It is my feeling that living things and non-living things are dichotomous...But I feel that if all living plants and creatures were to disappear, the sun would still shine and the rain still fall.
We need Nature, But Nature does not need us.

- Louis Kahn

"Resident" vs. "Inhabitant:" "A resident is a temporary occupant, putting down few roots and investing little, knowing little, and perhaps caring little for the immediate locale beyond its ability to gratify......The inhabitant, in contrast, 'dwells,' as Illich puts it, in an intimate, organic, and mutually nurturing relationship with a place. Good inhabitation is an art requiring detailed knowledge of a place, the capacity for observation, and a sense of care and rootedness."

- David Orr, Ecological Literacy

Study nature, love nature, stay close to nature. It will never fail you.

- Frank Lloyd Wright

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

Responsive, Responsible
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. Ecological luminaries such as architect Ed Mazria have re-analyzed the statistics, revealing that architecture with all of its associated technologies and materials consume nearly 50% of the energy generated in the United States. Architects are thus strategically poised to positively intervene to effect change in our culture's insupportable, consumptive trajectory. With this resurgent need for ecologically responsive design, designers no longer have the luxury to ignore the effects 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.**
In this context, ideas that will be considered in this thesis sequence will include:

**Architecture + The Landscape**

Place-making is essential in the creation of meaningful architecture, no matter what the scale. Scale of settlement patterns 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.

**Architecture + Its Inhabitants**

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

**Architecture + The Environment**

Sensitive architectural solutions should respect and celebrate the environment. This includes an appreciation for the local (geographies, bioregions, seasons, microclimates, etc.) as well as a response to the global (energy and water sources 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.**

**Architecture + The Landscape Spectrum**

The landscapes of America take many different forms and, considering that the act of play requires the presence of a landscape, it means that play also takes different forms in different places. Until the turn of the 20th century, most people in the United States experienced natural landscapes in a Primitive to Rural form, and it wasn’t until the rise of suburban and urbanization that people moved farther away from more natural places. Today, the trend continues as a growing amount of people are moving into urban centers (as part of the “Fifth Migration”) and therefore, a growing amount of thought is being committed toward evaluating the quality of life within an urban context and how design can influence the implications of our lifestyle decisions.

Being one of those lifestyle decisions, Playscape Design must also be evaluated for its suitability in an urban context and for how natural inspiration can thrive within an increasingly unnatural environment. This means stripping the age-old experience of play in nature down to its essential elements (risk, freedom, complexity, choice, etc.) and reinventing how to achieve those essential qualities while also maintaining the components of nature that cannot be replaced (sun, wind, trees, water, etc.). The resultant playscape for this exploration must be able to take children within a dense urban city and re-offer them the thrill and benefits of playing outside through the design of a new type of play-landscape (objects, mechanisms, terrain & atmosphere).
A Place To Be: Exploring Design For Disassembly

Architecture + Materiality
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 involved in extraction as well as recycling. Thus, a designer manipulating any given palette of materials must balance issues of material source with appropriate and inspiring form and structure.

Architecture + 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. Use of appropriate simulation tools for design as well as performance will be part of studio activities.
Architecture + 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). 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.

The Paradigm of Architecture | Integration

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 relationship 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 and they should overlap. The iterative design process will be a guiding principle. “Architecture + Nature” projects might develop in a multitude of scales and uses.
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 environmental setting 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.

Schematic Schedule
What is the Thesis (and development of a dialectic). Critical position explored through a series of “peer” reviewed abstracts and presentations. Precedent research, program, and site explorations.
Design Studio Fall: Ideation
Design Studio Winter: Development
Re-evaluation of conceptual ideas.
Demonstrable development of design proposal(s).
Submission #2 of thesis “book.” Fieldtrip(s).
Juried reviews.
Design Studio Spring: Synthesis

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.


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

- Kenyan Proverb
Partial Bibliography


Drew, Philip, *Touch This Earth Lightly: Glenn Murcutt in His Own Words* (Duffy & Snellgrove, 2000).


SAMPLE [design|build].................
Paradigm of Architecture | Integration

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, Orodjeva, Leung
Phase 3: Boyce, Bultema, Hicks, Wentz-Fitzgerald, Woods
Phase 4: Bierce, Evans, Gibbs, Rowlee, Stabler, Wang, Wong
[project ongoing]

Recognized with a USGBC C4 “Green Innovation” Award
Paradigm of Architecture | 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 2017 USGBC|CCGBC 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

INHOUSE: Designed to respond to climatic design priorities

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.
Small sampling of Italian student work, spring 2011. Project challenges: long-term/temporary relief housing for earthquake victims; off-grid, zero energy dwelling. [A. Prisco, D. Cameli]
Proposal for Haitian relief housing, using appropriate passive design principles and durable, sustainable, low tech materials.

There are an average of 2 - 4 humanitarian projects in the studio each year, including Journeyman International projects.

E. Namisniak
Paradigm of Architecture | Integration

Adaptive re-use of an under-utilized factory into a center for contemporary art, exploring notions of continuous flexibility and freedom of expression; Beijing, China.

[M. Yee]
Mechanical Love is a bench built from reclaimed leaf springs from truck suspension and a reclaimed wood tabletop. These parts have been rethought and remade into a low profile, rocking, bouncing bench to be enjoyed alone or in good company while rocking peacefully to the view of a sunset.

**SAMPLE materials exploration**

*Vellum. et cetera*

“Vellum” is 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.

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]

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

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

Piezoelectric energy is produced from the transduction of vibrational energy into electrical current. These crystals/crystaline films hold the potential to generate untold amounts of energy due to the natural vibrations found in the settings of day to day activities. Due to the unique atmosphere and climate presented in Guangzhou, this is one of the only consistently available renewable energy resources on site.

Water Collecting Facade Study

**Water Catchment Potential**

- 10,912,399 gallons per year
- Guangzhou Annual Water Usage: 54,800,000,000 gallons
- Annual water savings: 10,912,399 gallons
- 294% of building usage

**Electrical Potential**

- 533,596 kwh/year
- Average of water collected = 10,912,399 gallons
- Average of electrical generated = 533,596 kwh
- 1,549,998 kwh/year
- 34% of building usage
- 117% of building usage

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)]
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 SLO based 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/marketable. 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.