MAKING SPACE

Cal Poly San Luis Obispo Architecture Department
Thesis Prospectus | Professor Sandy Stannard

PREAMBLE

The terminology "making space" has layered meanings and is used here intentionally. In terms of architecture, making space is what architects do. The quality and meaning of that space may vary, depending on who is making and who is looking; but we make space. In a philosophical sense, Lefebvre observes: "Space is not a scientific object removed from ideology or politics. It has always been political and strategic. There is an ideology of space. Because space, which seems homogeneous, which appears as a whole in its objectivity, in its pure form, such as we determine it, is a social product." In a sociological sense, we may make (or hold) space for one another to express ourselves, to have empathy, to be listened to and understood, with support and without judgement. In this thesis sequence, we will explore these multiple meanings: making meaningful, exquisite, responsive and responsible architectural space; exploring the social, political, economic and environmental implications of space-making; and also making space for you as emerging designers to explore your place in the world of architectural design.

To extend this a bit further, I also propose that "making space" is a lifelong pursuit, for us to ruminate on our own as well as our society's collective shortcomings, with a resolve to be more conscious, to be more active and to awaken this same resolve in others. Our conventional methods of response require scrutiny as we seek a more equitable, just and inclusive way forward. I look forward to exploring with you what that means in relation to architecture, as we explore how the constructs of the built environment have aided and abetted social, cultural, political, and racial disparity. It is important to recognize that the injustices inflicted on marginalized communities and the planet are interconnected. This work will require us to re-think our assumptions about the design of our public and private spaces, inside and out. I provide a proposed framework for approaching this necessary work in the prospectus pages that follow.

Berkeley Passenger Ferry Terminal

Fresno Wellness Center

Nature doesn't have a design problem. People do....Instead of using nature as a mere tool for human purposes, we can strive to become tools of nature who serve its agenda too.....What would it mean to become, once again, native to this place, the Earth - the home of all our relations?
- William McDonough and Michael Braungart, *Cradle-to-Cradle*

Pursuing Responsive, Responsible Design

Humans and all their associated artifacts are an immutable fact in nature. However, on our current consumptive trajectory, we are on a collision course with the environment. If we accept the definition of sustainability as "the triple bottom line" (i.e., the three E's of "economy, ecology, equity" OR the three P's of "people, planet, profit"), at its practical root, sustainable architecture is about how we come to terms with our place in nature. (We might also overlay onto our sustainability definition Vitruvius' maxims of "utilitas, firmitas, venustas" to remind ourselves of the timelessness and applicability of these lessons).

Faced with increasingly diminishing resources, creating appropriate architectural environments is beyond choice: it is essential. It should also be abundantly clear that architecture serves a role in society's social construct: buildings have meaning, they are the physical manifestation of a society's ideals. Architects are thus strategically poised to positively intervene to effect change in our culture's insupportable hegemonic and consumptive trajectory. With this resurgent need for ecologically and socially responsive design, designers no longer have the luxury to ignore the affects of their architectural creations on the global environment and its inhabitants.

Buildings are the mediator between man and nature; the designer is the artistic intermediary charged with creating a responsive, responsible architecture.

Homeless Youth Refuge, Portland

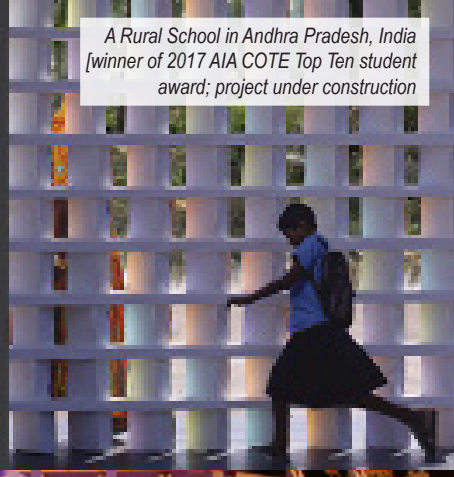
Buildings are never just buildings. Buildings respond to the political foundations of the institutions that fund, envision, and desire them. Buildings are physical manifestations of the ideologies they serve. Although a naively detached or romantic position may be able to render buildings as semi-autonomous artifacts capable of sheltering or enveloping space, this depoliticized attitude overlooks their historical and material relationship to regimes of violence and terror. Buildings can protect but they can also confine, instill fear, crush, oppress. Buildings can school, and foment hospitality but can imprison and torture. Buildings can be tools for ethnic segregation, cultural destruction and historical erasure. Buildings can reinforce the status quo and aide in the implementation of settler-colonial desires of expansionism. An anti-racist democratization of access is only possible through the decolonization of buildings and public spaces. Architects should be aware of the programs of the buildings they design and be held accountable for doing so.
http://waithinktank.com/Anti-Racist-Manifesto

Treasure Island Cancer Treatment Center

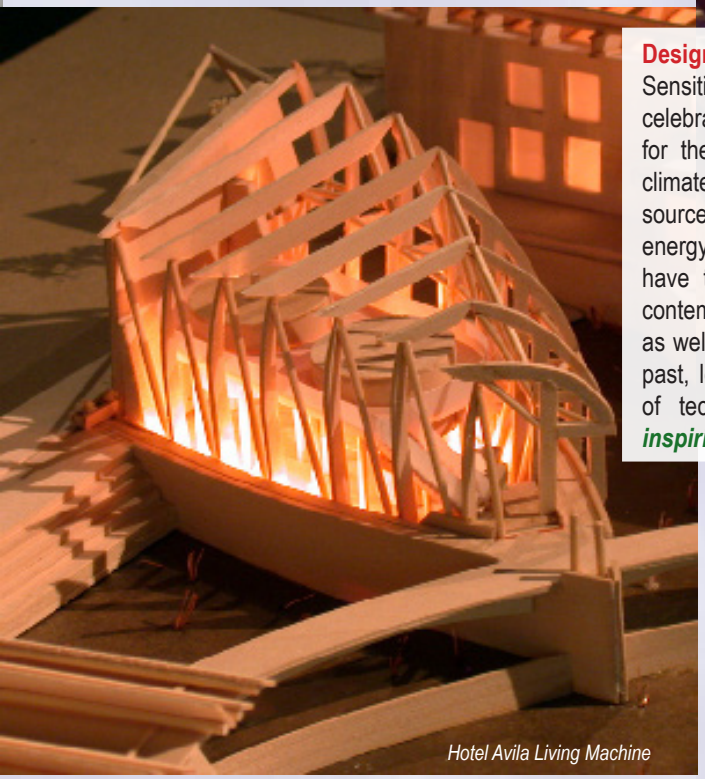
In this context, ideas that will be considered in this thesis sequence will include:

Design for the Social-Cultural-Economic-Political Context

All architecture is physically contextual (whether consciously conceived or not); it is also always political (whether consciously calculated or not). It is impossible to engage in responsive/ responsible design without addressing the socio-economic, political and cultural context, including race. "Intersectional Environmentalism" advocates for a response to and the protection of both people and the planet. The primary goal should be to make architectural proposals that are ***strategic rather than reactive, appropriate to the space and time of the given situation.***



A Rural School in Andhra Pradesh, India [winner of 2017 AIA COTE Top Ten student award; project under construction



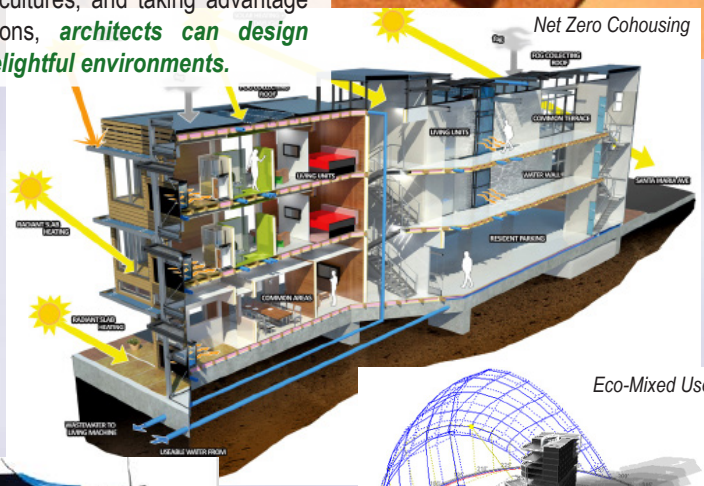
Hotel Avila Living Machine

Design With Respect for the Ecological Context

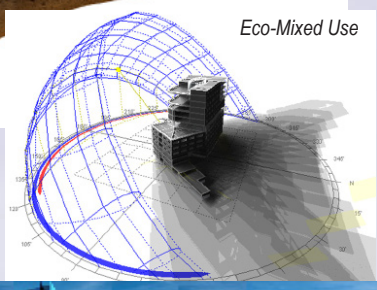
Sensitive architectural solutions respect and should celebrate the environment. This includes an appreciation for the local (geographies, bioregions, seasons, micro-climates, etc.) as well as a response to the global (energy sources and resources, etc.). Because buildings are energy consumptive, this is an arena in which architects have the opportunity to innovate, taking advantage of contemporary parametric tools in order to create stunning as well as responsive design solutions. Learning from the past, learning from other cultures, and taking advantage of technological innovations, ***architects can design inspiring, resourceful, delightful environments.***

Santa Barbara Transit Center

Net Zero Cohousing



Eco-Mixed Use



Design With Integrity

Even the best sustainably designed environment will not be useful unless it elicits "***delight***" in its users. Creating spaces that allow ***all people*** to experience joy, health, comfort, and well-being is essential. Exploring equal access, material tactility, thermal delight, and inspiring luminous environments are a few of many methods to this end, moving toward a multi-sensory architecture.

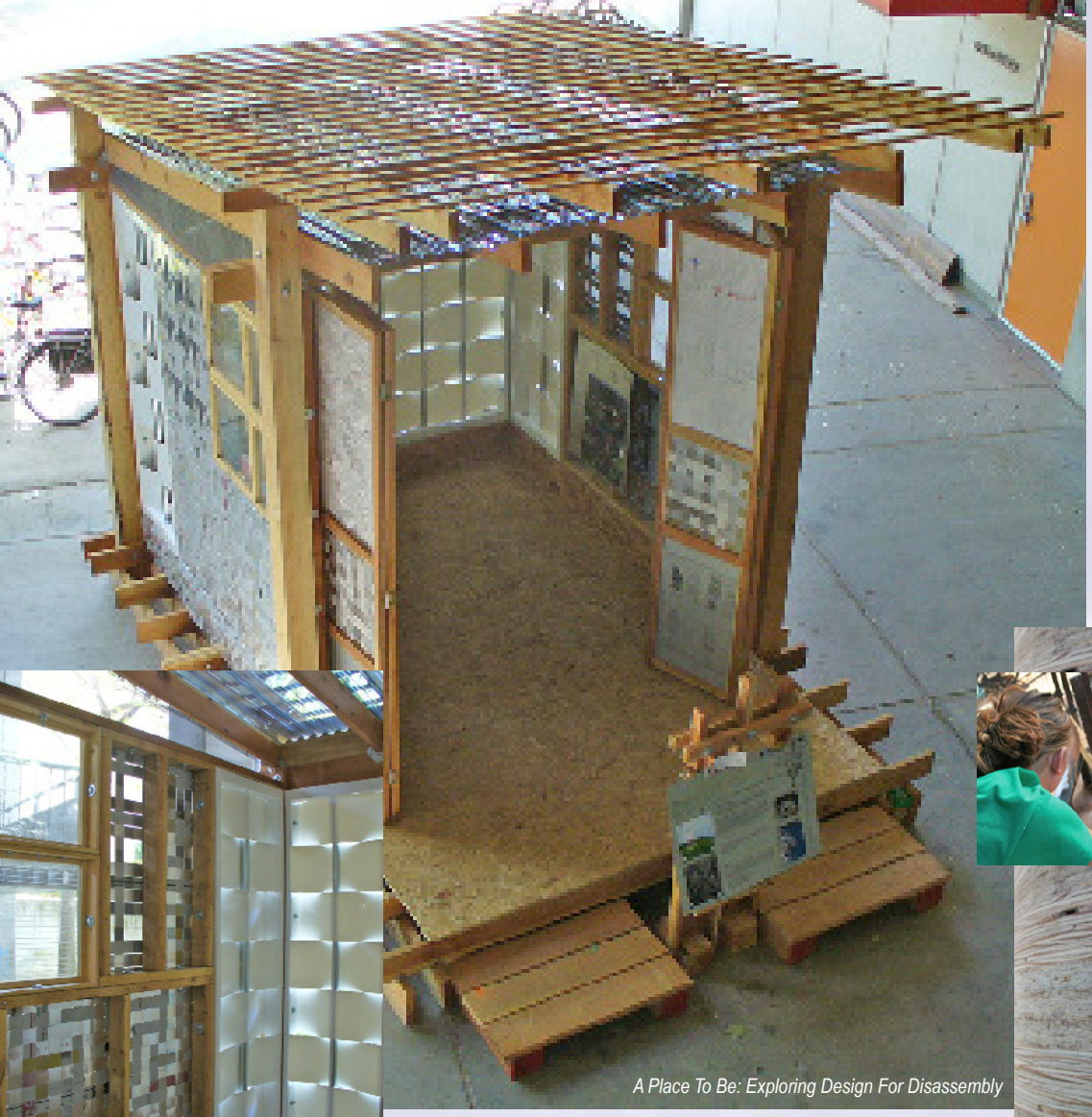
Healing Through Laughter, San Luis Obispo

Re-Connect: Nature to Man, Lake Tahoe

Landscape Spectrum

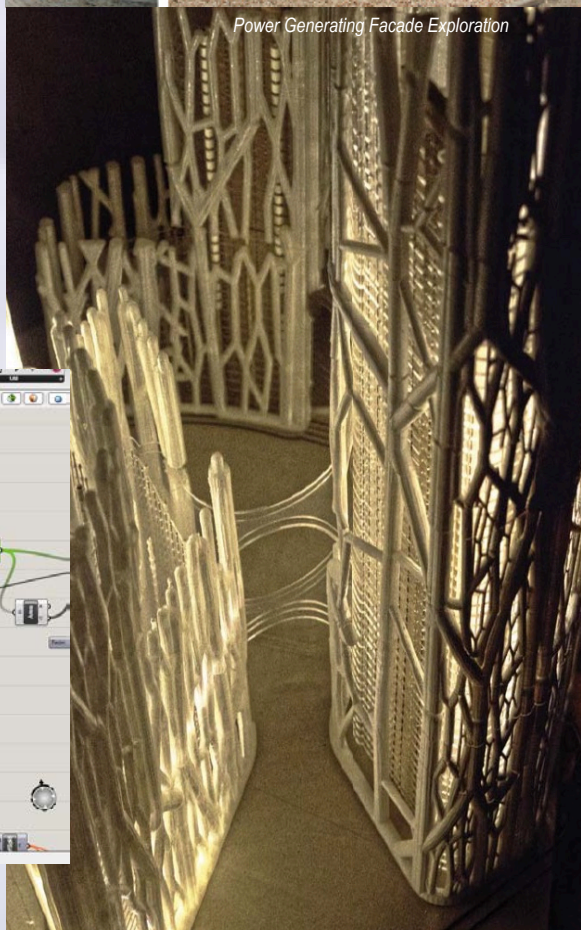
Design Inspired by Nature

Materials are the basic building blocks of an architect's language. Exploring the ***poetic potential of structure and materiality*** is the goal here. Further, it is our responsibility to understand the pivotal cradle-to-grave-to-cradle issues related to material choices, with consideration for the energy consumption as well as societal inequities involved in extraction as well as recycling. In our work together, we will also explore issues of bio-inspiration and biophilia as design informants and drivers.



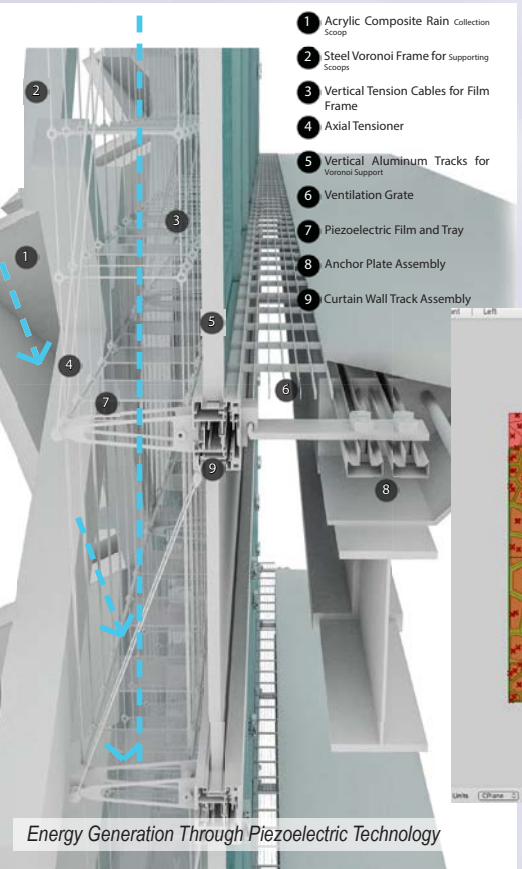
A Place To Be: Exploring Design For Disassembly

Power Generating Facade Exploration

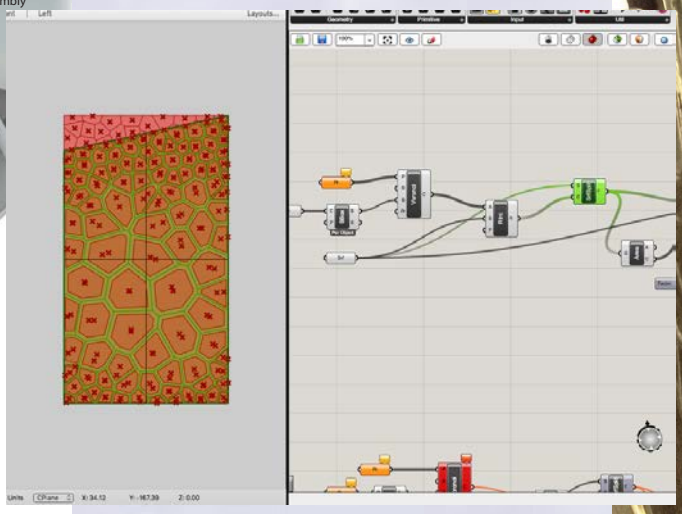


Design Informed by Technology

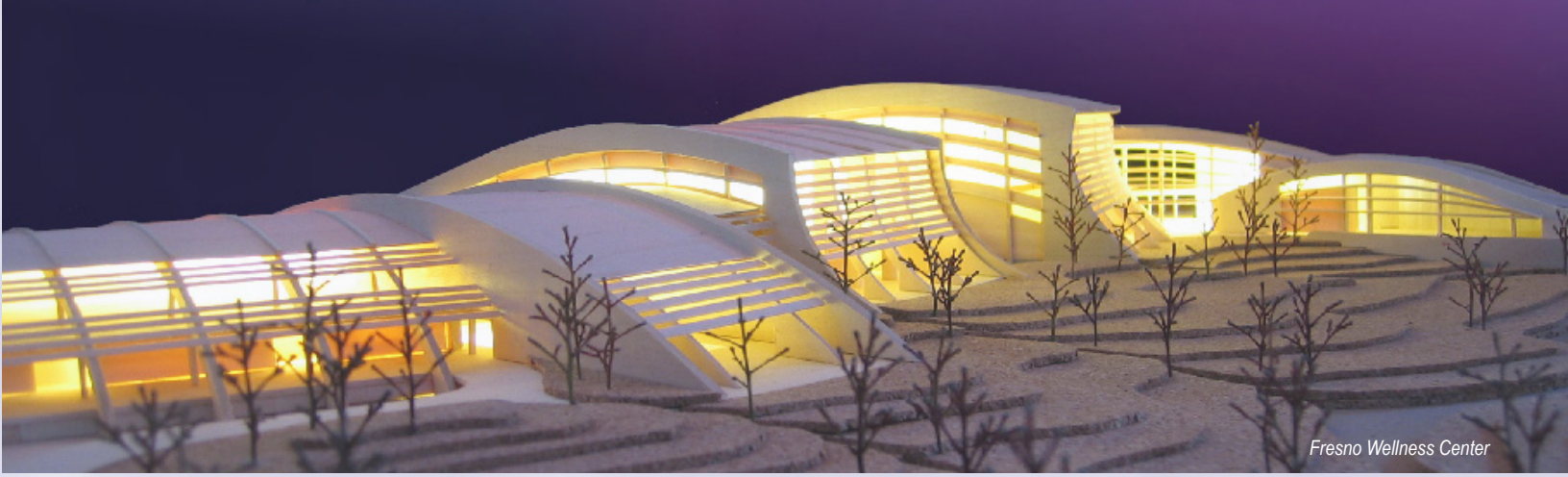
The ***appropriate use of technology*** should be the aim of any project. This includes not only the technology used in the design process but also in construction, operation, and maintenance as well as issues of equal access. Use of appropriate simulation tools for design as well as performance will be part of studio activities.



Energy Generation Through Piezoelectric Technology



Parametric Studies for an Air Purifying Facade System

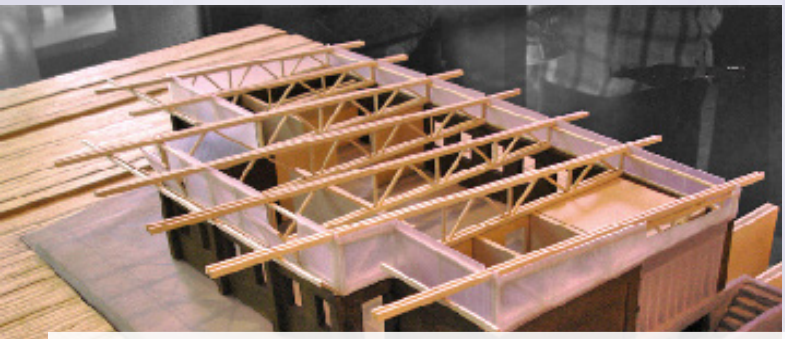


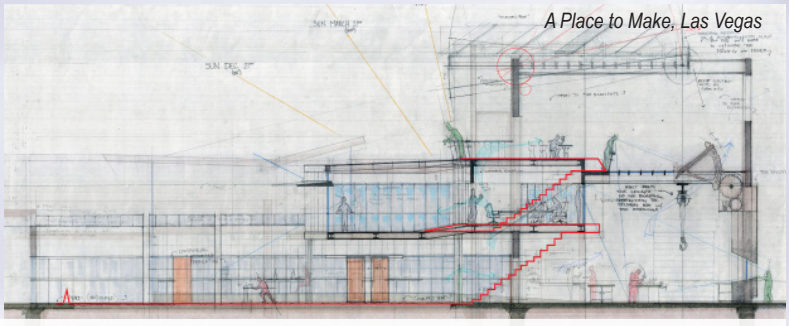
Fresno Wellness Center

Wellness Center, Idaho

Design with Sensitivity

Place-making is essential in the creation of meaningful architecture, no matter what the scale. Scale of settlement patterns; equity and inclusion; and appropriateness of setting are vital issues in any successful architectural endeavor. The specifics of any given place, its genius loci, must be understood and respected. In addition to phenomenology and place, ***creating symbiotic relationships with the land should be the goal of all of our built artifacts.***





A Place to Make, Las Vegas

Design Integration and the Pursuit of Intersectionality

The ultimate aim of this topical sequence is to understand how our creative work reflects upon, questions, and relates to the broader field of architecture. Are we advancing the discipline or simply replicating the past? Are we improving our relationships with one another and with nature, or settling for the status quo? Are we creating stimulating, responsible environments or ...? To paraphrase Corbusier, we should aim to ***make the bad difficult and the good easy.*** Naturally, these topical issues are not discreet; they should overlap and intersect. The iterative design process will be a guiding principle. "Making Space" projects might develop in a multitude of scales and uses.

Project HOPE: Design/Build AIDS Clinic, Africa

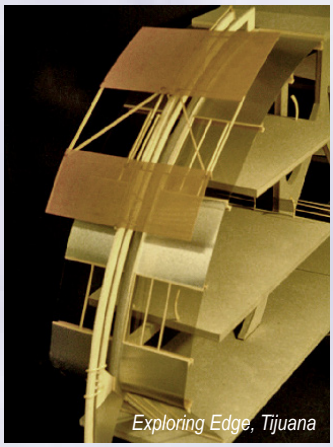
Planning in the Present for the Future

Buildings are among the more durable artifacts that a society produces with causal affects on the environment that far outlive their makers. As thoughtful, educated designers, we are the stewards not only of creating meaningful spaces for people but also for respecting the ecological and societal settings of these places. Man's existence within the earth's fragile ecosystems (of which we are a part) calls for sensitive, responsive, appropriate design.

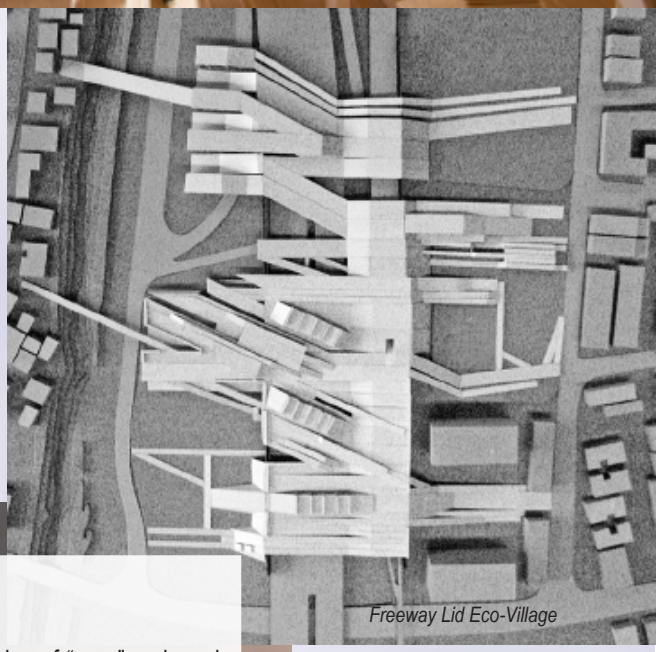
It is our responsibility to search for a fitting co-existence, a symbiotic relationship that neither impoverishes the planet nor our human experience on it.

Multi-Modal Transit Center, LA

Wellness Center



Exploring Edge, Tijuana



Freeway Lid Eco-Village

Schematic Schedule

Fall Thesis Seminar: "Making Space"
What is the Thesis (and development of a dialectic). Critical position explored through a series of "peer" reviewed abstracts and presentations. Critical readings; precedent and program research; COTE Top Ten Toolkit; bio-inspiration. Argumentative writing/GWR.

Design Studio Fall: Ideation
Explore schematic ideas through a series of topical charrettes. Site modeling and analysis. Conceptual design proposals and material/form/biophilic/light explorations. Full-scale design/build experiment(s). Fieldtrip if possible. Submission #1 thesis "book." Juried reviews.

Design Studio Winter: Development
Re-evaluation of conceptual ideas. Demonstrable development of design proposal(s).
Submission #2 of thesis "book." Juried reviews.

Design Studio Spring: Synthesis
Completion of thesis. Submission of #3 thesis "book." Juried reviews and final reviews/exhibition.

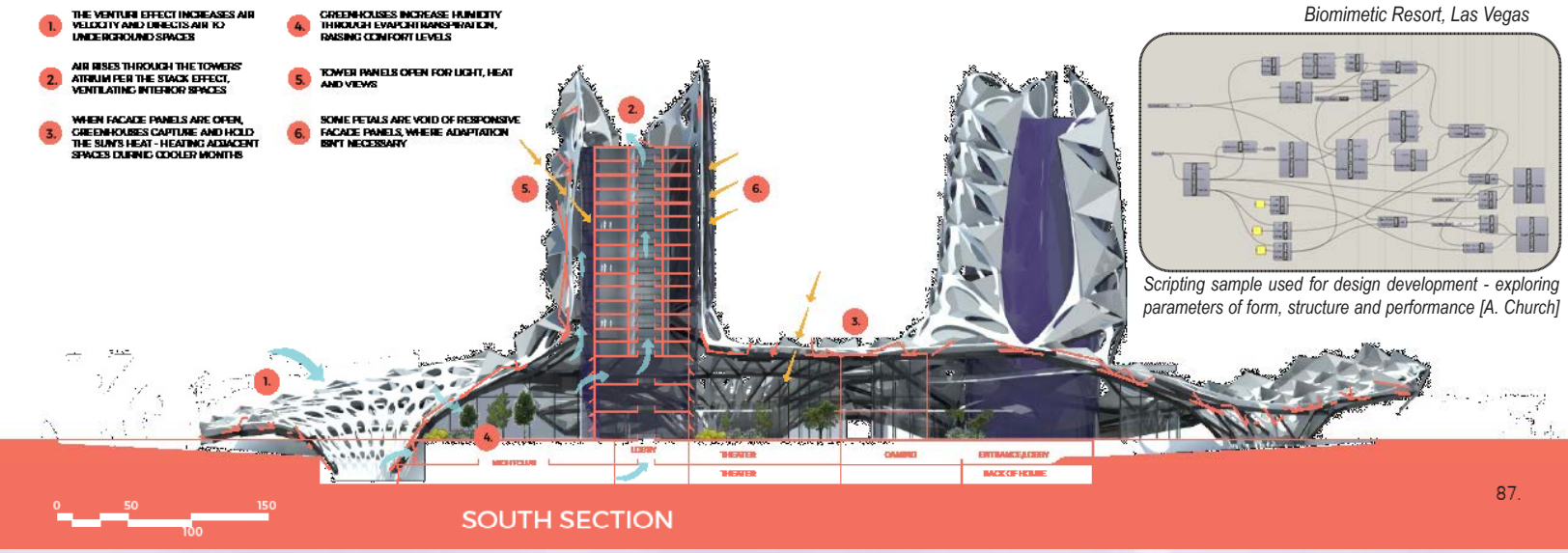
This is potentially one of the most challenging periods of architectural innovations in history. While many of the established architects today seem intimidated by the accelerating momentum of change – fearing their stylistic commitments may be under attack – there is no reason why the environmental revolution cannot be welcomed as the threshold of a great creative era. Here is an opportunity to invent the future on terms that are sociologically and ecologically responsible.

- James Wines, *"The Art of Architecture in the Age of Ecology"*

Treat the Earth well. It was not given to you by your parents.
It was loaned to you by your children.

- Kenyan Proverb

A Place To Be



Biomimetic Resort, Las Vegas

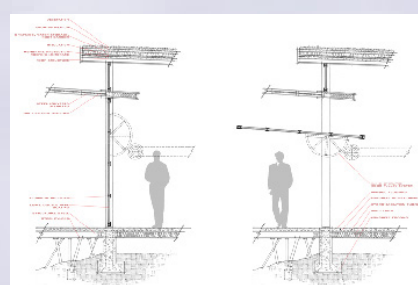
Scripting sample used for design development - exploring parameters of form, structure and performance [A. Church]

SOUTH SECTION

Partial Bibliography

Alexander, Christopher, *A Pattern Language* (New York: Oxford University Press, 1977).
Benyus, Janine, *Biomimicry: Innovation Inspired by Nature* (New York: Harper, 2002).
Carson, Rachel, *Silent Spring* (Boston: Houghton Mifflin Co., 1962).
Drew, Philip, *Touch This Earth Lightly: Glenn Murcutt in His Own Words* (Duffy & Snellgrove, 2000).
Earth Pledge, *Sustainable Architecture White Papers* (New York: Earth Pledge, 2000).
Fernandez-Galiano, Luis, *Fire and Memory: On Architecture and Energy* (Cambridge: MIT Press, 2000).
Fields, Darrell Wayne, *Architecture in Black: Theory, Space and Appearance* (Bloomsbury, 2015).
Gadanho, Pedro, *Climax Change: How Architecture Must Transform in the Age of Ecological Emergency* (2022)
Guzowski, Mary, *Daylighting for Sustainable Design* (New York: McGraw Hill, 1999).
Hosey, Lance, *The Shape of Green: Aesthetics, Ecology, and Design* (Island Press, 2012)
Kwok, Allison, and Walter Gronzik, *The Green Studio Handbook, 3rd Edition* (Architectural Press, 2018).
McDonough, William and Michael Braungart, *Cradle To Cradle* (New York: North Point Press, 2002).
Leopold, Aldo, *A Sand County Almanac* (New York: Oxford University Press, 1989).
Massy, Jonathan, et. al, "Black Lives Matter," http://we-aggregate.org/piece/black-lives-matter
Mau, Bruce, *Massive Change* (London: Phaidon Press, 2004).
Mazria, Edward, "It's the Architecture, Stupid!" (*Solar Today,* May/June 2003, p. 48-51).
Mazria, Edward, *Passive Solar Energy Book* (Emmaus: Rodale Press, 1979)
McHarg, Ian, *Design With Nature* (Garden City: Doubleday/Natural History Press, 1969).
McKibben, Bill, *The End of Nature* (New York: Random House, 2006)
McPhee, John, *The Control of Nature* (New York: Noonday Press, 1989).
Miller, David, *Toward a New Regionalism* (Seattle: University of Washington Press, 2005).
Millet, Marietta, *Light Revealing Architecture* (New York: Wiley + Sons, 1996).
Moe, Kiel, *Convergence: An Architectural Agenda for Energy* (New York: Routledge, 2013).
Orr, David, *The Nature of Design: Ecology, Culture, and Human Intention* (New York: Oxford University Press, 2002).
Pallasmaa, Juhani, *The Eyes of the Skin: Architecture and the Senses* (London: Academy Group Ltd., 1996).
Pawlyn, Michael, *Biomimicry in Architecture* (London: RIBA Publishing, 2016)
Pollan, Michael, *In Defense of Food* (Penguin Press, 2008)
Portoghesi, Paolo, and Erika Young, *Nature and Architecture* (Milano: Skira, 2000).
Reisner, Marc, *Cadillac Desert: The American West and Its Disappearing Water* (New York: Penguin Books, 1993).
Solnit, Rebecca, et al, Ed., *Not Too Late: Changing the Climate Story From Despair to Possibility* (2023)
Thompson, D'Arcy, *On Growth and Form* (London: Dover, 1992).
Van der Ryn, Sim and Stuart Cowan, *Ecological Design* (Island Press, 1995).
Wells, Malcolm, *Gentle Architecture* (New York: McGraw Hill, 1992).

"Plant a Seed; Watch it Grow" Preschool, San Luis Obispo



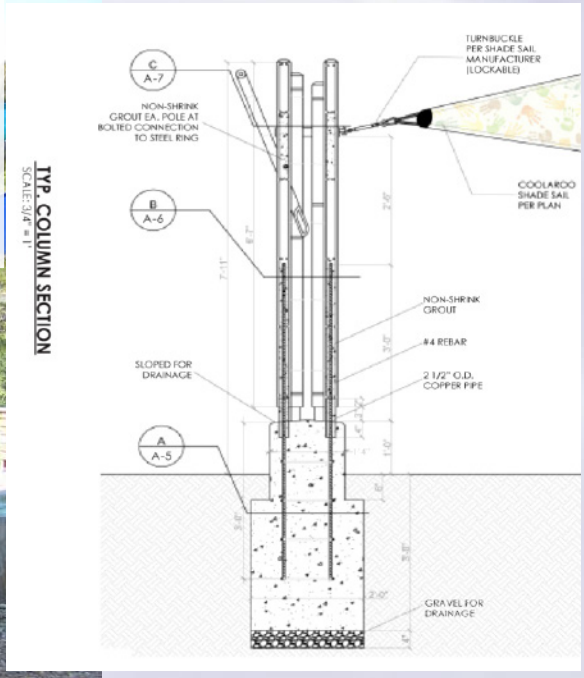
SAMPLE [design|build]

Integration/Intersectionality

A funded proposal for an "outdoor classroom" at a local elementary school, leading to multiple levels of design/ build involvement by thesis students.

Phase 1: Peterson, Montes, Radle
Phase 2: Iliff, Fematt, Robinson, Douglas, Oroudjeva, Leung
Phase 3: Boyce, Bultema, Hicks, Wentz-Fitzgerald, Woods
Phase 4: Bierce, Evans, Gibbs, Rowlee, Stabler, Wang, Wong

Recognized with a USGBC C4 "Green Innovation" Award



SAMPLE [design|build]

Integration

Solar Decathlon 2015: a net-zero energy interdisciplinary design|build project involving many students from multiple disciplines.

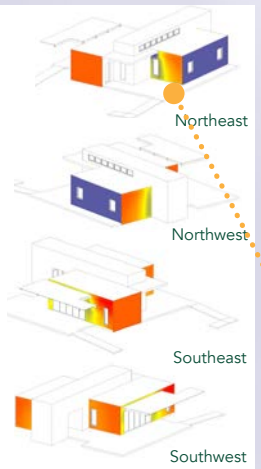
Thesis student: Michael Fletcher

Project managers: Lisa-Marie Mueller, Alyssa Parr

Recognized with a 3rd Place Award [Solar Decathlon] and a 2017 USGBC| Central Coast Green Building Council Design Award

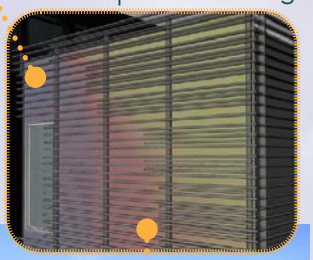
INHOUSE: DESIGNED TO RESPOND TO CLIMATIC DESIGN PRIORITIES

- **organize**: facing south with east/west elongation
- **insulate:** tight envelope with R 30.5 walls + roof; R 24 floor
- **shade:** south windows + envelope
- **ventilate:** operable windows for cross and stack ventilation
- **stabilize:** phase change material dampens temperature swings
- **collect:** solar power as well rain and greywater

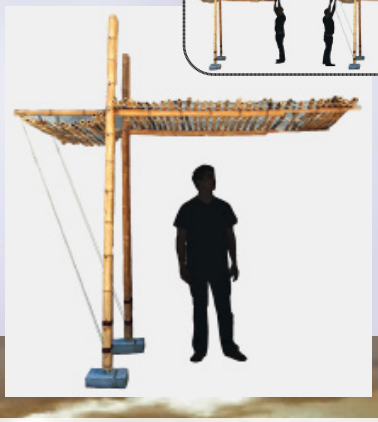


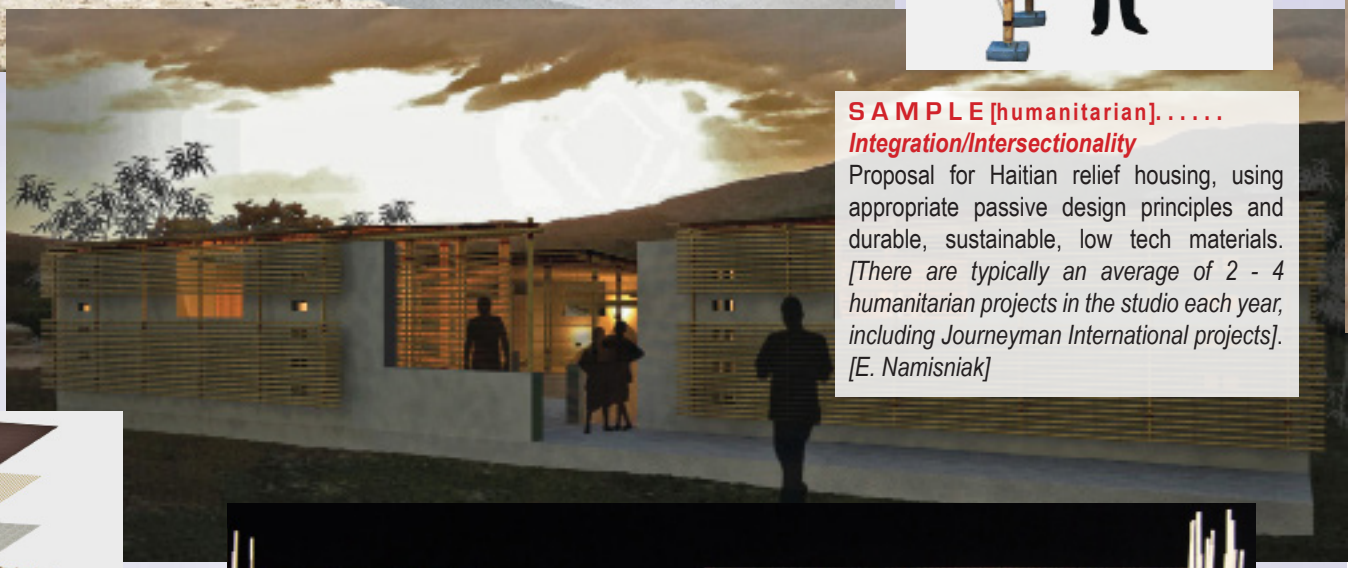
Shading Strategy

Analysis of incident solar radiation informed the design of the exterior screen, intended to shade the envelope as well as subtly demonstrate our solar responsive design

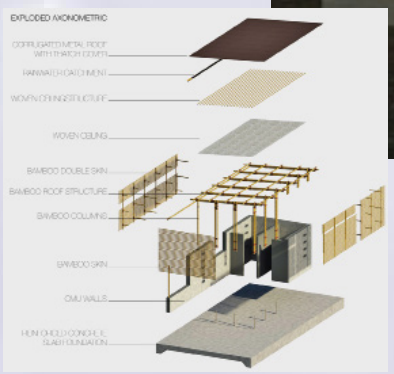


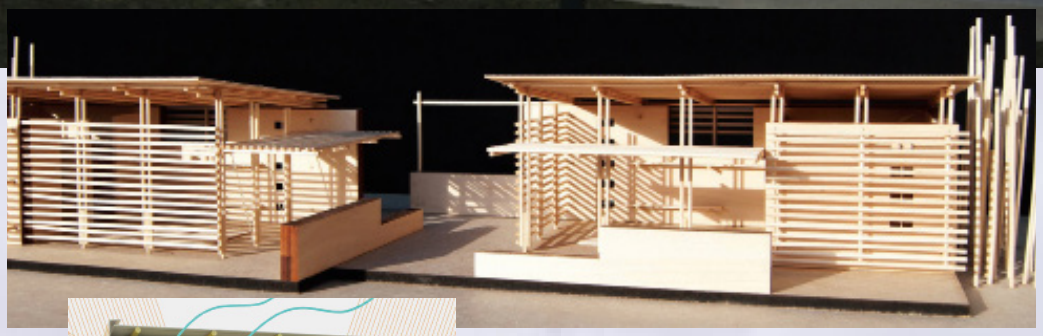
Phase change material used as a thermal stabilizer as well as artistic display (with D. Clifford]

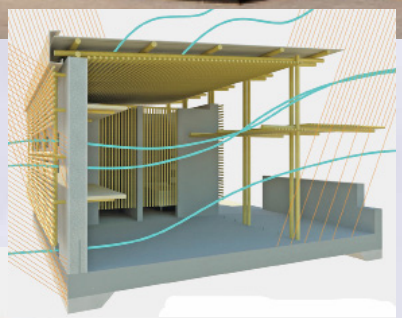


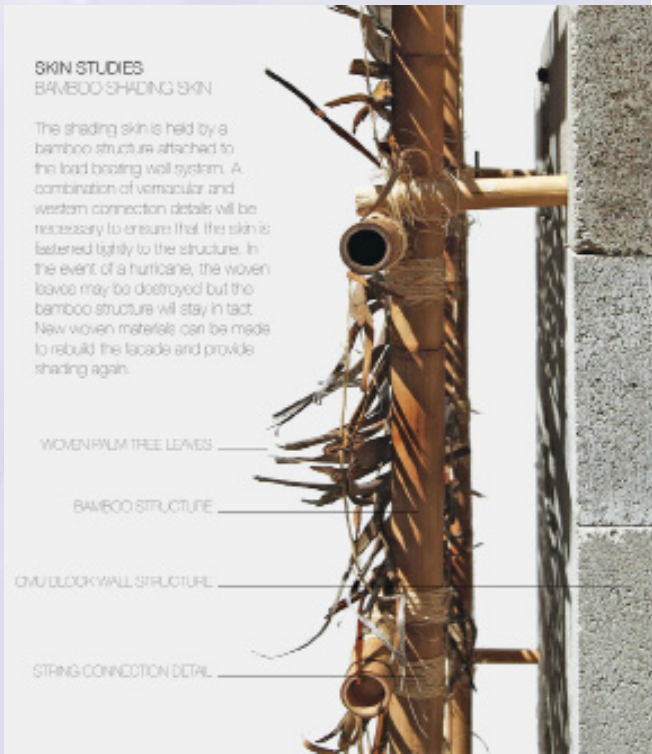


S A M P L E [humanitarian]. . . . . .
Integration/Intersectionality
Proposal for Haitian relief housing, using appropriate passive design principles and durable, sustainable, low tech materials. *[There are typically an average of 2 - 4 humanitarian projects in the studio each year, including Journeyman International projects]. [E. Namisniak]*









SAMPLE

[large scale/ecology]. . . . . .

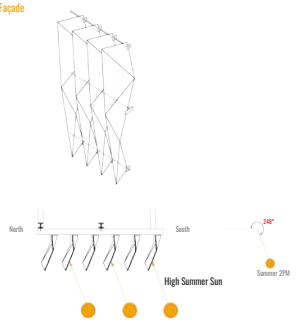
Food | Energy | Water Nexus

Adaptive re-use project in a hot-arid climate focusing on alternative urban farming, water harvesting, energy production and thermal comfort through a performative facade design proposal.

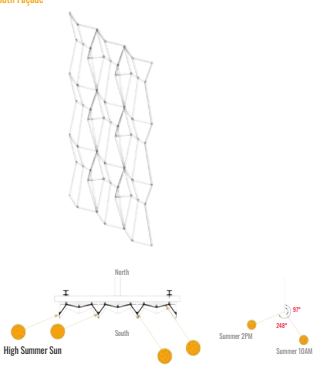
[B. Li, BTES Ed Allen Award]

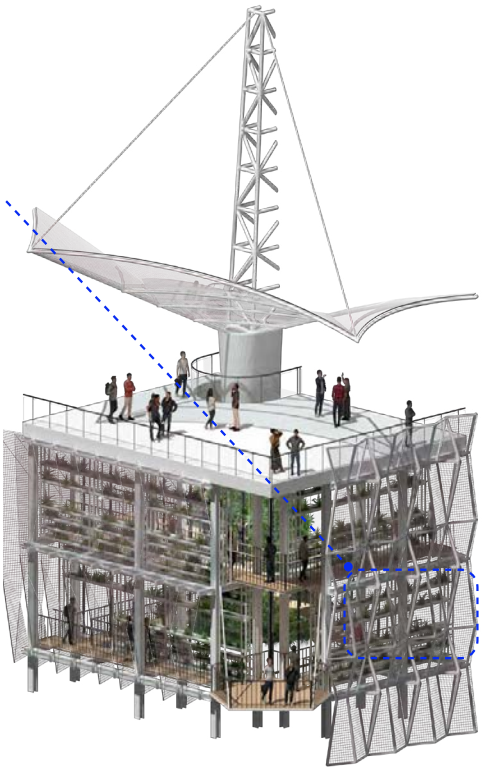
FAÇADE PERFORMANCE ANALYSIS

West Façade

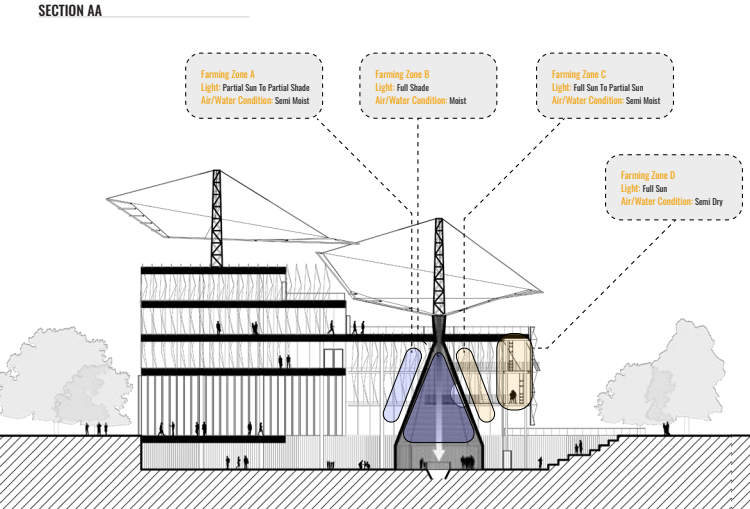


South Façade





SECTION AA



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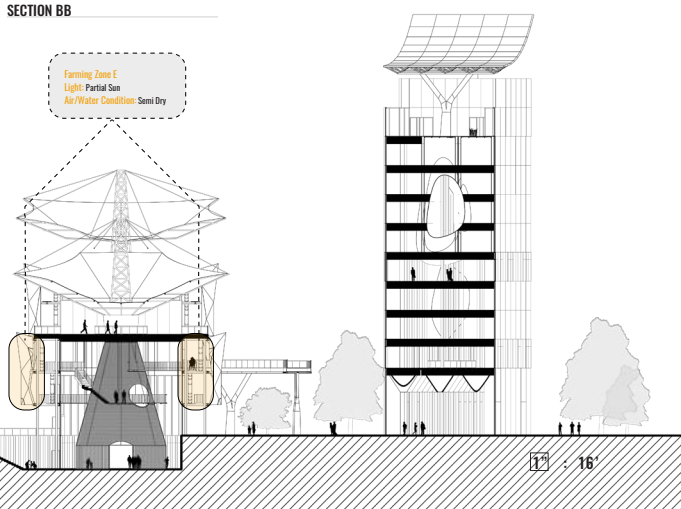
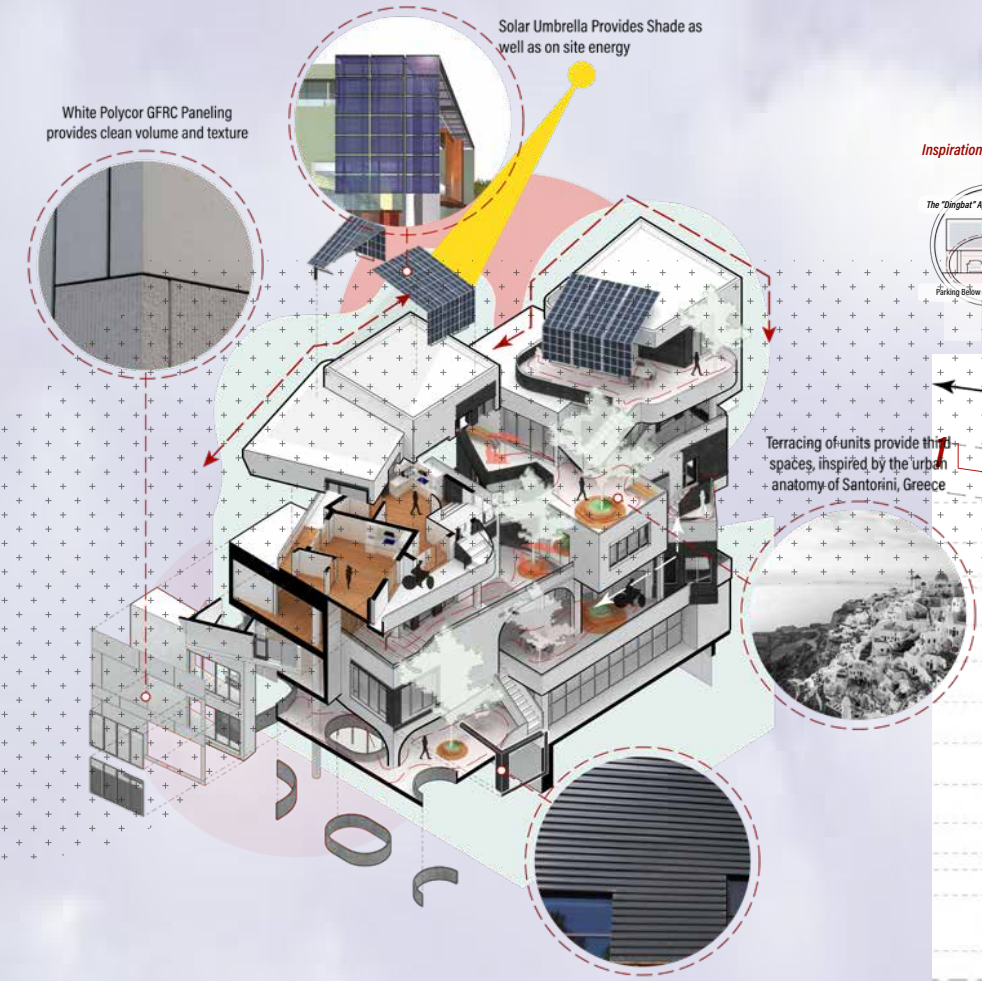
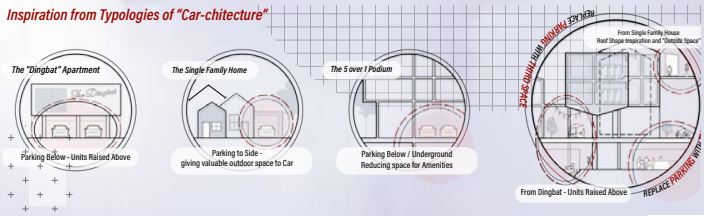


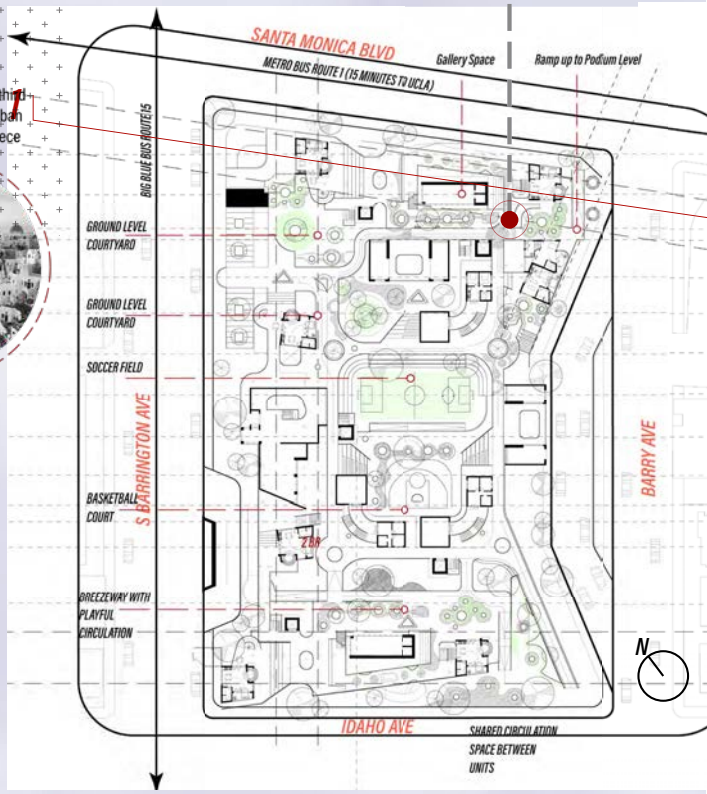
SAMPLE [large scale]

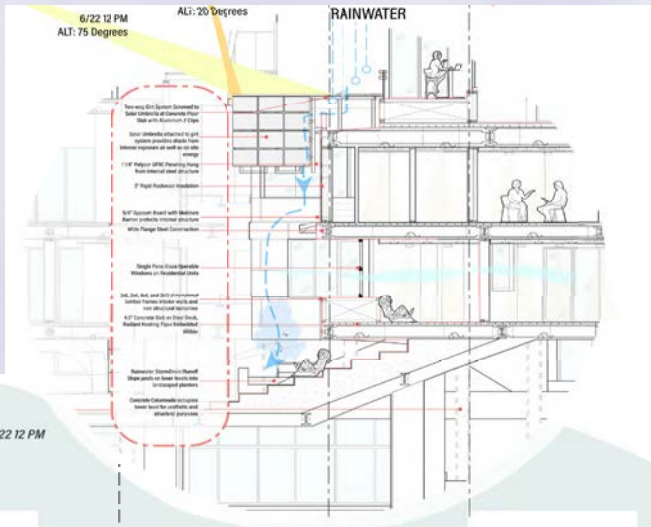
The Urban Condition

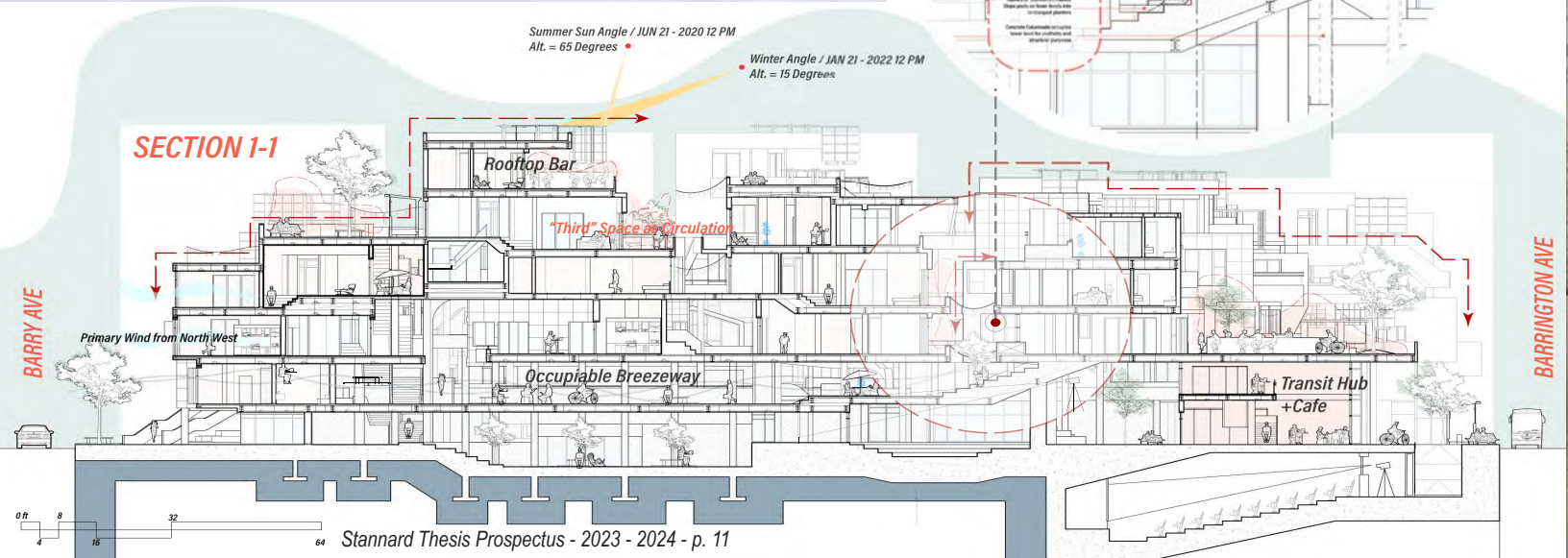
Visions for post-automobile urban living.
Los Angeles, CA.











SAMPLE [materials exploration]. . . . .

Vellum. et cetera

"Vellum" is (typically) a seven week challenge in which students design and construct a full-scale three dimensional piece "in the spirit of" their thesis topic.
Also shown: studio design/build flexible bench/stand project; table and stools.

Rain coat made from re-purposed plastic bags [K. Barton, award winner]

Leaf spring bench from reclaimed/repurposed material [T. Bierce, B. Preston; award winner]

[J. Luty, runner up award]

Storage system, design for flexibility, transportability, and zero waste [D. Aine/M. Rittenour; award winner]

Molded plywood chair, from concept to prototype. Now in production. [B. Preston, award winner]

C. Petrella, Honorable Mention

S. Reddy, Honorable Mention

Collaborative studio design/build table + stools [2022]

Collaborative studio design/build bench + stand for final show [Sandy's 19, 2013]

S A M P L E [performative materials explorations]. . . . . .

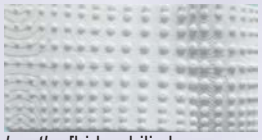
When Performance Informs Design

Inspired by natural systems or by emerging materials engineering, the students used multi-modal methods to explore their design ideas, leaning on parametric design tools in search of superior performance as well as delightful aesthetics (with this tool use representing an emerging chapter in the design professions). *[The work was selected for presentation as part of the AIA/ACSA "Intersections" Symposium (June 2018)]*

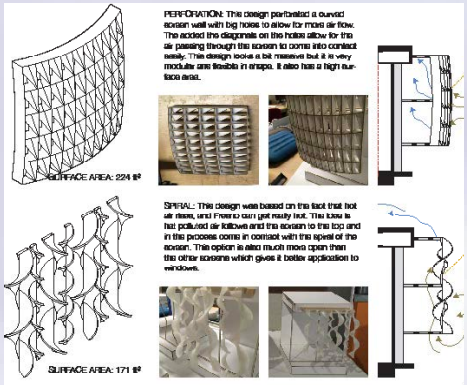
desert moss: [water collects on the leaf tip "awns"]

spider silk: [hydrophilic nanofibrils collect water]

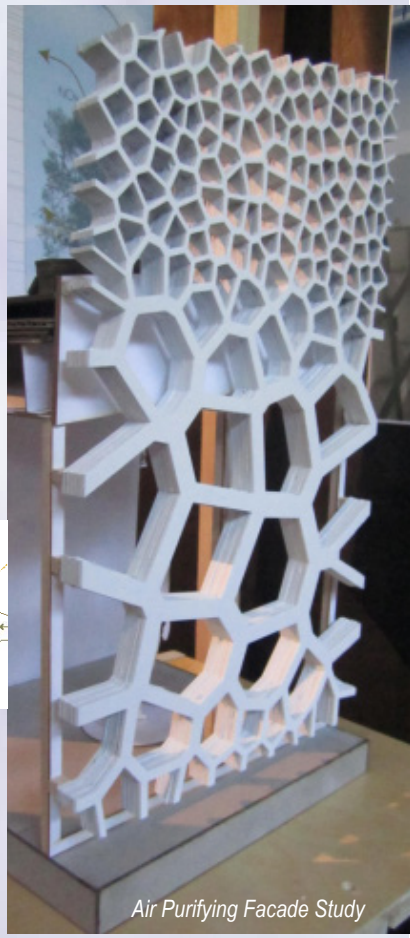
cactus: [cone shaped spines collect water]



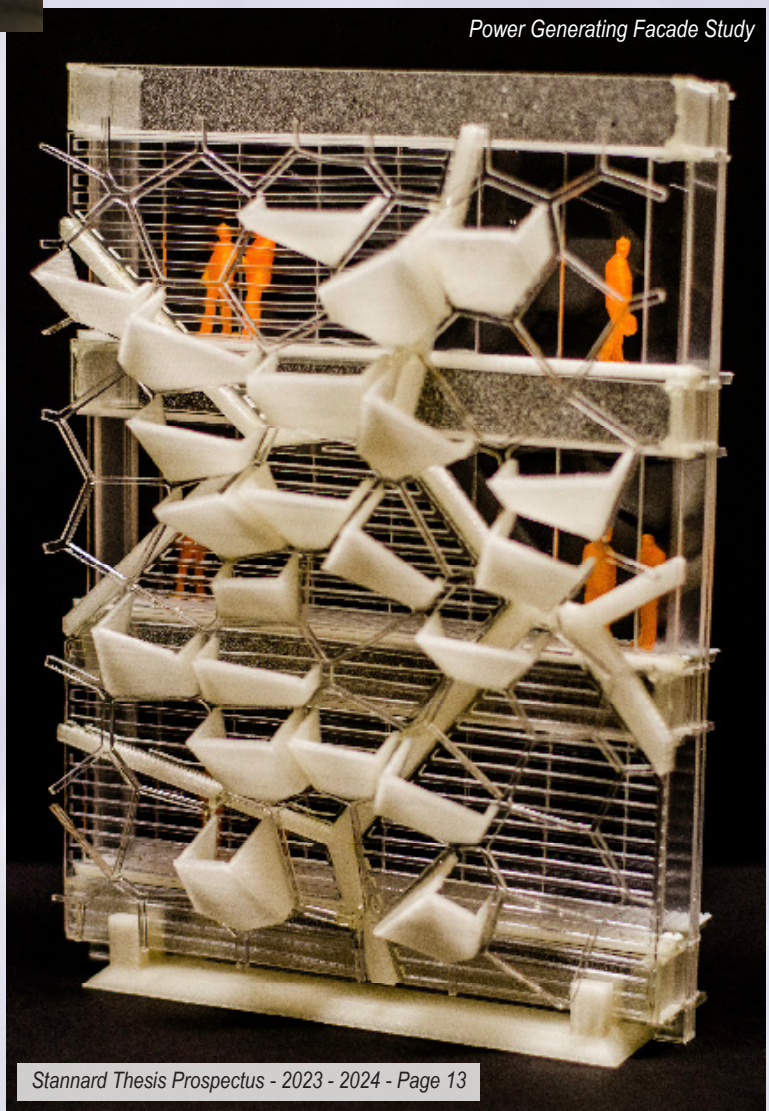
beetle: [hidrophilic bumps collect water]



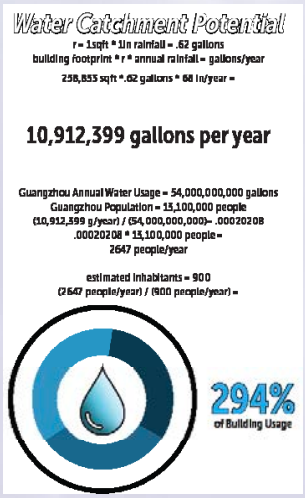
Water Collecting Facade Study

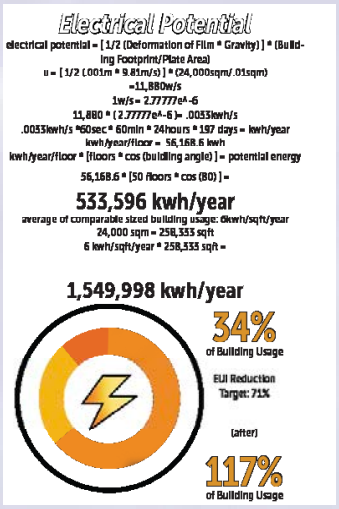


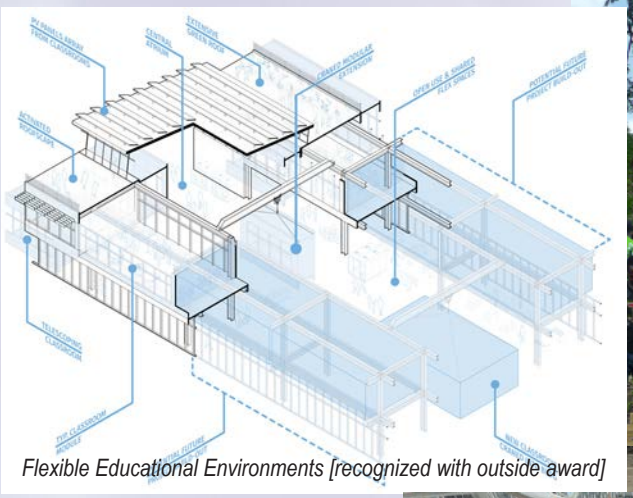
Air Purifying Facade Study



Power Generating Facade Study







Flexible Educational Environments [recognized with outside award]

Cocoa Study Center, Ghana

The Spheres

Islandwood

A Place To Be (Design/Build)

Arbor Study Center

Graphic examples shown depict past Stannard student thesis projects. [Aine, Alameda, Ballachey, Barton, Bjorkman, Burford, Church, Eppink, Fairman, Gaines, Ghishan, Herbst, Holliday, Holmes, Jones, Kith, Koss, Lam, Laurel, Li, Luty, Moser, Nakano, Ngo, Novak, Petrella, Preston, Reddy, Rowe, Stabler, Teich, Valles, Vargas, Wang, Weller, plus Solar Decathlon]

Solar Decathlon 2005 in Washington, D.C.

Sandy Stannard

Sandy studied architecture at UC Berkeley and University of Washington, including study abroad experiences in Italy and Denmark. She is a licensed architect and a LEED Accredited Professional. Sandy has had the opportunity to work on a variety of architectural projects, both public and private, at large and small scales, including design-build projects. She has taught architecture for over twenty years (University of Idaho, University of Washington, and Cal Poly San Luis Obispo), including summer studios in Rome at the Sede di Roma/Penn State. A few years ago she taught at the Universita' di Camerino in Ascoli Piceno, Italia, teaching design studios and materials classes in combined English and Italian. Just prior to joining the faculty at Cal Poly, she worked as a lighting specialist at the Pacific Energy Center in San Francisco. Recently Sandy was awarded three grants to complete design-build "outdoor classroom" projects and installations with thesis students for a local elementary school; this project received a design award as well. In the studio, Sandy has mentored a number of projects focused on global design and humanitarian endeavors, working with Journeyman International (JI), a non-profit that provides opportunities to solve real design problems to be implemented by global non-profits. In addition, Sandy was one of the faculty advisors for Cal Poly's 2005 and 2015 Solar Decathlon projects (an interdisciplinary design/build challenge to design + build a small 100% solar powered residence). Both the 2005 and 2015 Solar CalPoly projects received third place overall in the competition, with a 1st place in architectural lighting [05], 2nd and 3rd in architectural design, and 2nd in buildability/livability/marketability. Two thesis students used the Solar Decathlon for their thesis investigations. Sandy was gratified to receive a Cal Poly Distinguished Teaching Award in 2015 and a Department of Architecture Faculty Merit Award in 2017.