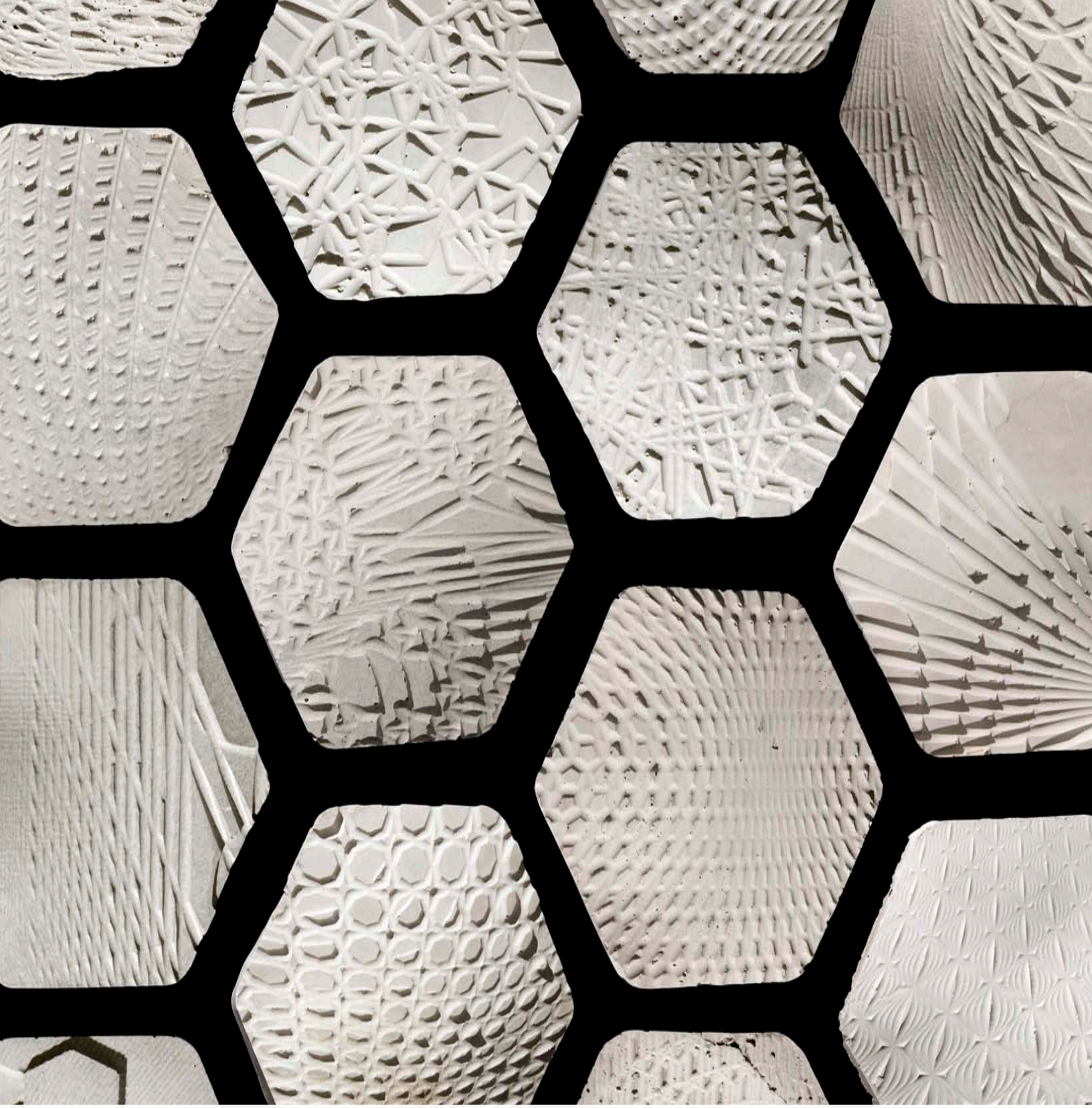
ACSA/AIAS New Faculty Teaching Award

2015-2016 Winner Submission Materials

ADAM MARCUS
California College of the Arts



ADAM MARCUS, AIA
ASSISTANT PROFESSOR OF ARCHITECTURE
CALIFORNIA COLLEGE OF THE ARTS

ACSA / AIAS NEW FACULTY TEACHING AWARD SUBMISSION
FALL 2015

ADAM MARCUS, AIA
Assistant Professor of Architecture, California College of the Arts
Submission, 2015-2016 AIAS / ACSA New Faculty Teaching Award

PEDAGOGY & PRACTICE

I am an Assistant Professor of Architecture at California College of the Arts in San Francisco, where I teach design studios, as well as core and advanced courses in the Design Media and Digital Craft curricula. Before coming to CCA in 2013, I taught for two years at the University of Minnesota School of Architecture, where I held the Cass Gilbert Fellowship.

My teaching seeks to develop critical approaches to integrating emerging technologies into the pedagogy and production of architecture. My approach is informed by both my advanced expertise in digital practices and a highly skeptical and critical attitude towards such technologies. I steer my students away from the seductive novelties of wild curvature, twisty towers, and endlessly differentiated surfaces, instead encouraging them to apply computational processes in pragmatic and focused ways. Rather than have technology dictate or overly determine architecture, I challenge students to integrate these new tools as a means to enhance architectural agency. Although my teaching deals very much with the question of computation, my approach is *post-digital* in the sense that the focus is not the computer itself, but rather how computational techniques can be leveraged and employed in the service of broader architectural goals. Towards this end, my courses promote an integrated and synthetic process, equally emphasizing form *and* performance, affect *and* efficiency, digital *and* analog, virtual *and* material. The work of my students is notable for blurring these binary oppositions, merging computational processes with a sense of craft, materiality, and pragmatism.

My academic work is notable for having significant effects on the programs and cultures in the schools in which I have taught. At the University of Minnesota, I organized the annual Architecture as Catalyst series of week-long graduate workshops, and I also started a graduate Digital Assistant program to formalize software training and help streamline how technical knowledge is better distributed among the students. While at Minnesota, I organized and chaired "Digital Provocations: Evolving Computational Approaches to Pedagogy and Practice," a symposium that featured a roster of nationally recognized educators and practitioners, and catalyzed a broader discussion within the school about the role of digital technologies in architectural curricula. At CCA, I have led a number of advanced studios in collaboration with external public and private partners as a way to bring additional resources into the program and increase the exposure of student design work to a broader community. Faculty colleagues and students at both schools have remarked how such efforts have had a lasting, transformative impact upon the institutional culture.

Furthermore, the pedagogical approach I have developed and continue to refine is deeply informed by my extensive experience as a licensed and practicing architect. Prior to returning to academia, I practiced for six years with Marble Fairbanks in New York City, where I served as project architect for a number of significant, award-winning public and institutional projects. I now direct Variable Projects, an independent, award-winning architectural practice in Oakland, and I am also a founding partner of Futures North, a collaborative design/build practice focused primarily on large-scale public artwork. My professional background very much informs my pedagogical approach in its insistence on testing the physical and material implications of computation through full-scale prototypes and constructions. Students appreciate this ability to merge experimental practices with real-world understanding of materials, assembly techniques, and construction workflow.

COURSES I TEACH

I teach at all levels of the curriculum, in both undergraduate and graduate programs. In addition to the courses below, I teach regular summer and extracurricular design workshops both with CCA's Digital Craft Lab and also as a visiting professor at other institutions, such as the Architectural Association's Visiting School Los Angeles.

California College of the Arts, Division of Architecture (2013 – present)

ARCHT 303	B.Arch Architecture Studio 3
ARCHT 311	B.Arch Design Media 3
ARCHT 507 / MARCH 607	Advanced Architecture Studio: "Prototyping Mobility"
ARCHT 508 / MARCH 608	Integrated Building Design Studio: "Buoyant Ecologies," "Architecture in the Making"
ARCHT 570 / MARCH 670	Design Media Elective: "Performative Ornament"

University of Minnesota, School of Architecture (2011 – 2013)

ARCH 3250	Undergraduate Bachelor of Design in Architecture Studio: "Modular Variations"
ARCH 5101	Summer Graduate Design Studio: "Part / Whole"
ARCH 5110	Graduate Architecture as Catalyst Studio: "Material In/Formation"
ARCH 8251	Graduate Design I Studio
ARCH 8299	Graduate Masters Final Project Studio

WHAT MAKES MY TEACHING UNIQUE




My academic work is distinguished by three separate but overlapping trajectories: weaving my expertise in design computation and digital fabrication into an innovative pedagogy of **computational craft**; a focus on **full-scale construction** as a way to carry ideas from concept to reality; and an ability to expand the academic experience by **forging external partnerships and alliances** with industry and outside organizations.

1. COMPUTATIONAL CRAFT

The common focus of my teaching, research, and scholarship is an emphasis on merging computational and material practices with a sense of focus, pragmatism, and craft. I refer to this sensibility as "computational craft," and it informs all the courses I teach, from the beginning design level to advanced studios and electives. In my undergraduate core Design Media 3 course, I have developed an effective pedagogy of computation and fabrication for beginning design students—a topic that has long been a focus of my teaching and scholarship. This course introduces students to parametric modeling tools and digital fabrication equipment—technologies now ubiquitous in architecture schools and practices alike—in a way that highlights not only the formal and geometric possibilities of using such tools, but also their impact on design workflow and broader issues of professional practice. These topics are equally important at the other end of the spectrum, in the Integrated Building Design studios for advanced B.Arch and M.Arch students. These studios leverage computation as a bridge between performance-driven design and the discovery of novel formal and spatial effects. They also incorporate a digital fabrication agenda into the highly structured curriculum by exploring how computer numerically controlled (CNC) and robotic fabrication processes can inform material innovation and logics of building performance.

2. FULL-SCALE CONSTRUCTIONS

Central to my teaching is a fundamental commitment to learning through making, which is typically manifest through a pedagogy of full-scale prototyping. This guided my recent "Prototyping Mobility" advanced architecture studio, in which students designed and built CCA's anchor installation for the Market Street Prototyping Festival in San Francisco. It also plays an important role in my Integrated Building Design Studios, in which students conduct digital fabrication research through the construction of 1:1 facade prototypes. This kind of work can be challenging in an academic setting—negotiating pragmatics of construction with experimental design concepts is always difficult—but I find this to a productive struggle. Students appreciate and learn from the opportunity to work at full-scale, and this is an important dimension of architectural practice that is not always explored in academia.

3. EXTERNAL PARTNERSHIPS

Much of my academic work at CCA involves forging partnerships and alliances with industry and outside organizations. In the "Prototyping Mobility" studio, we collaborated with Yerba Buena Center for the Arts and San Francisco's City Planning Department to deliver a temporary pavilion that activated a sleepy block of Market Street for an entire weekend with CCA-sponsored events. In the "Architecture in the Making" studio, we worked with the REALM charter school in Berkeley, the Studio H design/build non-profit, and Autodesk's Pier 9 Workshop. In the "Buoyant Ecologies" studios, we have worked with Autodesk, fabricators at Kreysler & Associates, scientists at Moss Landing Marine Laboratories, and ecological designers at Rana Creek Design, as well as regulatory liasons at the Port of Oakland, Jack London Improvement District, and the San Francisco Bay Conservation and Development Commission (BCDC). I see these types of partnerships as not only a way to expose students to collaboration and engagement with clients and community groups, but also to bring new resources into the studio and grow the research capacity of CCA, which (as a small arts college) does not have the resources of a typical research university. In particular, the partnership with Autodesk has been especially successful. It has led to a public exhibition and publication of the Buoyant Ecologies student work, and has catalyzed a broader extension of the Buoyant Ecologies research project into a fall 2015 studio and planning for a multi-year research initiative.

BUOYANT ECOLOGIES

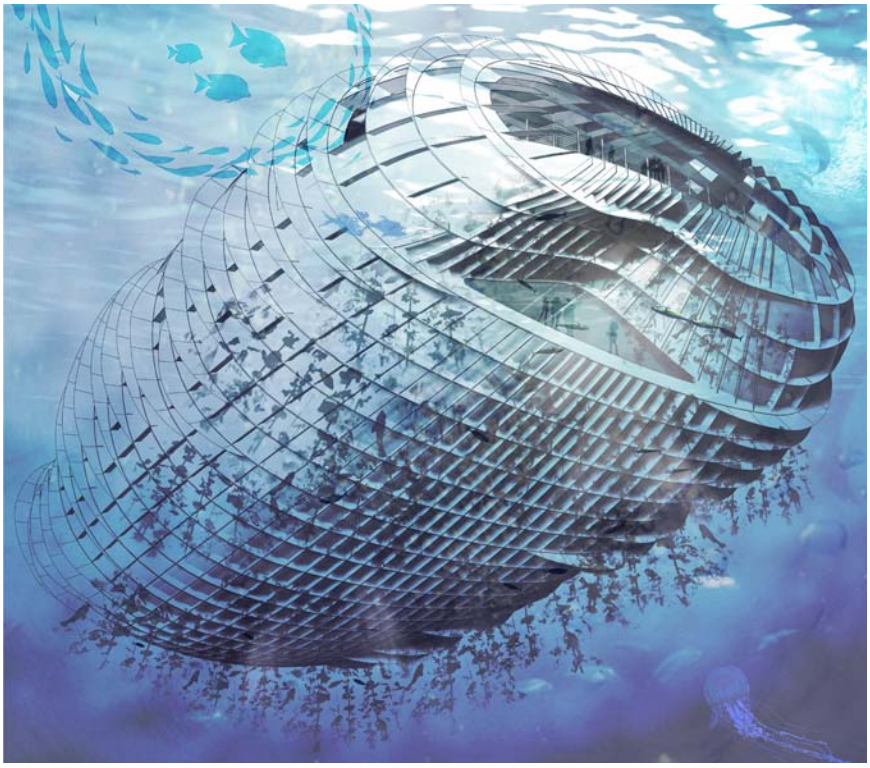
Integrated Building Design Studio
California College of the Arts / Fall 2014

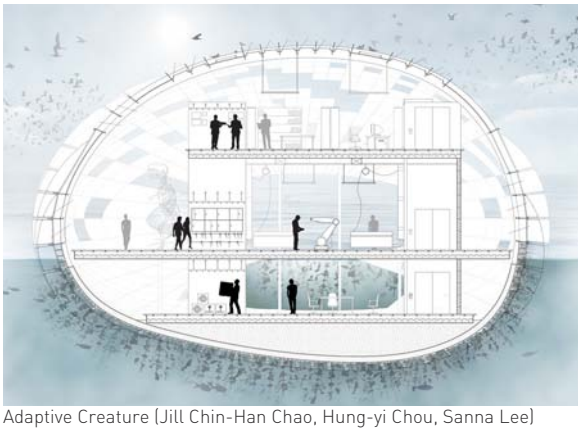
Co-Instructors: Margaret Ikeda, Evan Jones
Course: ARCHT 508 / MARCH 608
Students: Hayfa Al-Gwaiz, Behnaz Banishahabadi, Welbert Bonilla, Jill Chin-Han Chao, Hung-yi Chou, Tyler Jones-Powell, Sanna Lee, Mikaela Leo, Maryam Nassajian, Yasmine Orozco, Melissa Perkinson, Jude Simon, Blake Stevenson, Dustin Tisdale

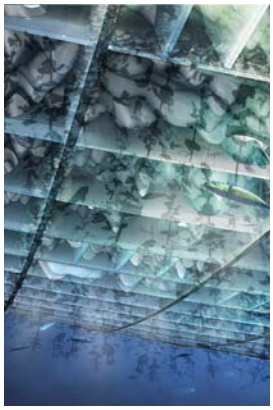
Buoyant Ecologies is a multi-year teaching and research initiative that synthesizes architectural design, marine ecology, and material innovation to explore new approaches to constructing resilient waterfront structures. The project is a collaboration between California College of the Arts, marine biologists from the Benthic Lab at Moss Landing Marine Laboratories, and fiber-reinforced polymer fabricators at Kreysler & Associates. The project has received sponsorship and support from Autodesk's Pier 9 Workshop.

The fall 2014 Buoyant Ecologies studio collaborated with Autodesk's state-of-the-art Pier 9 fabrication facility to explore how a new floating workshop vessel can engage productively with the San Francisco Bay ecology. The studio's research merged marine ecology and advanced digital fabrication techniques to develop new material approaches to man-made waterfront infrastructure. The proposals incorporated fiber-reinforced polymer envelopes that are optimized to provide habitats for marine life and enhance the biodiversity of the surrounding ecology. The studio's work included a full-scale prototyping component, and the research continues to develop in a fall 2015 follow-up studio.

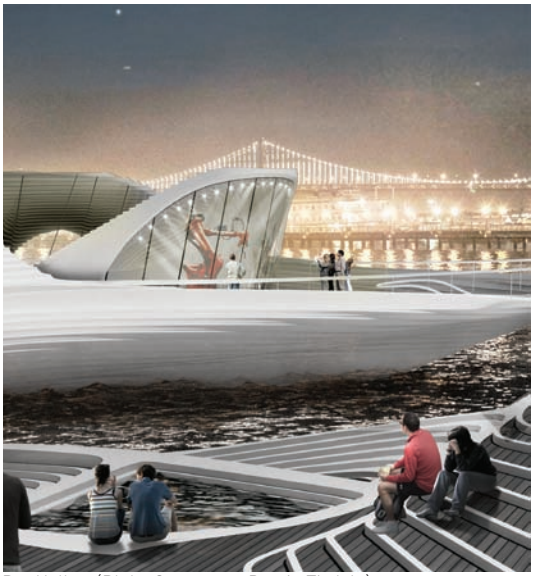
The studio was supported by an $18,500 grant secured from Autodesk, which funded the full-scale prototyping, research stipends for the marine scientists, exhibition materials, and publication of the studio's work.



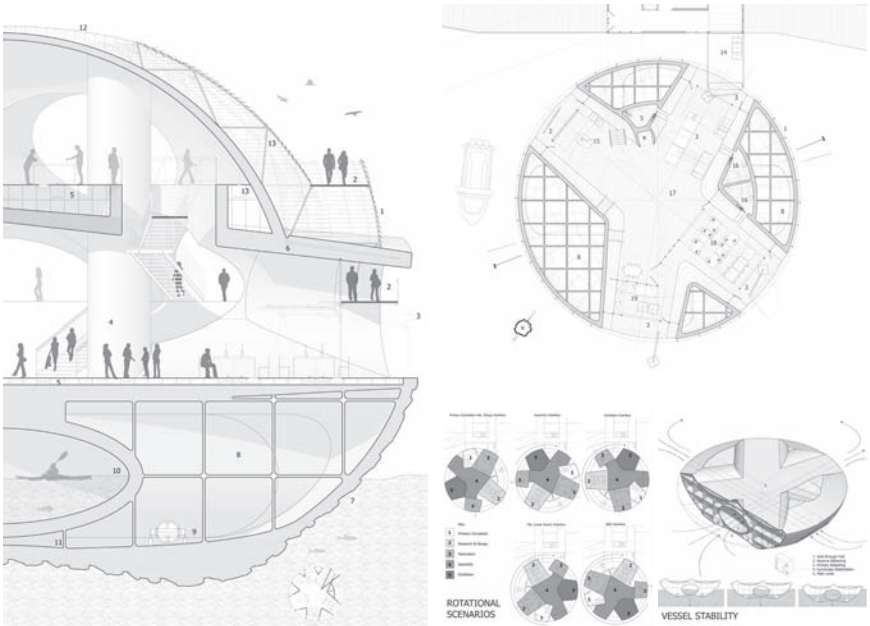




Adaptive Creature (Jill Chin-Han Chao, Hung-yi Chou, Sanna Lee)

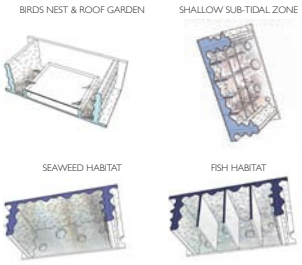


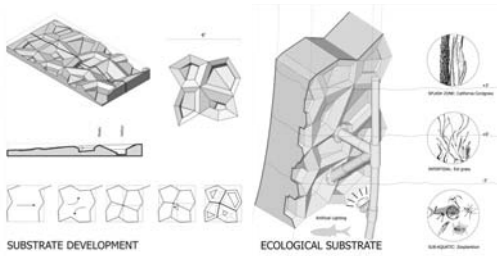
Bot Hollow (Blake Stevenson, Dustin Tisdale)

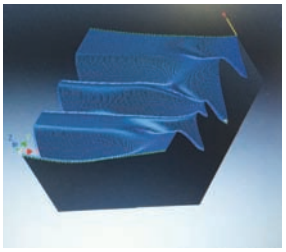
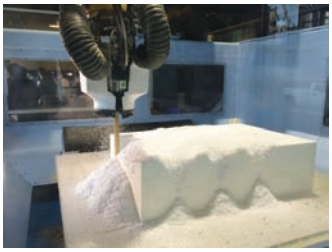


Sphere Nine (Tyler Jones-Powell, Melissa Perkinson)

The studio's research challenges conventional notions of "fowling"—the unwanted accumulation of marine life on the underside of floating structures—and instead proposes that controlled upside-down growth can contribute to the biological diversity of the marine ecology.

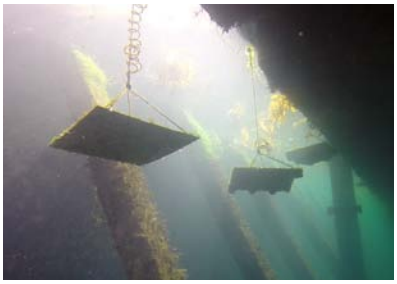


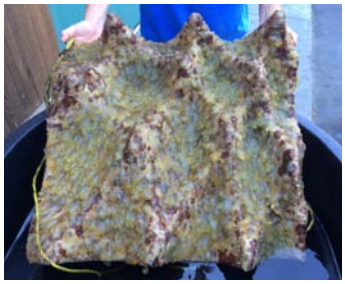








Students collaborated with fiber-reinforced polymer manufacturer Kreysler & Associates to fabricate a series of full-scale prototypes of the ecologically-optimized fiberglass substrates. These prototypes have been placed in Monterey Bay for monitoring by project partner Benthic Lab to further understand the impact of surface variation on upside-down aquatic ecosystems. These initial experiments have yielded design parameters for the next round of prototypes, currently underway in the fall 2015 Buoyant Ecologies studio.


The studio's work was exhibited at the Autodesk Gallery in San Francisco in the spring of 2015. The exhibition opening event featured short talks by students and each of the project partners.

PROTOTYPING MOBILITY

Advanced Architecture Studio
California College of the Arts / Spring 2015

Course: ARCHT 507 / MARCH 607
Students: Barry Atiabet, Keith Edwards, Joshua Evans, Tien Yi Hsieh, Ludmila Ilieva, Reynaldo Kambey, Thomas Monroy, Ryan Montgomery, Mark Nicholson, Chien Lien Pan, Murhaf Salameh, Adithi Satish, Jin Shen

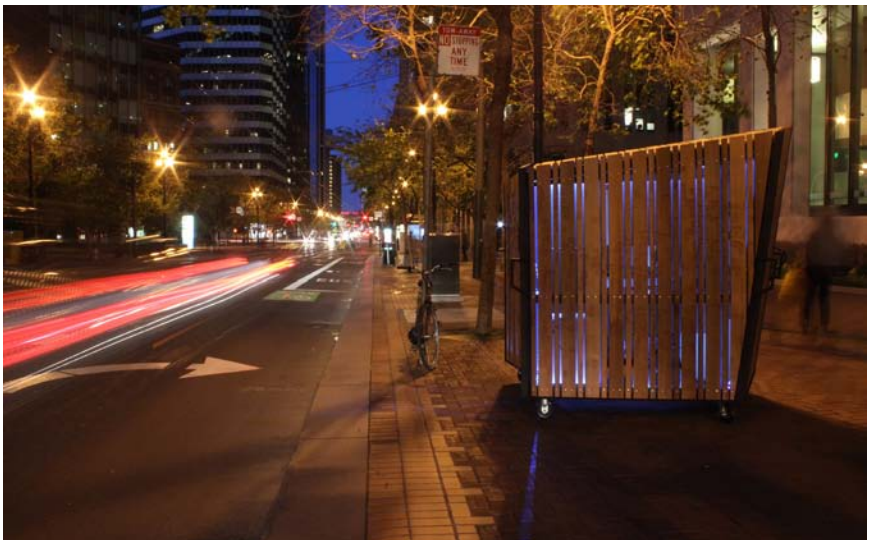
The Mobile Craft Module, the product of a collaborative design/build studio, proposes an architecture of deployable structures that can be reconfigured to serve a variety of functions. The twin modules can be arranged in multiple ways to facilitate exhibition space, event space, and work space, and they nest together to become secure at night.

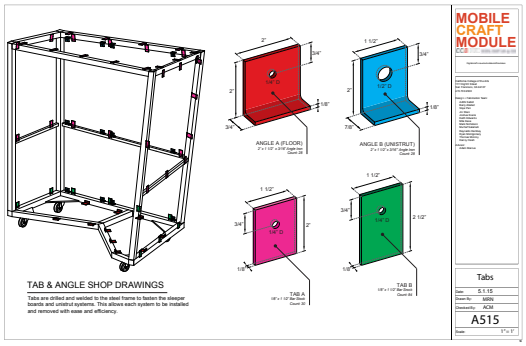
The modules were designed and built in eight weeks. The project served as the anchor pavilion for California College of Arts during the Market Street Prototyping Festival, a three-day event in San Francisco that explored new ideas for designing public space. Throughout the festival, the modules hosted a series of exhibitions and events featuring CCA students and faculty. Following the festival, the project returned to CCA to serve as mobile workstations on CCA's Back Lot, a new outdoor maker space on our San Francisco campus. The intent is for the modules to provide an infrastructure for the construction of future design-build projects undertaken by students and faculty.

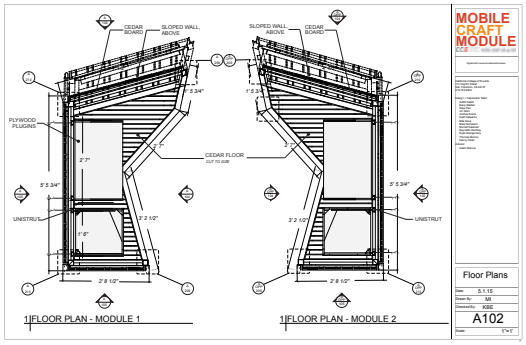
Each module is open on one side, providing access to the modular shelving and work surfaces on the interior. The reconfigurable plug-in shelving system includes removable caps, which double as stools once they are removed from the module. The structural frame is fabricated from welded steel tube, with angle iron members welded to the corners to serve as protective edges for the cladding. The cladding is fabricated from western red cedar boards, each of which is cut to size. A robotically-cut pattern carved into the cedar boards consists of abstract shapes that merge together to spell "CCA" as one moves around the module.

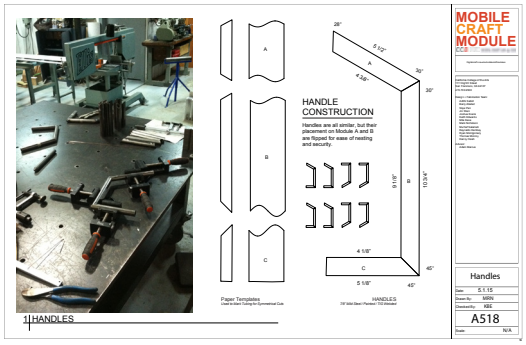
Recognition:
ArchDaily, "The Best Student Work Worldwide," August 2015

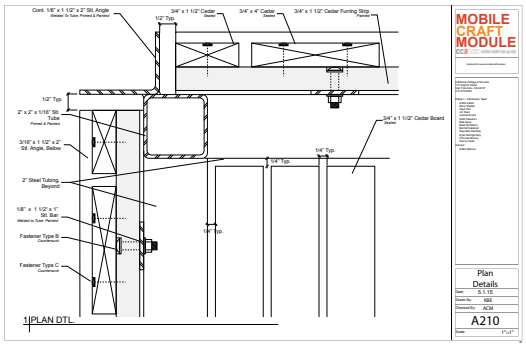
The Prototyping Mobility studio hosted a number of events throughout the 3-day Market Street Prototyping Festival: (1) Kinematic Code: Robotic Drawings and Paintings with CCA's Digital Craft Lab, (2) Grounding Urban Metabolism book launch & flash symposium, (3) M.Arch student thesis Pecha Kucha, (4) Virtual Interactive Prototypes: Emerging Uses of Video Game Technology.

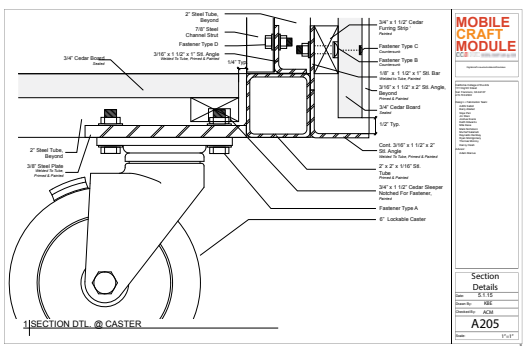




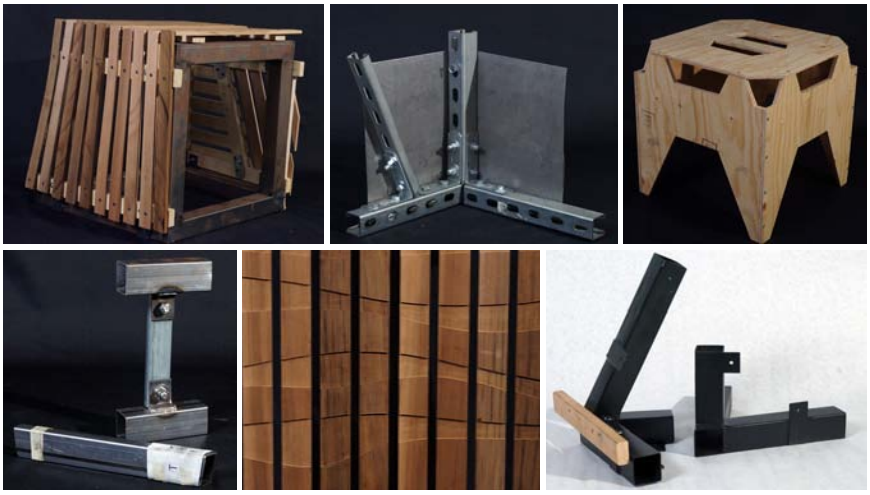






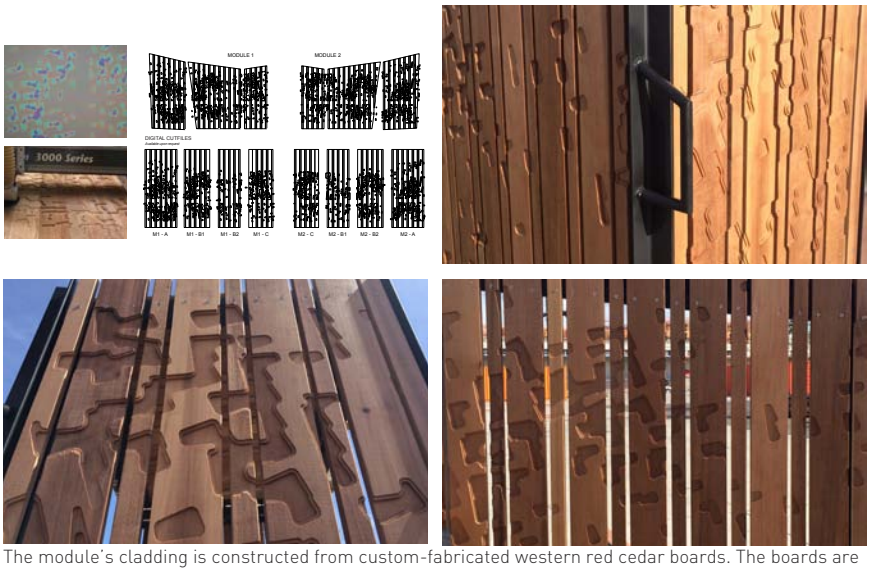


As part of the curriculum, the studio produced a comprehensive, 80-page set of working construction drawings that included fabrication drawings, 1:1 details, and documentation of the build process (selected thumbnails, above).



The studio relied upon a pedagogy of 1:1 that insisted on testing all design ideas at full scale. The students engaged in 1:1 prototyping from the outset, which allowed them to quickly understand attachment methods, tolerances, and material performance.

The module's frame is constructed from welded tube steel. The students performed all custom fabrication and welding in CCA's metal shop and welding studio. The module's trapezoidal shape in both plan and section added a high degree of complexity to the fabrication process. Students produced shop drawings for each steel part, full-scale jigs for the welding process, and custom templates for the complex mitered corners.



The module's cladding is constructed from custom-fabricated western red cedar boards. The boards are mounted to horizontal wood furring strips, which are fastened back to the steel frame. A CNC router was used to carve a custom pattern into the cedar boards, which produces multiple readings depending on proximity. From up close, the pattern appears to be entirely abstract collection of shapes, while from far away it forms the letters "CCA" as it wraps around the module.

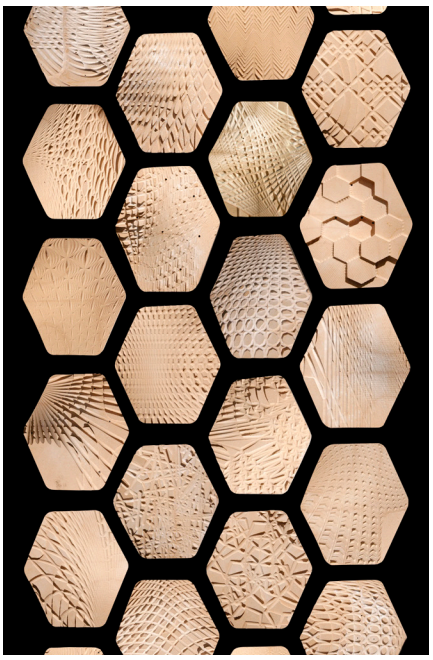
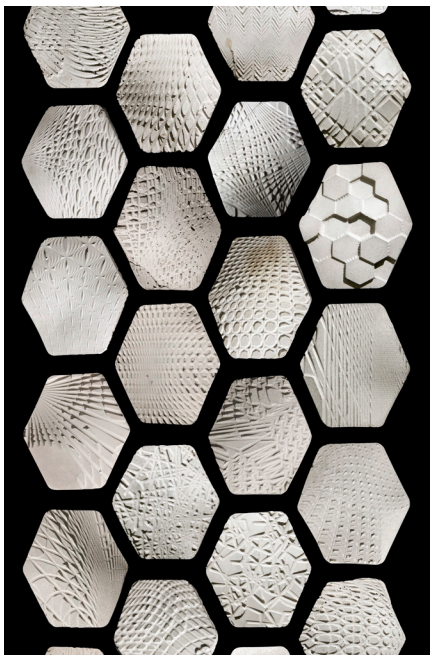
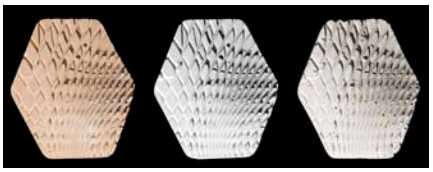
PROTOTYPING MATERIAL EFFECTS

California College of the Arts / Fall 2013, 2014

Course: ARCHT 311: Design Media 3
Students: Gabriel Ascanio, Jessica Ayran, Evan Bowman, Kuan-Lun Chen, Lisette Devore, Joy Fu, Jack Gale, Weichung Joong, Maurean Lally, Lu Li, Susan Lopez, Mrnalini Mills-Raghavan, Ryan Montgomery, Marianna Munguia-Chang, Priscilla Ng, Troung Nguyen, Betty Nip, Min Joo Noh, Chien Lien Pan, Brett Petty, Ernesto Preciado-Canez, Azin Raessi, Eric Sandoval, Arash Sedaqhatkamal, Jin Shen, Tommy Sutanto, Kelvin Thengono, Jamie Ung, Joshua Van Heidrich, Melody Villavicencio, Ahn Vu, Kyle Yamada, Hao Yu, Jessica Zamora, Fahad Aldughaish, Reyna Anastasi, Fernanda Bernades, Kungchul Byak, Joseph Chang, Abrar Felemban, Jonathan Frederick, Joshua Garcia, Sean Gentry, Sarah Herlugson, Antuanette Holder, Wut Htwe, De Huynh, Denita Irsjad, Trenton Jewett, Gloria Asuba Kiiza, Eva Lai, Daheen Maeng, Brian McKinney, Mariana Mijangos, Joshua Olivas, Mitchell Price, Samuel Sellery, Anh Vo

This material research was conducted in Design Media 3, a required core class for the undergraduate B.Arch students at CCA. This course introduces students to techniques of laser cutting, CNC routing, and 3D printing, and the intent is to instill a technical competency while also encouraging an experimental approach to these technologies.

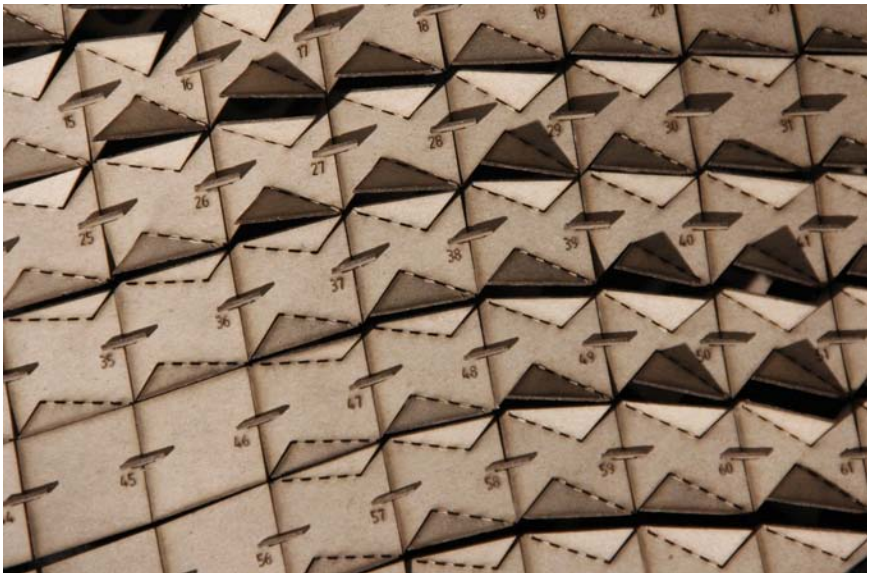
Assignment: Subtractive Topographies
Rather than relying upon pre-established algorithms that are often the default means of fabricating three-dimensional surface geometry, each of these prototypes is a result of custom-designed toolpaths that demonstrate an ability to generate unique material effects. Each CNC-routed MDF module represents a negotiation of the student's design intent with the constraints of the tool at hand. The MDF modules were used to create thermoformed plastic molds, which were then used to cast concrete positives as a way to explore subtle geometric variation through material translation. The prototypes tile together into a single continuous topography that maintains the character of the individual surfaces within the larger collective whole.

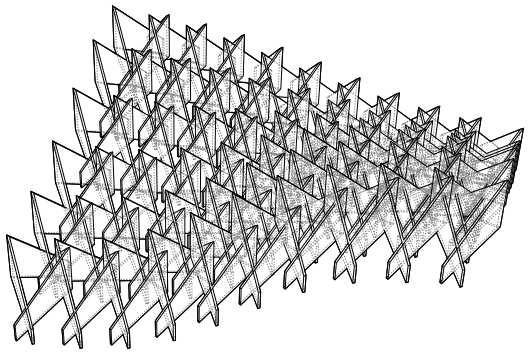






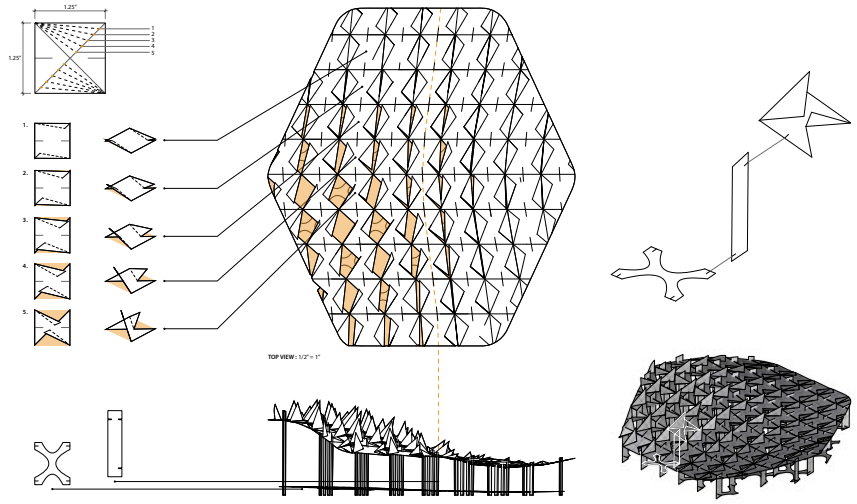
Assignment: From Component to Assembly

This project asks students to design and fabricate an assemblage of modular components that can accommodate parametric, variable behavior. Components must be three-dimensional yet fabricated from two-dimensional material, and assembled without the use of glue or external fasteners. Students begin with hand-made physical models and then transition to the Grasshopper parametric modeling software, redesigning their system and testing how parametric changes in the single component produce broader effects when the components are arrayed in a field. This process of reverse engineering is productive in the sense that students must identify the aspects of their analog systems that remain constant and the aspects that can become parametric in the digital environment, always conscious of how geometric changes within the component must conform to the logic of assembly between components. The project demands that students understand the relationship between part and whole, and between repetition and difference.

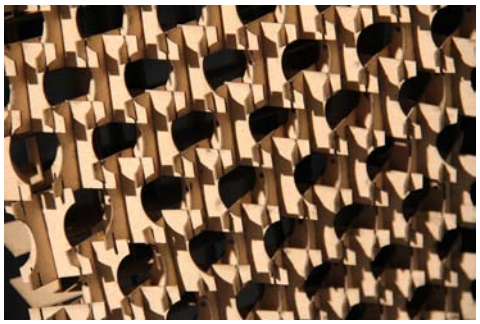


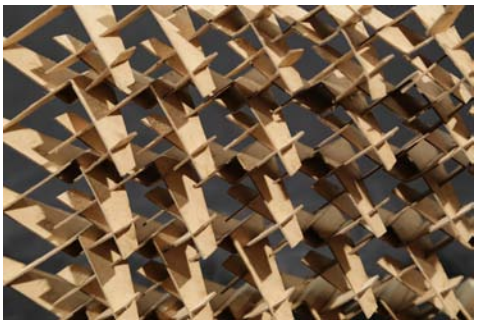


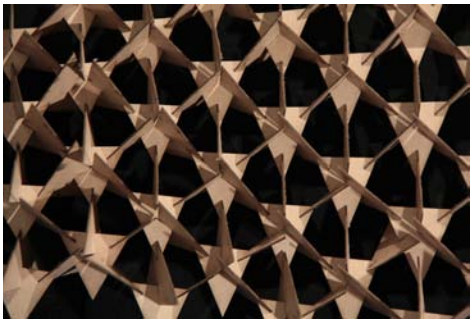
Ernesto Preciado-Canez

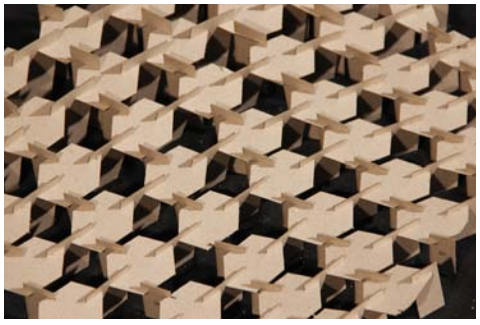


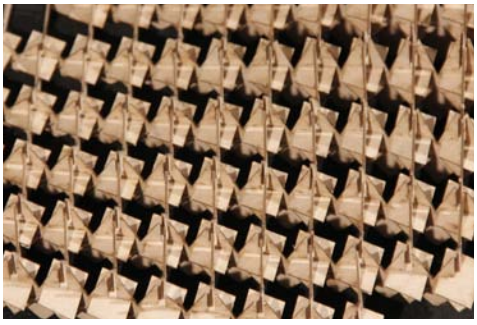
Kyungchul Byak











PERFORMATIVE ORNAMENT

Design Media Elective
California College of the Arts / Spring 2014

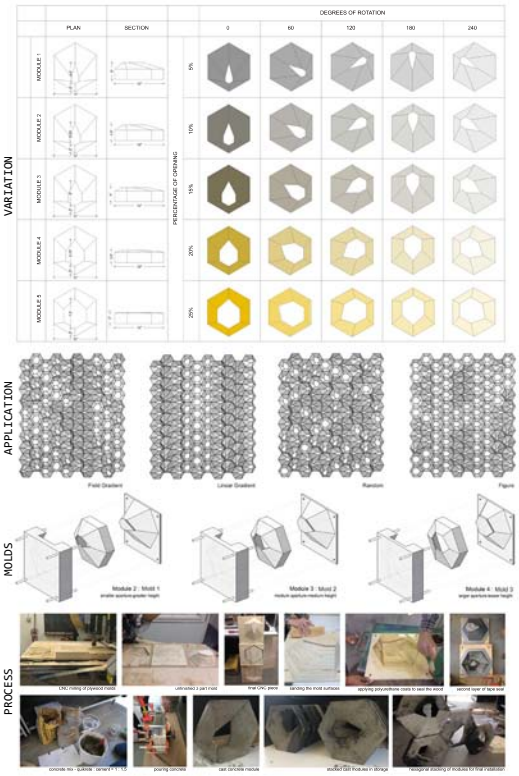
Course: ARCHT 570 / MARCH 670
Students: Jason An, Alan Cation, Jojit Diaz, Ivonne Gomez, Prairna Gupta, Tim Henshaw-Plath, Logan Kelley, Sanna Lee, Jeffrey Maeshiro, Mark Nicholson, Melissa Perkinson, Oscar Ramirez, Darshini Shah, Dustin Tisdale, Herbert Watts

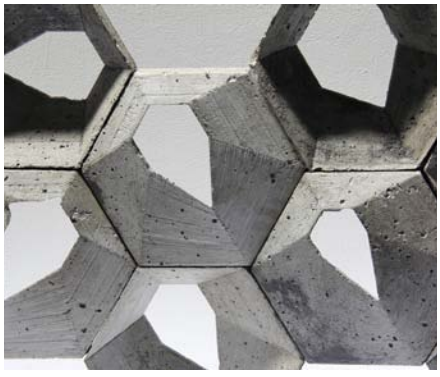
This advanced Design Media elective course investigated the contemporary resurgence of architectural ornamentation in the context of computational design and digital fabrication technologies. Specifically, it explored potential overlaps between ornamental systems and logics of performance-driven design, and it challenged students to formulate a critical agenda vis-à-vis the relationship between the two. How can material assemblies produce innovative visual effects while also addressing specific performance criteria? What kinds of new aesthetic, figural, representational, expressive, and spatial qualities can emerge from such a synthetic approach?

Structured as a hybrid research seminar / design studio, the course integrated readings, precedent studies, design speculation, and full-scale prototyping. This structure promoted a process of feedback between thinking, making, and critical reflection that encouraged students to position their work polemically within broader architectural discourse. The heavy focus on fabrication and material testing also emphasized the primacy of craft in merging digital and analog processes.

Typographic Cast (Jason An, Logan Kelley, Jeffrey Maeshiro)

Sponge Cast (Jason An)



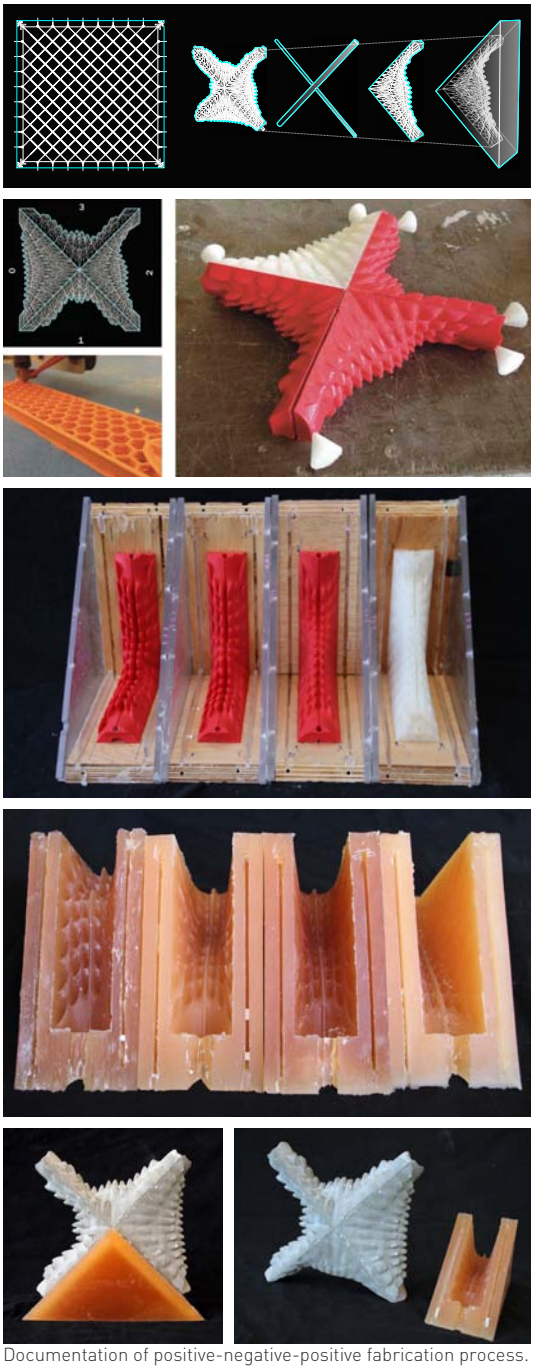


Tessellated Cones (Prairna Gupta, Mark Nicholson, Melissa Perkinson)
Reconfigurable molds are used to cast masonry modules with apertures of variable sizes.

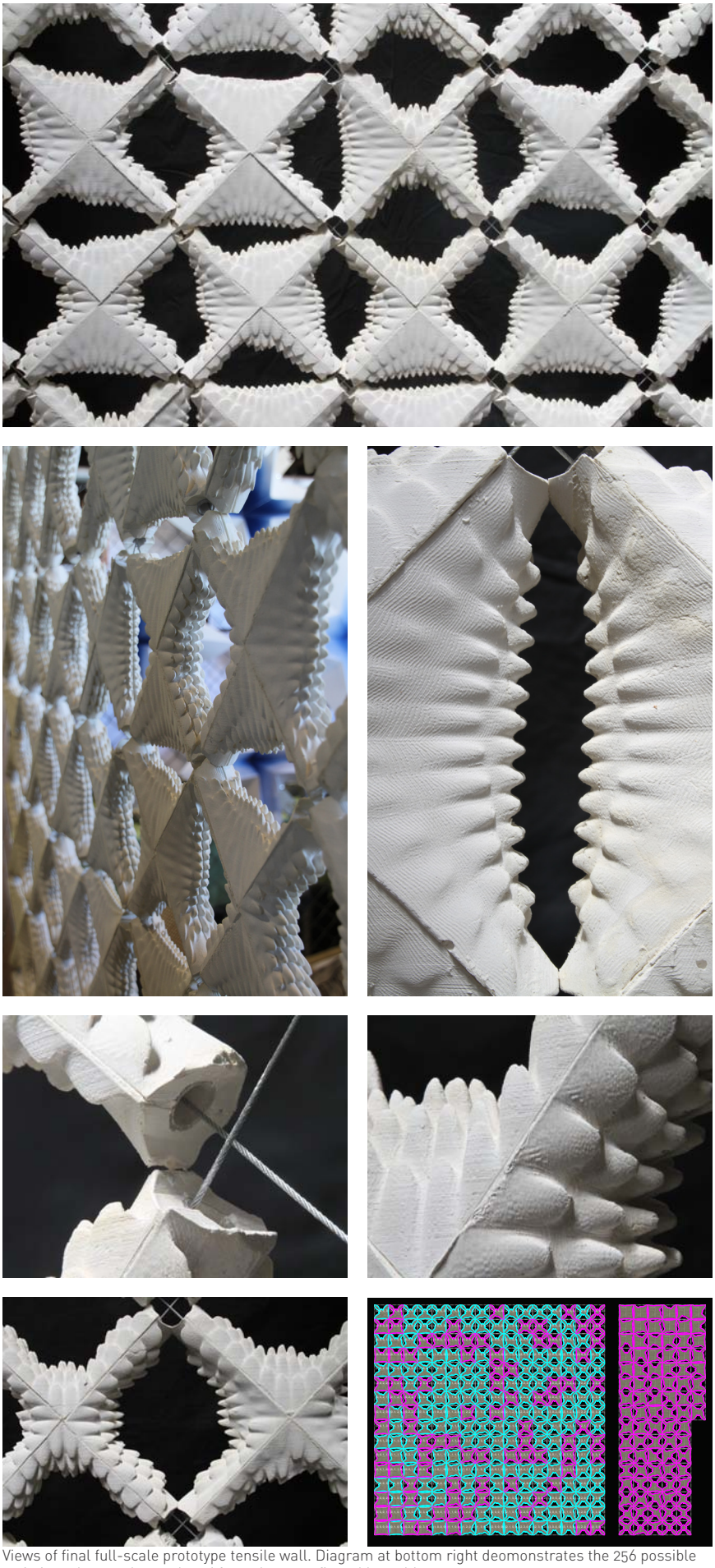
Project: Volatile Mutations
Students: Alan Cation, Tim Henshaw-Plath, Dustin Tisdale

This project balances technologies of mass customization (the 3D printed positives used to construct the reconfigurable molds) with more traditional technologies of mass production (the forming and casting processes used to replicate the modular components). Through a rigorous and highly iterative prototyping process, the students were able to develop a versatile system of variable modular facade elements, suspended within a tensile structural grid.

Recognition:
Honorable Mention, 2014 TexFab Plasticity Competition



Documentation of positive-negative-positive fabrication process.



Views of final full-scale prototype tensile wall. Diagram at bottom right deomonstrates the 256 possible variations that can be produced from the reconfigurable mold.

ARCHITECTURE IN THE MAKING

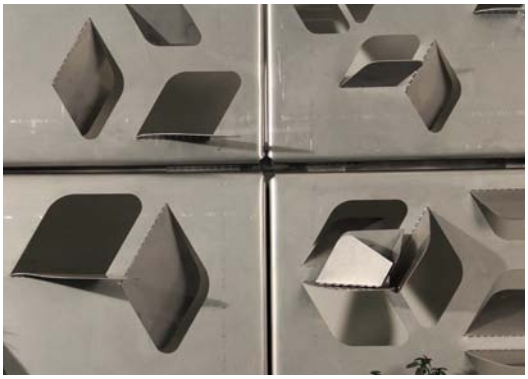
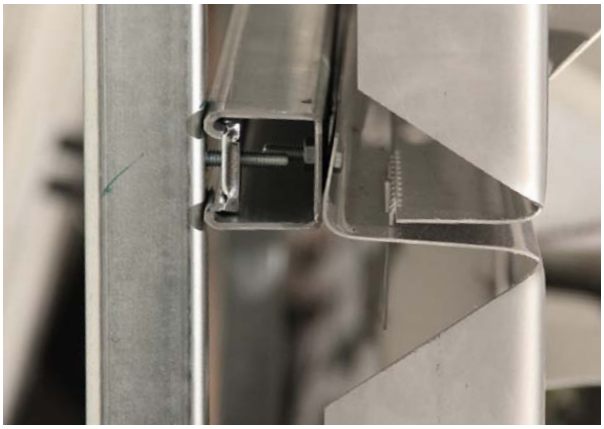
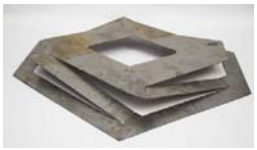
Integrated Building Design Studio
California College of the Arts / Spring 2014

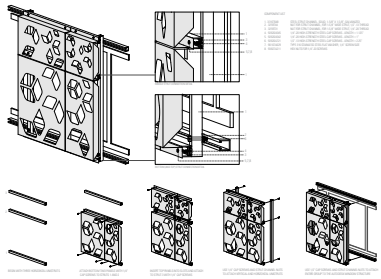
Co-Instructors: Margaret Ikeda, Evan Jones
Course: ARCHT 508 / MARCH 608
Students: Taole Chen, Adika Djojosugito, Joshua Evans, Benjamin Grabstein, Reynaldo Kambey, Veronica Leung, Abelino Robles, Colby Rosenwald, Martinus Setiawan, Setareh Taghvaei, Mallory Van Ness, Shan Yu

This Integrated Building Design studio explored ways to leverage digital fabrication technologies in a strategic and focused manner. The research seeks pragmatic ways for such technologies to interface with existing paradigms of construction, rather than purely speculative ones.

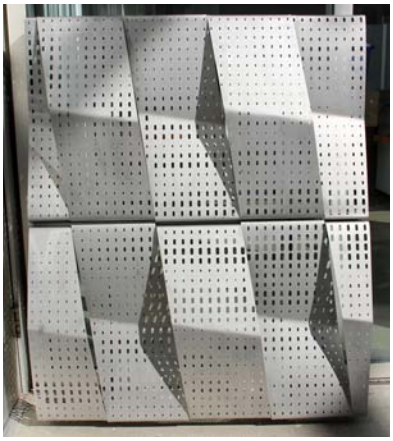
Towards this end, the studio interrogated architectural making both programmatically and pedagogically. Students worked with Berkeley's REALM Charter School to design a new workshop and dining facility for the school's Studio H program, an innovative design/build curriculum for high school students that has received national recognition. This speculative investigation of a making-centric curriculum and its architectural implications was coupled with a pedagogical focus within the studio on making and digital fabrication as a means to reinforce proof of concept.

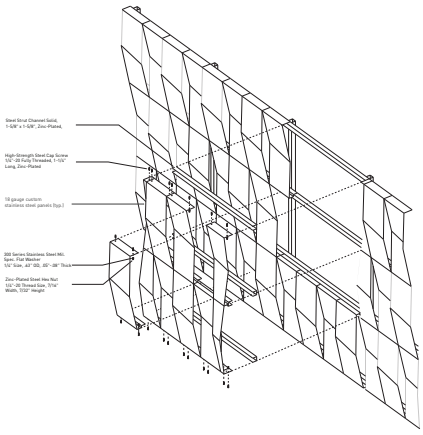
The studio was sponsorered by Autodesk's Pier 9 Workshop in San Francisco. Students collaborated with the workshop to produce a series of full-scale envelope prototypes from 18 ga. steel that demonstrate comprehensive understanding of performance, detailing, and assembly. The focus on the building envelope challenged students to embed material systems with intelligent behaviors derived from program, performance criteria, and experiential quality. The studio was CCA's first of several collaborations with Autodesk's Pier 9 Workshop, initiating what has become a strong relationship between CCA and Autodesk's Creative Programs team.

Learn to Grow / Grow to Learn (Taole Chen, Joshua Evans, Mallory Van Ness)
This project connects students to broader community and ecological systems through the implementation of a complete horticultural system at a micro scale. The building envelope includes a carefully designed steel screen with perforations and integrated bent panels that serve as an armature for this system, providing incubation and growth space for vegetation at a variety of scales. The architecture becomes an ornate patchwork of student-made, modular, portable planters that may be sold and delivered to the community.





Studio H20 (Adika Djojosugito, Martinus Setiawan)
The envelope system is a custom perforated steel screen that modulates light, shading, and privacy acccording to the interior programs and their solar and street exposures. The density and size of perforations change locally according to these programmatic requirements, and the global pattern is driven by a water graphic that is inspired by the project's focus on water conservation.

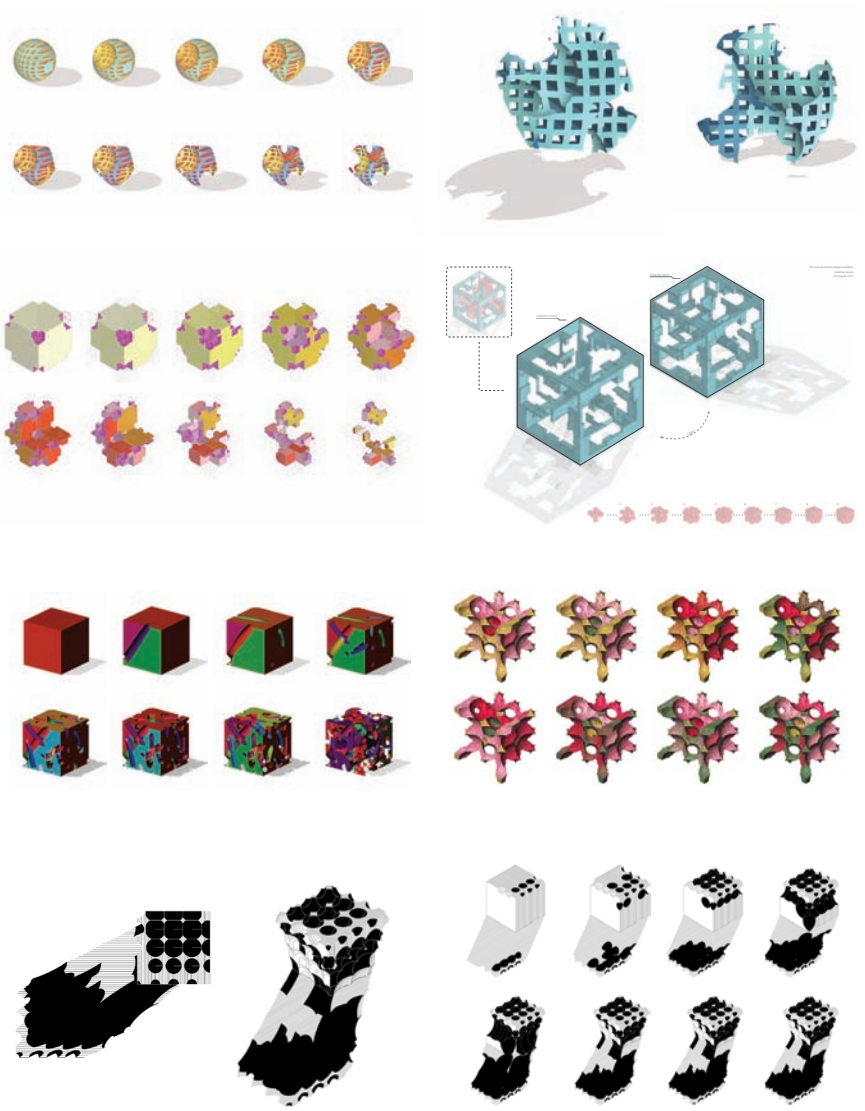
INTRODUCTION TO DESIGN COMPUTATION

California College of the Arts / Summer 2014, 2015

Course: Formations Summer Workshops
Students: Andrew Kleindolph, Hadi Koo, Meshal Albuthie, Manali Chitre, Jared Clifton, Keith Edwards, Weichung Joong, Evan Jones, Evan Kuester, Bella Mang, Luda Shashua, Max Sims, Setareh Taghvaei, Anh Vo, Hao Yu, Madeline Cunningham, Talitha D'Couto, Sitou Akolly, Craig Broussard, Chung Ling Luk, Cheuk Wai Lam, Armughan Faruqi, Mengjie Shen, Benjamin Julian, Amy Karle, Alaleh Rouhi, Eric Soifer, Bryan Frank, Shih-Hui Chang, Olivia Wang, Molly Reichert

Learning parametric design software can be very daunting for the beginning design student, particularly those with limited software experience. By the same token, the remarkable ease of contemporary visual programming languages such as Grasshopper can often yield a kind of banal uniformity to the work; we see this in the glut of twisty towers and endlessly panelized surfaces found in almost any architecture school. These drawings, produced in a 1-week "Introduction to Design Computation" workshop, represent an attempt to resolve this dilemma of teaching the tool without succumbing to the seductive biases of the software.

This approach takes advantage of the software's capacity to compute multiple geometric operations. The output is typically a series of iterative drawings that demonstrate a transformation of a simple primitive volume to a more complex form. The iterative structure of this exercise demands a certain representational rigor so that the transformation process is rendered legibly. This aspect of the project taps into the software's ability to control not only formal or geometric operations, but also representational decisions; students learn how to program parametric behaviors into line weights, line types, shading techniques, surface textures, and cast shadows. The synthesis of generative formal operations and parametric representational operations delivers the technical skills while also grounding the work within broader architectural conventions of drawing.



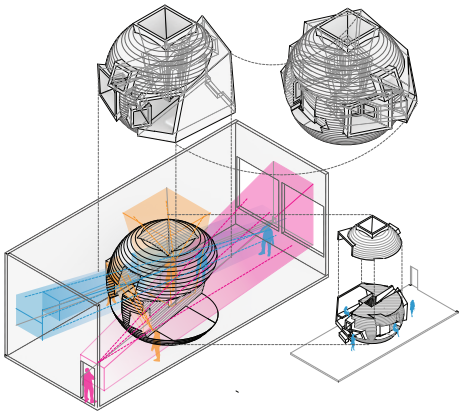
MACHINING ADAPTIVE LIVING: Contemporary Approaches to the Domestic Interior

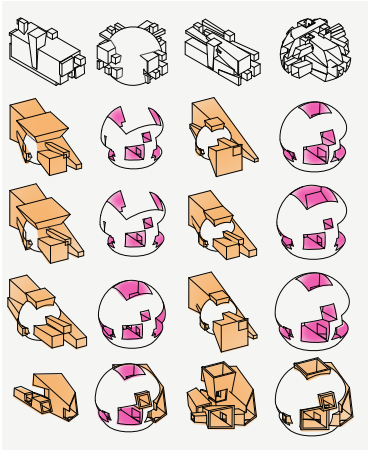
Architectural Association
Visiting School Los Angeles / Summer 2014

Students: Grace Chen, Bryan Dimagiba, Megan Khunakridatikarn, Paty Martinez, Anthony Printz, Sienna Tardini, Diego Vilatela, Yuan Yao

This two-week intensive studio program looked to the the Case Study House Program of 1945-1966 as a point of departure for reimagining the domestic interior in the city of Los Angeles. As the mid-twentieth century architects of the CSH Program focused on the single-family home as a locus for innovation, this studio turned to the generic loft as the contemporary site for challenging convention and proposing new models of domestic living. As the CSH Program sought to rethink the home in the context of Modernist paradigms of industrial mass production of standardized parts, this studio explored the implications of emerging paradigms of mass customization and the mass production of variable parts that is made possible by new technologies of digital fabrication.

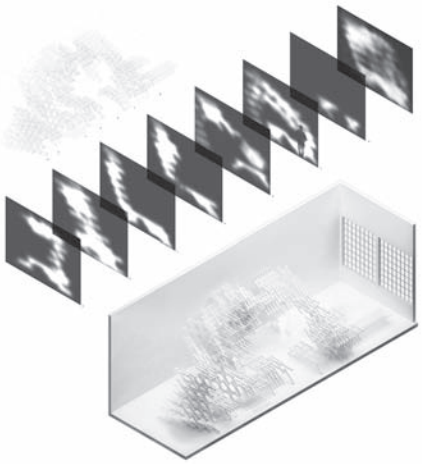
Students designed adaptive and reconfigurable architectural objects to be placed within a generic loft space. The studio utilized techniques of associative modeling and digital fabrication to imagine a customizable interior architecture scaled somewhere in between furniture and building. In addition to field trips to seminal CSH Program projects such as the Eames House and Stahl House, the studio presented its work at the Dwell on Design convention and a final exhibition at Gallery All in the Bradbury Building in downtown Los Angeles.





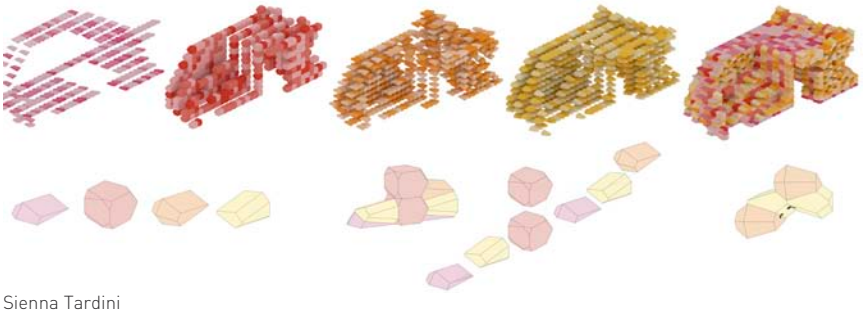
Grace Chen

Final studio presentations & exhibition, Gallery All



Yuan Yao

Anthony Printz



Sienna Tardini

MASTERS FINAL PROJECT

University of Minnesota / Spring 2012, 2013

Course: ARCH 8299

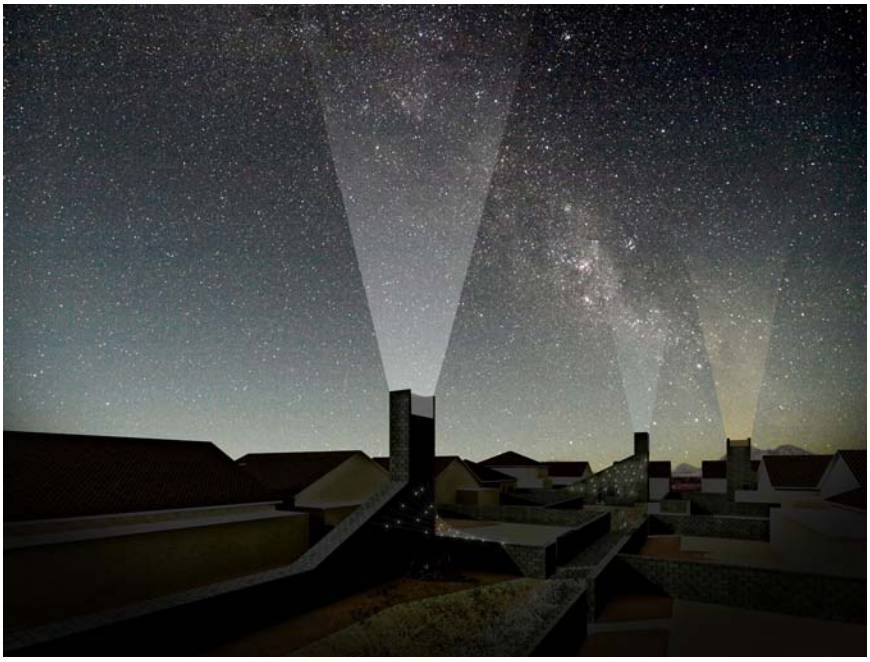
I led a Masters Final Project studio for both years that I taught at the University of Minnesota. The one-semester thesis curriculum is structured in premise-based studios that provide a structure for individual design research. My studios—"Information/Technology" and "Full Scale"—challenged students to critically engage questions of information-processing technologies and full-scale fabrication within the design process.

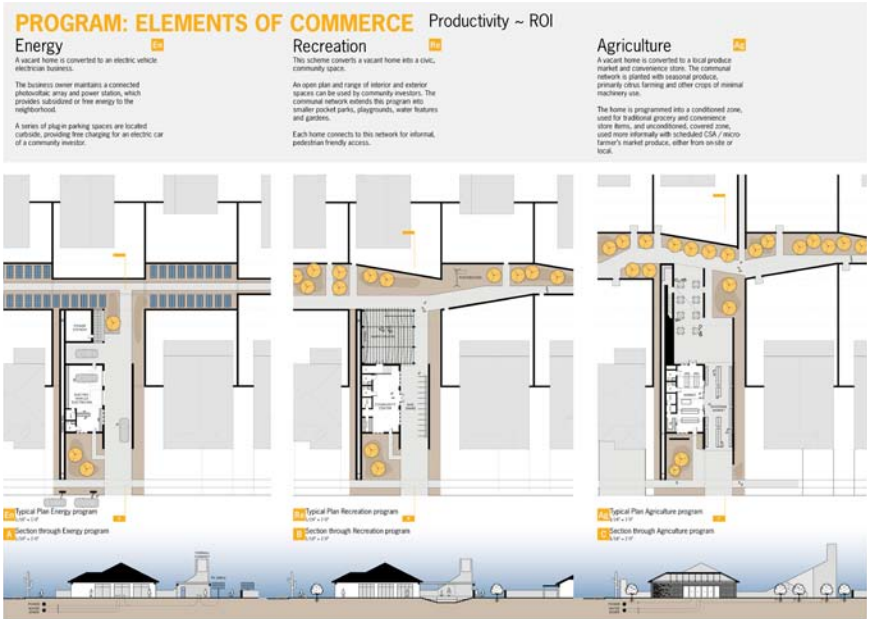
I/O Habitat

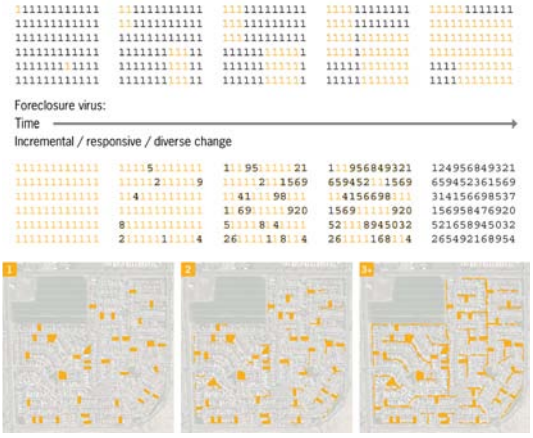
Student: Aaron Frazier

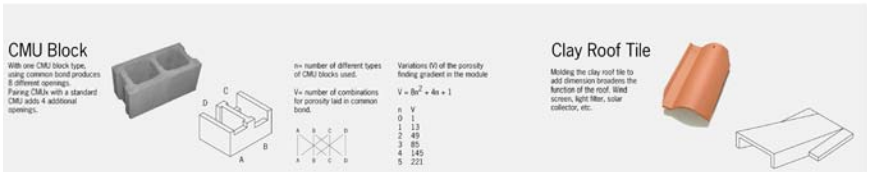
This project proposes a series of potential responses to the foreclosure crisis that has devasted American suburban communities in recent years. In the wake of an unprecedented recession, how can architecture help stabilize and improve the fabric of communities impacted by the recent housing crisis? Using a suburban Phoenix neighborhood with a 20% foreclosure rate as a case study, the project proposes rehabilitating both vacant housing and vacant infrastructure as a means to designing an alternative future development model. This project posits an alternate future and explores ways of breaking traditional suburban development by hacking "virus-infected" systems which promote degradation and community instability. Hacking allows a new stream of code to supplant and ward off the virus -- an architectural antidote which can provide a framework to build community.

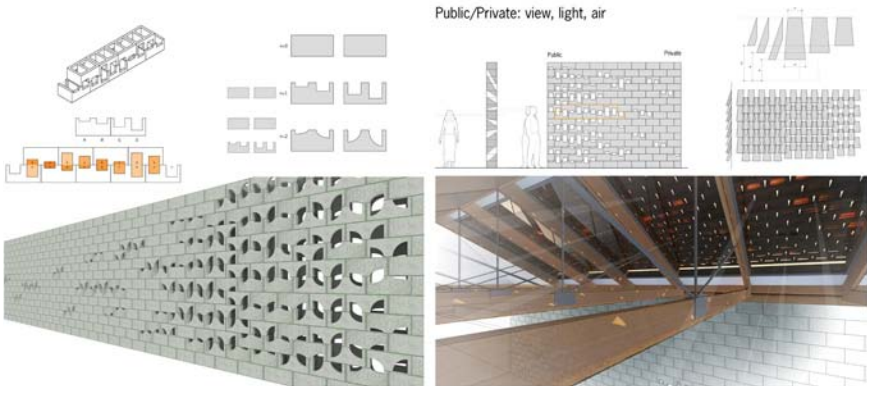
Recognition:
Richard Morrill Masters Final Project Award
Publication in *Graphic Design for Architects: A Manual for Visual Communication*, by Karen Lewis, Routledge 2015.











MASTERS FINAL PROJECT

University of Minnesota / Spring 2012, 2013

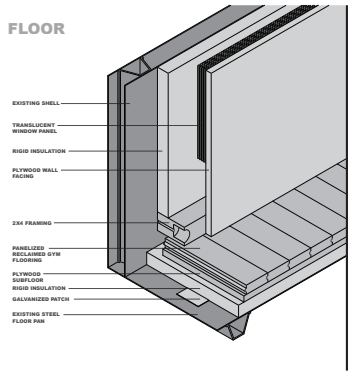
Course: ARCH 8299

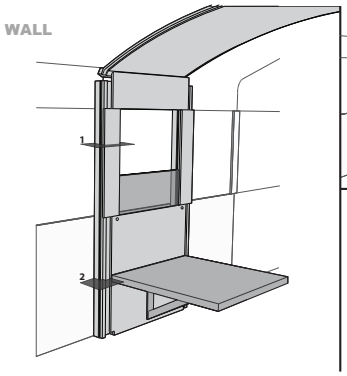
Hank Bought a Bus
Student: Hank Butitta

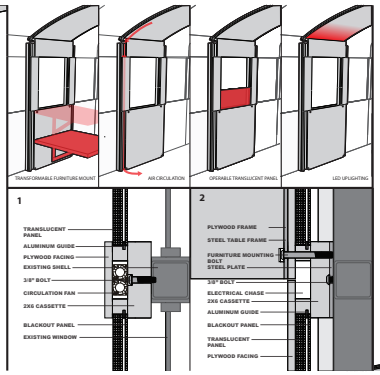
This project, designed and built in three months, proposes a domestic architecture of mobility and economy. The interior of a used Bluebird school bus was converted into a fully functional residence, which features reconfigurable built-in furniture system that allows for a variety of living arrangements. The project presented an opportunity to explore the hands-on process of learning through building, and the challenges of balancing design experimentation with pragamatics of material, cost, and time.

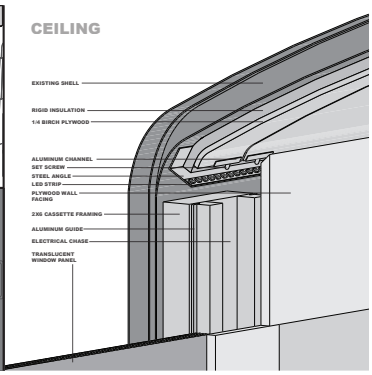
Two primary areas of design focus included the bus envelope and the design of customizable furniture to allow for maximum interior flexibility. The envelope wall section collapses multiple systems (electrical, mechanical/ventilation, glazing, and insulation) into a thin cavity that addresses these performance criteria without encroaching too much on the interior space. The customizable furniture developed from a series of full-scale prototypes and mockups to test a range of hinging, pivoting, and sliding volumes. The project merges a pragmatic approach to the logics of construction with a simple material palette, resulting in an elegant and highly functional architecture.

Recognition:
Richard Morrill Masters Final Project Award
Widespread publication/exposure on radio, television, print, and internet









MODULAR VARIATIONS

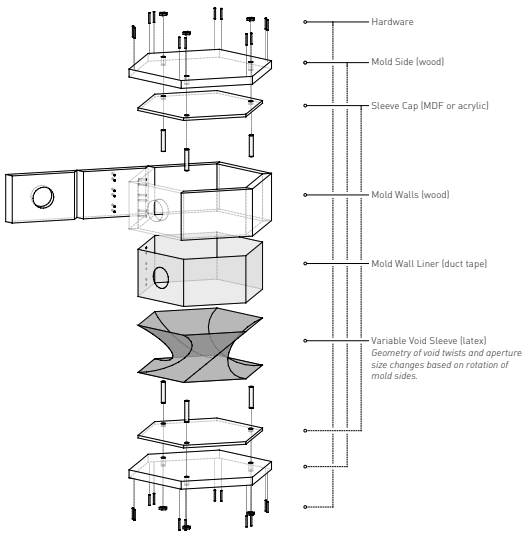
Bachelor of Design in Architecture, Design Studio
University of Minnesota / Spring 2013

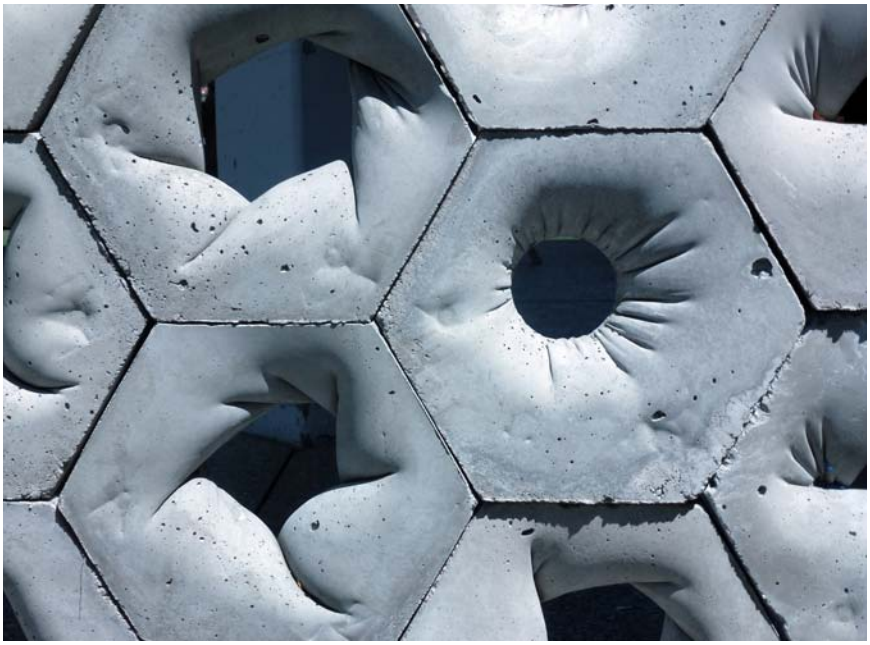
Course: ARCH 3250
Students: Elizabeth Adler, Sam Anderson, Holly Hodkiewicz, Emmett Houlihan, Erik Jackson, Thomas Kuhl, Adam Lucking, Jonathan Meyer, Nick Mosser, Elliot Olney, Jorie Schmidt, Alicia Smith, Christine Stoffel, Christopher Tallman, Rythm Unnown, Sharanda Whittaker

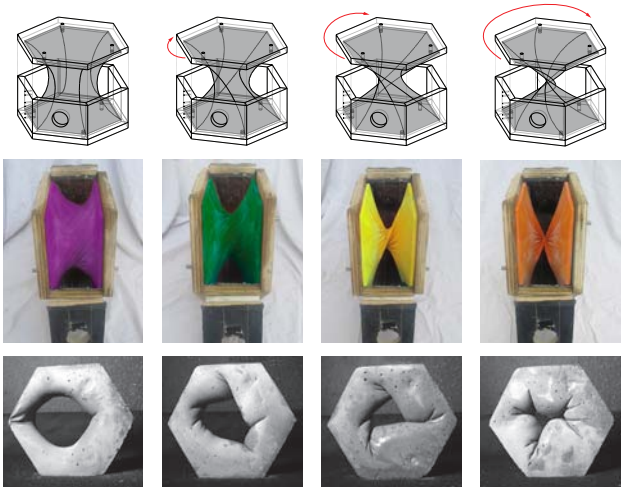
This studio investigated the role of variation in design and fabrication processes, with a focus on developing innovative approaches to reconfigurable and/or flexible formwork. In addition to readings and precedent studies, the course structure included a series of fabrication projects, in which students developed a range of experimental casting techniques. The course culminated in a collaborative design-fabricate-build project, a full-scale wall prototype consisting of 66 structurally repetitive yet individually unique concrete modules.

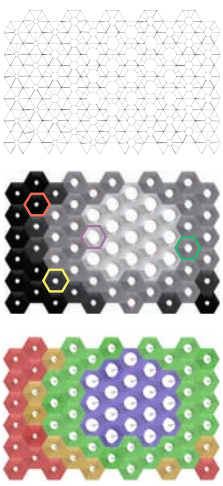
The custom-fabricated molds incorporate a flexible latex bladder that provides a controlled means for producing variable apertures in the cast modules. Incrementally rotating the mold's hexagonal faces increases the twist of the internal bladder, and the resulting void in the cast module decreases in size. This adjustability allows for reliable and rather precise modulation of the aperture's radius, yet of course the material performance of the concrete as it cures within the latex bladder maintains a degree of unpredictability and geometric variation from one module to the next.

Throughout the process, parametric design and digital fabrication tools were strategically leveraged to iterate in form finding, generating fabrication instructions, and directing the assembly sequence of the wall. A constant feedback between physical testing and digital modeling enabled an integrated approach to computation in which the technology is used to augment an architectural agenda rather than determine it.







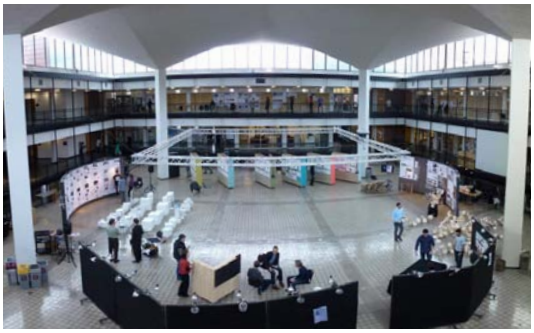


ARCHITECTURE AS CATALYST

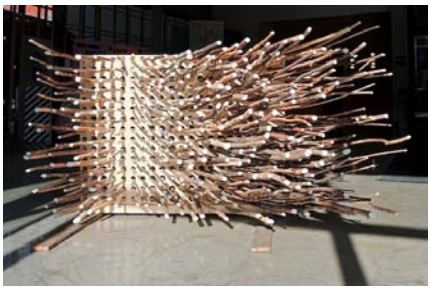
University of Minnesota / Spring 2012, 2013

The Architecture as Catalyst program is an innovative feature of UMN's graduate M.Arch curriculum that occurs each year in the middle of the spring semester. In this award-winning program, professional degree students in architecture step out of the day-to-day curriculum to work with small teams of faculty in safe havens that encourage high-risk work. Through catalyst workshops, students gain the confidence to grapple with large messy problems and become impassioned to ask very big questions and fearlessly probe in specific and tangible ways. Each workshop is led by a host UMN faculty member in conjunction with an invited guest instructor from outside the University. The visiting faculty help provide novel insights and techniques for students, and they are typically recognized leaders within their field or specialty. Each guest also delivers a public lecture during the week; all events are open to the public and provide a chance for the local design community to hear from some of the world's most creative practitioners.

During my two years at UMN, I served as both a Catalyst instructor and overall coordinator of the entire program. My role as coordinator included organizing the workshops, curating the guest instructors, and organizing and executing the public programs.



Views of final exhibition and public events.

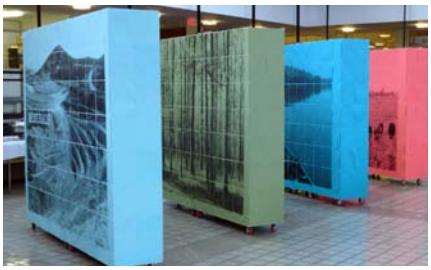


THIRD NATURE (2012); Instructors: Blaine Brownell, Sheila Kennedy, Frano Violich

NESTED SCALES (2012); Instructors: Adam Marcus, Ken Tracy

Left: ELECTRONIC PROTOTYPING (2012); Instructor: Lucy Dunne
Right: MATERIALS AS PROBES (2013); Instructors: Blaine Brownell, Billie Faircloth, Ryan Welch

BODIES IN FORMATION (2012); Instructors: Marc Swackhamer, Andrew Kudless



MAPPING THE CORN BELT (2013); Instructors: Marc Swackhamer, Karen Lewis

MAXIMUM POWER DESIGN (2013); Instructors: Kiel Moe, Jennifer Yoos
OLD SCHOOL TOYS, NEW SCHOOL TOOLS (2013); Instructor: Barry Kudrowitz

STUDENT FEEDBACK

Prototyping Mobility
Advanced Architecture Studio
CCA / ARCHT 507 & MARCH 607 / Spring 2015
Mean instructor rating: 3.84 / 4.0
Mean course rating: 3.69 / 4.0
Response rate: 11/13 students

"Building at 1:1 scale really challenged my understanding of construction and tolerances of how things are assembled in real life."

"This class is one of kind, it pushed my experience and learning to upper levels."

"Adam was highly involved in this collaborative studio. He spent a large amount of time with us besides the normal studio time on this project. It's awesome to have an instructor who not only gives you advice on design but also has better skills in software than us. We could learn so much from him! It's hard to think of his weakness...Such a great instructor."

Buoyant Ecologies
Integrated Building Design Studio
CCA / ARCHT 508 & MARCH 608 / Fall 2014
Mean instructor rating: 3.88 / 4.0
Mean course rating: 3.73 / 4.0
Response rate: 14/14 students

"Adam brought to the table a much needed critical eye. His knowledge of historical and contemporary architectural practice allowed our projects to engage in a deeper dialog with the discipline of architecture itself...Thanks to Adam the course remained relevant, exciting, and rooted in meaning."

"Adam has been the best teacher I've had. He has pushed the amount of detail I design with. My discussions with him have pushed the boundaries of my design."

Design Media 3
CCA / ARCHT 311 / Fall 2014
Mean instructor rating: 3.95 / 4.0
Mean course rating: 3.48 / 4.0
Response rate: 21/24 students

"Adam is very patient and is a critical thinker. I like that he takes time outside of class through email/meetings to help out with software issues."

"You visibly care about your students and our learning results, your effort in the classroom to make sure everyone is understanding is fantastic."

Architecture In The Making
Integrated Building Design Studio
CCA / ARCHT 508 & MARCH 608 / Spring 2014
Mean instructor rating: 3.3 / 4.0
Mean course rating: 3.83 / 4.0
Response rate: 10/12 students

"Adam Marcus is an excellent instructor that understands the role of the instructor in an architecture discipline. He cultivates student's confidence in their own work while also contributing dependable design concepts. Adam has had the most constructive criticism of all the instructors I've had during my time at CCA."

Performative Ornament
Design Media Elective
CCA / ARCHT 570 & MARCH 570 / Spring 2014
Mean instructor rating: 3.89 / 4.0
Mean course rating: 3.65 / 4.0
Response rate: 13/15 students

"All of these discussions were very useful and it was awesome to read theoretical texts and discuss those concepts as we were developing our project ideas. This made for developing a clear position and argument about what we were doing."

"I thought the combination of reading and making made for a very interesting outcome and artifacts that had a lot of intentionality behind them. The discussions were some of the first I've had at CCA that combine theoretical positions with building and producing."

"Adam is definitely one of the best teachers at CCA."

"I'll just say this was the most rewarding class of this semester for me. It was interesting, we got to learn a rich history of an aspect within architecture that is only glossed over in history, and MAKE THINGS 1 to 1."

Modular Variations
Bachelor of Design in Architecture / Design Workshop
UMN / ARCH 3250 / Spring 2013
Mean instructor & course rating: 5.69 / 6.0
Response rate: 15/16 students

"I loved this class. Provocative: intellectually, iteratively, imaginatively. This course is the first and only I have encountered that fused theory and practice."

"He pushed us to produce work at our highest potential by keeping his expectations high. Awesome class. Easily one of my favorites."

Masters Final Project Studio
UMN / ARCH 8299 / Spring 2012, Spring 2013
Mean instructor & course rating: 5.40 / 6.0
Response rate: 20/21 students

"Adam was an excellent instructor for Masters Final Project. He demonstrated a high degree of flexibility and design rigor. He continually brought energy and thoughtfulness. Essential to thesis, he allowed self-direction, not over-powering design towards his own end. Brings incredible talent."

"No other faculty member has a thorough understanding of digital fabrication—not just an interest in wobbly forms, but the ability to work the equipment, and the ability to determine when its usage is beneficial, and when it's frivolous."

"Adam is the best studio instructor I've ever had. Thank you!"

STUDENT RECOGNITION

Alan Cation (CCA M.Arch 2015)
- Artist-in-Residence, Autodesk Pier 9 Workshop, San Francisco (fall 2015)

Alan Cation, Tim Henshaw Plath, Dustin Tisdale (CCA M.Arch 2014/15)
- Honorable Mention, TexFab Plasticity Design Competition, 2014
  (project developed in "Performative Ornament" course

Vanessa Abin-Fuentes (UMN M.Arch 2014)
- Clarence Wigington Minority Architectural Scholarship, Minnesota Architectural Foundation, 2013

Daniel Raznick (UMN M.Arch 2014)
- Henry Adams Medal (highest achieving graduate student), 2014

Hank Butitta (UMN M.Arch 2013)
- Richard Morrill Masters Final Project Award, 2013
- Widespread publication of design/build Masters Final Project (radio, television, print, internet)

David Johansson & Jenna Johansson (UMN M.Arch 2013)
- Richard Morrill Masters Final Project Award, 2013

Aaron Frazier (UMN M.Arch 2012)
- Richard Morrill Masters Final Project Award, 2012
- Publication of project in *Graphic Design for Architects: A Manual for Visual Communication*, by Karen Lewis, Routledge 2015.

Sean Kelly (UMN M.Arch 2013)
- Richard Morrill Masters Final Project Award, 2012

CAREER PATHS

I have been fortunate to have taught and advised a number of exceptional students. Here are a few examples of former students who have gone on to graduate programs and successful careers in architecture, academia, and allied disciplines.

Vanessa Abin-Fuentes ..... Architectural Designer, LMN Architects / Seattle, WA

Samuel Anderson ..... Designer, ROLU / Minneapolis, MN

Hank Butitta ..... Adjunct Faculty, University of Minnesota School of Architecture

Sam Daley ..... Architectural Designer, VJAA / Minneapolis, MN

Prairna Gupta ..... Architectural Designer, WRNS Studio / San Francisco, CA

Sangyong Hahn ..... Architectural Designer, Alliance / Minneapolis, MN

Tim Henshaw-Plath ..... Fabricator, Kreysler & Associates / American Canyon, CA

David Johansson ..... Architect, HGA / Minneapolis, MN

Marc Mascarello ..... M.Arch, Columbia University GSAPP

Jeffrey Maeshiro ..... Designer, Future Cities Lab / San Francisco, CA

Thomas Monroy ..... Designer, Surface Design / San Francisco, CA

Omar Morales-Armstrong ..... M.Arch, Columbia University GSAPP

Melissa Perkinson ..... Architectural Designer, Field Architecture / Palo Alto, CA

Blake Stevenson ..... Designer, AirBNB Environments / San Francisco, CA

Daniel Raznick ..... Architectural Designer, Pickard Chilton / New Haven, CT

Alex Robinson ..... Designer, HGA / Los Angeles, CA

Alec Sands ..... Designer, Snow Kreilich Architects / Minneapolis, MN

Jenny Shen ..... Intern, BIG / M.Arch Candidate, Harvard University GSD

Christopher Tallman ..... MLA Candidate, University of Minnesota

Wen Wen ..... M.Arch at Harvard University GSD

Hannah Wilentz ..... Intern, Diller Scofidio + Renfro / Fullbright Grant, Cyprus