JAKE CHEVRIER

Design | Engineer | Sustain

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1201 SAN PABLO AVE

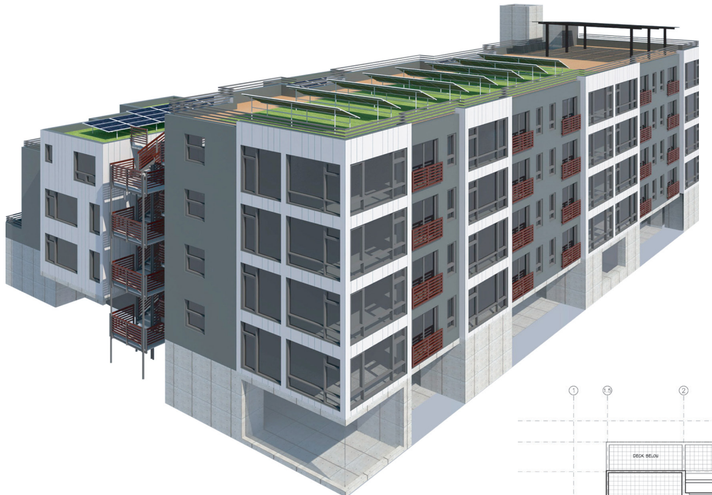
35 UNIT
MIXED USE MULTI-FAMILY

PROJECT LOCATION: Berkeley, CA
PRIMARY SOFTWARE: AutoCAD, Sketchup
ROLE: Job Captain
@ Todd Jersey Architecture

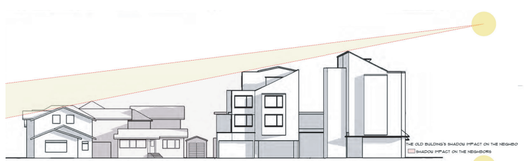
Multi-family Mixed-use Project focusing on 1-3 bedroom units, above a restaurant, and commercial storefront. This project features a rooftop garden, outdoor space, and exterior circulation.

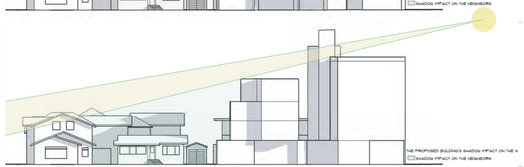
Sustainability goals include LEED Certification, Transform certification with minimal vehicle parking, extensive bike storage, photovoltaics, high-performance envelope, and urban location.













1110 UNIVERSITY AVE

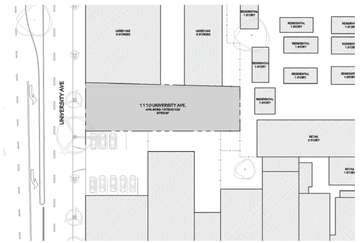
40 STUDIO UNIT
MIXED USE MULTI-FAMILY

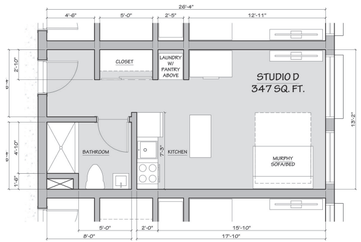
PROJECT LOCATION: Berkeley, CA
PRIMARY SOFTWARE: AutoCAD, Sketchup
ROLE: Job Captain
@ Todd Jersey Architecture

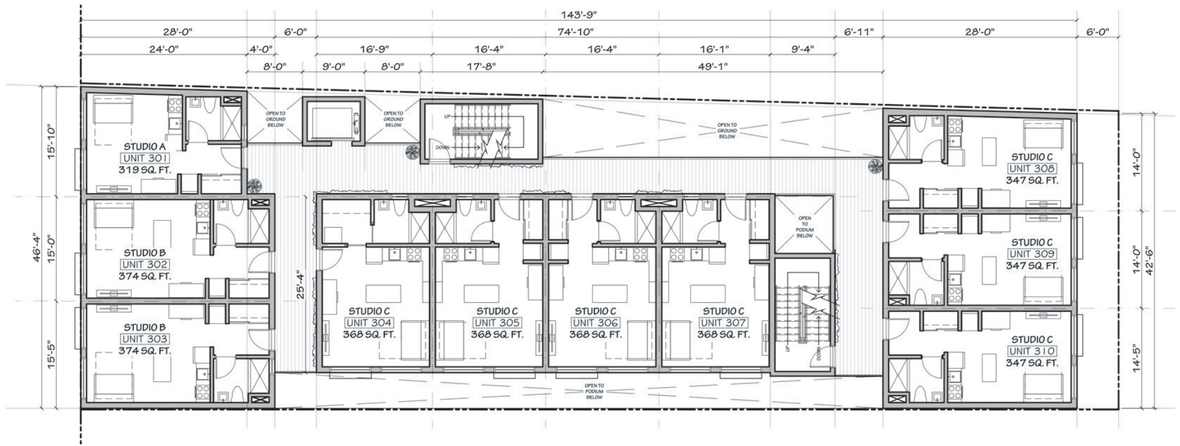
Mixed-use Project focusing on efficiency studio units, above a commercial storefront and community room . This project features a rooftop garden, outdoor space, and exterior circulation.

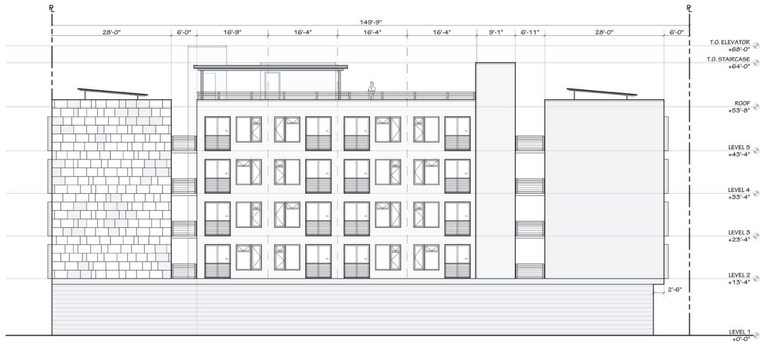
Sustainability goals include LEED Certification, Transform certification with minimal vehicle parking, extensive bike storage, photovoltaics, high-performance envelope, and urban mobility.

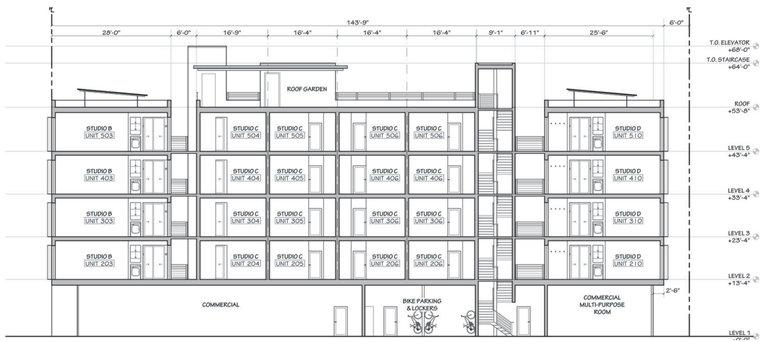


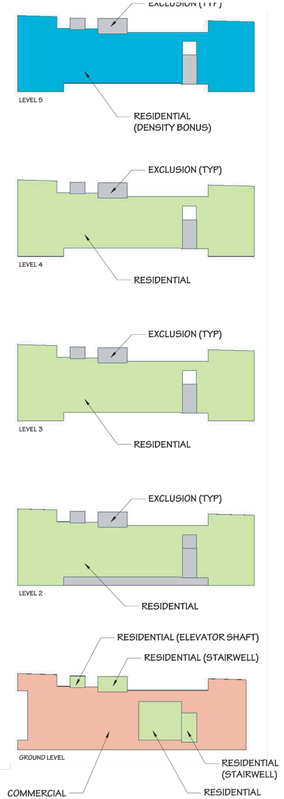










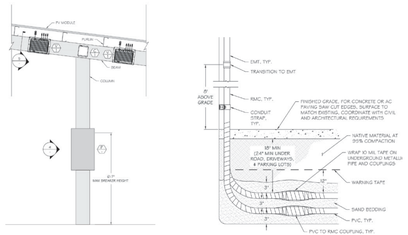


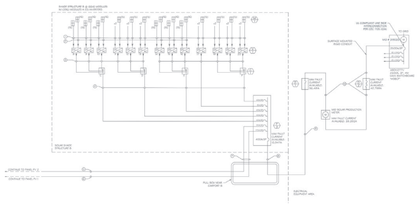
MODESTO JR COLLEGE

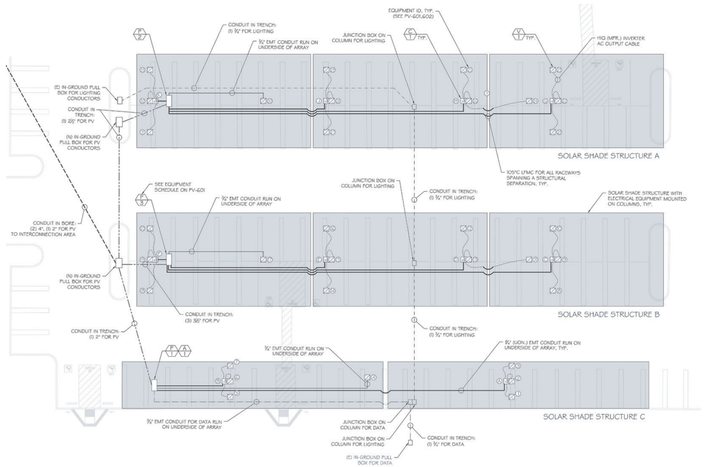
312KW PHOTOVOLTAIC
SHADE STRUCTURES

PROJECT LOCATION: Modesto, CA
PRIMARY SOFTWARE: Autocad, Custom Excel Tool
ROLE: Design Engineer
@ Sun LIght & Power

Sun Light & Power was contracted by Modesto Junior College to design a solar shade structure system that would utilize as much of the parking lot as possible. The design required detailed coordination with the steel contractor and the GC of the adjacent new construction project. The project involved long wire runs, and a large interconnection to an existing switch gear.









LANEY POCKET HOUSE

DIGITALLY FABRICATED
12' x 8' TINY HOUSE PROTOTYPE

PROJECT LOCATION: Oakland, CA
PRIMARY SOFTWARE: Fusion 360, AutoCAD
ROLE: Student Construction Admin
@ Laney College

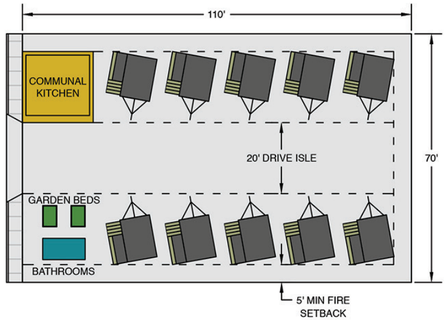
The housing crisis is at an all-time high in the state of California, and the Bay Area is especially feeling the effects. In response, the City of Oakland commissioned Laney College to build two prototype tiny homes to be used in a pilot project. A tiny house village, of ten units, will occupy a vacant lot and provide central facilities including bathrooms, showers, and a communal kitchens.













MODULAR
Designed parametrically for adapaibility and customization



CNC
Rapid assembly of structural frames and interior furniture



JOINERY
Functional flat pack design constructed with digital wood joints



MOBILE
House on wheels that can fit in a standard parking spot

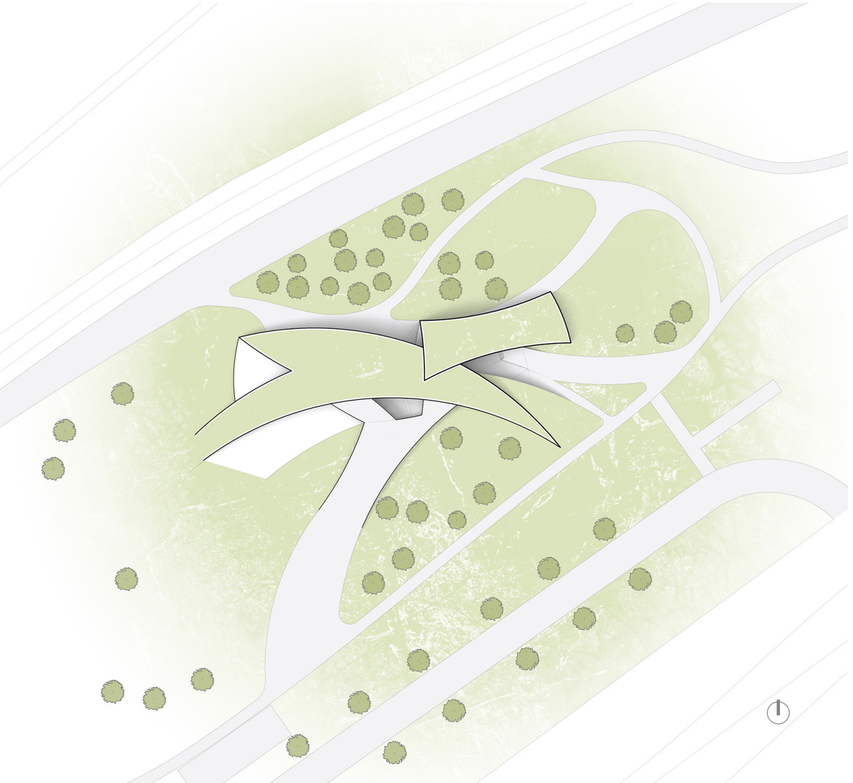


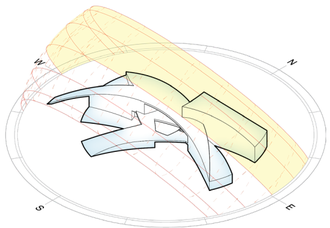
LOS ANGELES CULTURAL CENTER

PERFORMING ARTS
CULTURAL CENTER

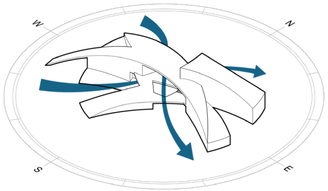
PROJECT LOCATION: Los Angeles, CA
PRIMARY SOFTWARE: Rhino, Ladybug
ROLE: Student Project

After a long battle with developers and city officials, the Los Angeles Historical was established as a state park in 2001. In appreciation of the park, the Los Angeles Cultural Center mimics the surround hills, while providing an accessible green roof, minimizing the lose of open space. The concrete building acts as a large thermal mass, which is oriented for natural ventilation.

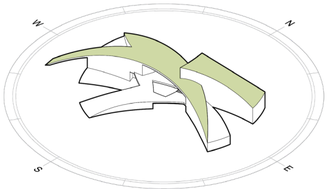




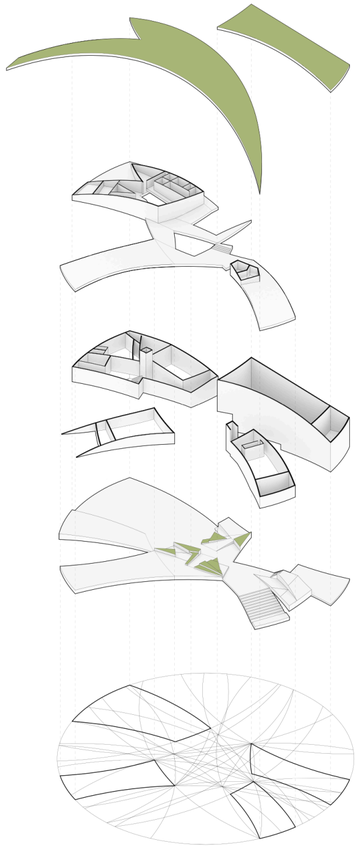
ORIENTATION & THERMAL MASS



NATURAL VENTILATION



ACCESSIBLE GREEN ROOF



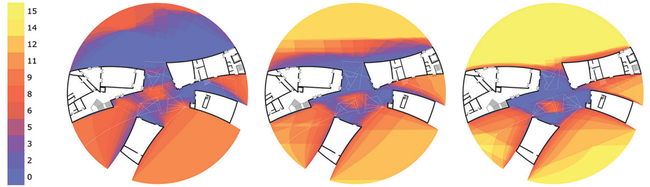
1 Blackbox Theatre
2 Backstage
3 Dressing Room
4 Cafe
5 Library/Media Roon
6 Auditorium
7 Loading/Backstage
8 Screening Room
9 Offices
10 Community Room
11 Outdoor Patio



LEVEL 2



LEVEL 1



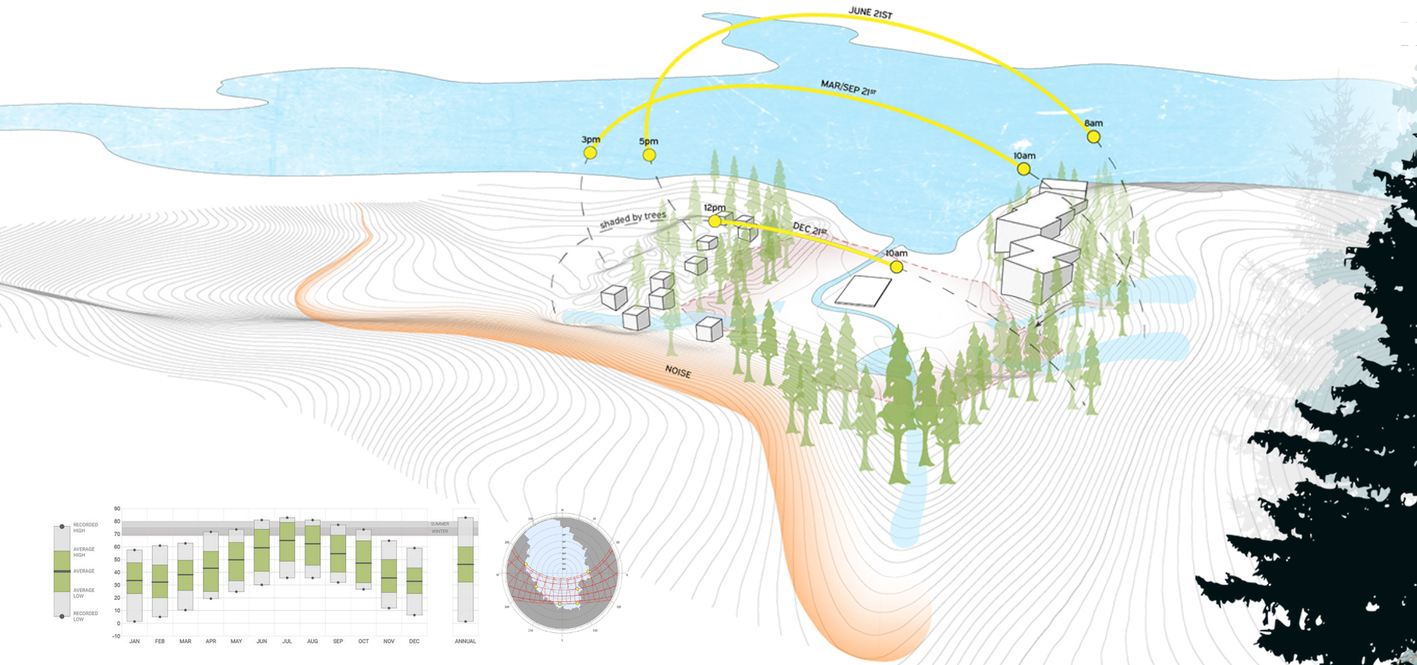
SUN HOURS STUDY

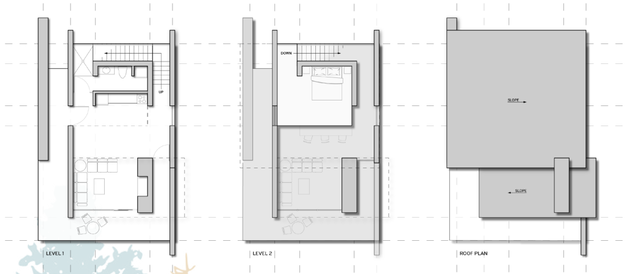
ARROWHEAD RETREAT CENTER

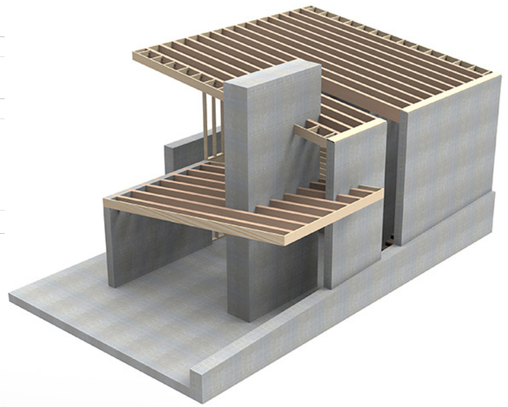
LUXURY CABIN
RETREAT CENTER

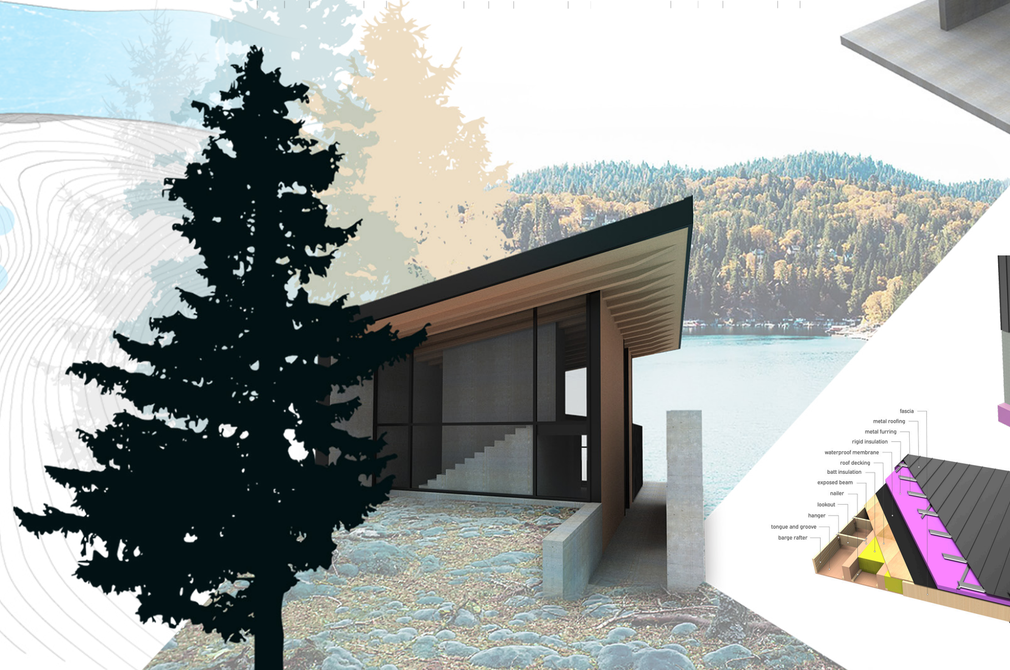
PROJECT LOCATION: Lake Arrowhead, CA
PRIMARY SOFTWARE: Rhino, Ladybug, Keyshot
ROLE: Student Project

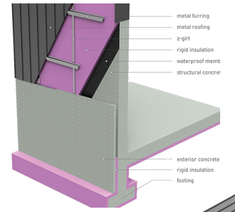
Arrowhead Retreat Center is a Luxury Retreat Center featuring conference rooms, a full bar, and a spa with rooms for massage and yoga. Twelve cabins provide lodging and feature built in fireplaces, exposed timber beams, with floor to ceiling glazing slipped between the vertical board-formed concrete walls. The sleeping lofts embrace views of the surrounding natural beauty.

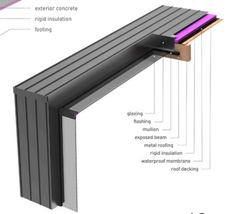








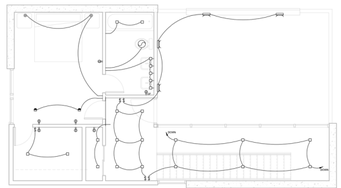


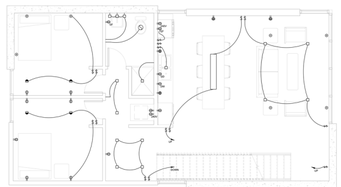


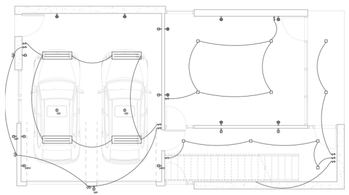
LIVE-WORK RESIDENTIAL UNIT

PROJECT LOCATION: Los Angeles, CA
PRIMARY SOFTWARE: Sketchup, Revit, Rhino
ROLE: Student Project

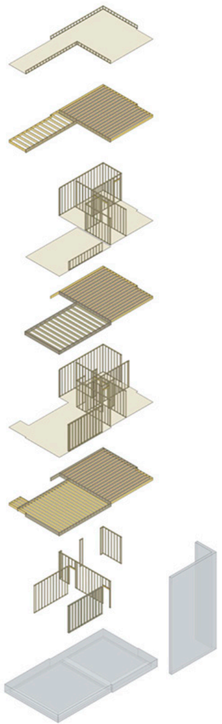
Live-work residential unit featuring 3 bedrooms, including one master level suite, with adjacent roof deck. Each unit has designated outdoor space, and garage access from rear ally. The residential unit consists of wood framing with exposed concrete wall when adjacent to the next unit. Every other unit is staggered to create shared courtyards breaking up the front facade.

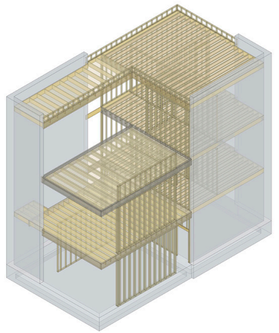


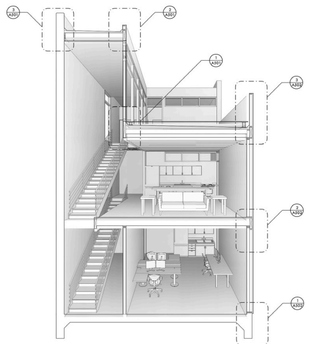


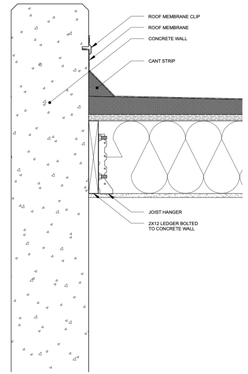




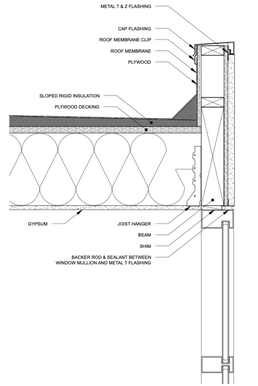




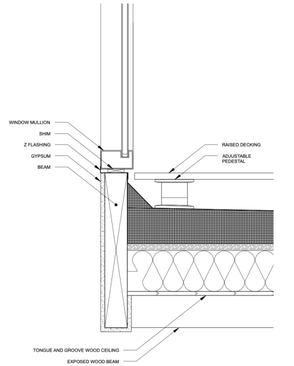




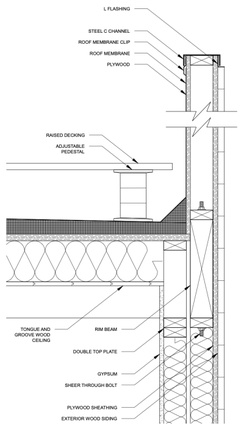
CONCRETE PARAPET
1-½"=1'



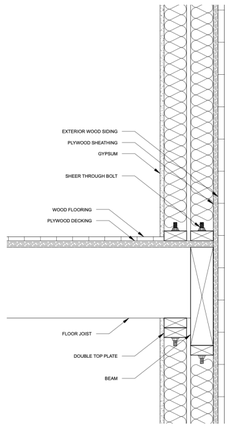
ROOF PARAPET & WINDOW HEADER
1-½"=1'



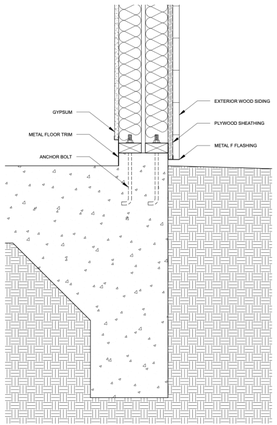
ROOF DECK & WINDOW SILL
1-½"=1'



ROOF DECK PARAPET DETAIL
1-½"=1'



FLOOR JOIST DETAIL
1-½"=1'



FOOTING CONNECTION DETAIL
1-½"=1'

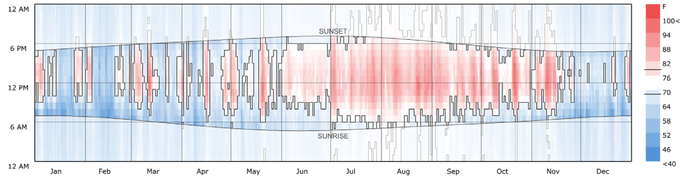
WEST HOLLYWOOD HOUSING

24-UNIT
MIXED USE MULTI-FAMILY

PROJECT LOCATION: West Hollywood, CA
PRIMARY SOFTWARE: Sketchup, Revit, Ladybug
ROLE: Student Project

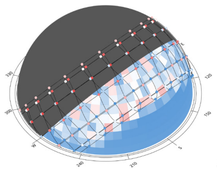
Multi-family Mixed-use Project featuring studio and one bedroom units, plus two bedroom townhouses, external circulation above commercial ground floor. Each unit has private outdoor space, some with rooftop deck access. Passive design strategies include deep overhangs created by the floor plates above, green roofs, and deciduous trees for shade along western facade.



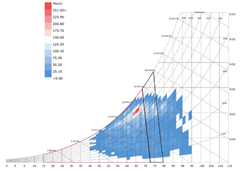


DRY BULB TEMPERATURE

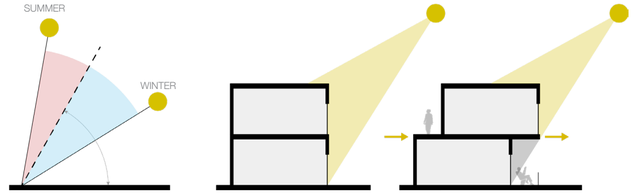
SHADING BENEFICIAL 33% OF TIME



SHADING ANGLE

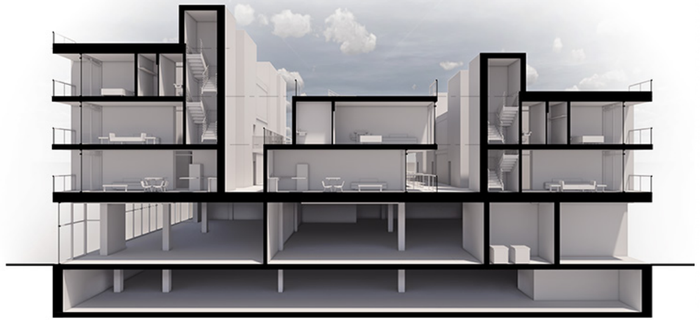


PSYCHROMETRIC



CIRCULATION & SELF SHADING







EL MONTE MASTER PLAN

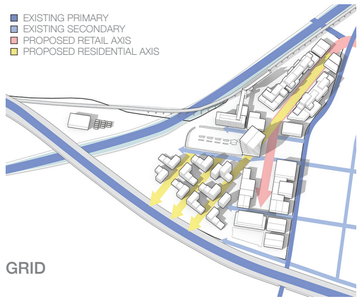
64-ACRE MASTER PLAN
TRANSIT ORIENTED DEVELOPMENT

PROJECT LOCATION: West Hollywood, CA
PRIMARY SOFTWARE: Rhino, Grasshopper
ROLE: Student Project

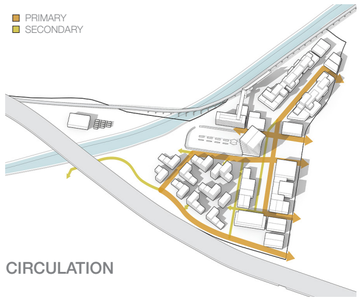
The master was based on three criteria, diverse housing typologies, engage and regenerate outdoor spaces, and to encourage public Life and public space. The site is surrounded by a seasonal river to the west, a major highway to the south, and a retail street to the east. The proposed plan extends the existing retail street through a mixed-use central corridor running through the site.



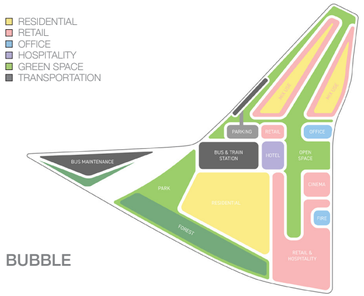
RETAIL COORIDOR SECTION



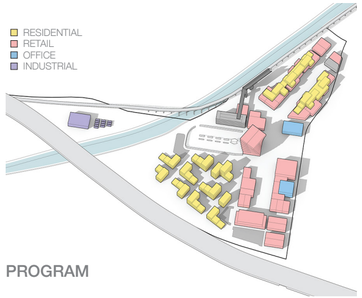
GRID



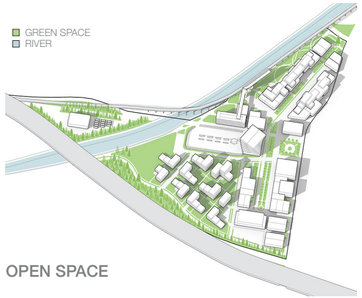
CIRCULATION



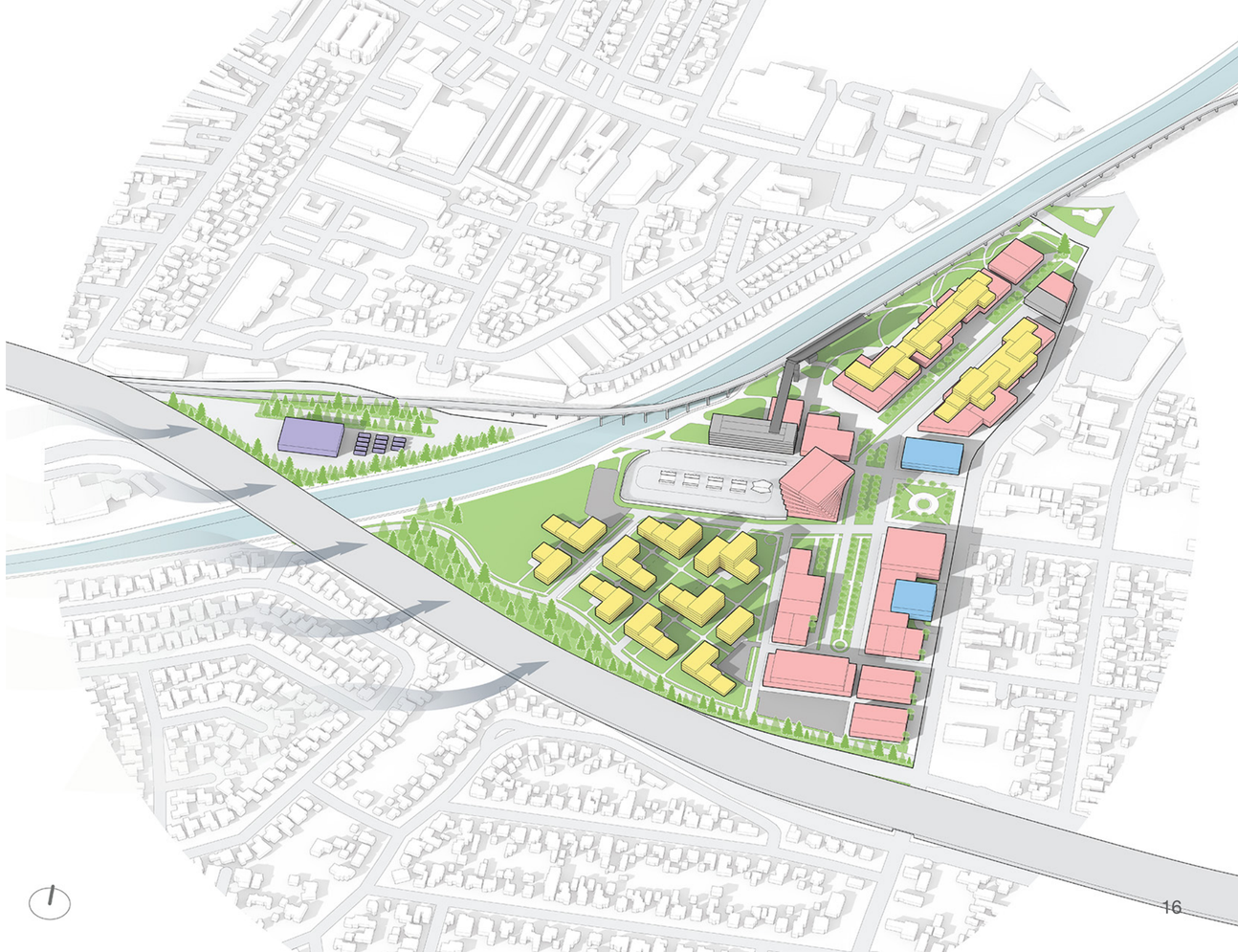
BUBBLE



PROGRAM



OPEN SPACE

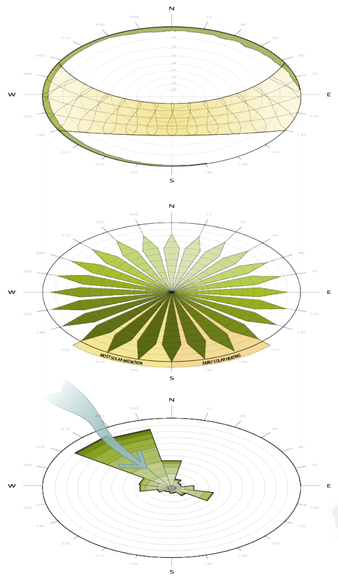


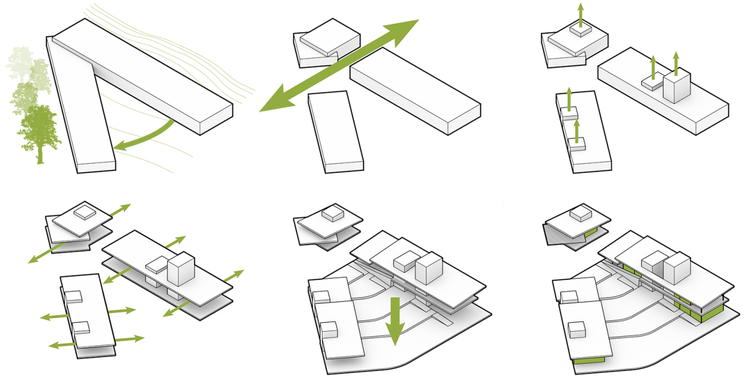
ECOTONE: A SPACE BETWEEN

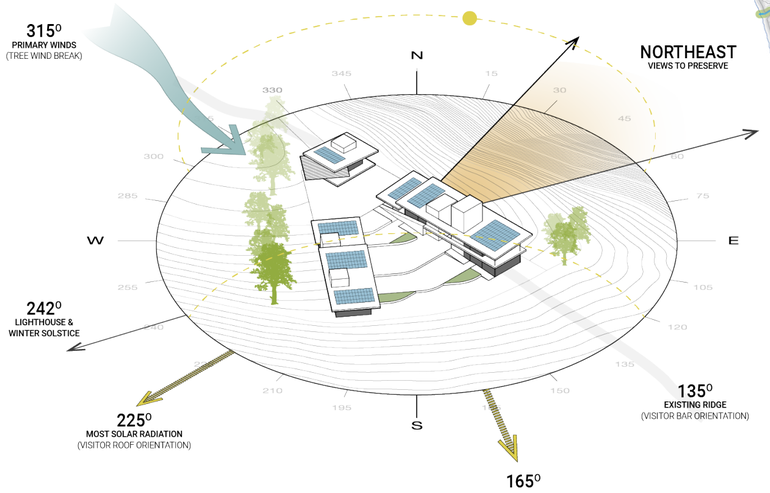
REMOTE RESEARCH
& VISITOR CENTER

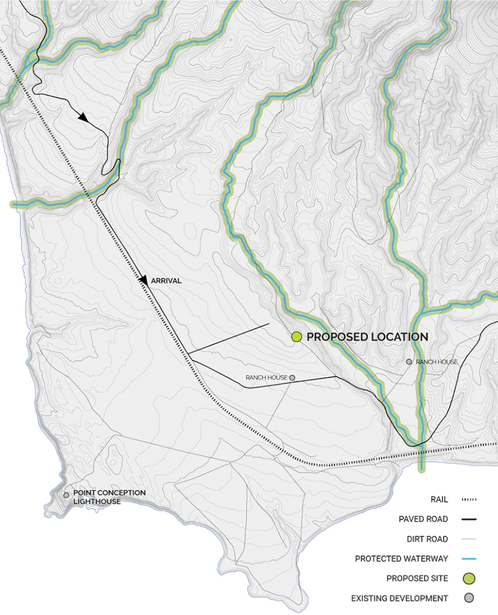
PROJECT LOCATION: Dangermond Preserve, CA
PRIMARY SOFTWARE: Rhino, Revit, Ladybug
ROLE: Thesis Project

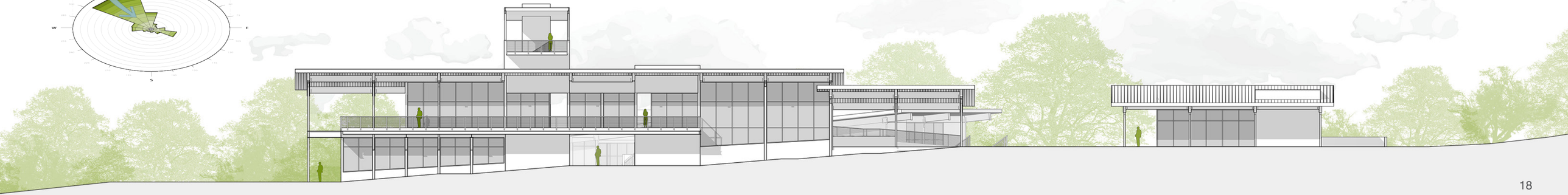
The center sits at the convergence of research, visitation, and preserv. Due to is pristine condition, the land acts as a living laboratory, while the project confronts development in and untouched terrain. The project is organized into two bars that form a v-shape and takes formal notions from the context as in the topographic relationship between peak, ridge and valley.









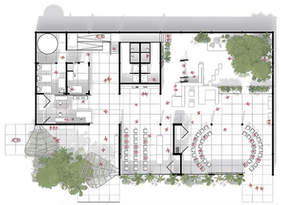


PATIO DIGNIDAD

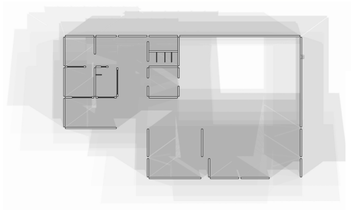
COMMUNITY DAY CENTER FOR
HUNTINGTON'S DISEASE PATIENTS

PROJECT LOCATION: Barranquitas, Venezuela
PRIMARY SOFTWARE: Rhino, Diva, Ladybug, Eddy3d
ROLE: Student Project

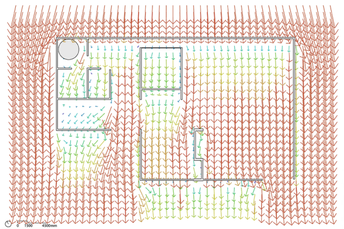
One of three submissions to Factor H, a non-profit providing humanitarian and medical aid to Huntington's Disease patients. Our group's proposal was chosen for development and embraces holistic sustainability by utilizing natural ventilation, solar shading and pv, local materials and labor, water harvesting, plant food and medicine cultivation, and is net zero energy.



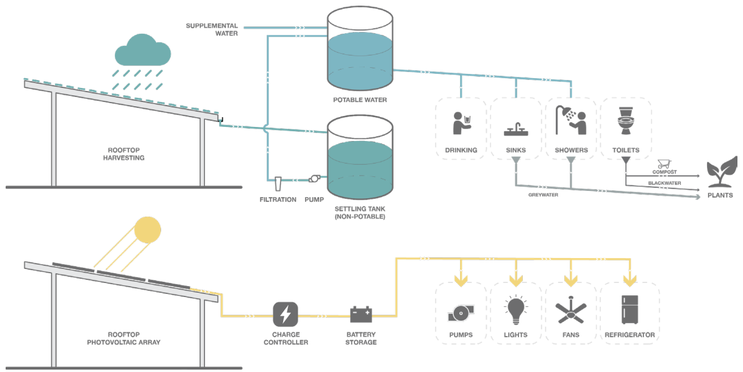
FLOOR PLAN



SHADING ANALYSIS



WIND ANALYSIS





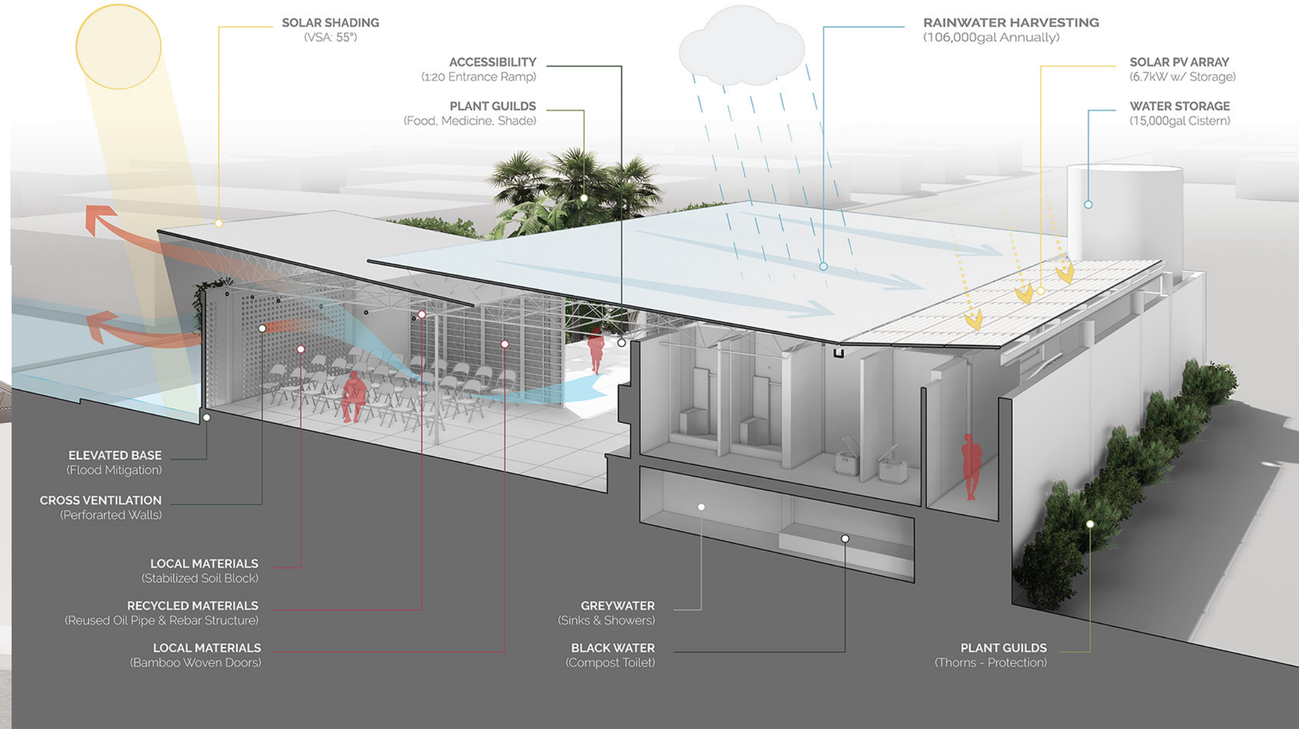
RESILIENT DESIGN
FLOOD PREV. & NATURAL VENT.

LOW CARBON MATERIALS
LOCAL & RECYCLED

NET ZERO ENERGY
SOLAR PV & SHADING

WATER HARVEST & REUSE
RAIN & GREY & BLACK

BIOPHILIC DESIGN
PLANT GUILDS & SYSTEMS



FALLBROOK EDUCATION CENTER

ENVIRONMENTAL ANALYSIS
DAYLIGHT, SUNLIGHT, & WIND

PROJECT LOCATION: Fallbrook, CA
PRIMARY SOFTWARE: Ladybug, Honeybee, Butterfly
ROLE: Sustainable Designer @ HMC Architects

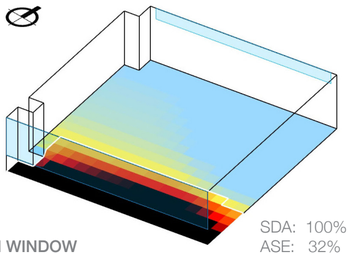
A study was conducted to determine the southern window glazing and shading option. A ribbon window was compared to punched windows, with no overhang, an 18" overhang, and a 3' overhang.

The study included outdoor temperatures, solar radiation, and prevailing winds. Furthermore the courtyard was studied for sun hours, and outdoor wind to determine the comfort of the space.

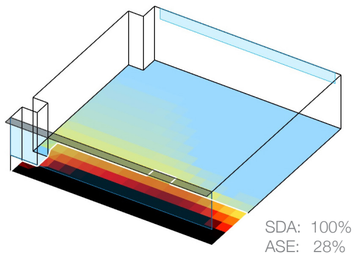
NO OVERHANG

18" OVERHANG

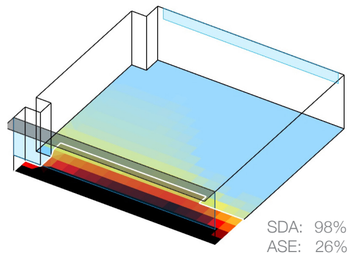
3' OVERHANG



SDA: 100%
ASE: 32%

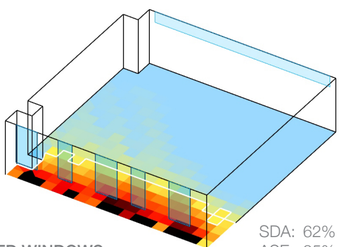


SDA: 100%
ASE: 28%

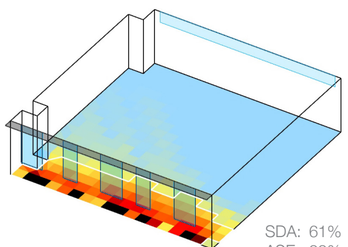


SDA: 98%
ASE: 26%

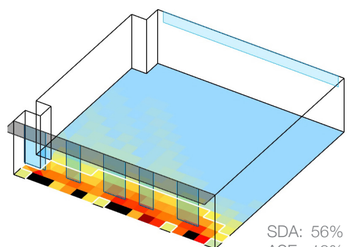
RIBBON WINDOW



SDA: 62%
ASE: 25%

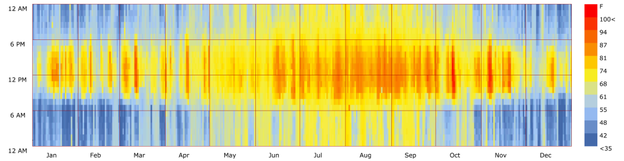


SDA: 61%
ASE: 22%

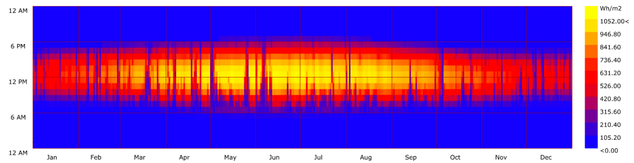


SDA: 56%
ASE: 18%

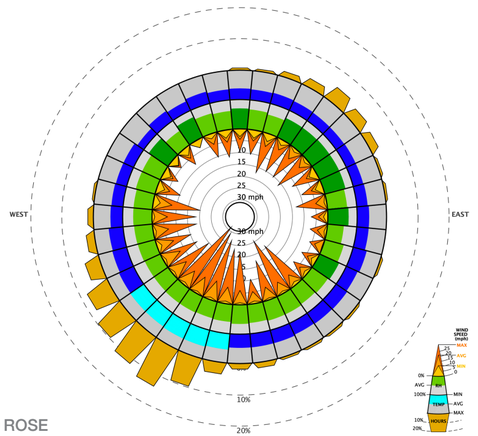
PUNCHED WINDOWS



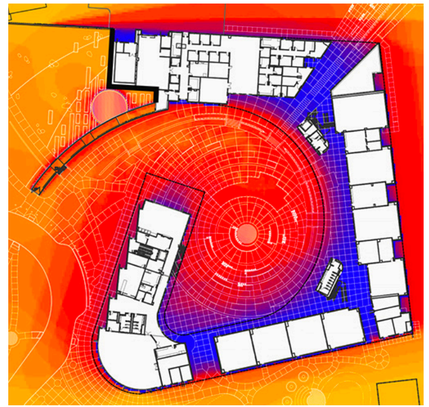
DRY BULB TEMPERATURE



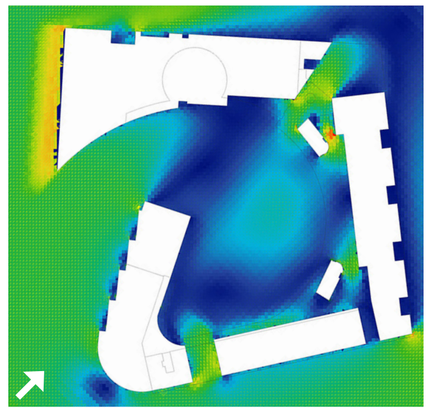
GLOBAL HORIZONTAL RADIATION



WIND ROSE



SUN HOURS ANALYSIS



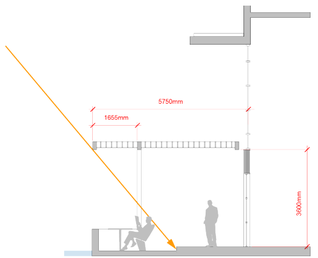
WIND ANALYSIS

OUTDOOR MALL

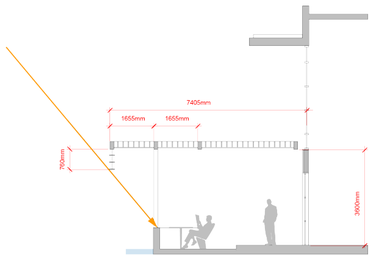
OUTDOOR COMFORT
AND SHADE ANALYSIS

PROJECT LOCATION: United Arab Emirates
PRIMARY SOFTWARE: Grasshopper, Ladybug
ROLE: Sustainable Designer @ CallisonRTKL

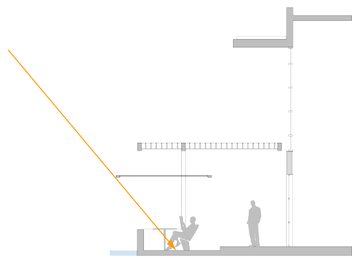
A study was conducted to determine the appropriate shading for outdoor comfort. The goal in this hot climate was to extend the comfort seasons by providing adequate shade during peak hours during shoulder months. Several options were proposed by the Performance Driven Design team, and compared by their ability to reduce the amount of direct sun exposure hours.



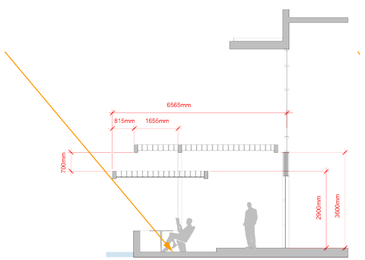
BASELINE



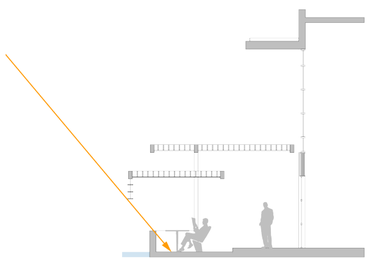
EXTENDED OVERHANG



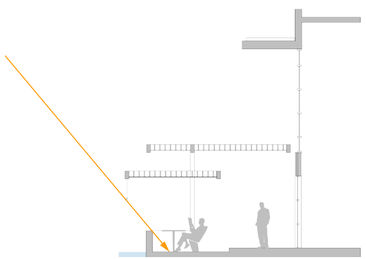
FABRIC CANOPY



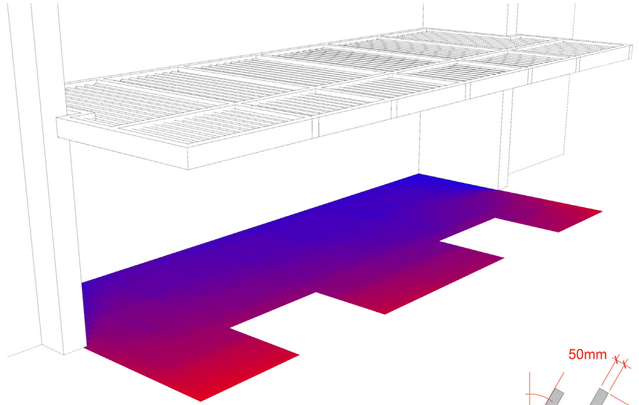
DOUBLE OVERHANG



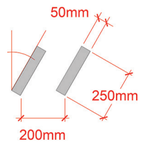
DOUBLE OVERHANG W/ HORIZONTALS

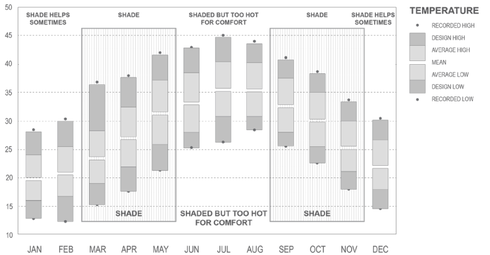


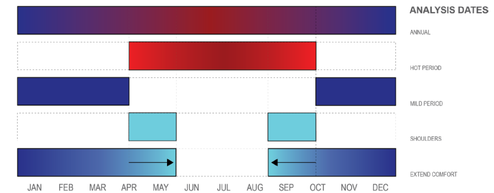
DOUBLE OVERHANG W/ DYNAMIC

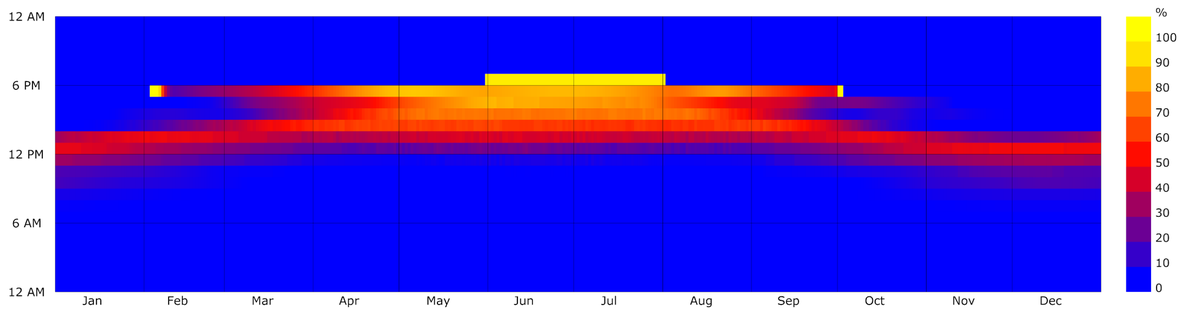


EXTENDED OVERHANG W/ LOUVERS
11% REDUCTION









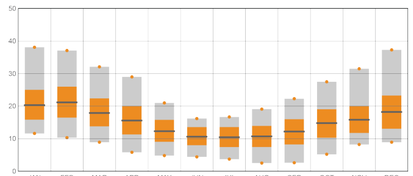
PERCENTAGE OF FLOOR AREA IN DIRECT SUN (HOURLY)

COURTYARD CANOPY DESIGN

SOLAR RESPONSIVE
CANOPY DESIGN

PROJECT LOCATION: Australia
PRIMARY SOFTWARE: Rhino, Grasshopper, Ladybug
ROLE: Sustainable Designer @ CallisonRTKL

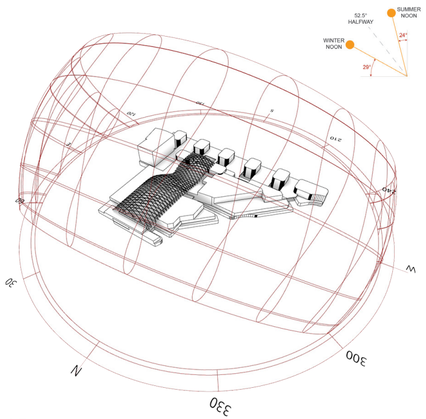
A study was conducted to determine the best solar canopy for an addition to the Chadstone Mall. Two options were refined by the Performance Driven Design Team. The baseline option was refined by increasing the structural depth in areas of high solar radiation to increase indoor shading. The sawtooth option was refined by adjusting its angle to reduce high summer sun.

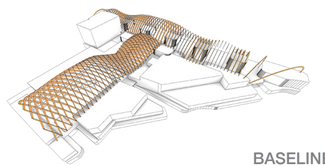


MONTHLY DRY BULB TEMPERATURES (C)

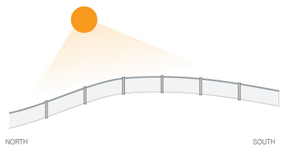


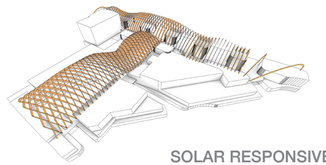
ANALYSIS PERIOD



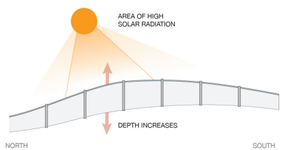


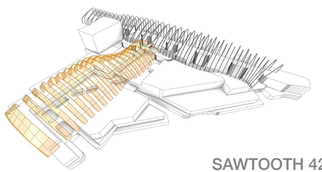
BASELINE



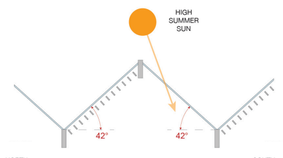


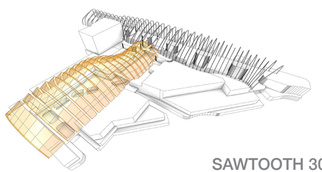
SOLAR RESPONSIVE



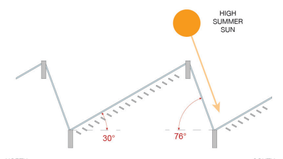


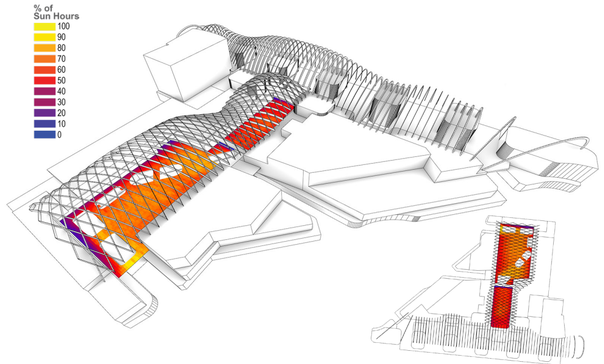
SAWTOOTH 42°



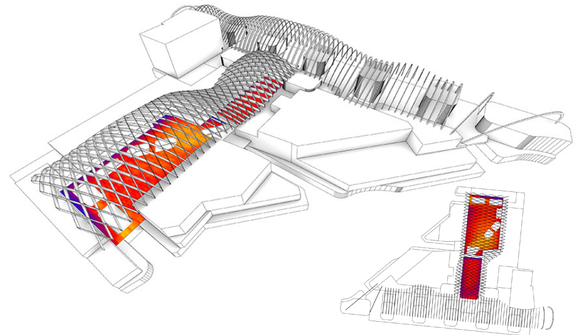


SAWTOOTH 30°

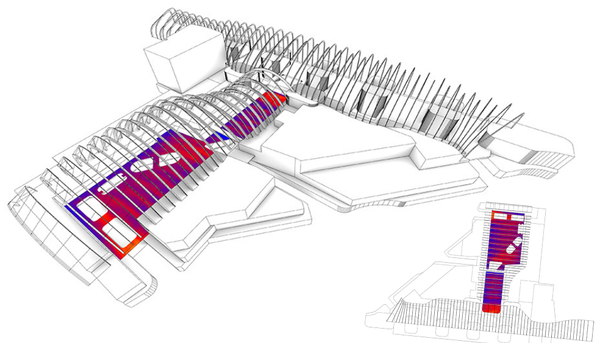




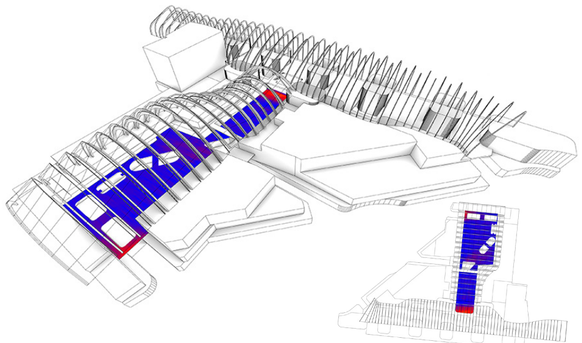
BASELINE
Peak Sun Hour Exposure: 967



SOLAR RESPONSIVE
Peak Sun Hour Exposure: 883
Percentage Reduction: 15%



SAWTOOTH 42°
Peak Sun Hour Exposure: 730
Percentage Reduction: 59%



SAWTOOTH 30°
Peak Sun Hour Exposure: 589
Percentage Reduction: 82%

jakechevrier@gmail.com

248.464.1580