



Studio 401_design matters

We make things better

Architecture is a form of ACTION, a way of speculating about a better world. Our studio is a PLATFORM for experimentation, speculation, and the development of ideas that have social relevancy. We think, we make a lot of mistakes, we test, we build skills, and we operate as a collective. At the intersection of architecture, ecology and related disciplines, the coursework draws from the creative application of vernacular and emergent building approaches. Site, environment, infrastructure, culture, morphology, materials and fabrication process are key drivers for project development.

Our studio is a human-centered, maker-thinker space, built upon curiosity, wonder and play. We are experimental and do not have a predetermined style or dogma. As a studio, we balance theory and practice, in an effort to make a difference - through the creative and social enterprise of design. This year, I suggest we continue to learn through the making of things and that we have a strong presence in the shop. By bridging research, thinking, making, and drawing, I expect we can go beyond the prospects of the traditional thesis. If you like developing ideas from making things – through the equitable engagement of hand and mind – this studio may be a good choice.

We also develop networks with interesting architecture, design, and engineering firms to build collaborative opportunities between studio and creative practice. These relationships often continue after graduation. Most recently we have been in contact with NBBJ, BCJ, Jan Gehl's office, and TriPyramid, to name a few. We have a network of students that enter graduate school and stay in contact with the studio to share skills and current experiences. We bridge research, academia and practice.

In terms of travel, it would be great to go to the Venice Biennale. Another possibility is to look into extreme environments and take an extended field trip to the Sonoran Desert which runs through the urban and rural areas of Arizona and Mexico.

“The conditions in which we learn become the conditions we practice and reproduce.”

Womxn in Design on shifts in design pedagogy.

On the creative practice of our studio building community

As in the most creative practices, our studio supports a culture of experimentation, **knowledge exchange, confidence, and trust**. The studio is considered open-source, where ideas are freely exchanged and the momentum of the group benefits the individual. I believe creativity is learned, and strive to set up an environment of risk-taking combined with a playful and experimental attitude. These thoughts are structured on professional models I have experienced in multidisciplinary practice, specifically in architecture, biotech, and industrial design. As in the quote above, the learning environment that we shape, **shapes our future** practice. In this studio, students have a **voice** in the shaping of our learning environment.

This studio supports alternate modes of thinking and is designed to inspire the imagination. As Ken Robinson notes, ‘**creativity is as important as literacy,**’ and our studio opens new conversations for idea development and creates a climate of possibility. We all have creative sensibilities, though our standardized educational system has made us fearful of making mistakes. Once fearful, the prospect to make discoveries is diminished. So, we draw, we make, we discuss, and **we make a lot of mistakes** as fast and as often as possible.

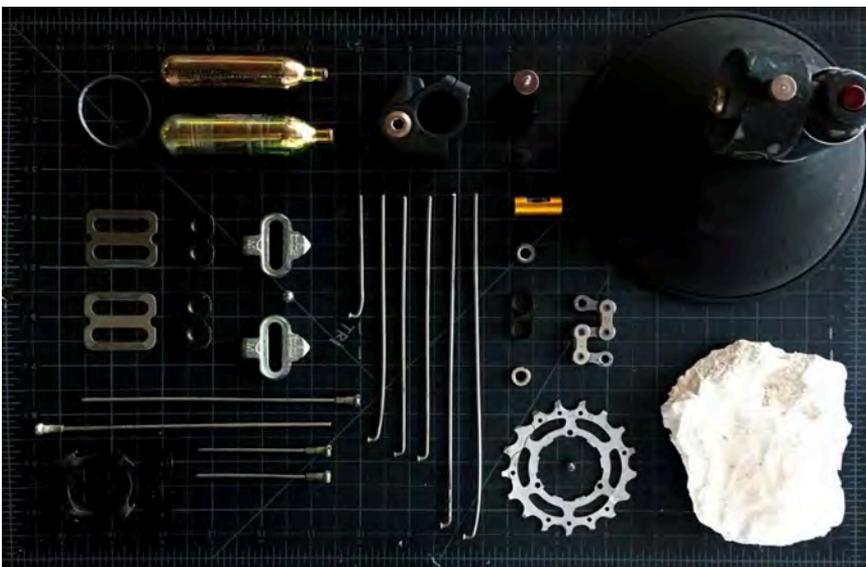
I’ve just found a compilation of work from the Extreme Environments Studio, which is similar to our design process. Have a look and see what you think. https://issuu.com/davidgarcia122/docs/kadk_aee_fin_screen_72dpi

also

Check out this year’s work here: <https://dalesdolls.cargo.site/>

And last year’s work here: <https://calpolythesis.weebly.com/>

And – if your interested in the relationship of biology to architecture, check out: <http://biologicarchitecture.com/>



Karli Montick's desk. Her thesis looked into ways to rethink the industrial waste stream.

Studio culture

It's a loose fit

"There are no passengers on spaceship earth. We are all crew."

Marshall McLuhan

The structure of the studio is a 'loose-fit' model to enable skill building and design exploration. This means that we have a non-hierarchical model, and that we take all voices and ideas into account. We support creative thinking and skill development by working as a collective as we draw from the experiences and abilities of other disciplines and practice. The studio method draws from firms such as IDEO, Snohetta, and others that look closely at the opportunities afforded by design, materials, construction techniques and knowledge exchange.

As a collective, we focus on the creative development of each individual. Projects range widely in scale and content, may be static or mobile, may be material studies, guerilla installations, full-scale builds, or public interventions, though all have the common thread of addressing environmental/social/political issues through design. The studio is a tinker lab/ maker space where ideas are discovered, not preconceived.

It is a place where skills are developed and unorthodox ideas are nurtured. It's a bit nerdy, but with purpose.

In this studio there is the opportunity to work individually or collectively.

Feel like you don't fit into a precise mold? Welcome to the studio.

"I try to create a forum where everyone doesn't have to mold into the idea of what's expected . . ."

Lindsey Adelman on how her experience at RISD influenced her approach to her office.

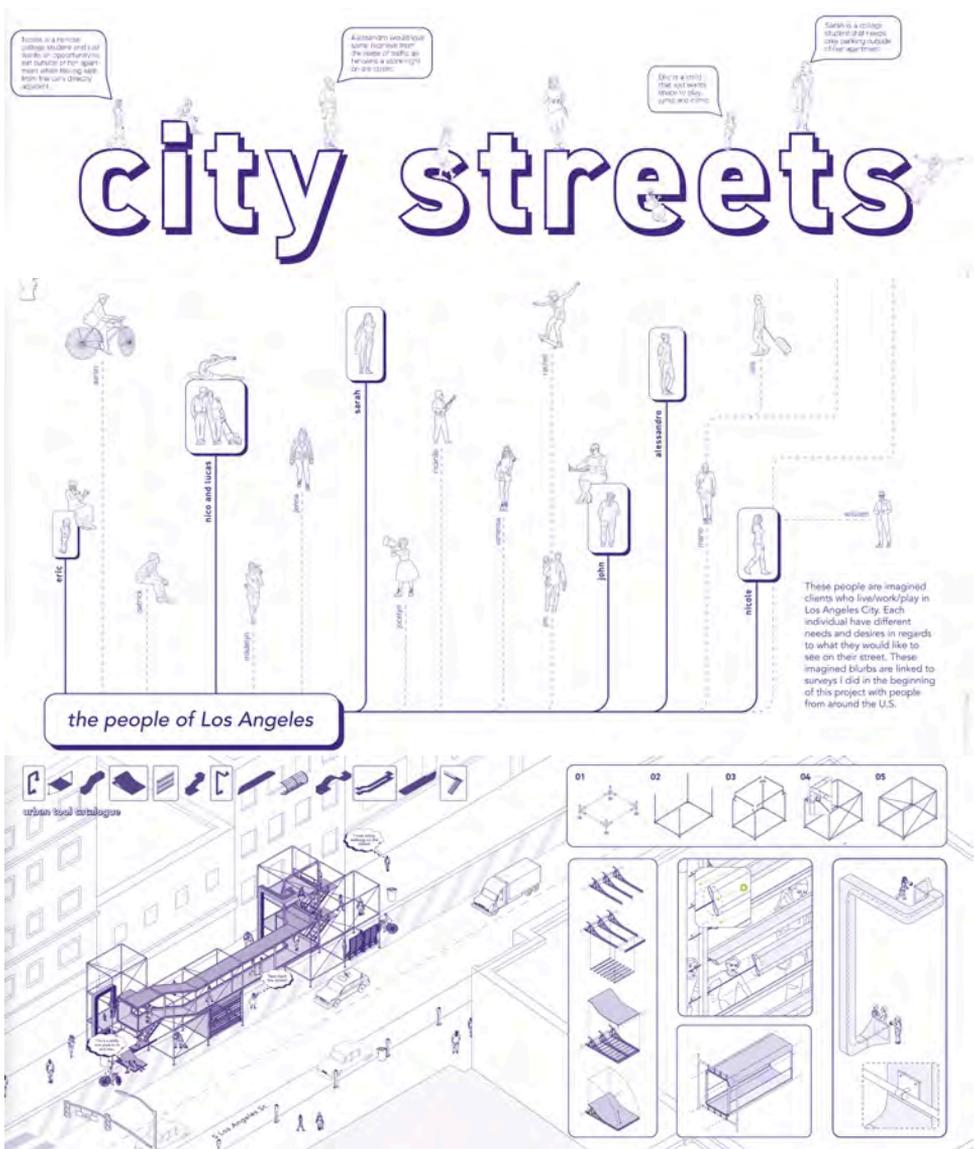


Students often begin with tools and materials as a means to develop project ideas.

Want to make a difference?

Our projects are linked by the idea that we can positively impact the world through good design, and Studio 401 is built upon the idea that small changes can lead to big effects. The studio is a creative platform where good ideas are discussed and develop - it is a place to incubate good ideas and launch them into the world.

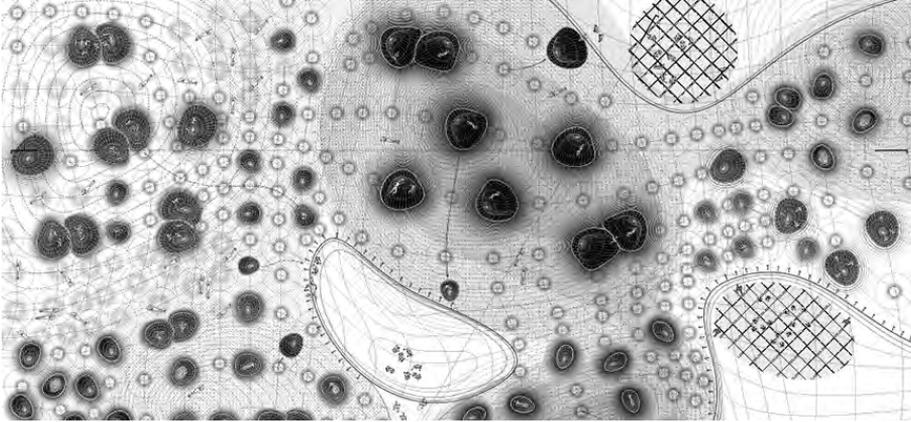
Larissa Muller's project looks at the approaches of tactical urbanism and giving people agency to make positive change in their environment. We look into what Atelier Bow Wow calls Architectural Ethnography – an in-depth study of the people of a place, and how the built environment can support culture and **build community**.



[Site mapping]

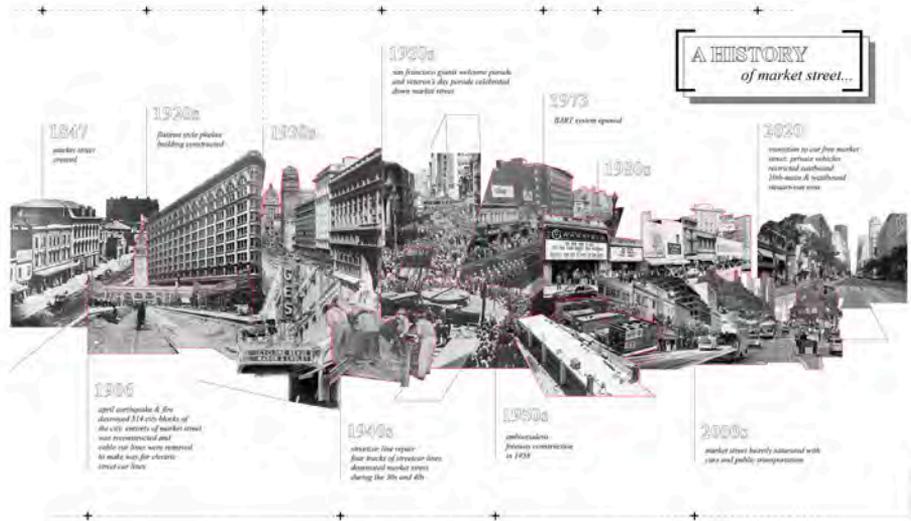
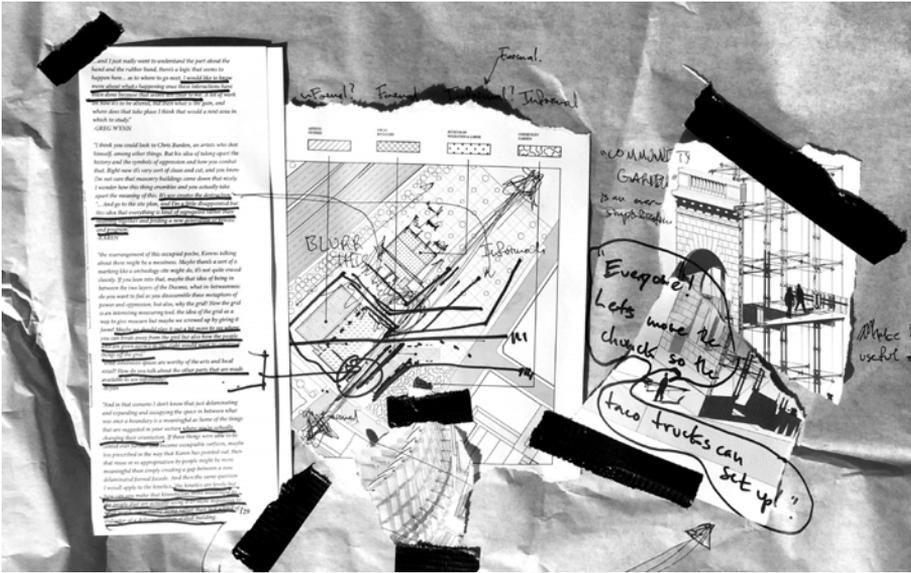
We look at site as a series of dynamic conditions, rather than a static entity. We have looked to the project below by architect S. Lally as an example of visualizing normally unseen relationships. In this case, the dark areas are heat islands. We also support alternative methods of getting to know a place, through storytelling, interviews, and other creative means. Have a look at this article if you are interested in the transformation of the normative site survey into participatory design.

http://field-journal.org/wp-content/uploads/2016/07/Site-Seeing_Butterworth-Vardy.pdf



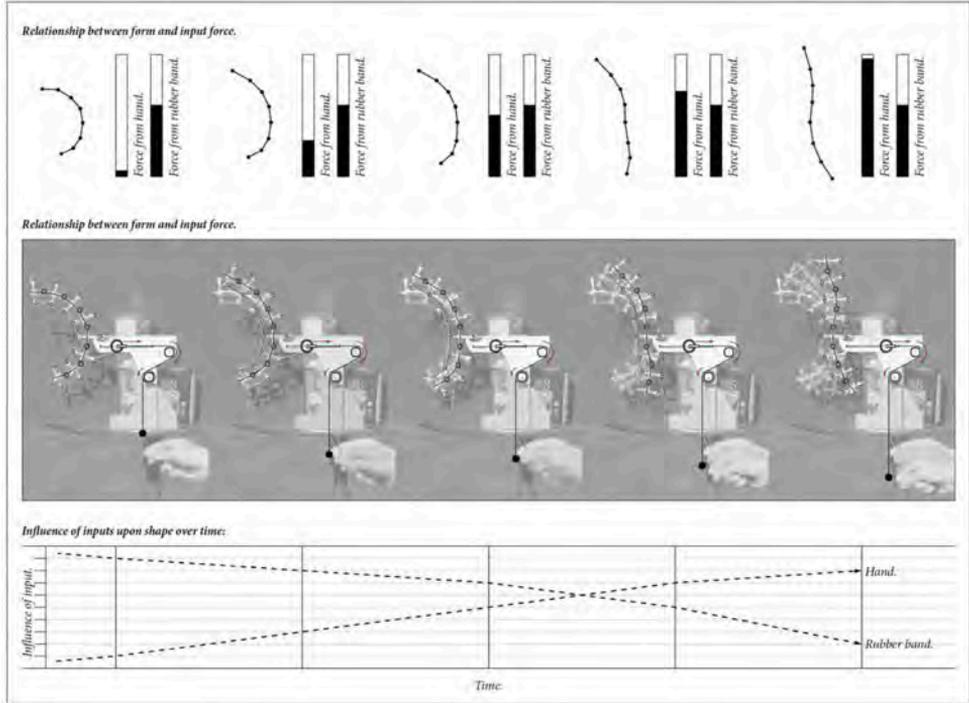
[Process] sketch and collage

We look to a wide range of methods to create dialogue, uncover creative possibilities, and spur the imagination. **Liam Lautze** used both to develop an adaptive reuse project in Oakland.



[Process] working models

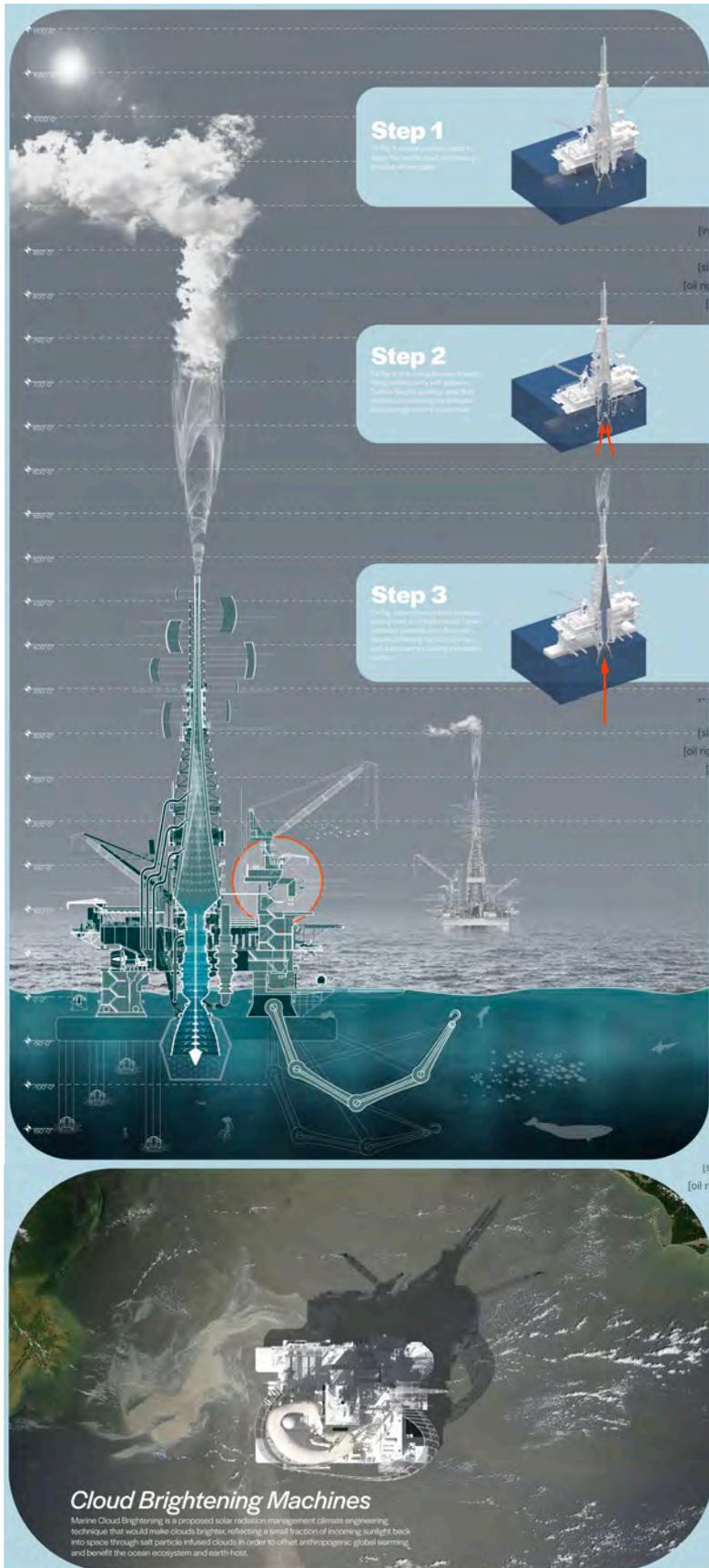
Well, we didn't make that many this year, but we did make a few with materials and tools found around the house.



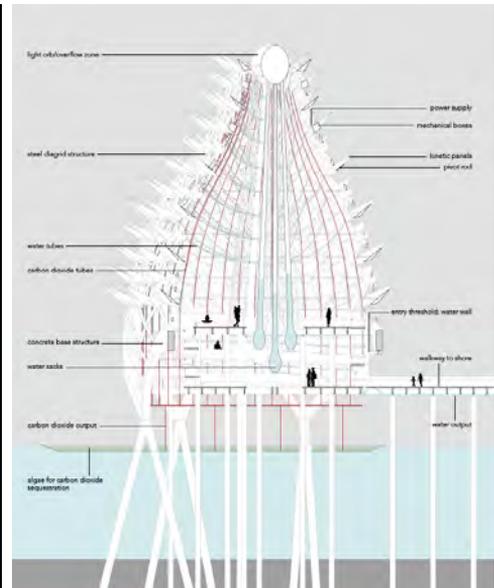
[Media] photography, hybrid drawing and collage

We often take field trips to interesting sites. The one below is the Mass Landing Power Plant. Photography became a way into **Robin Johnston's** thesis on industrial materials, ephemerality, and space.





Sometimes we retrofit aging industrial infrastructure, such as a network of oil rigs, to make large-scale geoengineering proposals such as **Ben Will's Cloud Brightening Machine** designed to reflect solar radiation back into the atmosphere.



Velum entry that led to the design for a water treatment facility, by **Kristen Fauske**. The project studied the strategies succulents use to store water. Work from her thesis became the winning student entry in the Biomimicry Design Challenge and her team is competing for the final \$100,000 prize. A recent team won the \$100,000 prize and formed a start-up business making water collection devices. **Ryan Daley** on the deck of Bldg 5 with his model for a mobile lab to increase soil health in areas depleted by pesticides.



Why make things interactive and responsive?

American author, marine biologist and conservationist, Rachel Carson stated "the control of nature is a phrase conceived in arrogance, born of the Neanderthal age of biology and philosophy, when it was supposed that nature exists for the convenience of man." Carson went further and identified the complex, interactive and interdependent network of life and made clear that human action disproportionately impacts the network. The control of nature has been a fundamental underpinning for architecture and engineering and they might well be added to the disciplines in Carson's list. We are now entering a more responsive age of architecture, biology, politics, environmental engineering, and computation where the boundaries of our discipline are being redefined.

Advances in computation, technology, and philosophy (among other disciplines) have enabled designers to conceive of a built environment that is in continuous exchange with the local environment. Currently, there is a shift in building design toward systems that adapt to environmental variations such as in humidity, temperature, light, and pollution. Adaptive architectural design varies in its underlying strategies, from the computational and electronic to more passive material-based systems that are reactive to environmental stimuli. An equally important aspect of adaptive architecture is to engage the senses and appeal to the imagination.

The Fine Print: The teaching method is not prescriptive and it is helpful if you are prone to curiosity and motivated to think for yourselves, to think your way into, and out of a problem, and to invest time and energy to creatively address your thesis to the best of your ability. The teaching | learning method is intended as a 'loose fit' model that is fluid and adaptable to new scenarios as they develop.

Here's a short story to help you decide if this studio is a good, loose fit.

about me

I came to architecture through commercial fishing and ships carpentry. From commercial fishing, I learned the benefits of teamwork, especially in adverse weather conditions. From ships carpentry I learned a respect for materials and craft. From sailing and study of nature, I realized there is often a correlation of form and performance that we intuitively recognize. This observation has led me to value the intuitive and emotive processes of design in tandem with more rational methods of thinking.

On the academic side I studied installation art, industrial design and architecture at Pratt Institute in Brooklyn. At Pratt, I learned to value the visual arts and diversity of thought. These studies led me to graduate work at MIT where I studied design thinking and learned to value the humanity of technology. Most recently, I have directed the CoDe Lab at Carnegie Mellon University where I worked with architects, artists, and computer scientists to explore the poetic, tangible, and social implications of design and technology. This 'creative sandbox' experience has influenced my understanding of the design studio.

CURIOSITY. I bring to thesis an interest in creativity drawn from my experiences from working with various disciplines that include the arts, biology, industrial design, and computer science. I also bring a strong interest in design experimentation at 1:1 scale and developing ideas through playful making and testing. As a teacher, I am interested in encouraging curiosity, learning, and innovation. As an architect, I am interested in bringing thoughtful and socially relevant architectural experiments into the world.

THE POINT of thesis is to develop skills that give you **agency** in the world, to make a more equitable, resilient, and imaginative world, and positively affect people's lives through design.

I believe that small things make big differences and that great things start from the bottom up. So, I look forward to what we will achieve together.

Contact me if you would like to know more about the studio. dtcliffo@calpoly.edu



FAQ

The questions below are intended to help you make decisions regarding choice of studio and reflect questions I have received from students.

Why do you teach?

- I believe I can use my inclinations and experience to help others develop their creative voice. It is my goal to help students to realize their potential and to make a difference.

Some things common to great teachers that I have had:

- They elevate your expectations of yourself, teach through demonstration, and encourage you to find alternate paths, disruptive technologies, and ideas that are not bound by the status quo.
- They leave us with our own ideas and the provocation to experiment and the desire to learn more – to make a difference.
- We are not confined by our discipline, but empowered to exchange knowledge across disciplinary boundaries.

How is responsive architecture defined in this course?

- Responsive architecture is adaptive to humans, animals, environmental stimuli, or other triggers. This definition is inclusive of both high and low-tech studies, of both static and dynamic solutions, and it is inclusive of ephemeral and more durable speculations.

What's construction got to do with it?

- I am a strong proponent of developing ideas though making 1:1 scale design experiments as creativity often stems from the equitable engagement of hand and mind.

I want to make a difference. Can I apply my interests to the real world?

- Yes. You may apply your work to current socially relevant issues. I only ask that your process is creative and rigorous.

OK, what about project ideas. What kinds of projects are ok?

- Most any project that is relevant and compelling. So, there are lots of possibilities! We do address the relationship of design to current societal issues of race, space and gender, of climate change, of poverty and inequity, of urban issues, of polluted ecosystems, . . .

Who else is involved in this studio?

- That's up to us. For instance, you may form a committee that includes a team from architecture, the arts, biology, sociology, . . . The plan is to exchange ideas, increase the depth and quality of your current work, and potentially forge future collaborations.

I'm into soft robotics. Can I use an arduino? How about grasshopper? Genetic algorithms?

- Yes, but not required. We explore ideas rigorously by analogue or digital means, high low-tech explorations. We consider technology broadly, creatively, and intelligently.

Will this course set me up to enter practice?

- Yes. Exceptional design firms have been impressed with the high quality, thoughtful and socially relevant work that we produce, and the ethic of teamwork and skill swapping promoted in this studio.

Will this course set me up for graduate work?

- Yes. The coursework supports an ethic of discovery through design research, qualities that will support a strong graduate school portfolio. Students have been accepted to UDelft, Columbia, MIT, the Bartlett, the Institute for Computational Design in Stuttgart (which is free), and lots of other places.

Is this class 'tech-heavy'?

- No, not unless that is your interest. Architecture is highly intertwined with technology and we will explore its creative side and how it can lead to new ways of thinking, building, or connecting us with nature.