

siteanalysis

asu east polytechnic campus



ASU Poly Site Plan



past

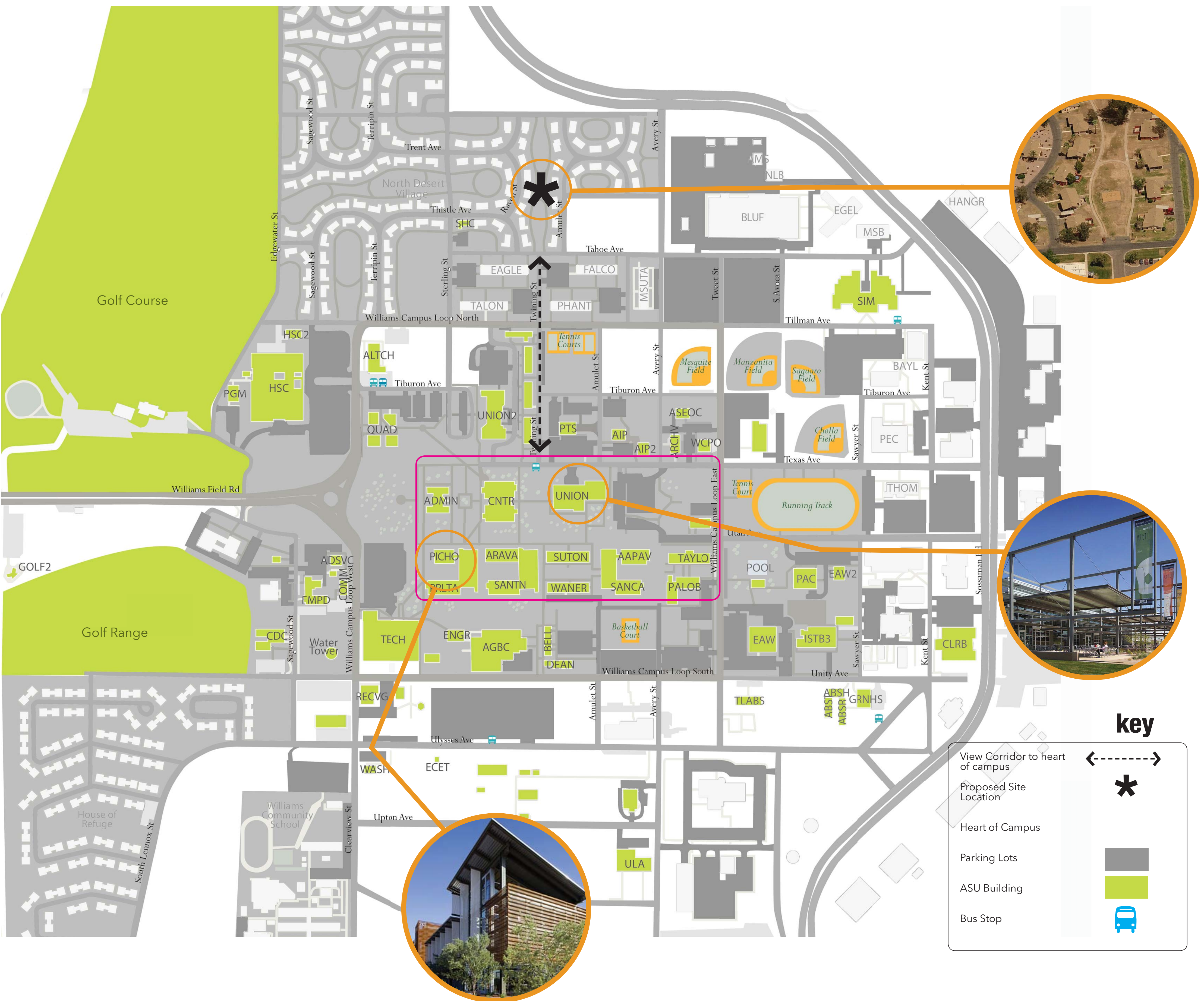
The history of Mesa dates back two thousand years to the Hohokam Indians. The Hohokam Indians left Mesa because the water table became too high without pumps, so the salts and minerals were not able to leach through the soil, preventing the crops from growing. In 1941, Falcon Field Airport and Williams Air Force Base were built to provide training for World War II pilots, Falcon Field for the British Royal Air Force and Williams for U.S. pilots. After the war, many military families decided to settle in Mesa. Until 1960 more than 50 percent of the residents earned their living directly or indirectly from farming, mainly citrus and cotton. In the fall of 1996, Arizona State University opened its Polytechnic campus (originally called ASU East) on the former Williams Air Force Base



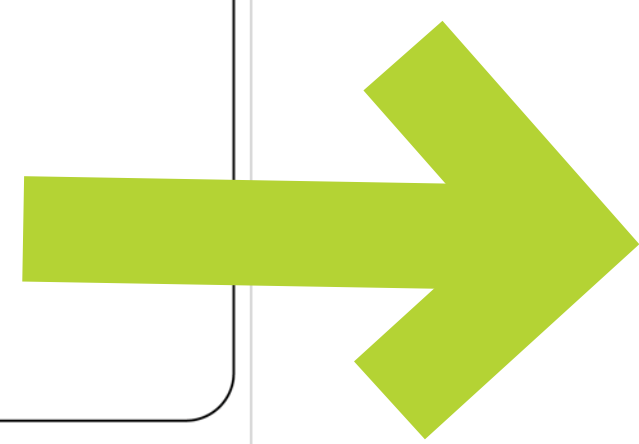
current

The facilities received LEED-Gold Certification in 2009, incorporating recycled materials used from the site, alternative energy features, natural and man-made sun screens, and showers for those who walk or ride their bikes to work. Each facility uses the same mix of building materials, have similar layouts, and each has an icon tower with observatory decks and team rooms, with one of the team rooms powered solely by solar energy. The facilities also enclose unique courtyard areas where students can relax and gather.





contextanalysis scale 1"=100'



northvillage

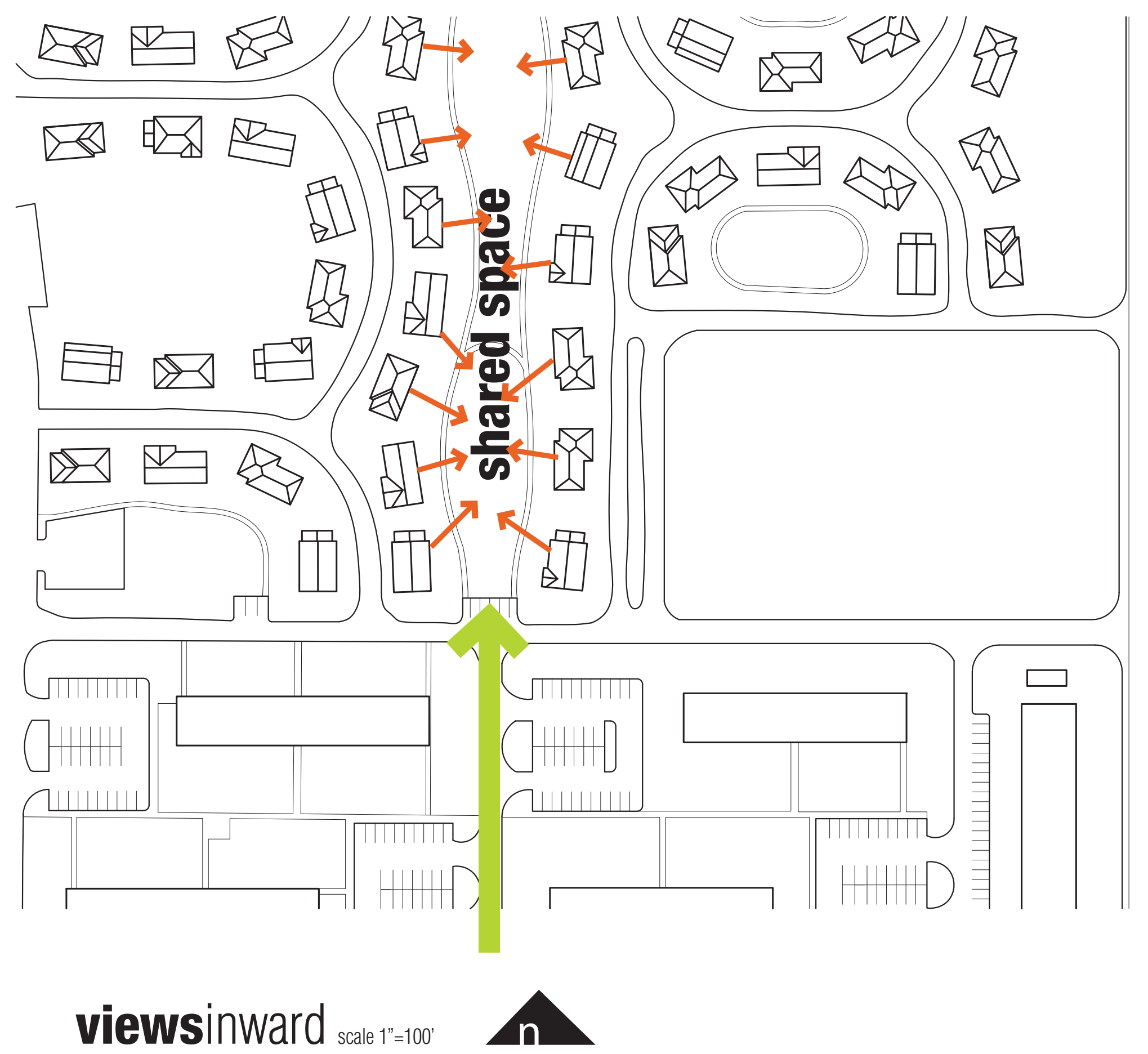
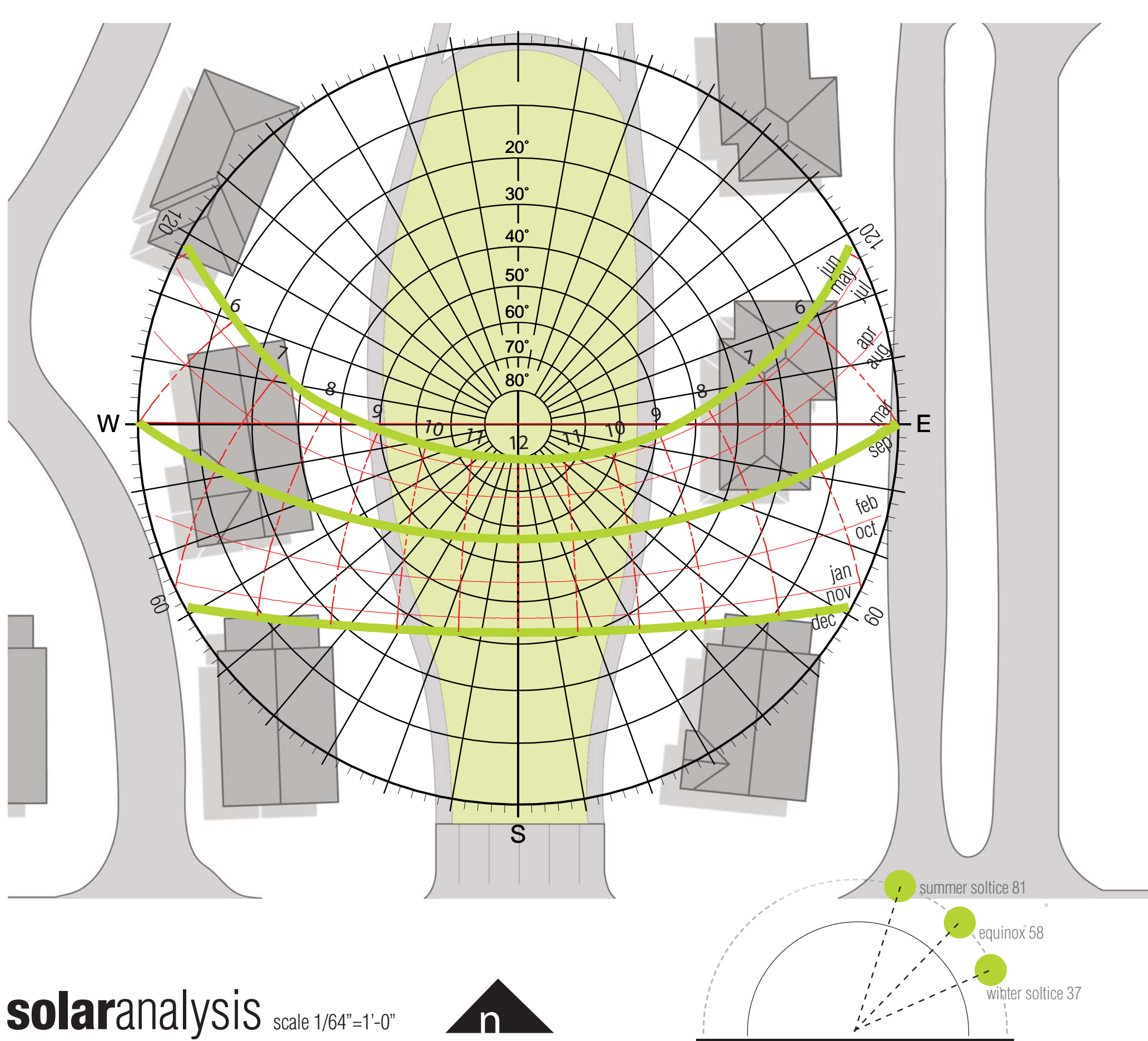
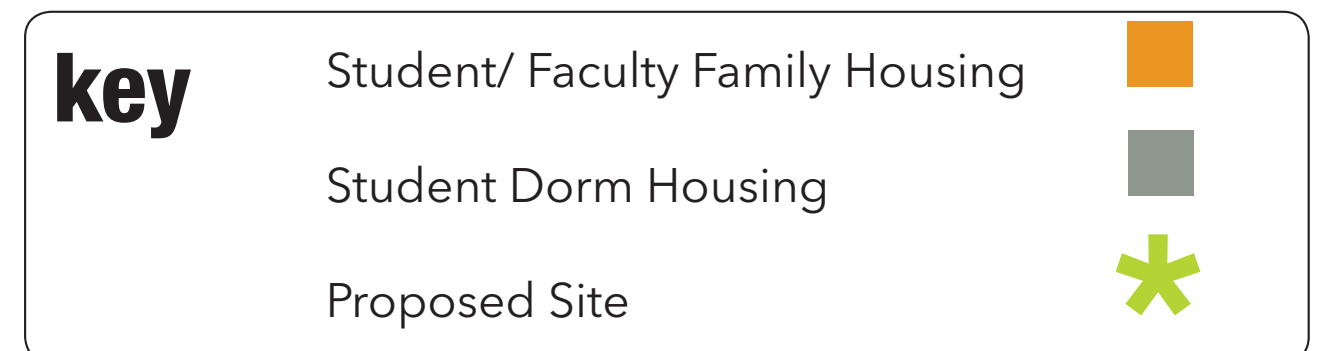
North Desert Village is made up of 152 homes ranging in size from 2 to 5 bedrooms. It is primarily family housing for faculty or students. There are over 250 children that live on ASU's Polytechnic Campus (campus wide). The village consists of a community house that can be used by all residents for study and social activities. There are 5 main floor plans which are replicated throughout the 152 homes.

falcohall

Falco is designated as the Tech House, which is a living-learning community for students enrolled in College of Technology and Innovation programs.

eaglehall

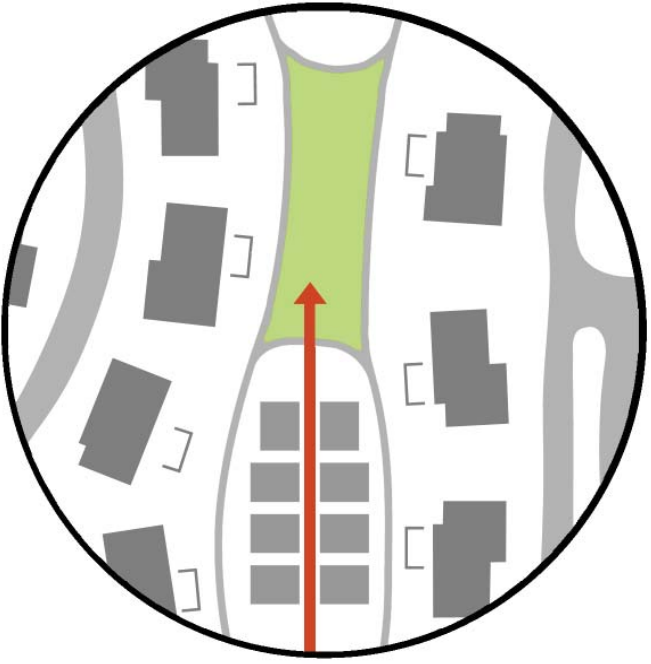
Eagle is designated as the Morrison House, which is a living-learning community for students enrolled in programs in the W. P. Carey School of Business/Morrison School of Management and Agribusiness.





asupolytechnic garden pavilion

The new community garden at ASU Polytechnic campus was created in the unused overlap space between two key communities: the ASU campus community and the neighborhood community just to the north. It has successfully begun to activate this space, allowing new relationships to form between the two communities that otherwise may not have existed. The shade structure will further this accomplishment by creating a comfortable outdoor gathering space that becomes a destination for the communities and extends the natural thermal comfort range of its occupants. The structure will thus become the mechanism through which the garden is experienced.



The inspiration for this shade structure resulted from three ideas that successfully merged into one form. The first evolved from the quality of Phoenix topography. Mountains completely surround the valley but many people become desensitized to their presence and forget to see their beauty. This design brings the mountains to the people, allowing them to experience the natural form in a new way. The second idea was derived from the nature of ASU Polytechnic campus, in which students and faculty alike are innovative and technologically-minded. Finally, the intense sunlight inspired a cooling structure that highlights the unique shadow quality produced by the Arizona sun. Combined, these sources of inspiration led to a design that celebrates the unique landscape of Phoenix while honoring the mission of the campus.



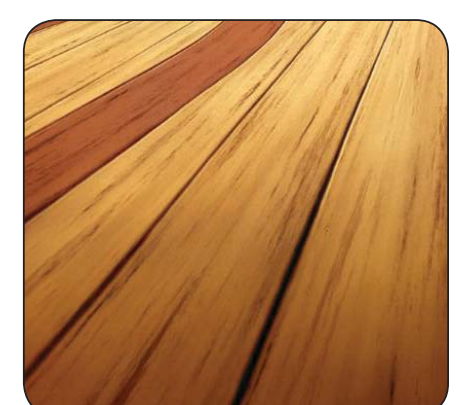
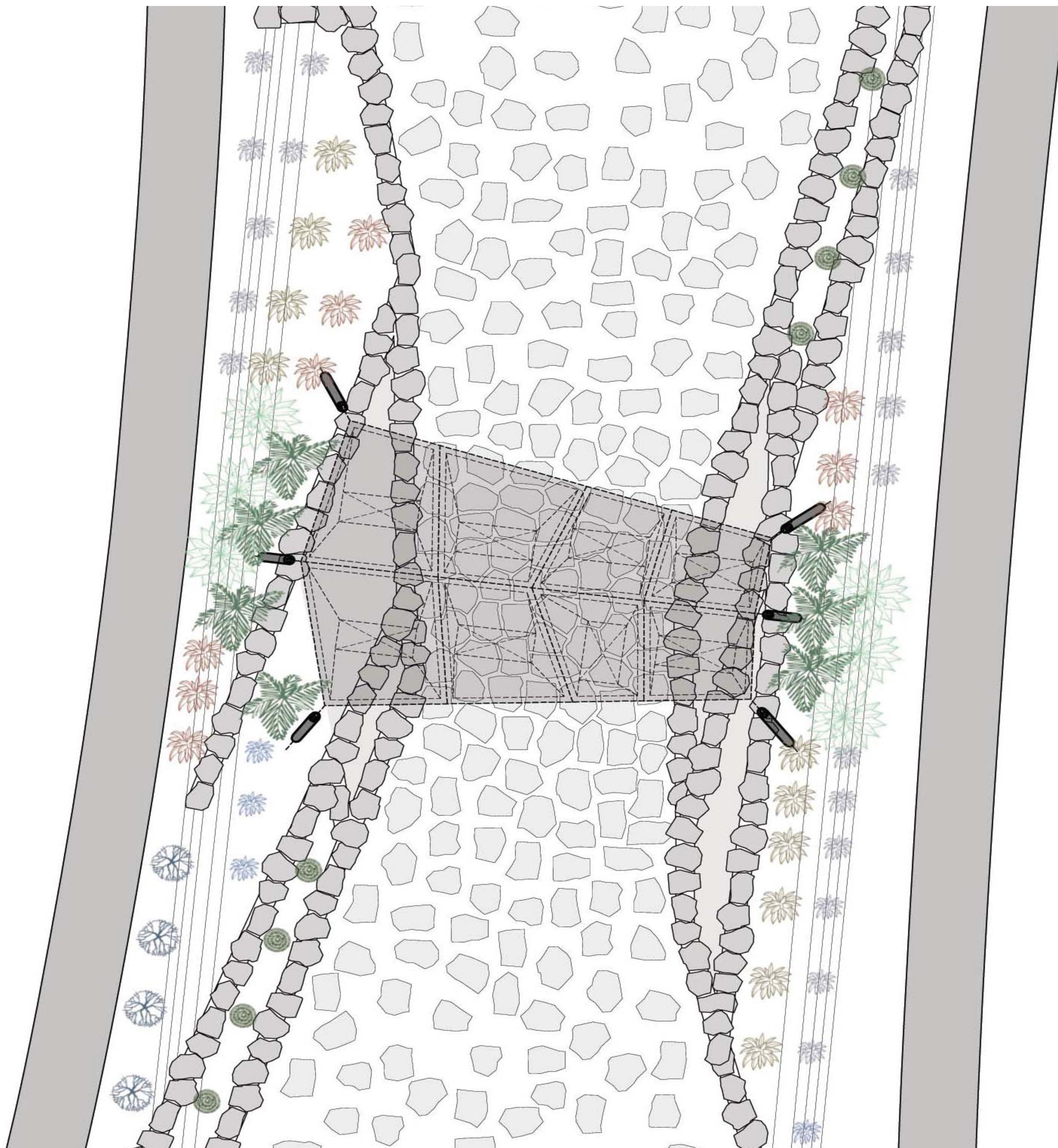
pavilion inspiration



replicate
mimic existing entities

exaggerate
vertical anamorphic distortion

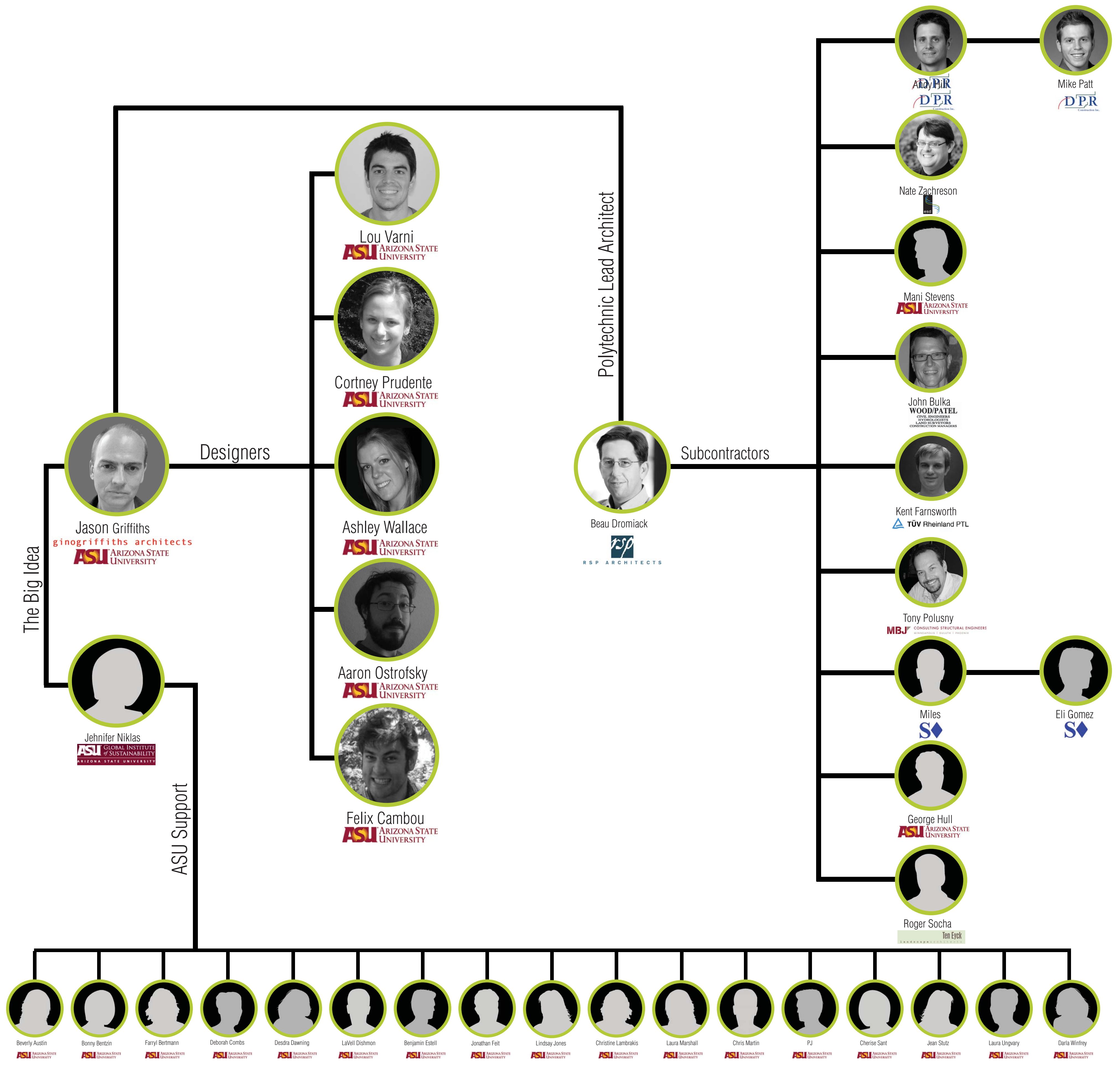
rationalize
summarize curved profile



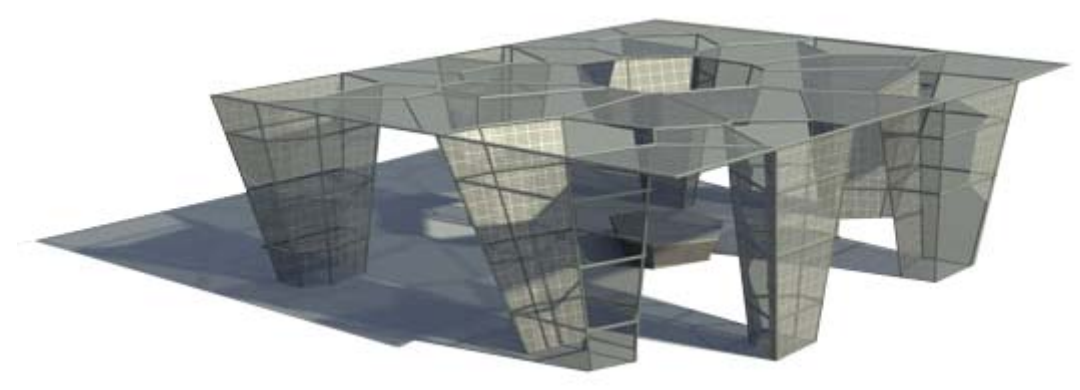
materialpalette



May 2009
Jehniifer Niklas and Jason Griffiths
Discuss Potential Project



February 6, 2010
Flower Pot Structure



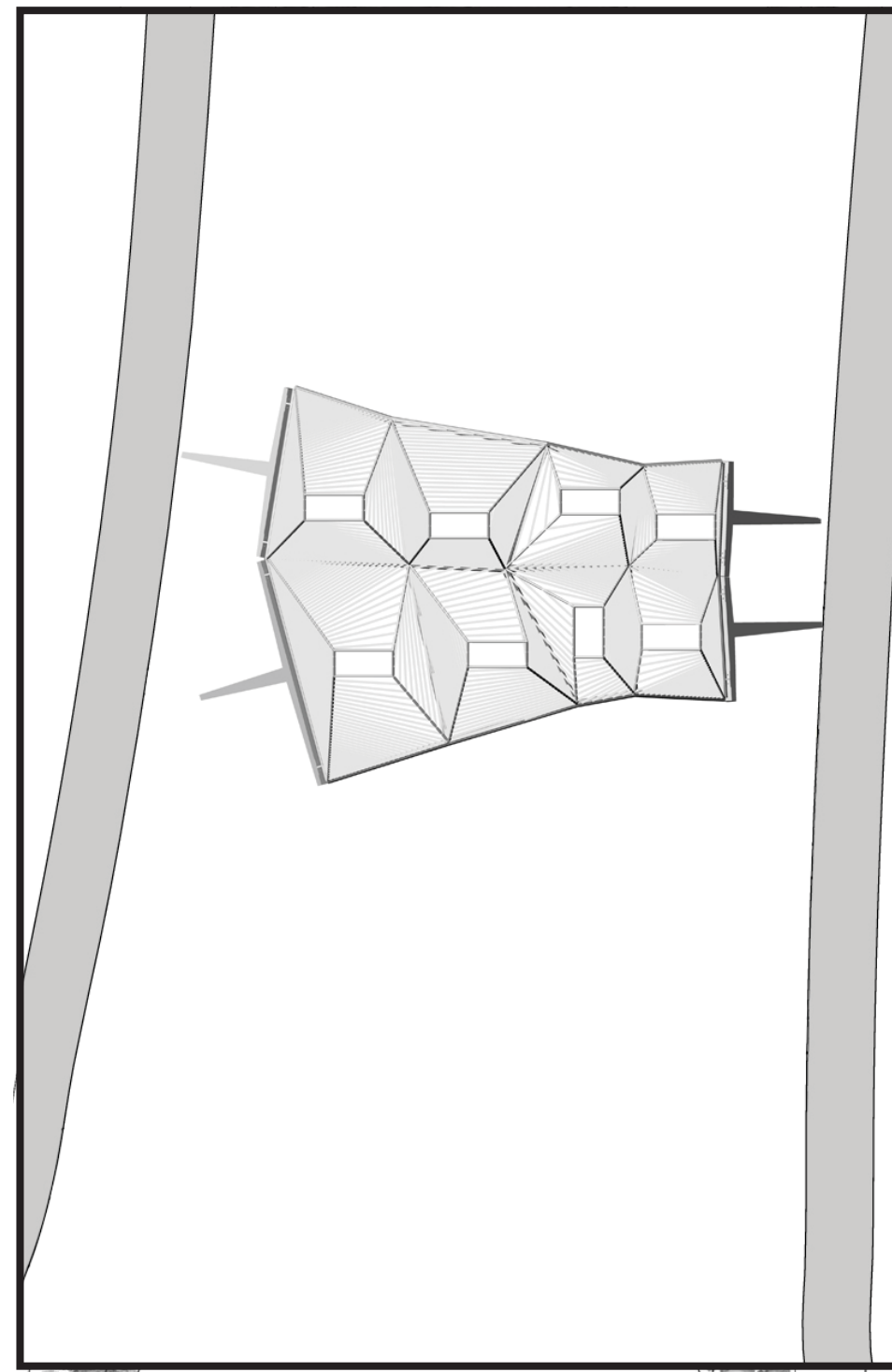
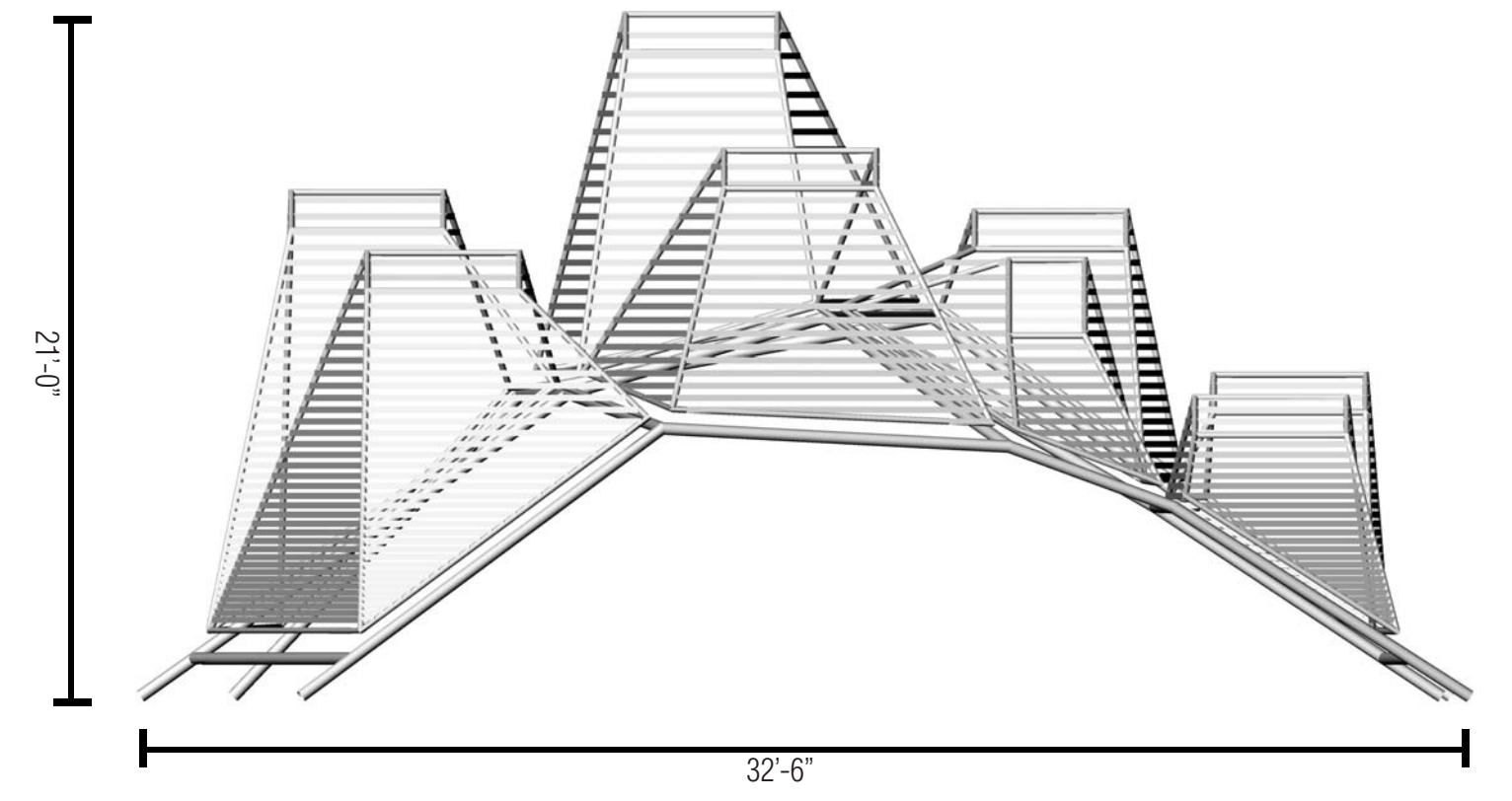
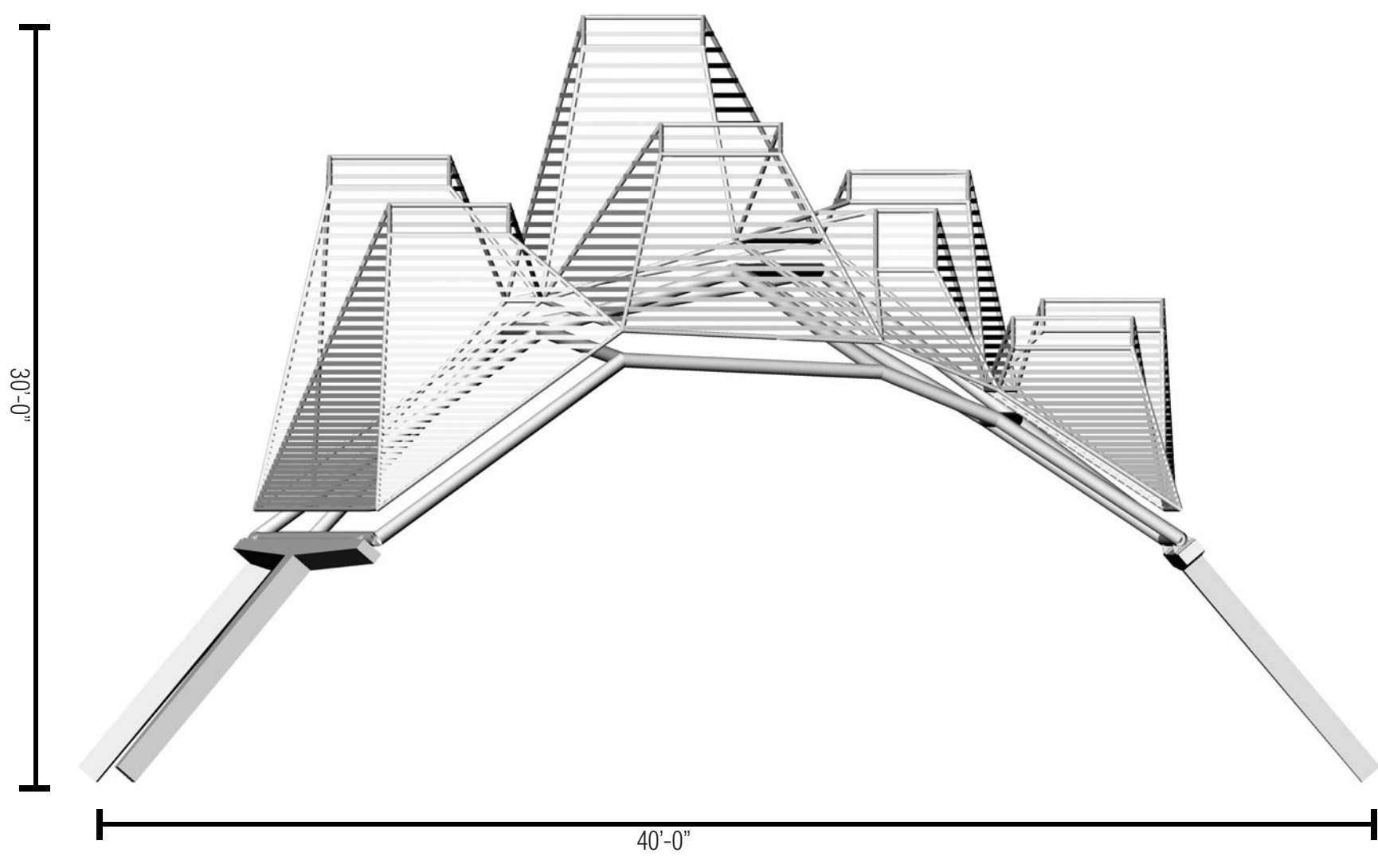
February 19, 2010
Review One at Polytechnic Campus

January 30, 2010
Site Visit

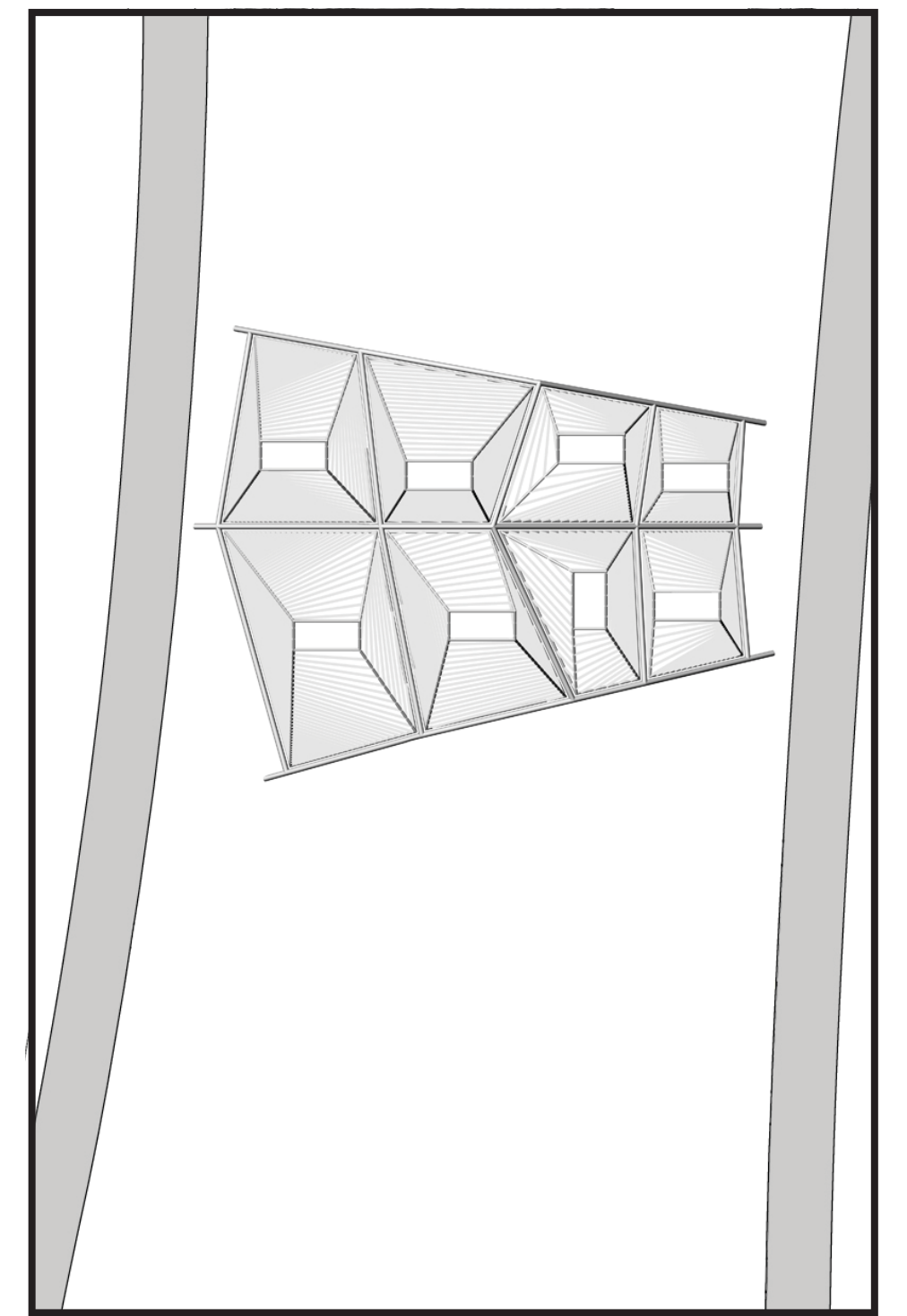
February 6, 2010
Garden Planting



March 5, 2010
Meeting with Beau Dromiack at ASU



7"



7"

\$196,000

\$136,830

costbreakdown

costbreakdown

- sitework \$ 56,200
- substructure \$ 6,450
- steel \$ 70,533
- electrical \$ 34,500
- miscellaneous \$ 28,317

- sitework \$ 19,256
- substructure \$ 6,450
- steel \$ 70,533
- electrical \$ 5,900
- miscellaneous \$ 34,691

designdecisions

designdecisions

- use "T" steel members
- simplified hardscape
- incorporated native plants

- simplified structure
- simplified hardscape
- incorporated native plants

keymoments

keymoments

- trex cladding
- built-in benches
- western shade

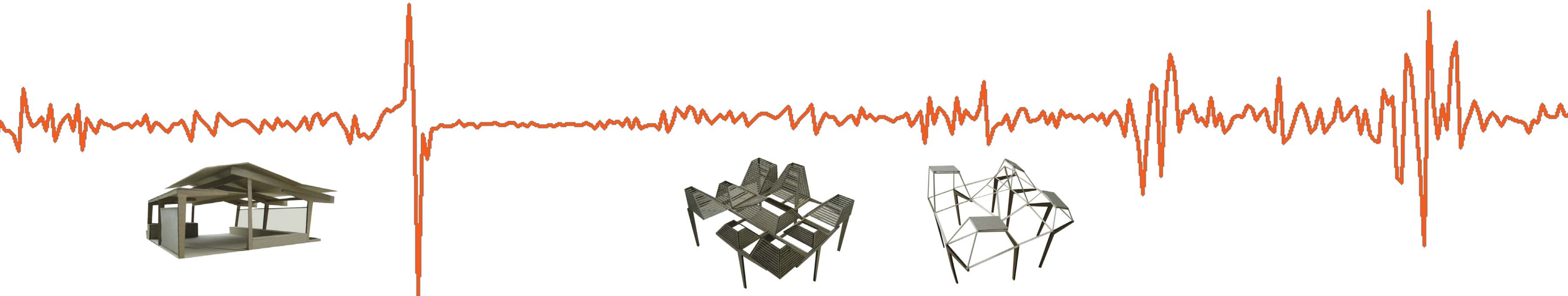
- trex cladding
- built-in benches

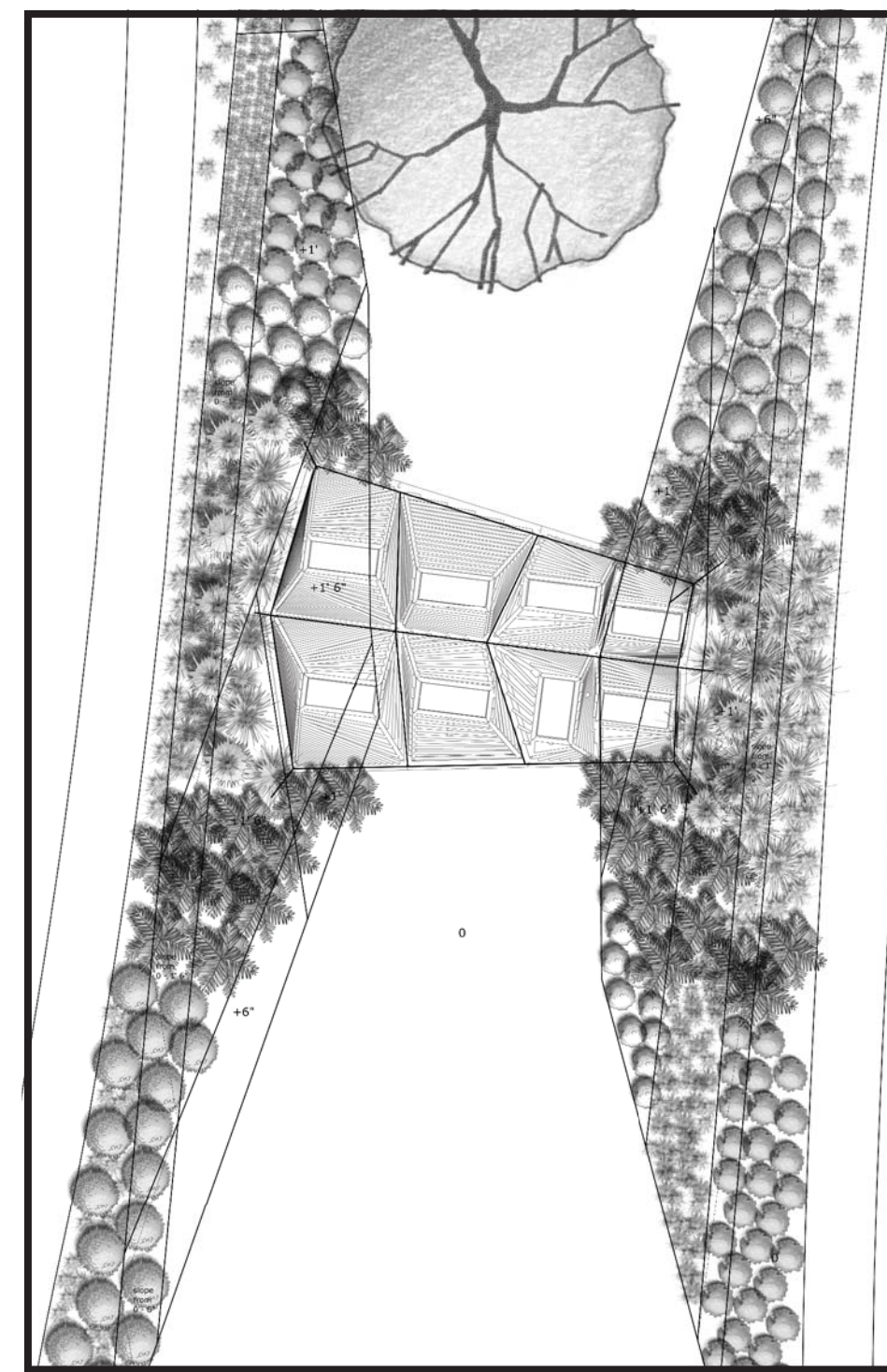
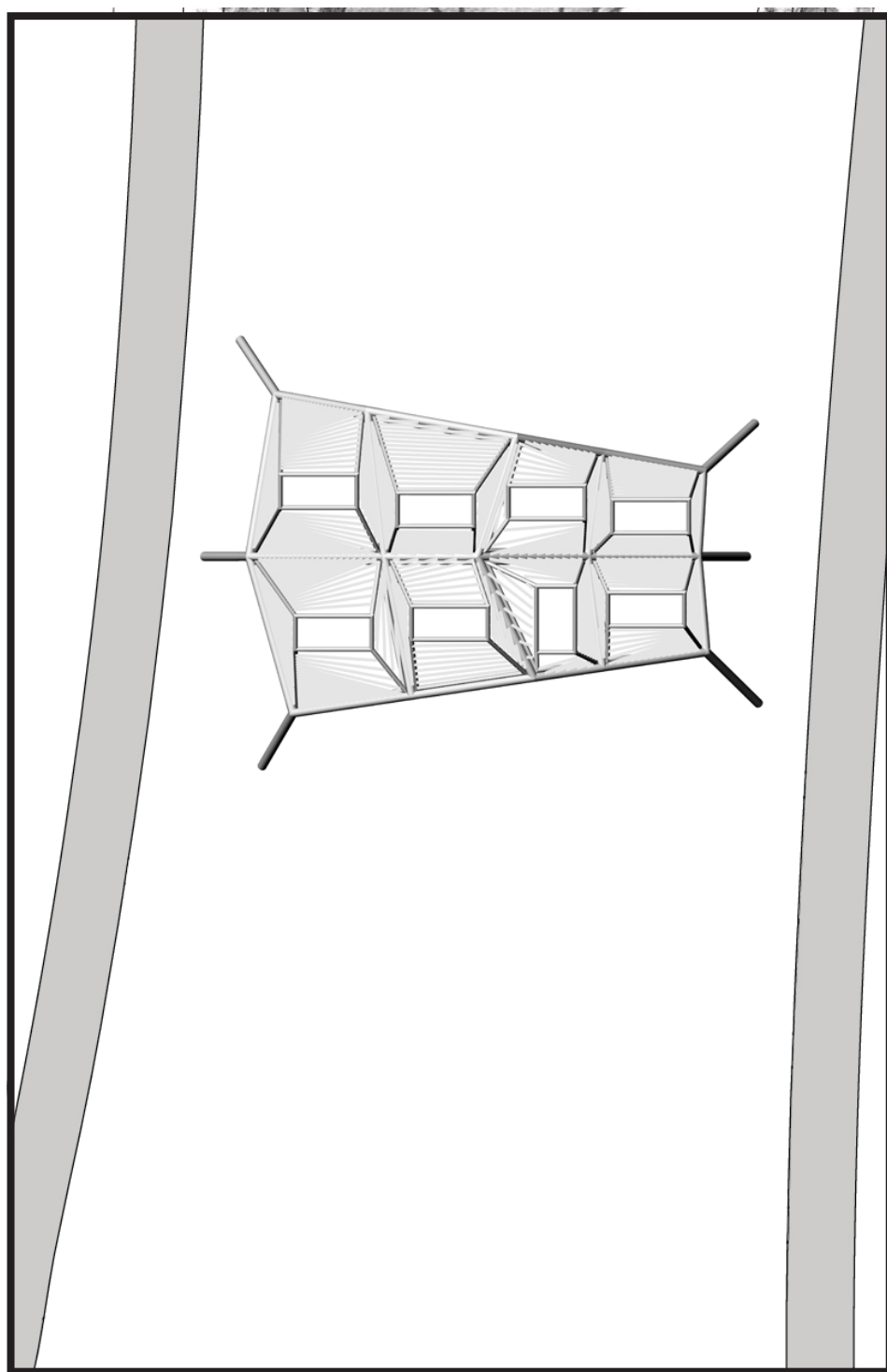
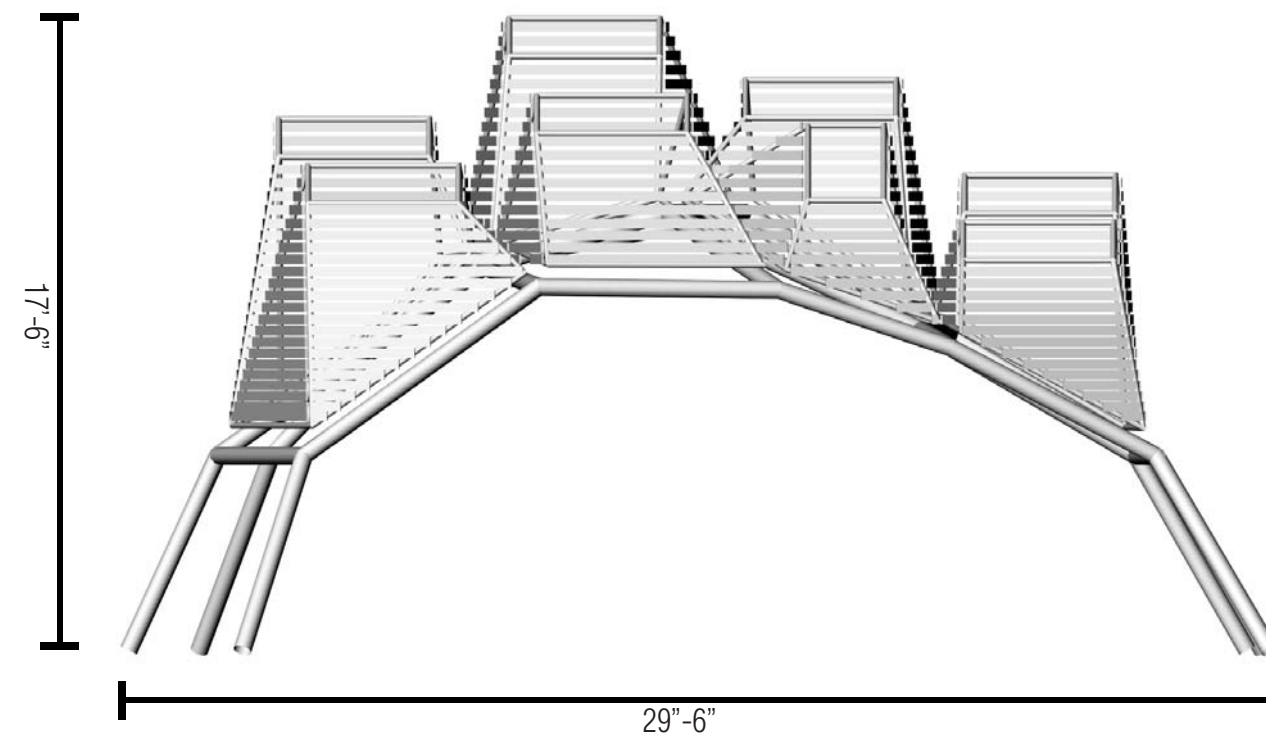
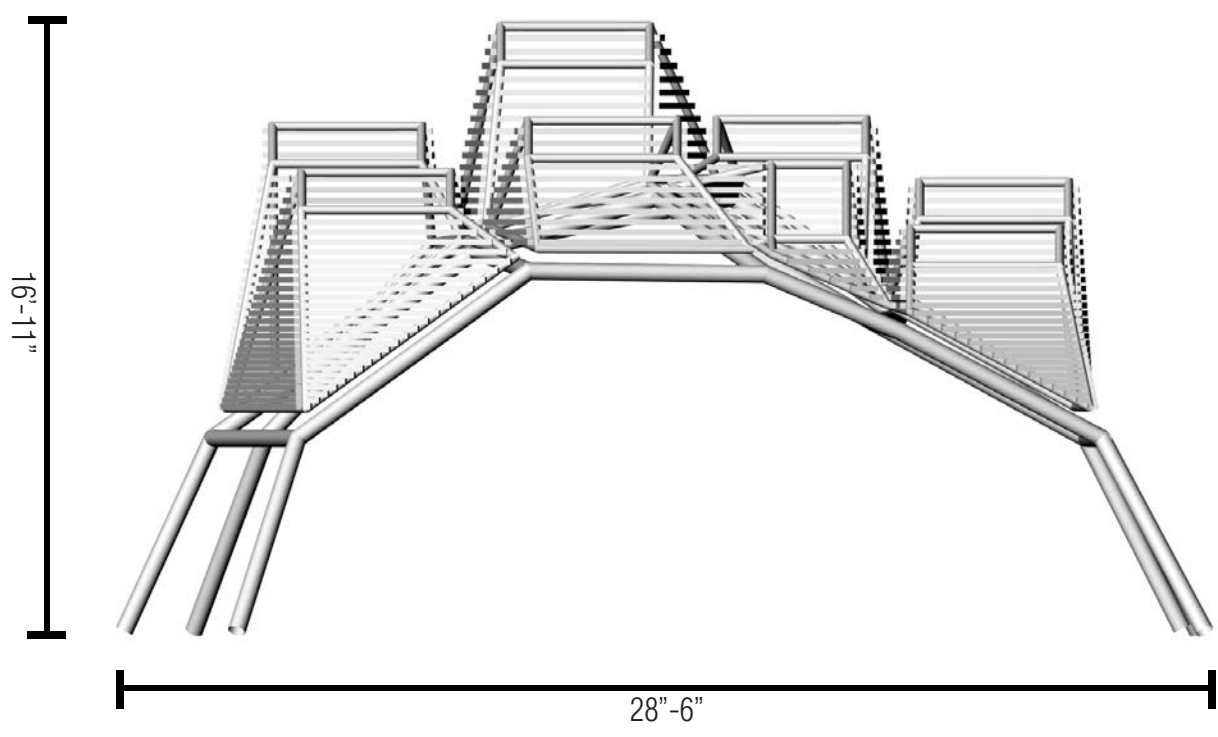


March 6, 2010
Extruded PV Panel and Fan Design



March 12, 2010
Review Two at ASU Tempe





6"

6"

\$125,770

\$116,630

costbreakdown

costbreakdown

- sitework \$ 13,790
- substructure \$ 6,450
- steel \$ 62,184
- electrical \$ 5,900
- miscellaneous \$ 37,446

- sitework \$ 8,986
- substructure \$ 5,138
- steel \$ 62,514
- electrical \$ 4,230
- miscellaneous \$ 35,762

designdecisions

designdecisions

- reduced structure by 25%
- simplified hardscape
- incorporated native plants

- reduced structure by 25%
- simplified hardscape
- reinforcement members

keymoments

keymoments

- pressurized lumber cladding
- built-in benches

- bend-a-board cladding
- inverted fan connection



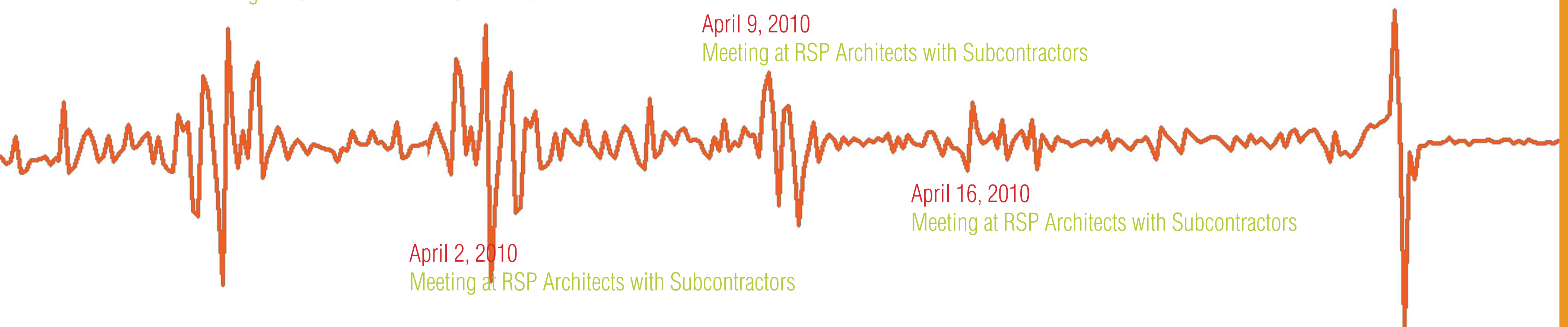
March 26, 2010
Meeting at RSP Architects with Subcontractors

April 9, 2010
Meeting at RSP Architects with Subcontractors

April 21, 2010
Visit to S Diamond Steel

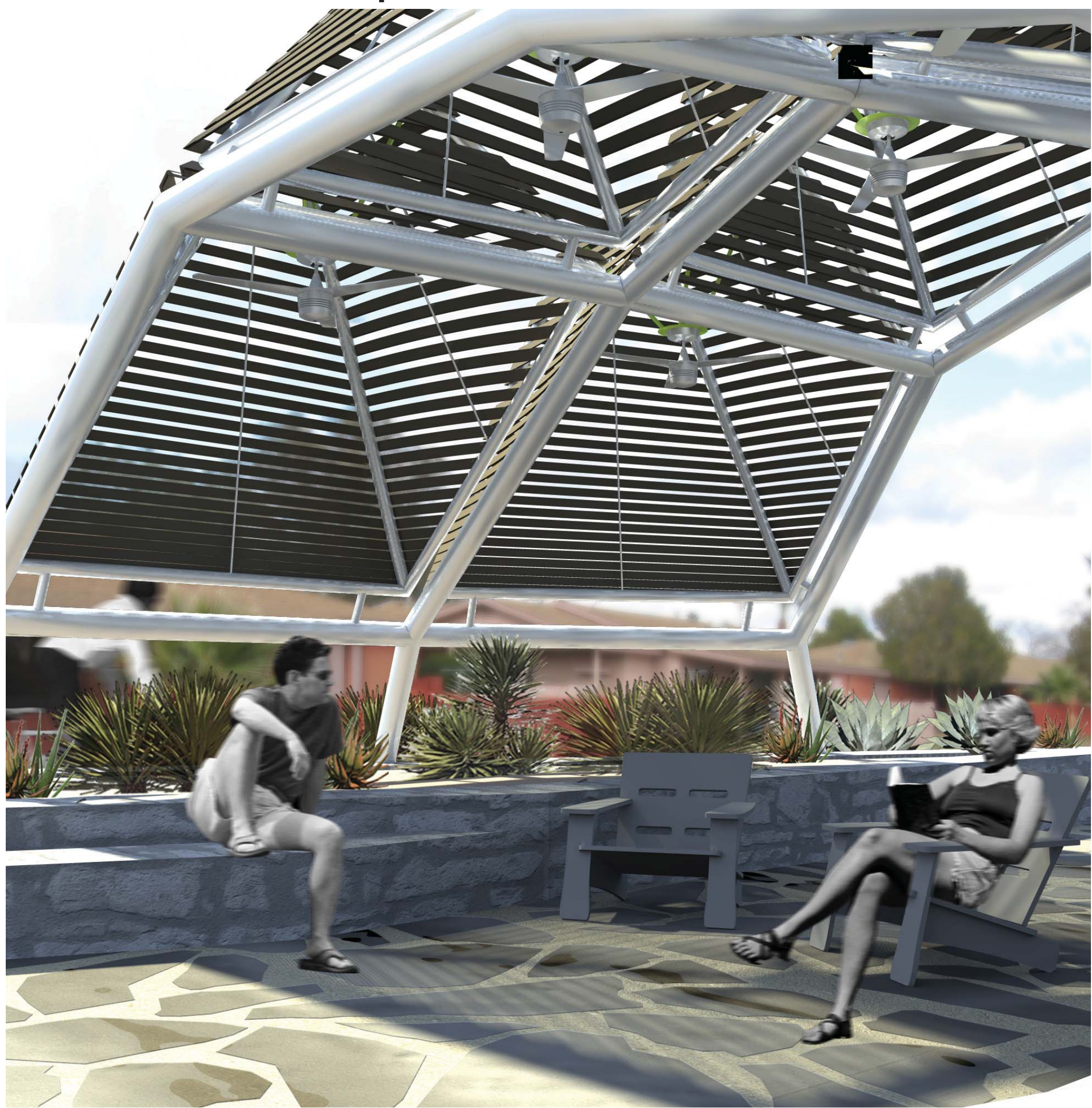
April 2, 2010
Meeting at RSP Architects with Subcontractors

April 16, 2010
Meeting at RSP Architects with Subcontractors



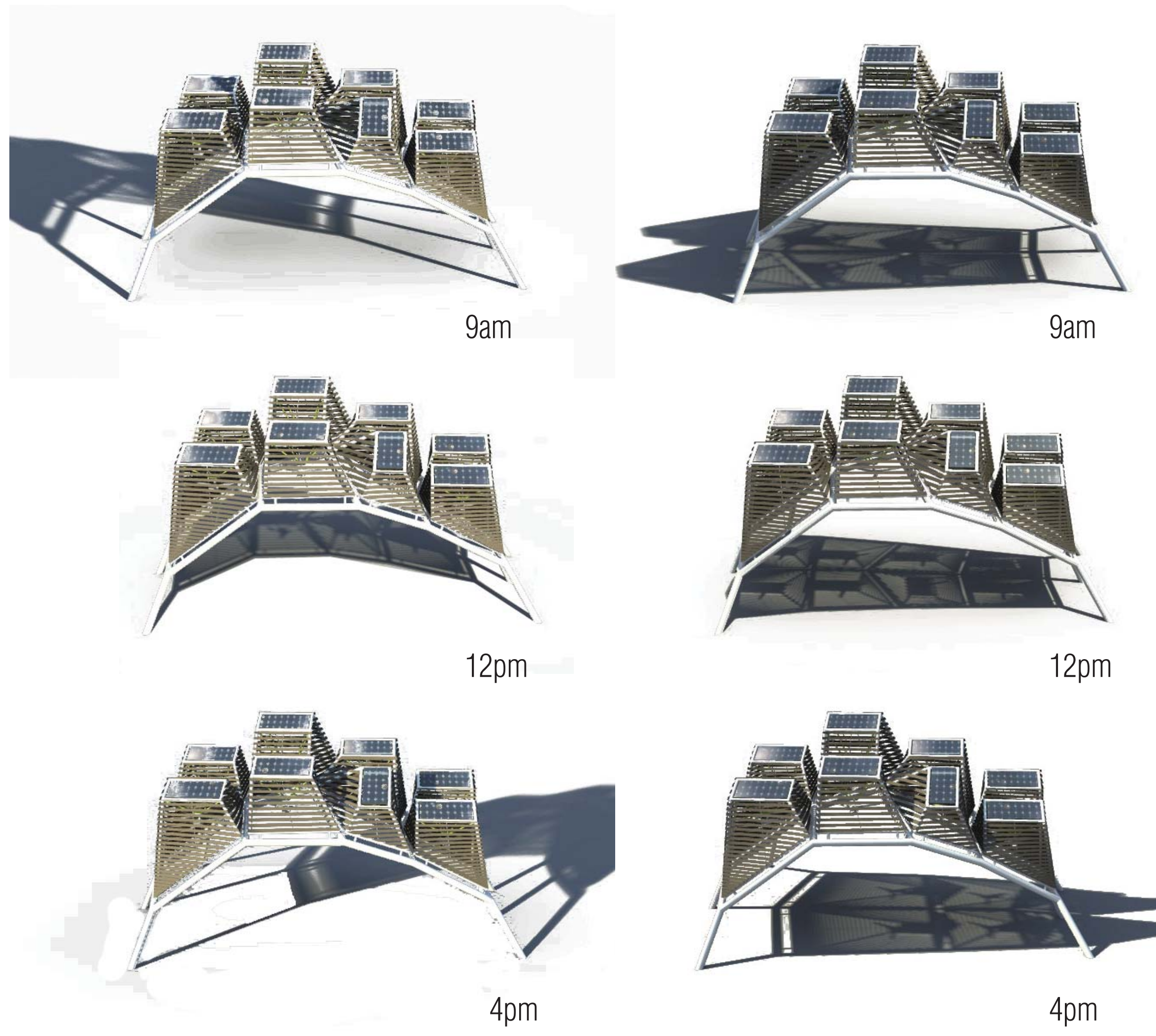


climateresponse



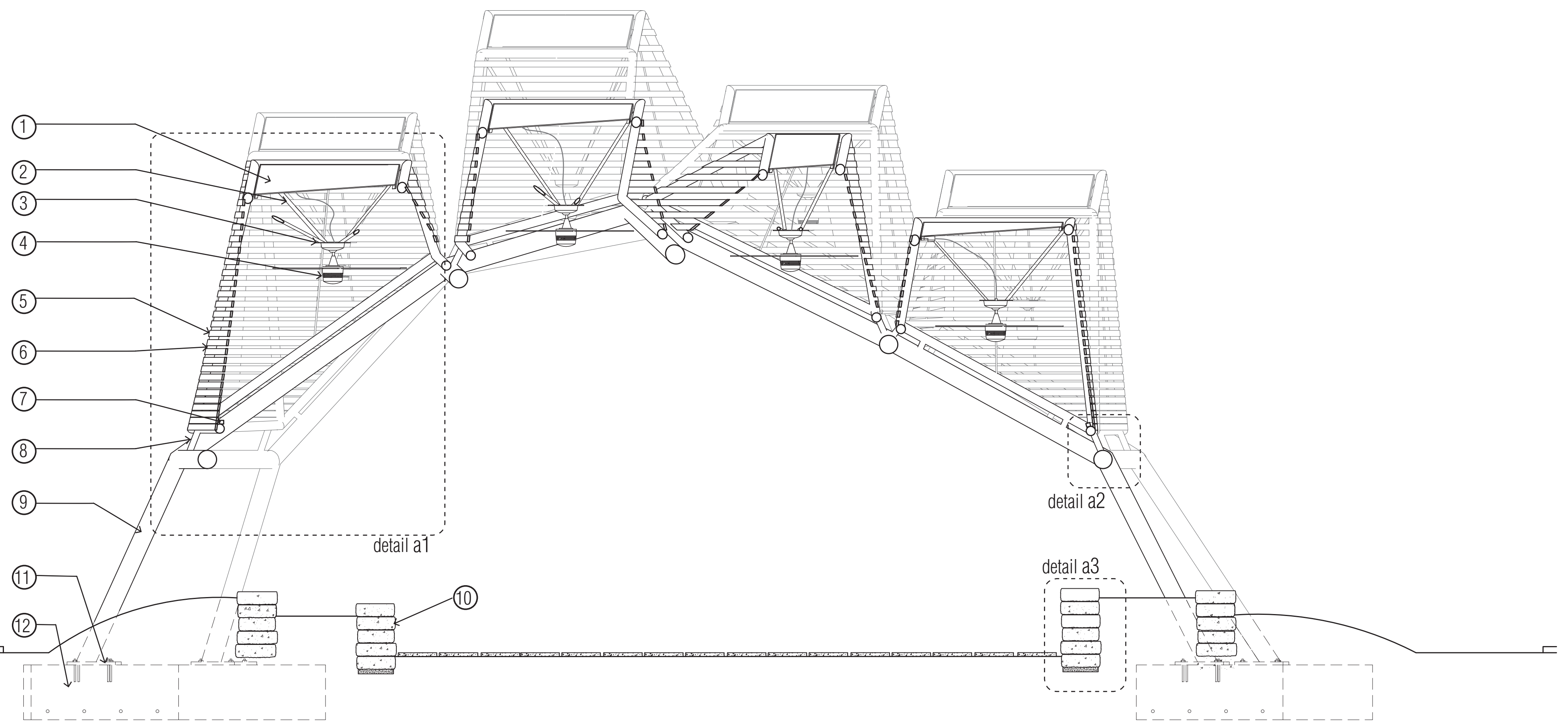
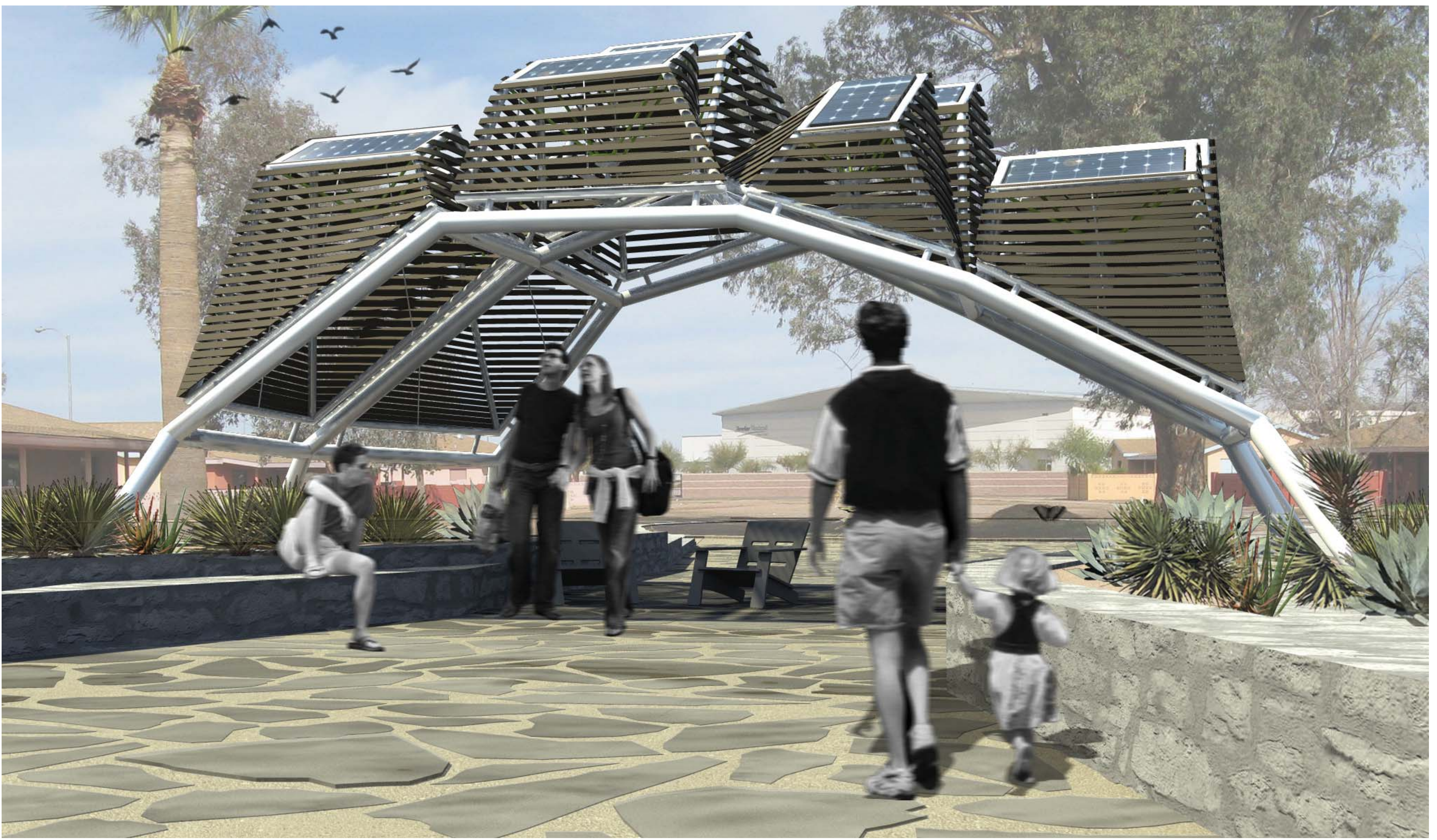
wintersolstice

summersolstice



sections



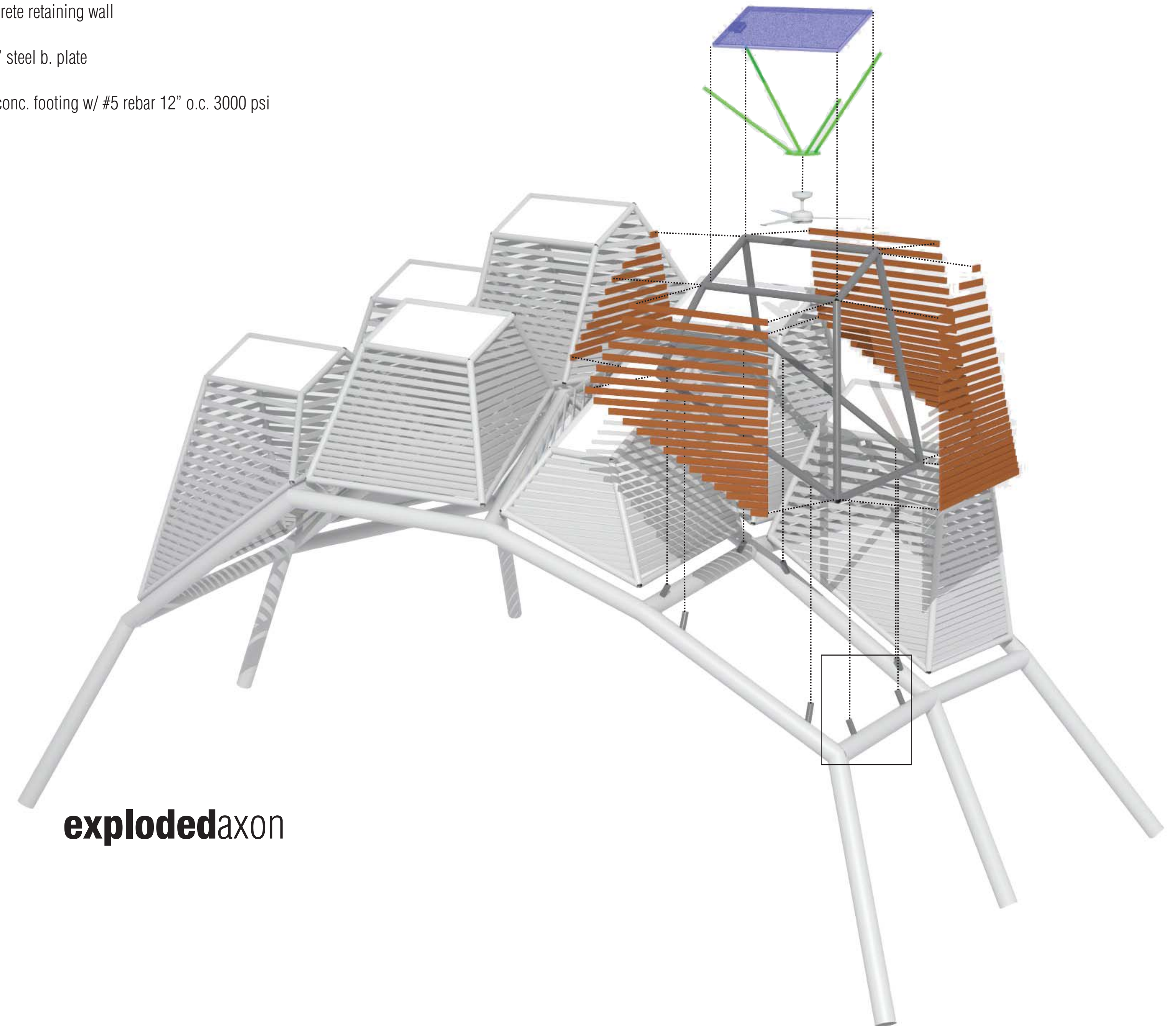
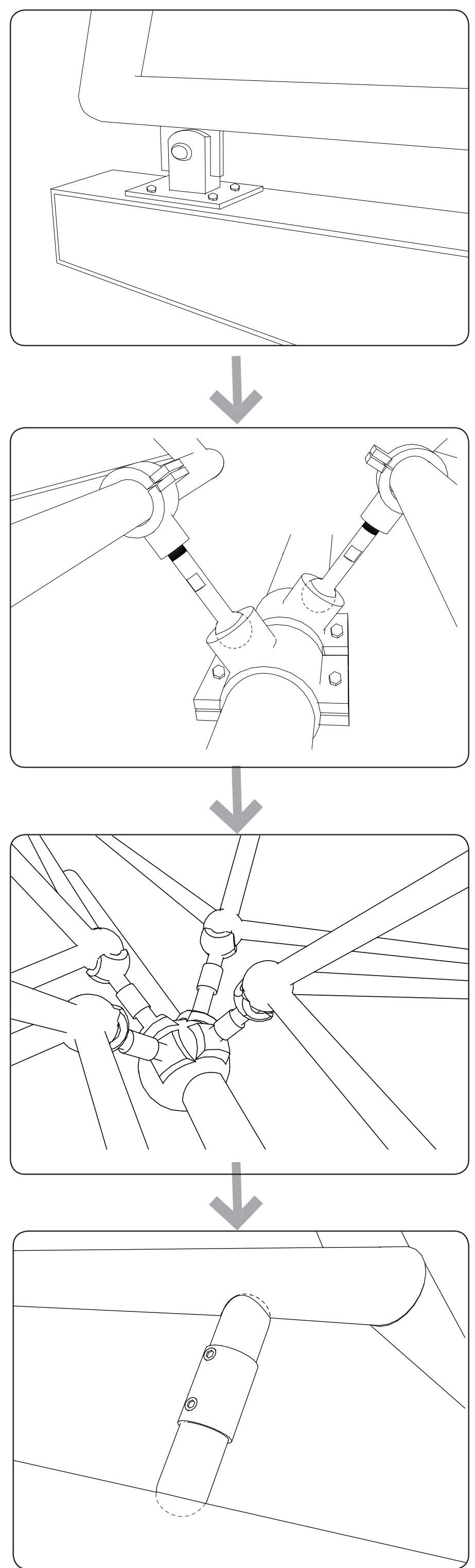


SECTION a-a'
scale 3/4"=1'-0"

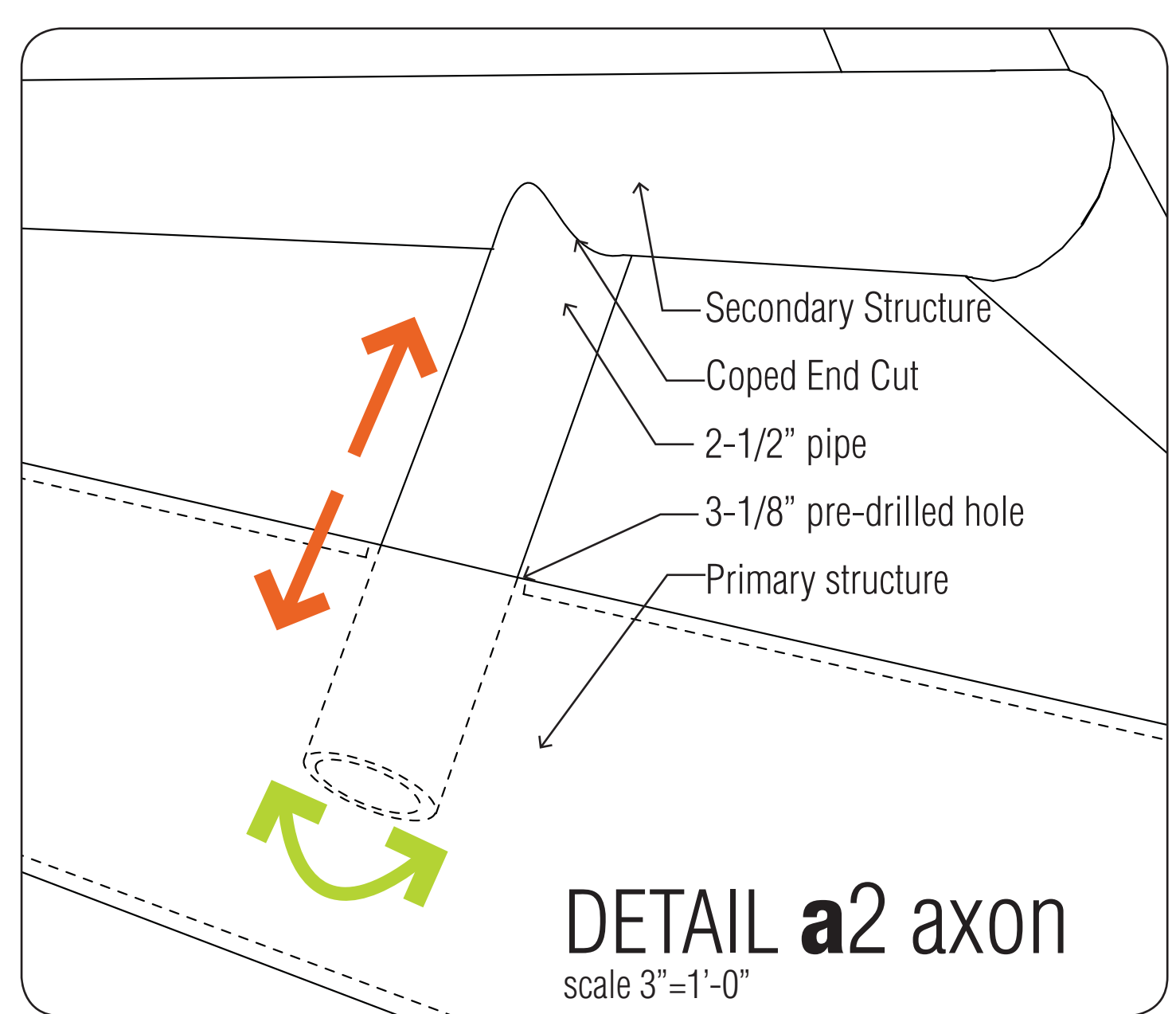
KEY

- | | |
|--|---|
| 1. 12V solar panel | 7. 1-3/16 x 1-5/16" x 8' lightwild LED strip |
| 2. 1" Ø steel pipe fan drop down struts | 8. 2-1/2" Ø strut connection |
| 3. 12" Ø .25" plate steel fan mounting bracket | 9. 6" Ø steel pipe primary structure |
| 4. 120v AC fan | 10. recycled concrete retaining wall |
| 5. 2x1" bendaboard Cladding | 11. 16" x 16" x 1" steel b. plate |
| 6. 3" Ø steel pipe secondary "hat" structure | 12. 4'-0" x 1'-6" conc. footing w/ #5 rebar 12" o.c. 3000 psi |

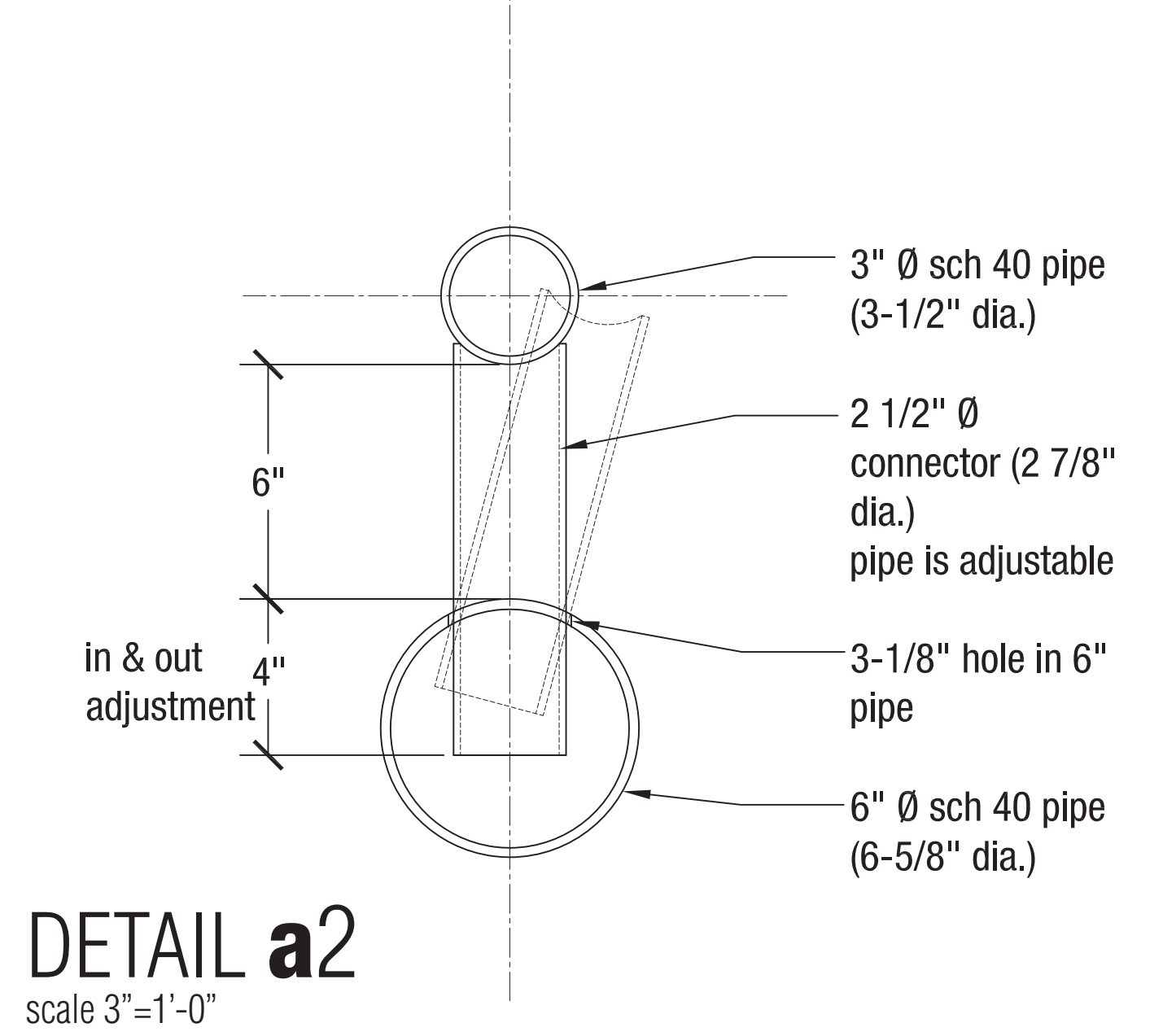
detail evolution



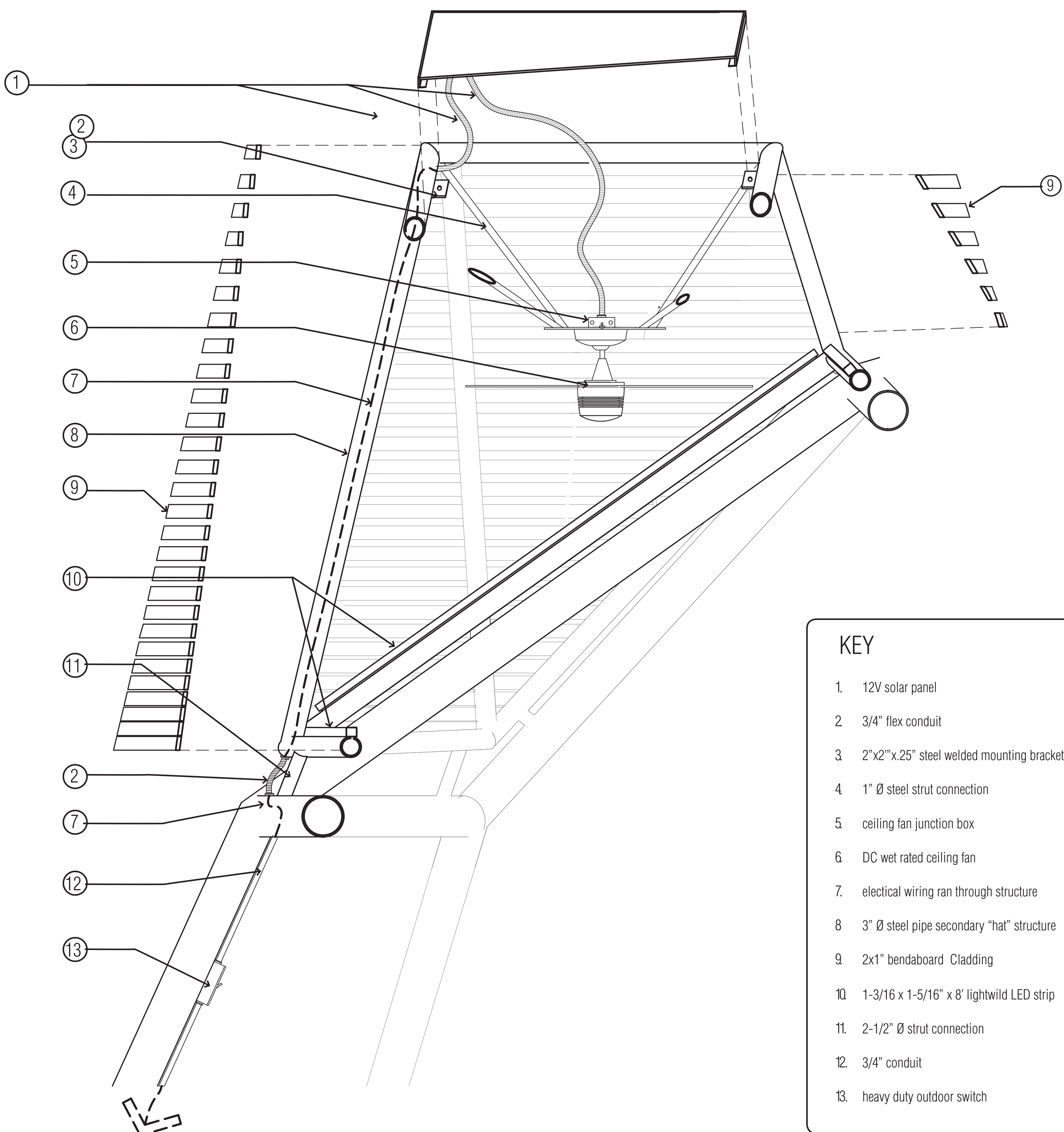
exploded axon



DETAIL a2 axon
scale 3"=1'-0"



DETAIL a2
scale 3"=1'-0"

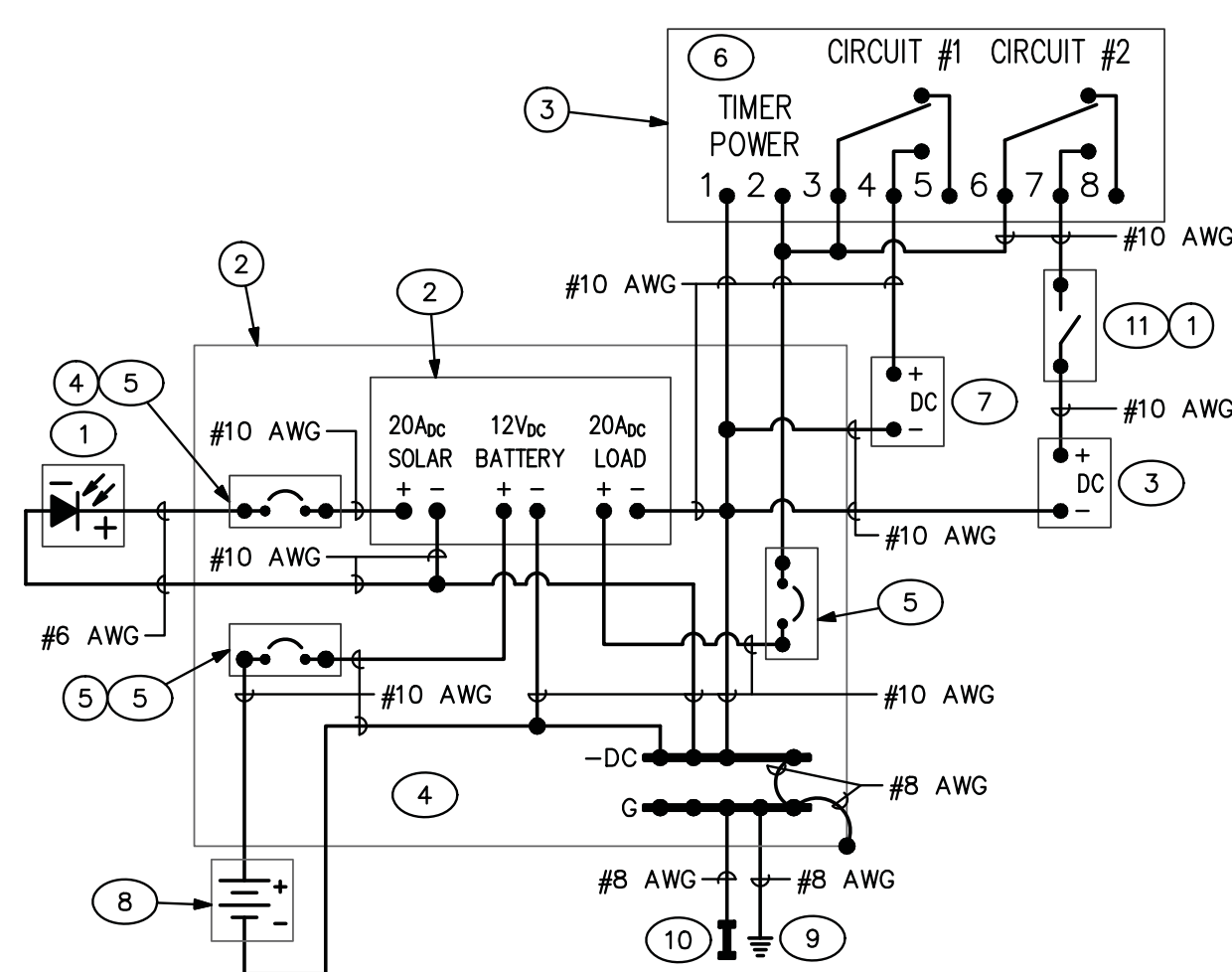


- KEY**
- 12V solar panel
 - 3/4" flex conduit
 - 2"x2"x.25" steel welded mounting bracket
 - 1" Ø steel strut connection
 - ceiling fan junction box
 - DC wet rated ceiling fan
 - electrical wiring ran through structure
 - 3" Ø steel pipe secondary "hat" structure
 - 2x1" bendboard Cladding
 - 1-3/16 x 1-5/16" x 8' lightwld LED strip
 - 2-1/2" Ø strut connection
 - 3/4" conduit
 - heavy duty outdoor switch

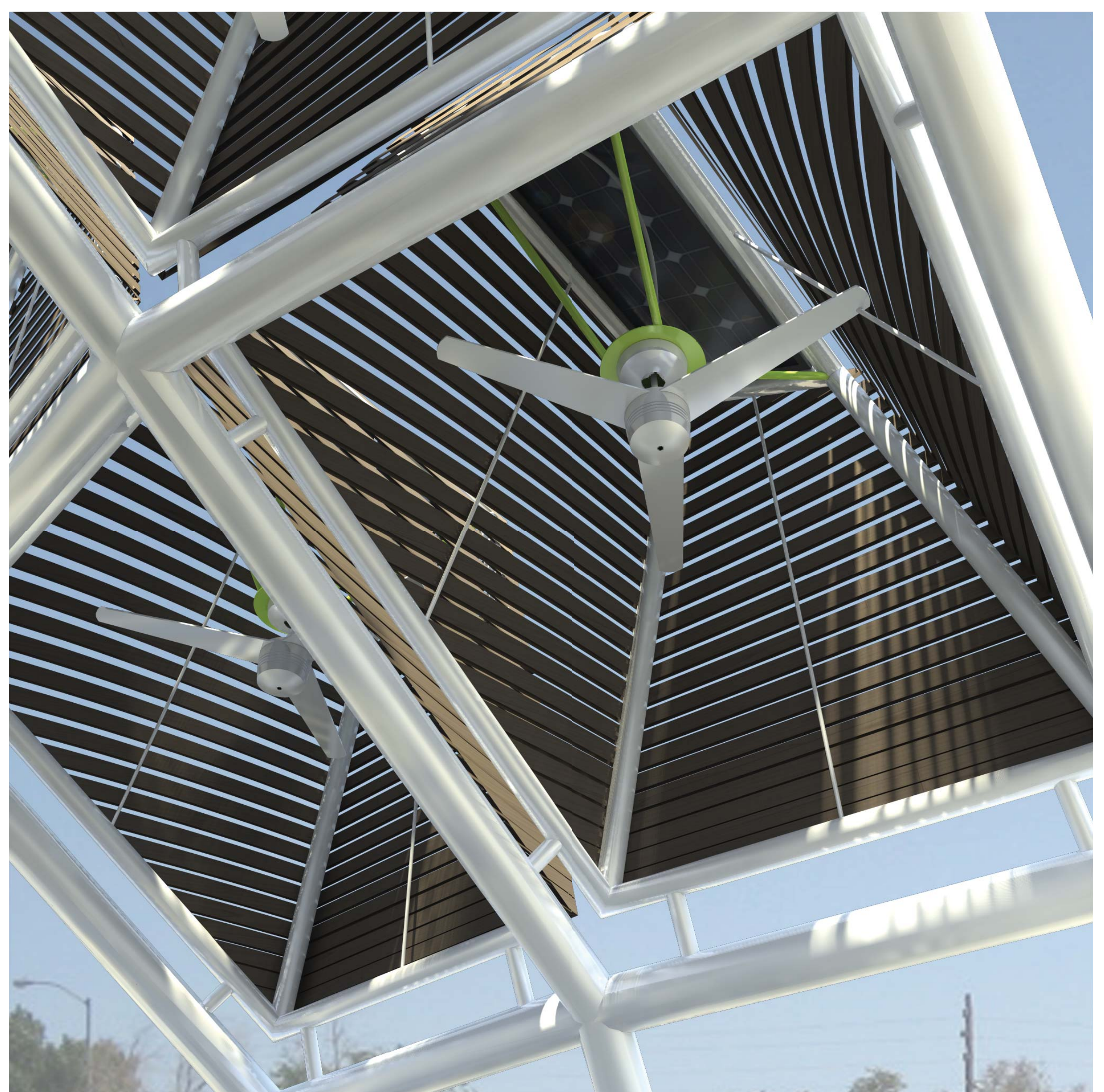
cont. to NEMA 3R enclosure in landscape

EXPLODED DETAIL a1
scale 1-1/2"=1'-0"

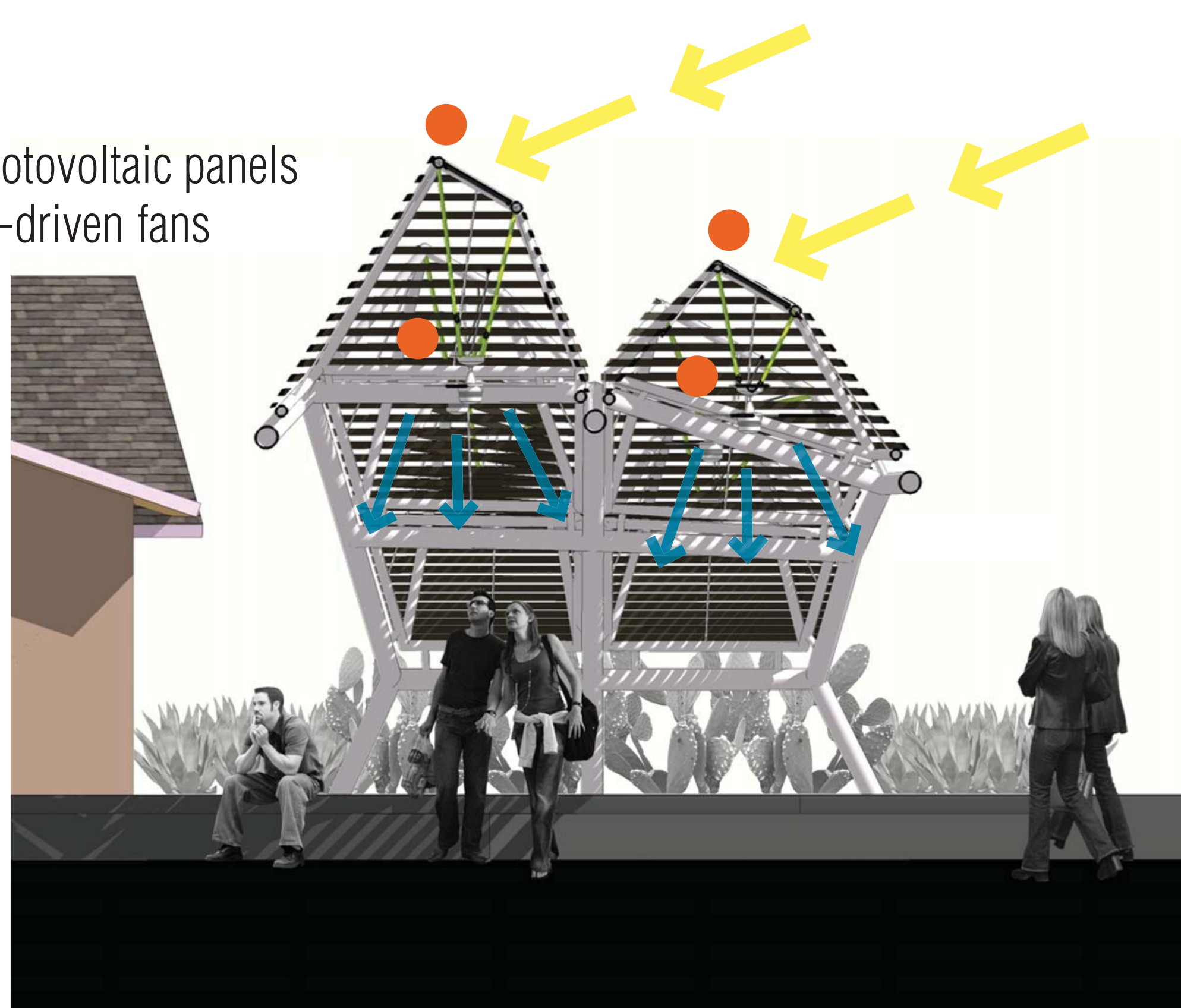
electrical design



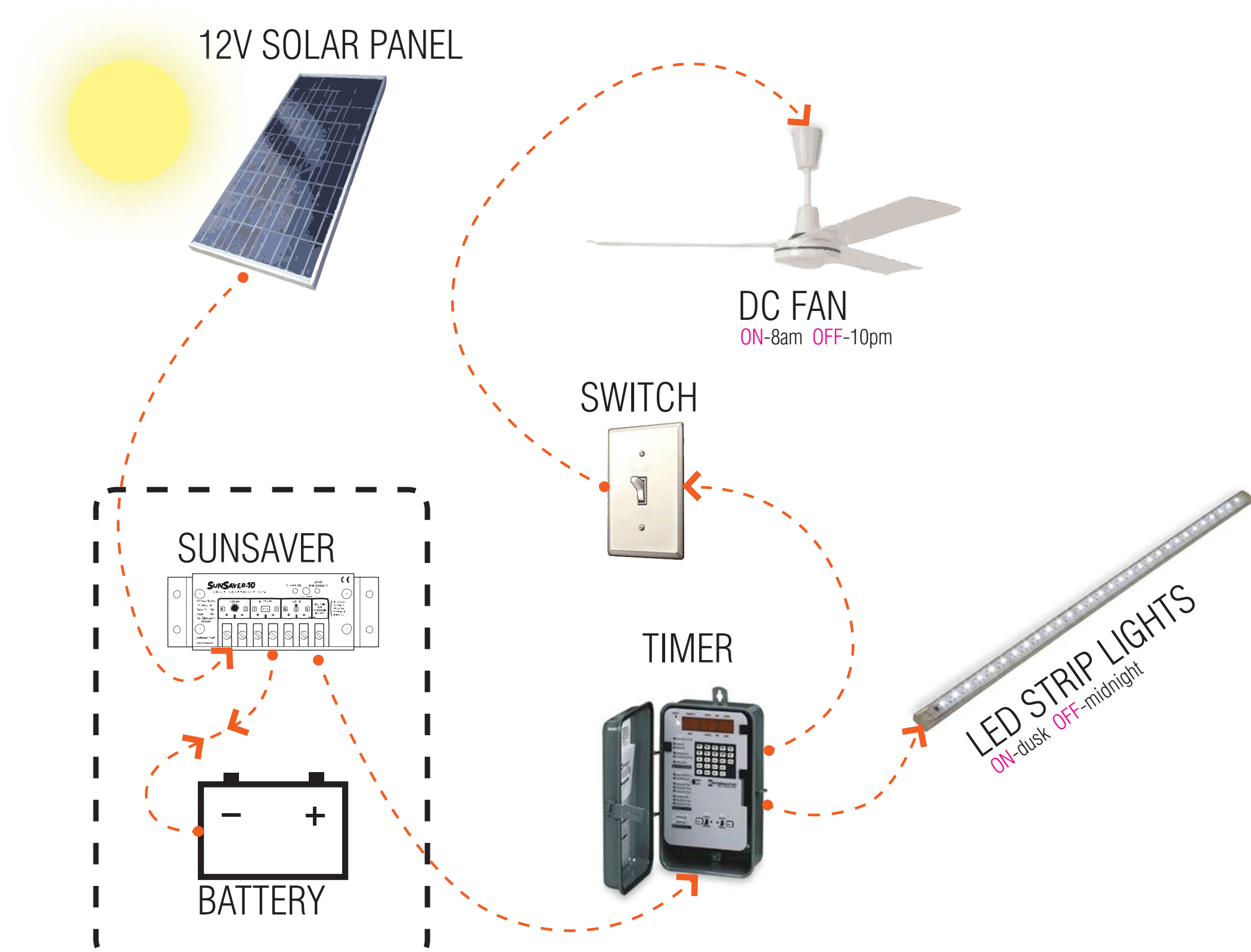
MARK	COMPONENT DESCRIPTION	ELECTRICAL DATA			NOTES
		ENCLOSURE	VOLTAGE	LOAD	
1	PHOTOVOLTAIC MODULE	NEMA 3R	TBD	TBD	
2	SOLAR CONTROLLER MORNINGSTAR SUNSAVER CAT.#SS-20L	NEMA 3R	TBD	20A RATING	INSTALLED INSIDE NEMA 3R ENCLOSURE SHALL BE RATED FOR 120° F +
3	OUTDOOR CEILING FAN	NEMA 3R	12/24VDC	2A MAX	
4	16in X 12in X 6in ENCLOSURE & BACKPLATE	NEMA 3R	-	-	EQUAL TO HUBBELL/WIEGMANN CAT.#RHC161206 & NP1612
5	HEAVY DUTY SPST SWITCH VERIFY COLOR	NEMA 3R	12/24VDC RATING	20A RATING	
6	(2) CIRCUIT TIME SWITCH	NEMA 3R	12/24VDC RATING	20A/CIRCUIT RATING	REFER TO NOTES BELOW
7	LINEAR LED WEATHERPROOF AND VANDAL RESISTANT	NEMA 3R	12/24VDC RATING	3W/lf	EQUAL TO LICHTWALD CAT.#LW-PLNW-WW-48in-FM
8	5/8in Ø X 8in COPPER GROUNDING ROD ELECTRODE	-	-	-	
9	ELECTRICAL BOND TO STRUCTURAL STEEL	-	-	-	



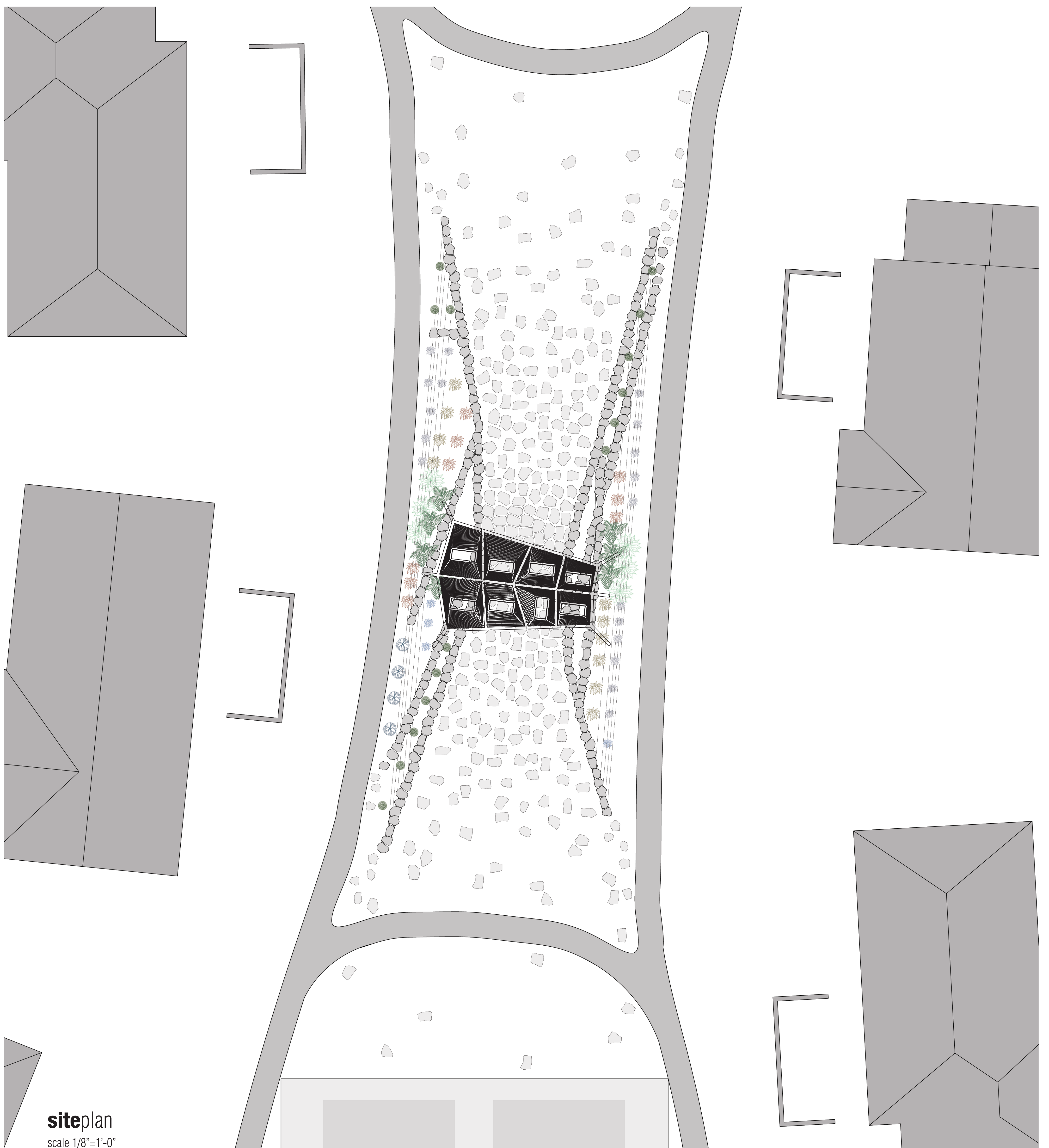
key
● photovoltaic panels
● pv-driven fans



pv+fansection



electrical component map



plantpalette

Aloe X (Blue Elf)

Mature Size:	18" h x 2' w	Flower Color:	Coral
Sun:	Full sun, Part shade	Flower Season:	January - April
Water:	Low	Foliage Color:	Blue green
Growth Rate:	Moderate	Foliage Texture:	Smooth
Hardiness:	20F	Evergreen:	Evergreen
Propagation:	Offsets/Cuttings	Thorns:	Not significant



Aloe vera (Medicinal Aloe)

Mature Size:	30" h x 30" w	Flower Color:	Yellow
Sun:	full sun, part shade	Flower Season:	May - June
Water:	Low	Foliage Color:	Light green
Growth Rate:	Moderate	Foliage Texture:	Smooth
Hardiness:	20 F	Evergreen:	Evergreen
Propagation:	Offsets/Cuttings	Thorns:	Not significant



Aloe succotrina (Fynbos Aloe)

Mature Size:	30" h x 4' w	Flower Color:	Red-Orange
Sun:	Full sun	Flower Season:	November - February
Water:	Low	Foliage Color:	Medium green
Growth Rate:	Moderate	Foliage Texture:	Smooth
Hardiness:	25 F	Evergreen:	Evergreen
Propagation:	Offsets/Cutting	Thorns:	Not significant



Euphorbia antisyphilitica (Candelilla)

Mature Size:	25" h x 15" w	Flower Color:	Red or Cream
Sun:	Full sun	Flower Season:	April - July
Water:	Low	Foliage Color:	Medium green
Growth Rate:	Moderate	Foliage Texture:	Smooth
Hardiness:	10 F	Evergreen:	Evergreen
Propagation:	Division	Thorns:	None



Opuntia ficus-indica (Indian Fig)

Mature Size:	15' h x 6' w	Flower Color:	Red, Orange, Yellow
Sun:	Full sun	Flower Season:	April - June
Water:	Low	Foliage Color:	Medium green
Growth Rate:	Moderate	Foliage Texture:	Medium
Hardiness:	15 F	Evergreen:	Evergreen
Propagation:	Woody cutting	Thorns:	Yes



Agave sisalana (Sisal)

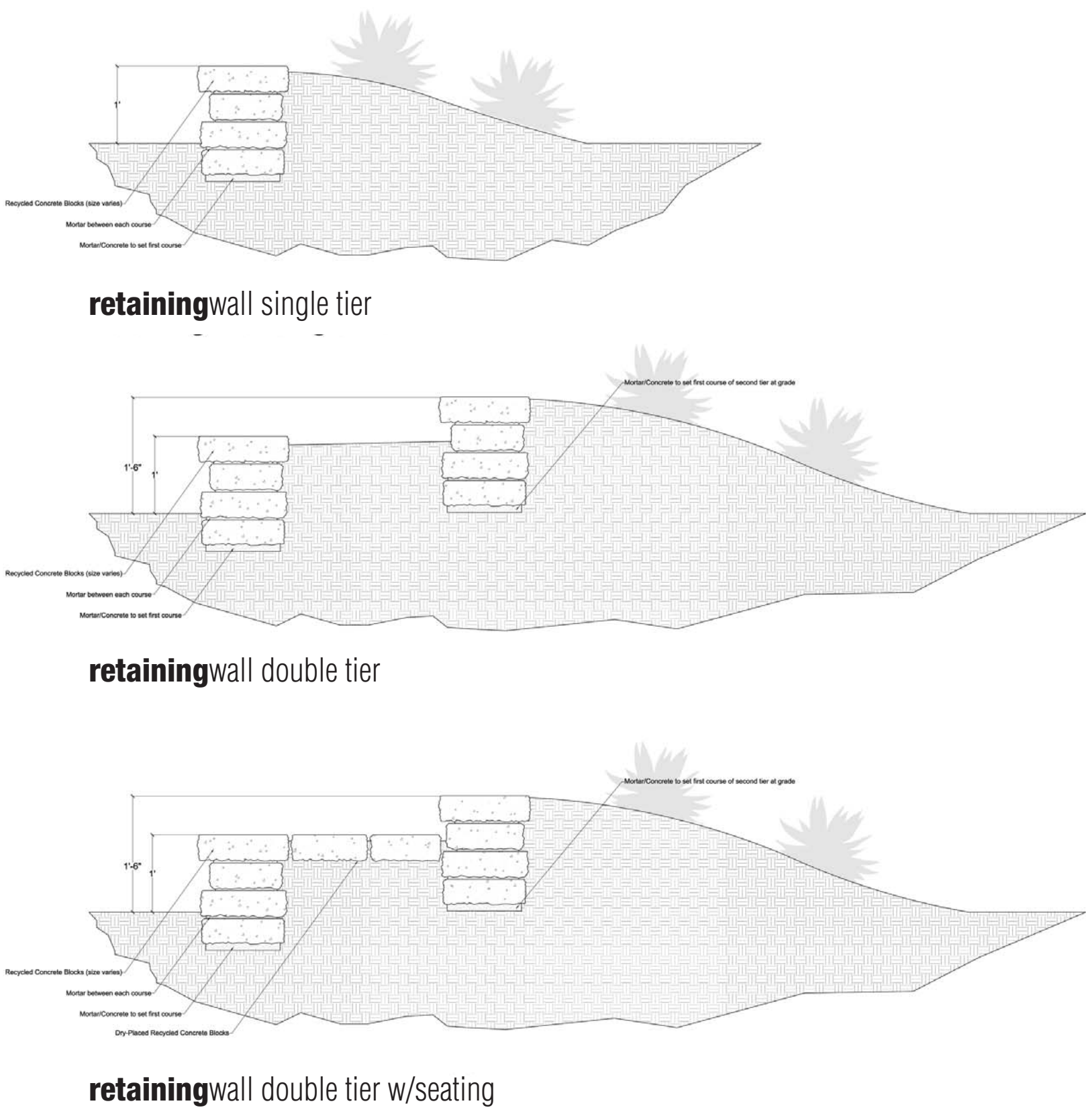
Mature Size:	5' h x 5' w	Flower Color:	Green yellow
Sun:	Full sun	Flower Season:	Century plant
Water:	Low	Foliage Color:	Blue gray
Growth Rate:	Moderate	Foliage Texture:	Smooth
Hardiness:	25 F	Evergreen:	Evergreen
Propagation:	Offset	Thorns:	Terminal spine



Encelia farinosa (Brittlebush)

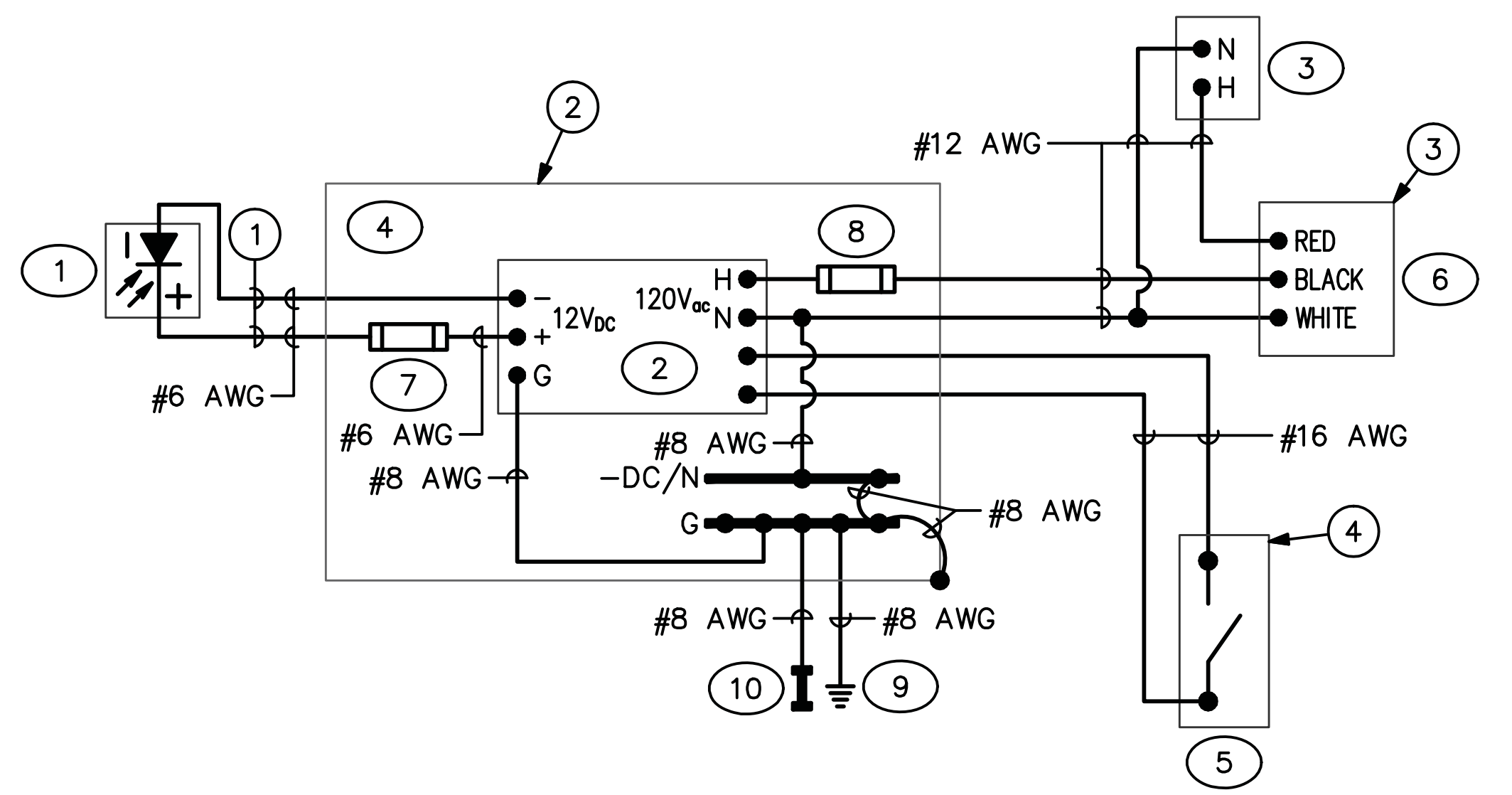
Mature Size:	3' h x 5' w	Flower Color:	Yellow
Sun:	Full sun	Flower Season:	March - November
Water:	Low	Foliage Color:	Blue gray
Growth Rate:	Fast	Foliage Texture:	Medium
Hardiness:	25 F	Evergreen:	Evergreen
Propagation:	Seed/Cutting	Thorns:	none



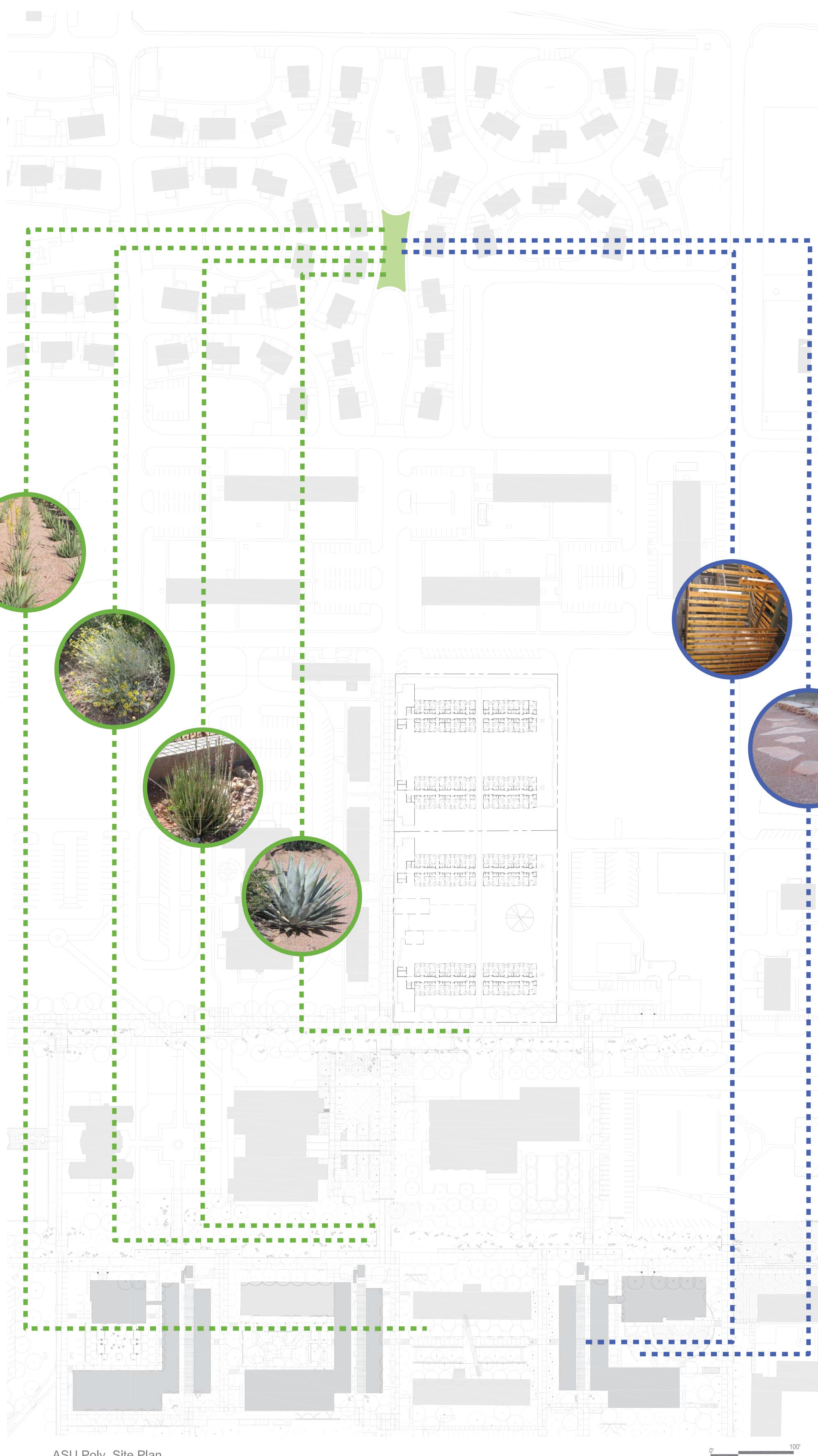


DETAIL a3

prototype electric



campus continuity

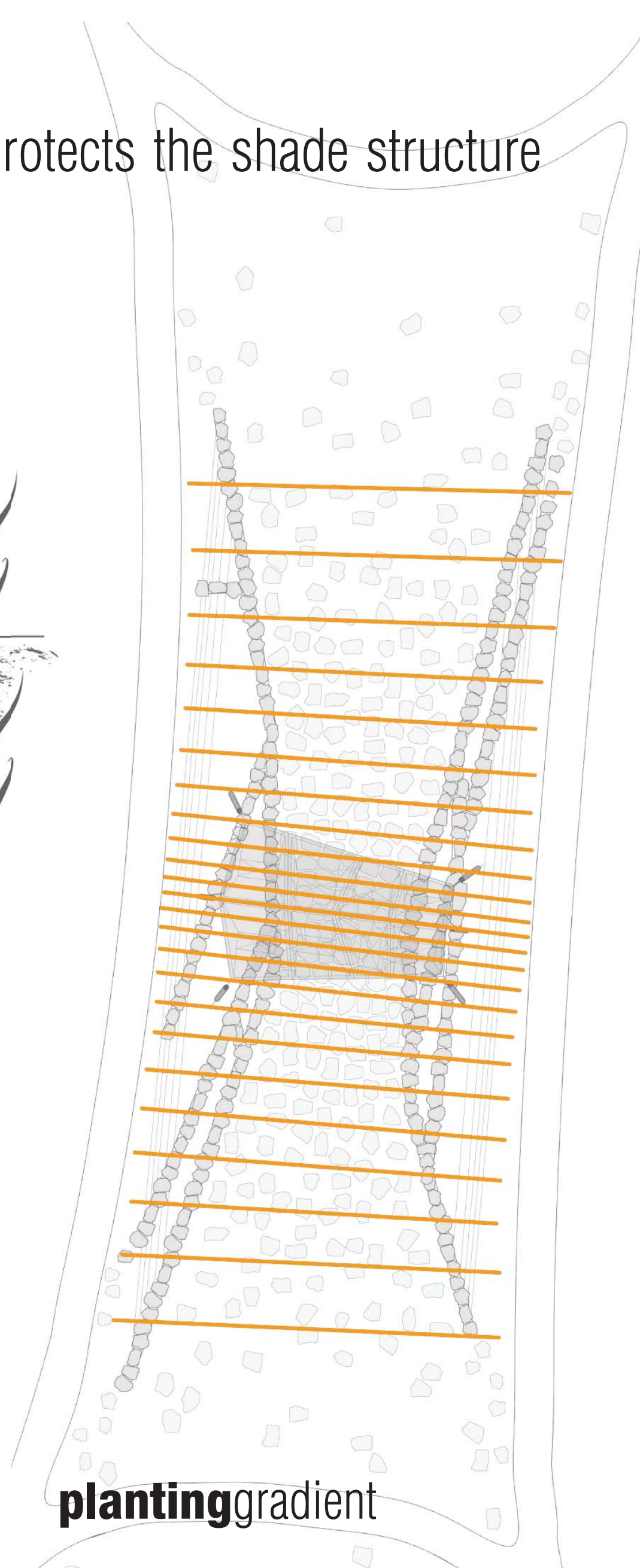


express a sense of regionalism for both the polytechnic campus and the sonoran region.

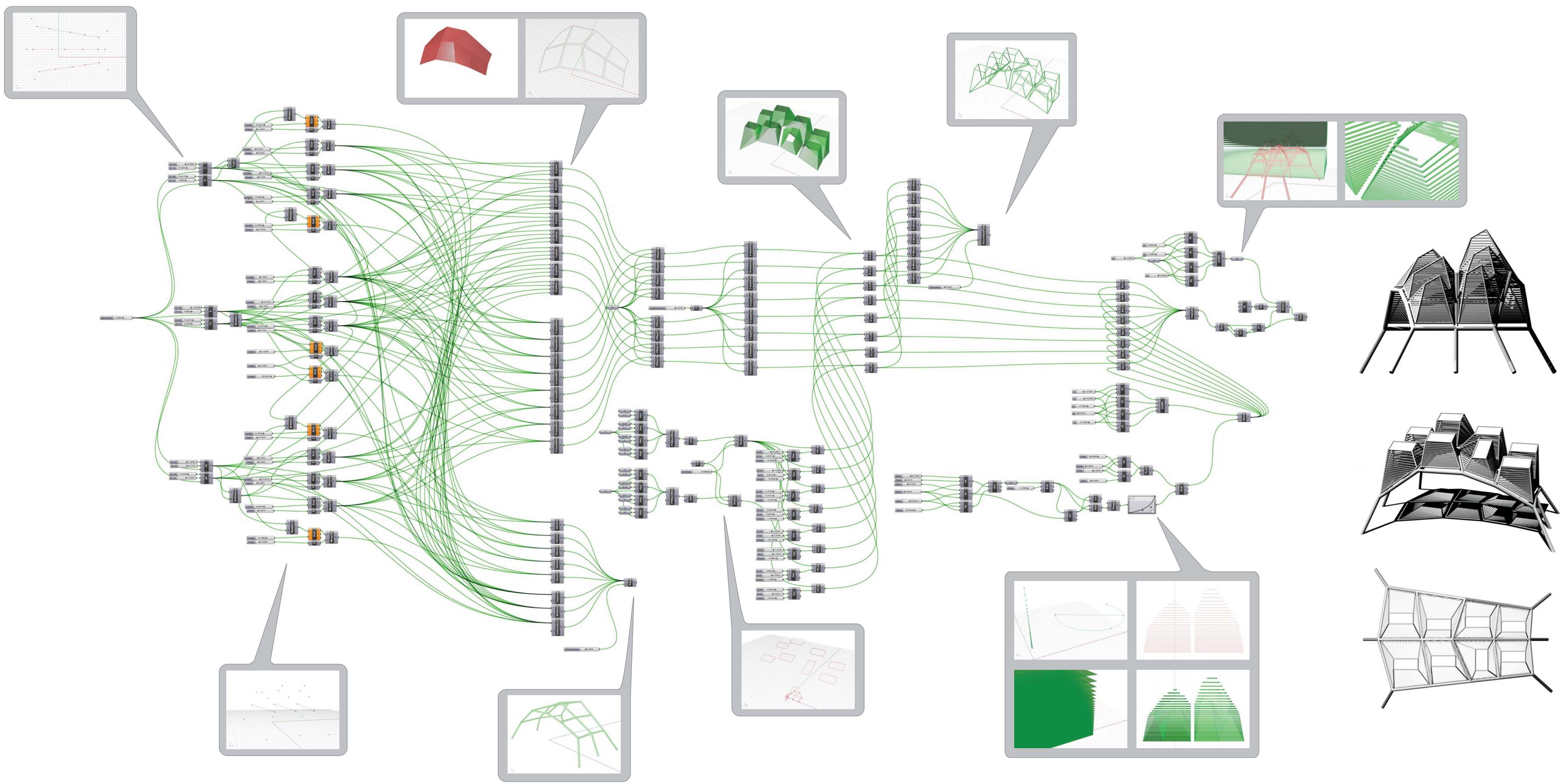
build a landscape that assimilates the shade pavilion to site context.

provide a planting scheme that allows residence to have a free garden.

create a planting plan that protects the shade structure from climbers.



parametric model



prototype evolution

