proposed development plan. Not only is the podcar track covered by solar panels, but all three buildings contain several components themselves. Below are examples of some of these components that include; solar panels and wind turbines on the roof, water harvesting and storage tanks, rooftop garden spaces and proper ventilation throughout the building. All of these components help contribute to the goal of making the buildings as close to net zero as possible.



Rooftop



Rooftop



Water Harvesting



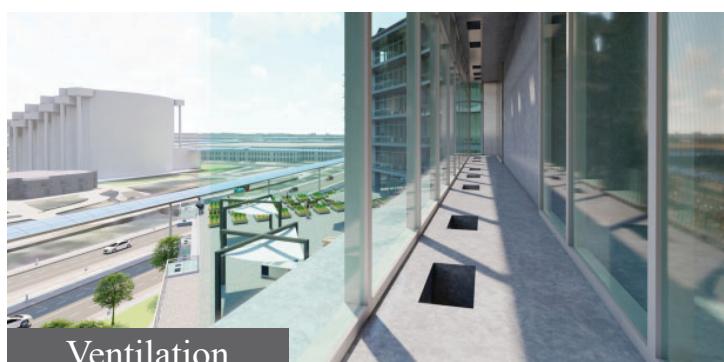
Water Harvesting



Rooftop garden



Rooftop garden



Ventilation



Ventilation

- 1.) <https://www.deanza.edu/communications/logo>
- 2.) <https://www.google.com/maps>
- 3.) <https://www.cupertino.org>
- 4.) <https://www.wcc.nrcs.usda.gov>
- 5.) <https://www.gaisma.com/en/location/cupertino-california>
- 6.) <https://www.deanza.edu/fleamarket>
- 7.) <https://www.timeout.com/san-francisco/shopping/de-anza-college-flea-market>
- 8.) https://lavozdeanza.com/uncategorized/2016/11/20/cupertino-holds-event-to-honor-veterans/?fbclid=IwAR1oi6tVgyW0zcgBMHAh13iURLen8nQbTf_5OIYRMW6fJ8ZZ_rHyN-QBKZQ