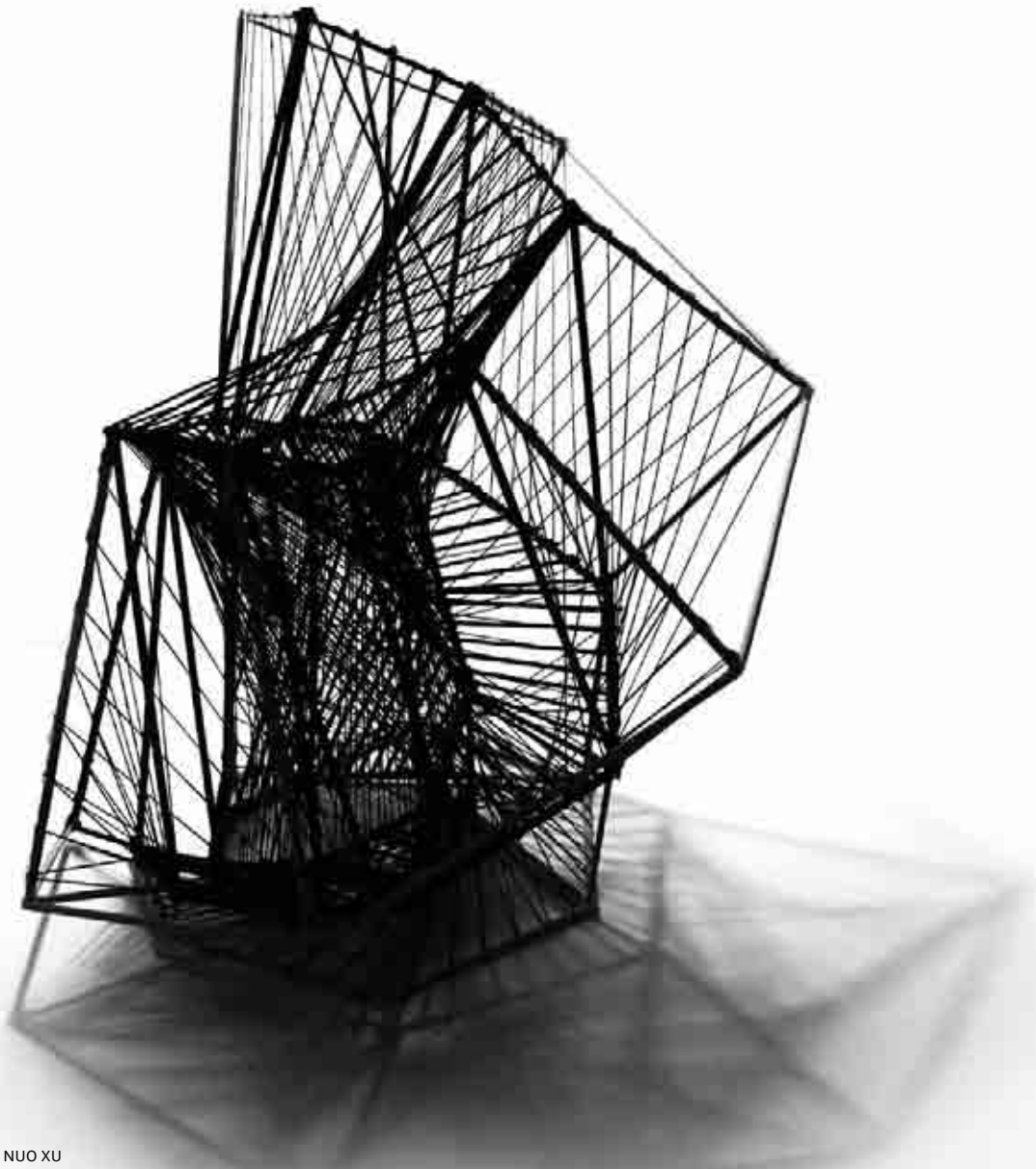


2012/2013

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USC Architecture

2012/2013



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INDEX

USC Architecture

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USC School of Architecture

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EDITORS' STATEMENT

As we assembled this collection of student work from the 2012-13 academic year, the INDEX editors were in the fortunate position to see many architectural ideas that were both novel and fascinating. As in past years' collections of work from the School, hundreds of students from the undergraduate and graduate programs submitted design projects and research. Despite its small size, INDEX aims to convey the School's ongoing changes and to sample the energy of a year of activity. Smoothing this stream of projects to resemble a single set of compatible aims is of course both undesirable and impossible. INDEX instead implies more than it can include, offering an incomplete sample of the School's most experimental projects. Working with this often unruly collection of ideas and directions is perhaps the most rewarding aspect of editing student work, and we hope this book conveys this quality of restlessness and innovation.

Laurel Broughton
UNDERGRADUATE EDITOR

Marcos Sánchez
GRADUATE EDITOR

The most intriguing aspect of the nature of the pedagogy at USC is the dialectic between the graduate and undergraduate programs.

While the fundamental knowledge of architecture and core strength of the profession are discussed and disseminated in parallel through the two programs, the agenda in design innovation research and theoretical parameters are integrated differently—both through strategic curricular organization and by creating an energetic and engaging cohort of tenure track faculty. They represent an incredibly diverse and therefore potent compound between innovative material and mechanism, interactive environment, digital design process and spatial performance. The collaborations across campus have provided a rich academic and social network critical to pedagogical models. In the undergraduate program, inquiries are primarily carried through a horizontal progression which accumulatively acquires a common agenda in historical studies, building physics, and global practices. Inquiries in the graduate programs are carried out vertically, which commands sustaining focus while allowing constant horizontal interaction.

With the unprecedented growth of the graduate program and optimization of the undergrad, with the maturing community of tenure track, with the new leaders in each four academic disciplines, and reborn Ph.D. program, the School is entering an unprecedented era of opportunity and promise.

Dean Qingyun Ma, AIA

DELLA AND HARRY MACDONALD DEAN'S CHAIR IN ARCHITECTURE



UNDER GRADUATE CORE STUDIOS

**WE STAND AT
THE BEGINNING
OF A NEW ERA
IN WHICH SUCH
PURSUITS WILL
DEFINE AND
BROADEN OUR
SUCCESS
IN TRAINING
A FUTURE
GENERATION OF
ARCHITECTS.**

UNDERGRADUATE CHAIR INTRODUCTION

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It takes many minds, skills, hands, and tools to make architecture. No one person has all the know-how to get the job done. To design something that will actually get built requires collaboration across many disciplines. You cannot just sit at a desk in front of a computer, or in a shop working with a bunch of machines. You have to interact.

It is a great thing when architectural *education* fully engages the collaborative process—when it can break out of the confines of the design studio and get students to walk the walk, not just talk the talk (and talk and talk...and press buttons). Higher education today has a global outlook, one that recognizes that interdisciplinarity leads to innovation and creative output. USC gets it; listen to transcripts of any speech by USC president C. L. Max Nikias.

The School of Architecture has made great strides in this area. This past year, the undergraduate curriculum actively engaged in design-build and fabrication as the embodiment of the collaborative process. Highlights included full-scale pavilions created by the second-year spring design studio, prototypes constructed by various fifth-year spring studios, and the participation of fourth- and fifth-year (as well as graduate) students in the 2013 Solar Decathlon, sponsored by the US Department of Energy (ongoing at press time).

We stand at the beginning of a new era in which such pursuits will define and broaden our success in training a future generation of architects. The markings of this trajectory are clearly imprinted on the pages that follow. It is the future; it is also our *now*.

Alice Kimm, FAIA

DIRECTOR OF UNDERGRADUATE PROGRAMS

ARCH 102A. SPATIAL LITERACY

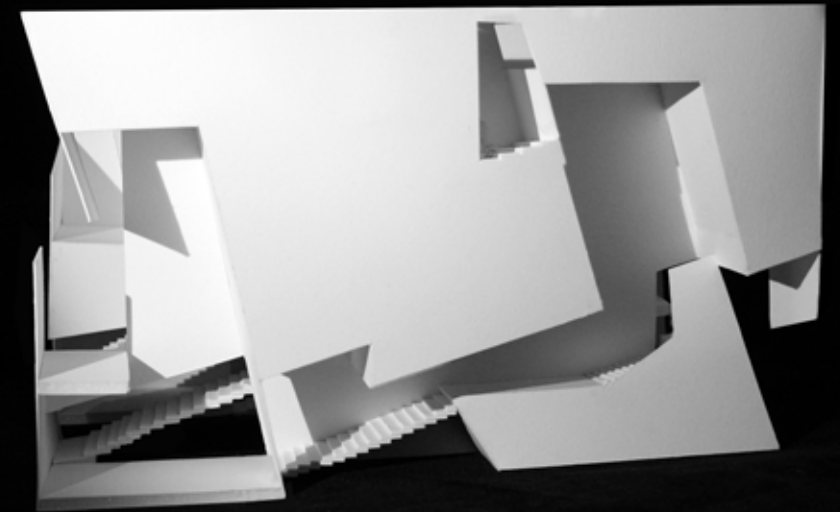
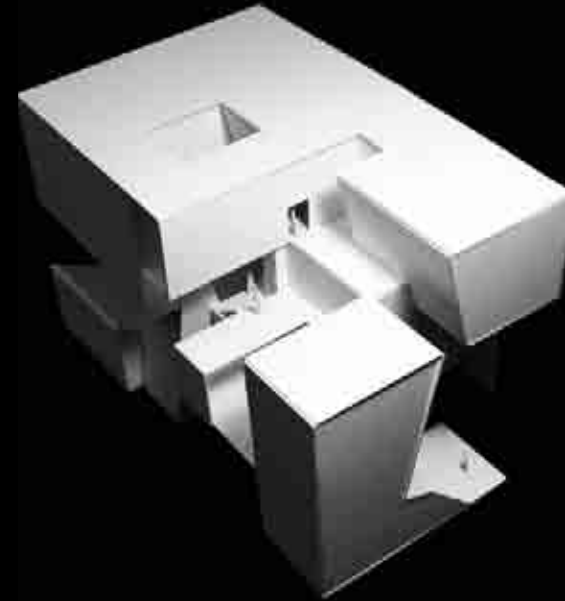
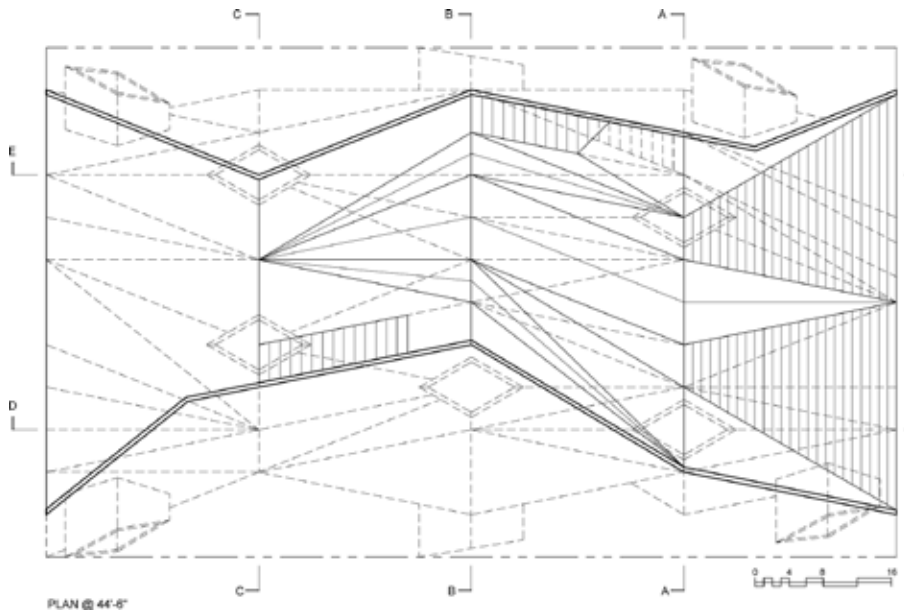
COORDINATOR: Anthony Guida. **INSTRUCTORS:** Rosalio Arellanes, Dana Bauer, Jason Kerwin, Lisa Little, Kris Mun, Colin Sieburgh, Geoffrey von Oeyen

The first semester studio provided an introduction to spatial design practice. Students developed the ability to use drawings and physical models to conceive, organize, and develop habitable, three-dimensional space.

Through four design projects of varied scale and increasing complexity, students addressed fundamental lessons of geometry, proportion, scale, formal organization, spatial definition, light, sequence, and movement. The study of relevant design precedent focused on conceptual understanding. Prescribed themes and processes aided in the advancement of technical skills, promoted awareness of spatial conventions, and stimulated critical thinking and creativity in interpreting limits.

In each project, diagrams and digitally produced orthographic drawings were the primary instruments of design inquiry and the iterative development of formal solutions. Physical models (interim design studies and refined final versions) supported visualization and the testing of ideas in three dimensions. Refined graphic and verbal presentations successfully communicated design intent.

ANJELIQUECA BAJITA, CALVIN BOYD, JOE CHANG



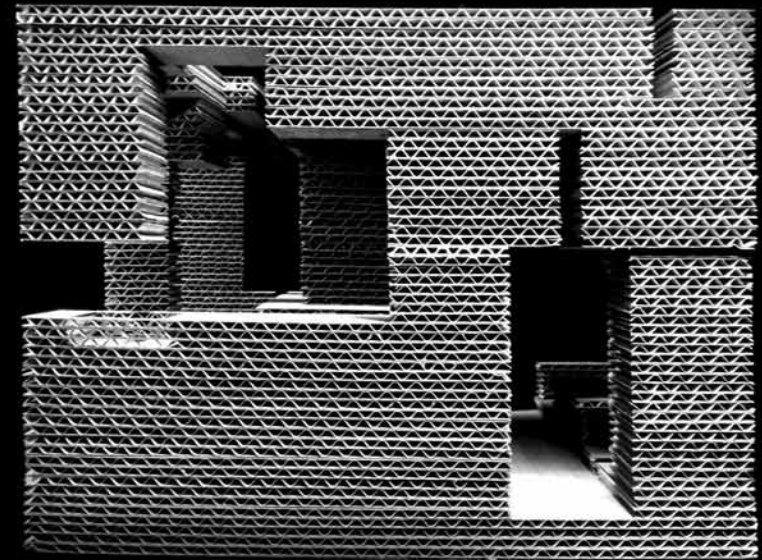
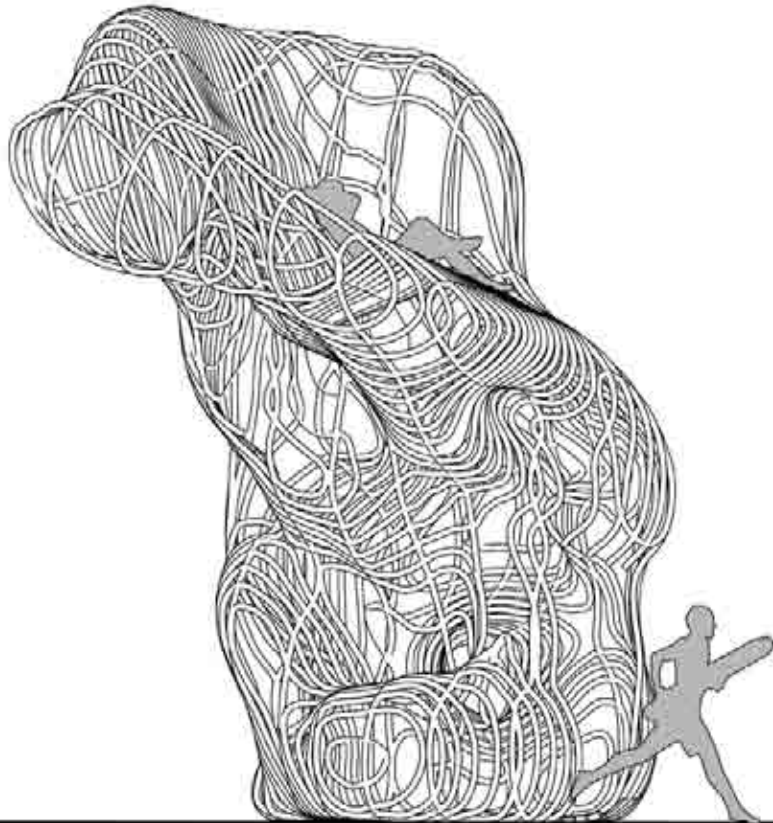
ARCH 102B. FORMAL SYSTEMS

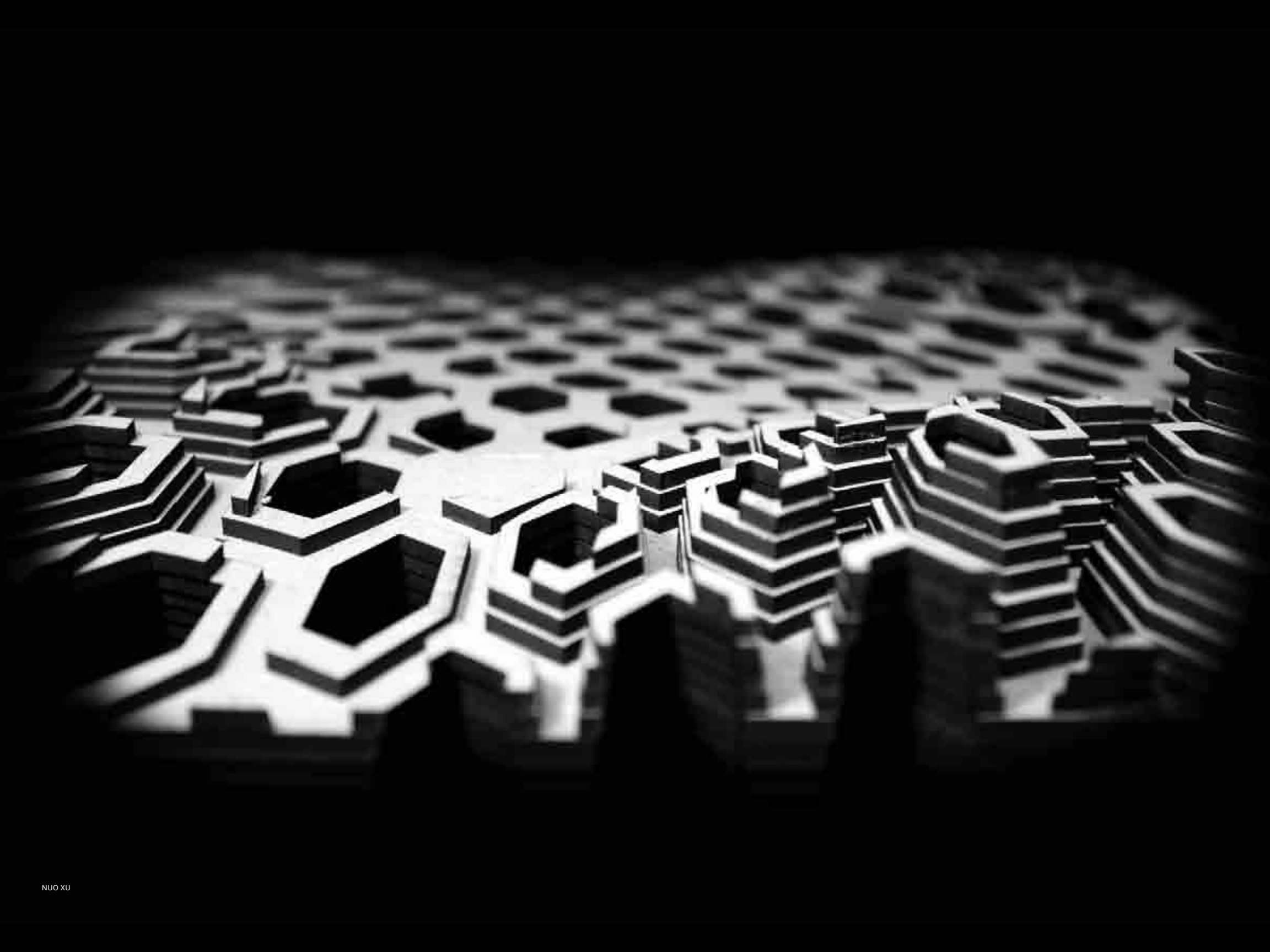
COORDINATOR: Colin Sieburgh. **INSTRUCTORS:** Rosalio Arellanes, Dana Bauer, Nefeli Chatzimina, Victoria Coaloa, Jason Kerwin, Lisa Little, Manuel Shvartzberg

The second semester of the first-year design studio served as an introduction to generative form-making in architecture.

As a point of departure, the semester began with investigations of three distinct but interrelated form-making methodologies: solids, surfaces, and lines. In each project, students generated abstract but coherent formal systems that were spatial, structural, and organizational as well as varied in scale, density, configuration, and so forth. They then used these systems as a basis for developing design proposals that addressed fundamental issues of program/use and site/context. Each of the initial investigations was limited to the singular form-making methodology. The expression of architectural form, however, is fundamentally a synthesis of these systems. Thus, the final project required students to synthesize multiple formal methodologies to resolve specific architecture programs on an actual site. Digital models were introduced and used in tandem with analog techniques, drawings, and diagrams as the instruments of design inquiry and development.

BRADLEY SILLING, TING HAO CHEN





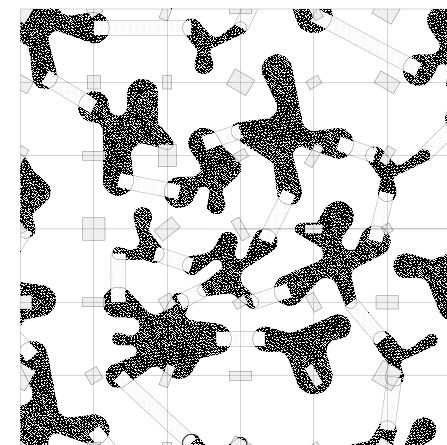
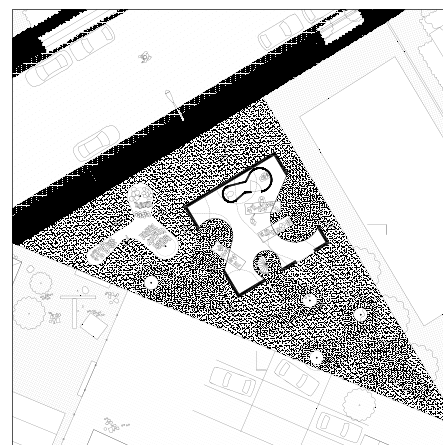
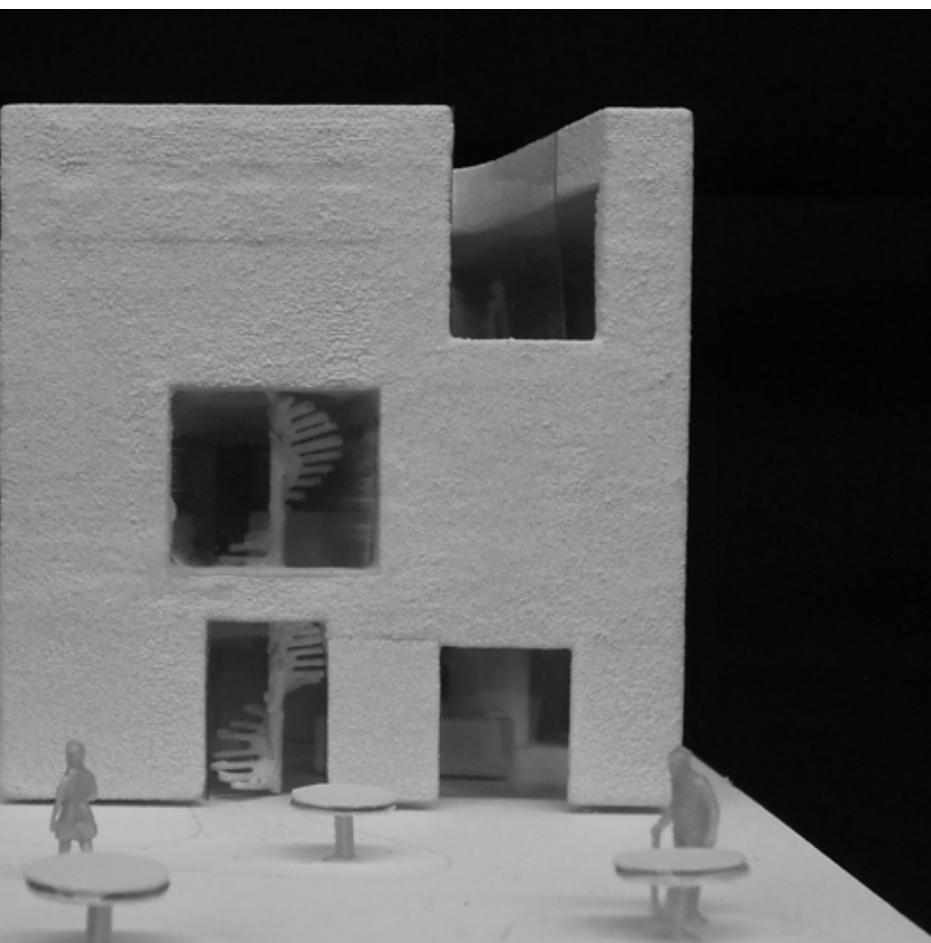
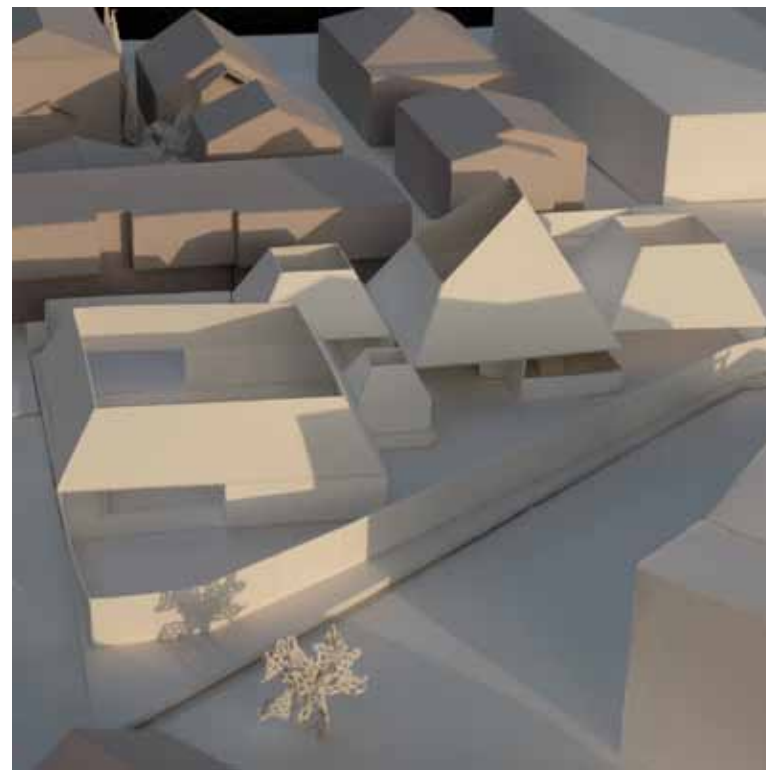
ARCH 202A. SITE WORKS

COORDINATOR: Victor Jones. **INSTRUCTORS:** Carlo Aiello, Laurel Broughton, Graeme Morland, Brendan Muha, Eric Nulman, Jennifer Siegal, Scott Uriu

The fall second-year design studio introduced fundamental knowledge about the interface between building and site. Assignments, lectures, readings, and field trips focused on the performative aspects of a site as students learned ways in which architects contemplate the “surrounding.” The study of historic precedents and ecological and human behaviors, as well as the study of systems, materials, and construction logic, reinforced the environmental, social, and cultural dimensions of building/site planning and design.

The semester consisted of three main assignments: In Situ, Dirt, and Field Operations. In these assignments, students engaged, respectively, with historic precedents in Los Angeles’s rich residential architectural history, worked directly with soil to design a community garden and kitchen, and investigated the interface between site, program, and the urban context. Working with the contemporary concept of “field to fork,” students designed a modestly sized food market and culinary center to prepare and sell products from local organic food producers.

TERESA FOREST, DELARAM RAHIM



COORDINATOR: Eric Nulman. **INSTRUCTORS:** Carlo Aiello, Laurel Broughton, John Frane, Brendan Muha, Aaron Neubert, Geoffrey van Oeyen, Roland Wahlroos-Ritter

Materiality was the topic of this foundation-level studio, which began with an introductory midterm project consisting of three parts: material precedent, material object, and material environment. It concluded with a final project that synthesized these introductory parts into material architecture. Through a material lens, architectural precedents were studied for their use of materials to produce effects (atmospheres, performance, and so forth) and the means employed to achieve them (tectonics, ordering systems, tooling, collections, and so on). These investigations were carefully documented, with each student developing unique graphic techniques for material representation. Two preliminary exercises, realized at full scale, introduced material applications in distinct contexts and with specific performance requirements.

The final project, a public swimming pool facility sited in an urban context, challenged students to synthesize the completed exercises and demonstrate the ability to utilize materials intelligently to achieve a desired architectural expression.

BELOW: KATHERINE AMRINE, ZHENTAO FENG, SHELLEY FU, SAEED GHODS, PETER JEUNG, DONG LEE, ANDREA MENDOZA, DAVID NICHOLSON, KRITHIKA PRABHAKARAN, ZENAH SAKAAMINI, YANG CHUN SU, VICKY WONG, GRAHAM WOOD, OPPOSITE: ANTONIO JASSO TORRES, ARLYN RAMIREZ-DIAZ





KATHERINE AMRINE, ZHENTAO FENG, SHELLEY FU, SAEED GHODS, PETER JEUNG, DONG LEE, ANDREA MENDOZA, DAVID NICHOLSON,
KRITHIKA PRABHAKARAN, ZENAH SAKAAMINI, YANG CHUN SU, VICKY WONG, GRAHAM WOOD

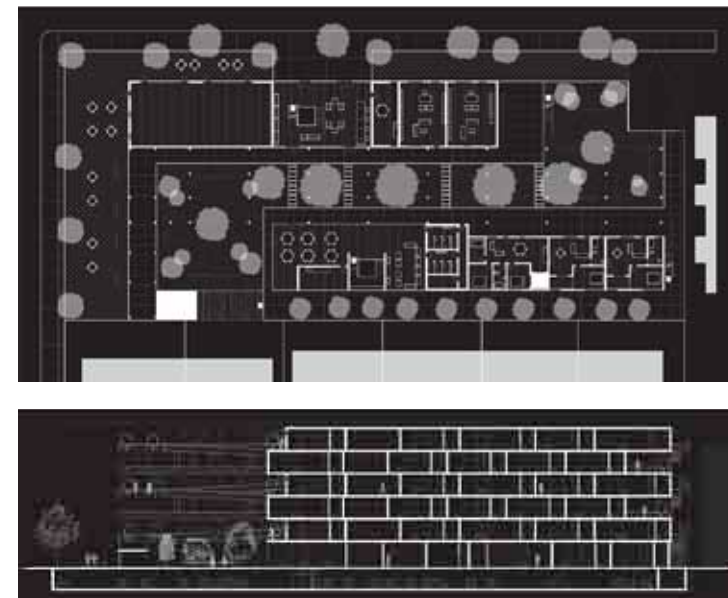
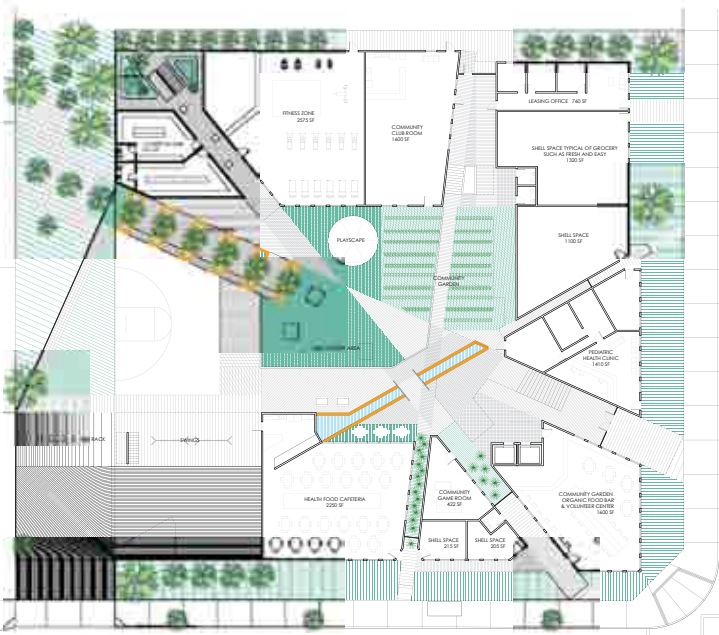
ARCH 302A. HOUSING

COORDINATOR: Liz Falletta. **INSTRUCTORS:** John Dutton, John Frane, Chris Genik, Christoph Kapeller, Charles Lagreco, Eric Mar, Edwin Woll

Dwelling units constitute the predominant built form in our communities. Whether standalone or accumulated into clusters, they reflect the needs and aspirations of individuals, families, and larger communities. Upon completion of this studio, students clearly understood housing as a set of building typologies locked in a social and historical continuum, as everyday performative objects (and spaces) embedded in the city, and as an integrated system (and species) of building composed of multiple and diverse elements, characteristics, and materials.

The studio explored methods and techniques to help students understand the design of dwelling-unit plans and interior spaces, unit aggregations, arrangements and organizations, building plans, and section and elevation development strategies, as well as site organization and the programming of open space. In addition, the studio posed larger-scale questions about the influence of social formations on spatial activities and physical form, the role of housing in the urban context, and the need to integrate sustainable strategies of design into housing.

AVNI SHAH, ZACH MATTHEWS, WALTER BOLANOS



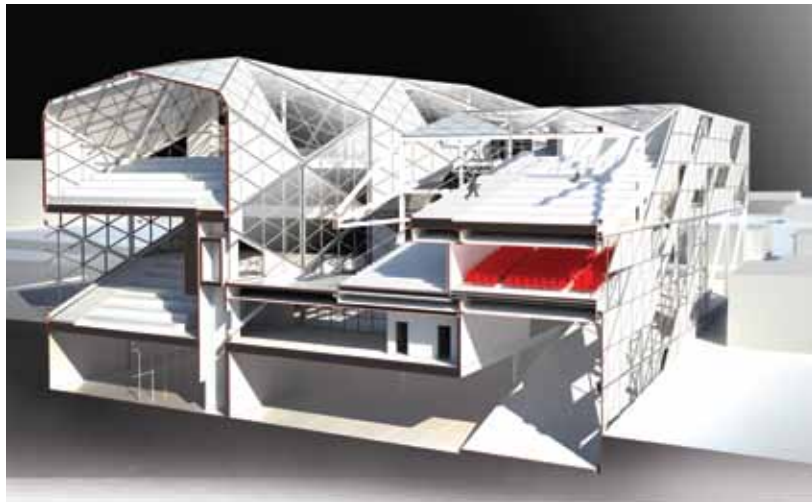
ARCH 302B. INTEGRATIVE STUDIO: PROGRAM/SYSTEMS/SITE

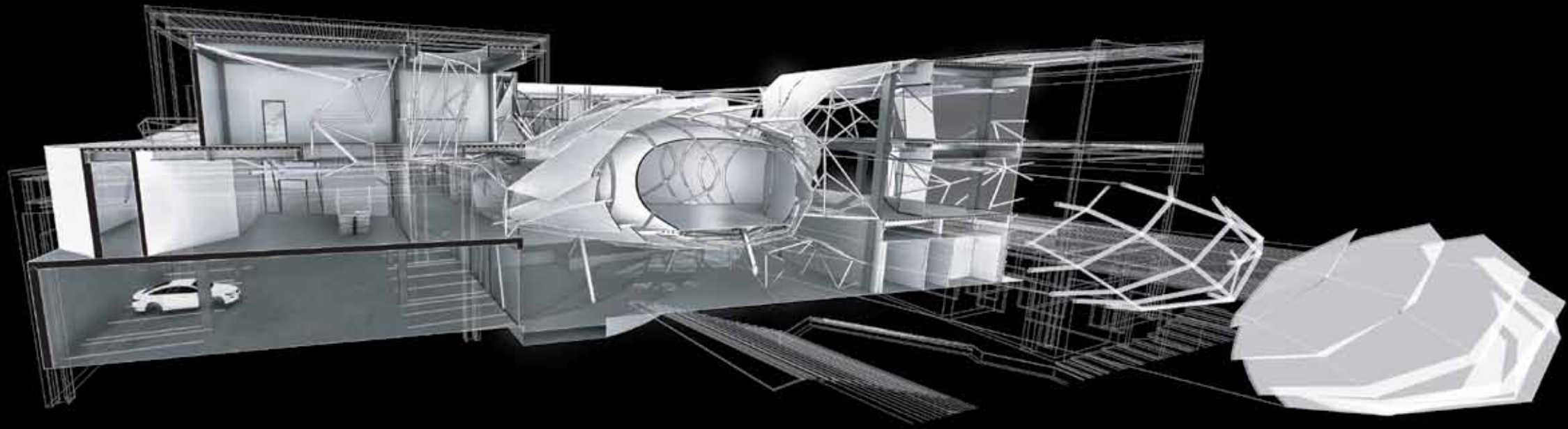
COORDINATOR: Eric Haas. **INSTRUCTORS:** Jeffrey Kim, Andy Ku, Eric Mar, Selwyn Ting, Olivier Touraine, Scott Uriu, Edwin Woll

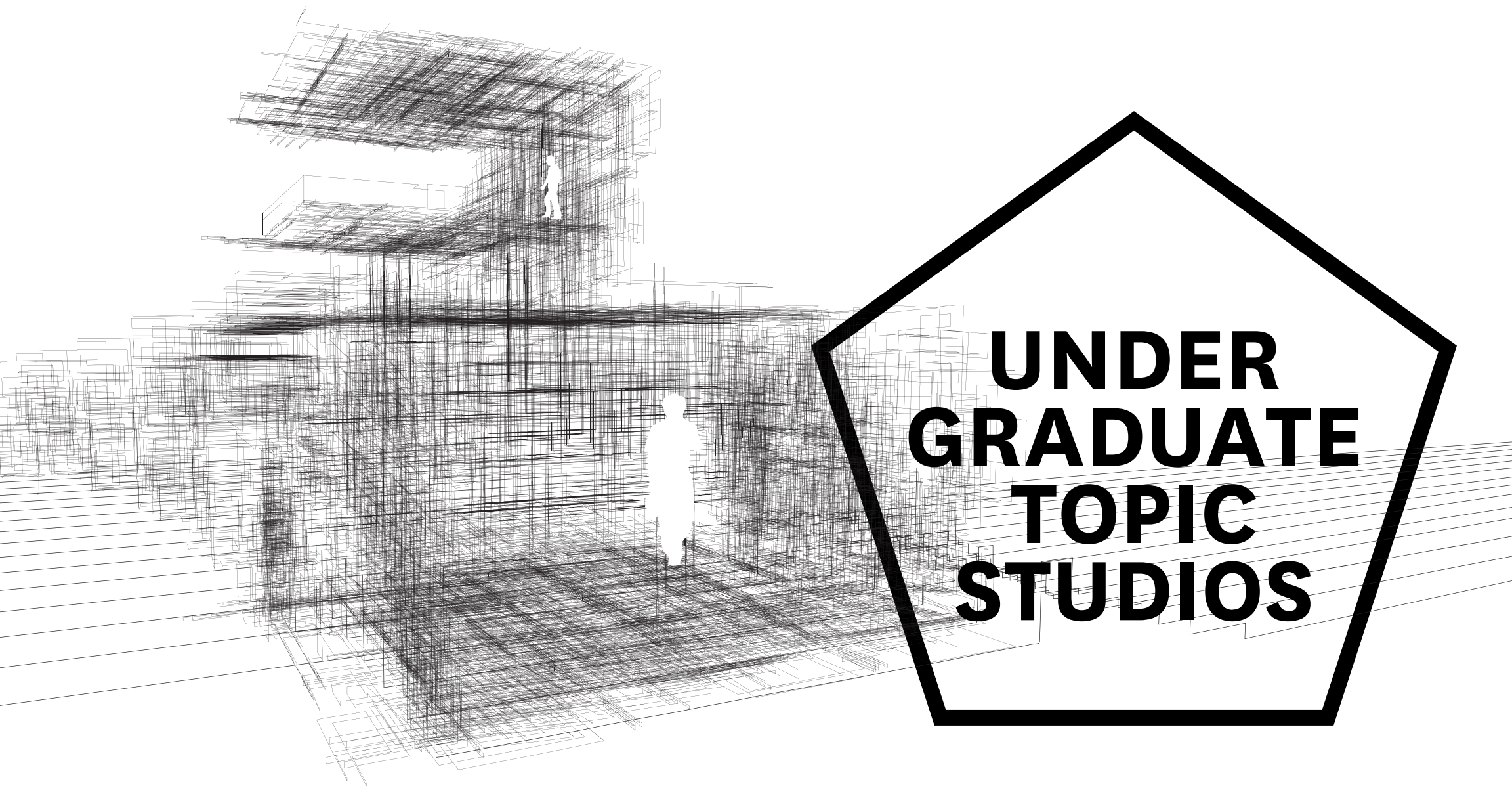
The third-year spring studio promoted a host of issues for students to address: investigation and augmentation of a design program, site and context studies, sustainable and passive environmental strategies, regulatory demands of life safety and accessibility, structural approaches and techniques, mechanical systems, construction tectonics, and materiality. Focusing on these issues fostered multidimensional thinking and consolidated solutions.

Students worked on a semester-long comprehensive design problem, the program for which was a charter high school with a community-connective component that encouraged all-hours occupation of the building and site. With such a cumulative and far-ranging project, participation in the studio required a high level of sophistication in integrating the various requirements of architecture. The investigations followed three main tracks: program, in both its functional and fluid modes; systems, whether physical or material factors such as structure and facade tectonics, or immaterial factors such as movement and natural light; and site, to encourage grounding in the specific and thinking outside the building envelope.

EDWIN WOLL/YOONHA KIM, ANDY KU/XINYI SHAO, OLIVIER TOURAINE/YUAN YAO







UNDER GRADUATE TOPIC STUDIOS

STRUCTURAL SYSTEMS, SITE DESIGN, ENVIRONMENTAL SYSTEMS, ACCESSIBILITY, LIFE SAFETY, AND SUSTAINABILITY.

ARCH 402. TOPIC STUDIOS

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The 402 studio sequence was organized into two thematic realms: applied research and comprehensive design. The goal of the studios was the continued development of analytical skills and theoretical knowledge, with particular emphasis on understanding the role of applied research in determining function, form, and systems and their impact on human conditions and behavior. Students explored how the information and data common to architectural research could be leveraged into strategies for iterative development and, ultimately, into the basis for pushing their own work in new and often unexpected directions. As they developed their projects, students collated and cataloged their research into a book that summarized and traced the decisions made and their impact on the process of design. At semester's end, final reviews were less a critique of a comprehensive and completed design than a discussion of how the research was applied to the development of students' projects.

As designated comprehensive design studios, Arch 402b and 402c offered students the opportunity to demonstrate the skills and knowledge acquired in a program recognized by the National Architectural Accrediting Board (NAAB). The studio presupposed that an understanding of complex building systems and the technical requirements relevant to contemporary architectural practice were territories rich in generative potential. Students were tasked with illustrating technical ability and awareness in a variety of areas, including structural systems, site design, environmental systems, accessibility, life safety, and sustainability. The integrative nature of the studio served to enhance the development of architectural proposals that were intellectually provocative, conceptually rich, and highly resolvable.

Valery Agustin
Alice Kimm
Warren Techentin

ARCH 402A. URBAN COLLECTION

INSTRUCTOR: Victoria Coaloa

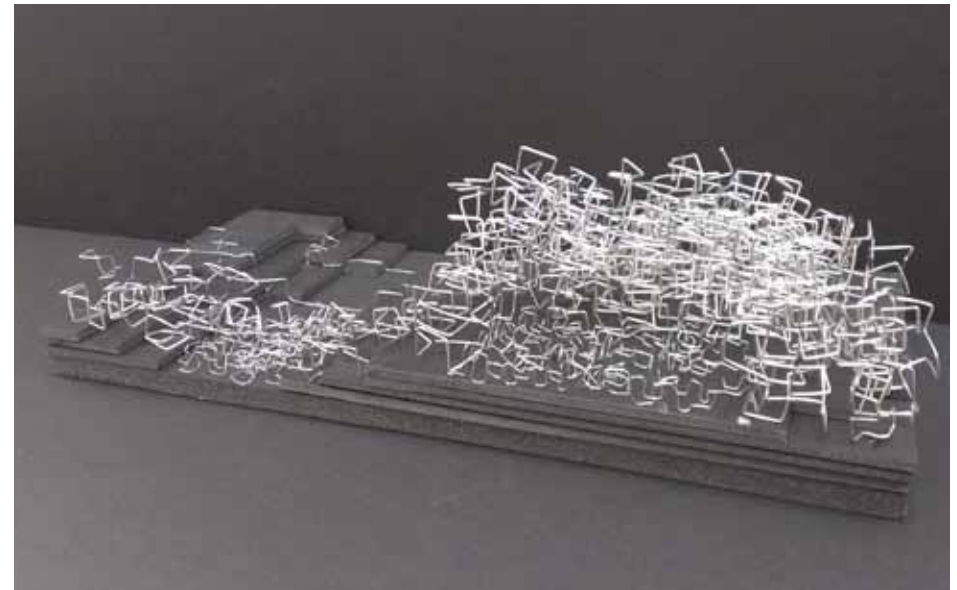
A collection can comprise many things. In fashion and design, it suggests a family resemblance between a series of objects. A collection offers unique organizational and generative potentialities as well as spatial adaptive qualities.

This studio investigated furniture collections as generative aggregate systems of growth that define space and react to future social and cultural occupations.

In Phase 1, students formally explored an existing furniture collection and studied similarities and dissimilarities between various objects to generate a collection of “Urban Furniture.” Students used these formal explorations as a basis for developing aggregate systems that achieve spatial and perceptual variation.

In the second phase, students interrelated site data conducted in the slums of Buenos Aires with the “Urban Furniture” collection into a coordinated plug-in strategy. The data were used to analyze information; to create an awareness and understanding of site; to organize movement, program, and spatial relationships; and, finally, to generate a synthetic design process for the development of an interactive urban architecture proposal.

ANNETTE CORONA, TAMAR TAWILIAN, OLIVER YANG



**ARCH 402A. ABROAD USC / LA SALLE/BCN: REMIX: SURFACE STRUCTURE AND
RETHINKING POBLENOU 22@BARCELONA**

COORDINATOR: Kim Coleman. **INSTRUCTORS:** Mark Cigolle, Jaime Font, Pedro Garcia, Sophia Gruzdzys

In the first half of the studio, students from USC and La Salle Barcelona worked in teams, applying a broad spectrum of background, knowledge, and research to Barcelona's Poblenou district and its urban structure, developing collaborative designs for urban frameworks that densify and diversify this formerly industrial area of the city. The projects looked ahead to develop housing, commercial, educational, and cultural functions, resulting in a range of both scale and use and a commitment to public space for the Poblenou district.

In the studio's second half, each student identified an individual project focus and implemented a strategy related to those outlined by their respective teams in the first half's urban framework study phase. These strategies were further informed by interim field studies in Venice, Paris, Amsterdam, and Barcelona. The studio postulated that reurbanization and hybridization of the program serve as a model for sustainable urbanism and dynamic urban life to refresh underutilized urban zones.

CHI BHATIA , NICHOLAS TEDESCO, CLAUDIA OTTEN



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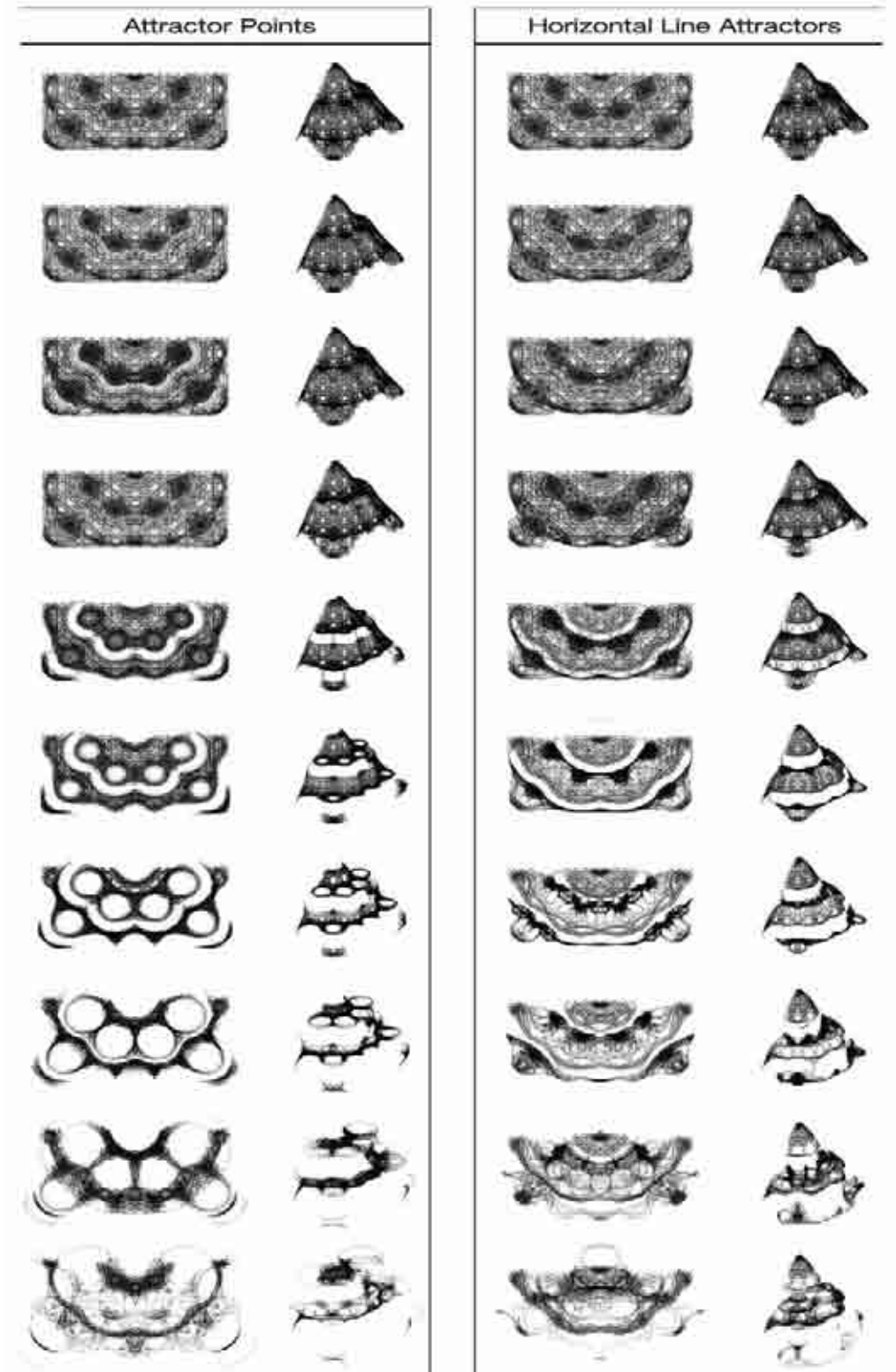
ARCH 402A. PATTERNS

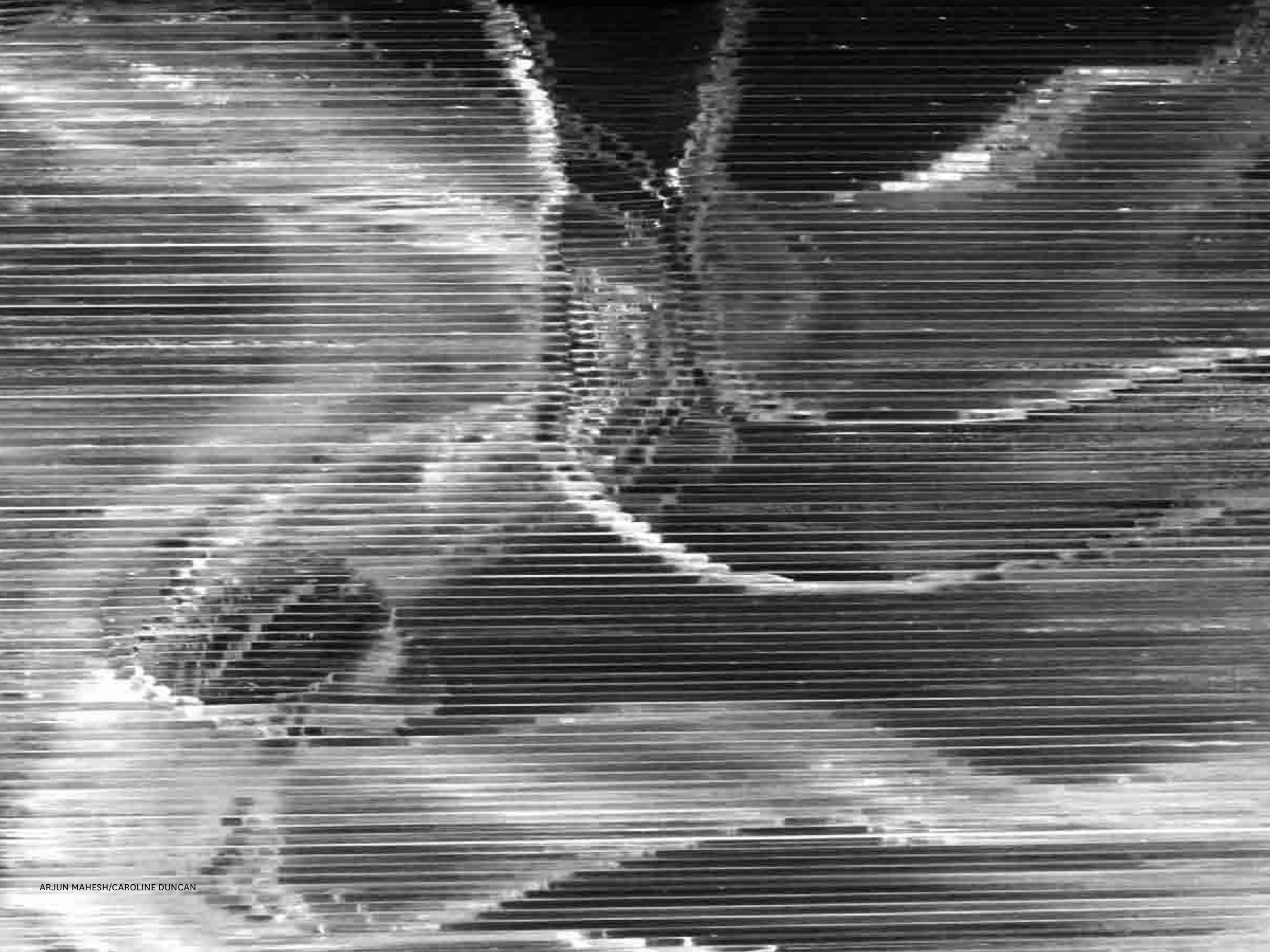
INSTRUCTORS: Neil Leach, Biayna Bogosian

This studio combined an understanding of digital computation with the study of material intelligence to investigate the logic of patterns and pattern making through the design of vaulting systems.

Students were asked to examine the internal logic of Islamic tiling and vaulting systems in a research document format. In parallel, they were asked to examine the logic of biological and chemical systems of agglomeration, aggregation, and other forms of material intelligence. The objective was to develop a series of novel vaulting structures informed by the pattern-making logic of Islamic tiling techniques and biological organisms with the assistance of various computational programs. Students worked in teams of two to move beyond merely cataloging these existing structures and develop novel and highly inventive approaches to vaulting systems.

CHRISTIAN GOMEZ, JAVIER MEIER, KRISTINA LAMBROS, CHELSEY KOENIG



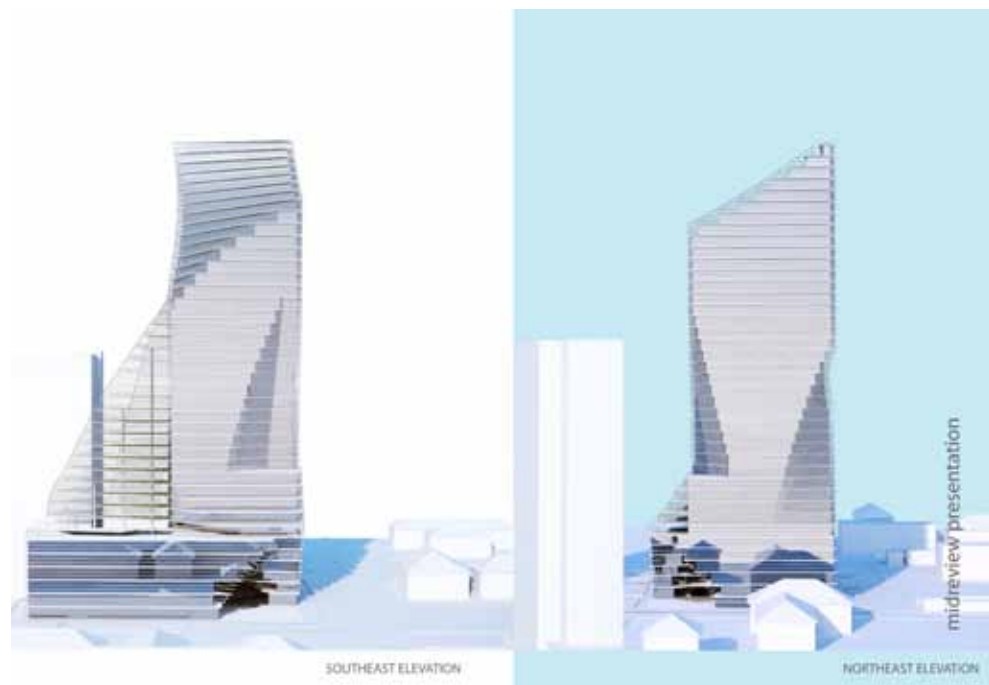




ARCH 402A. TOPIC STUDIO

INSTRUCTOR: Michele Sae

ROBERTS & ?



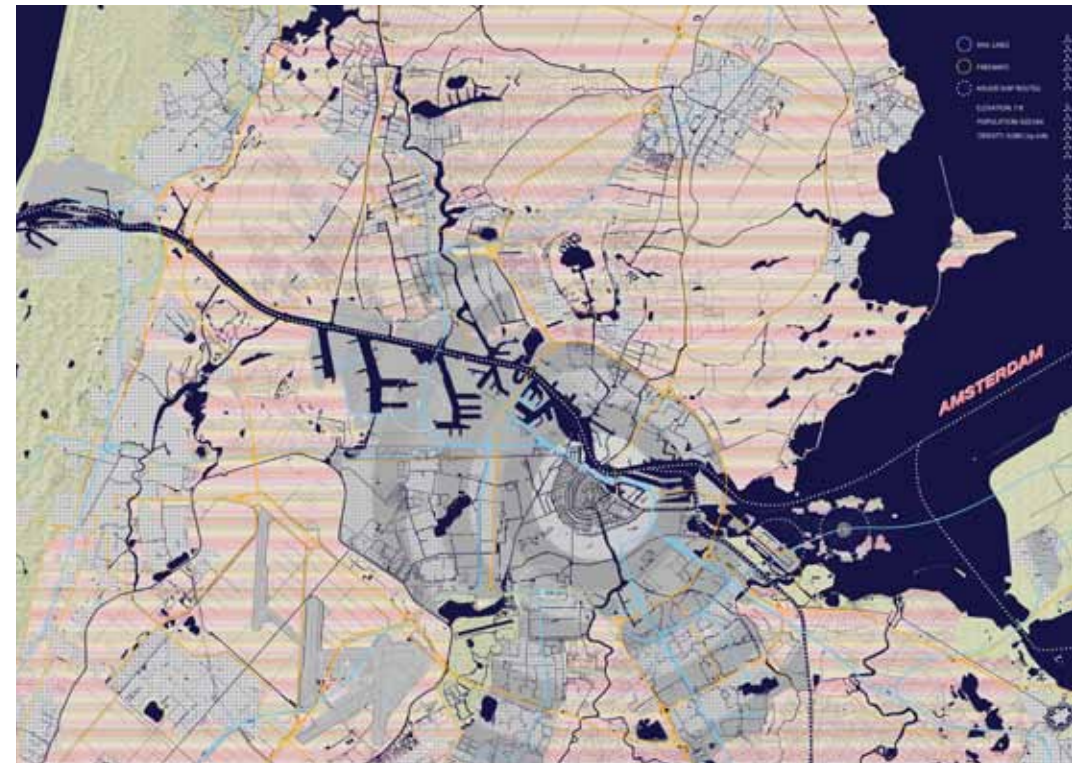
ARCH 402A. THE 100-MILE CITY-STATE: PROJECT SUPER-DENSITY

INSTRUCTOR: Warren Techentin

People everywhere are coming to our cities. How are we to accommodate such a mass, and where will they all fit? Will Los Angeles double in population by 2050, as reports claim? What would that Los Angeles look like? What about other cities—the ones considered “finished”?

These twin Trojan horses of overpopulation and ecological breakdown have already laid a strong narrative over our cities. To accommodate this narrative, urban experimentation is necessary. How do we add to what is already cherished? Barring widespread destruction, a tabula rasa is not an option. Selective demolition is perhaps the best we can hope for. How are architecture and landscape architecture able to serve as meaningful participants in the palimpsest of city? This studio explored how form and experience are generated through the need for incremental and ongoing change at a variety of scales.

MATTHEW GEHM, MICHAEL DENHERTOG, ALEX HAGENTORN, KEVIN REINHARDT, CALVIN LEE



COORDINATOR: Kim Coleman. **INSTRUCTOR:** Mark Cigolle

The studio consisted of three projects:

LAURENTINO 38

This project, a collaboration with students at the University of Roma Tre, involved urban transformation strategies that breathed new life into an aging public housing project in Rome.

ISTITUTO DEL CINEMA ITALIANO

Interpretations of primitive forms, spaces, and ideas established within ancient Roman architecture and modern Italian cinema were considered in the design of built space of a contemporary order.

PARCO LINEARE DI COMO: MATERIAL REALIZATION OF THE ARCHITECTURAL IDEA

Installations in Como, Italy, created public spaces for gatherings, cafés, and exhibitions and increased the potential for jump-starting the social life of the city. Students worked in teams to develop an urban strategy. Following a week of study at the fifty-second Salone Internazionale del Mobile, in Milan in April 2013, each student developed a device that reinforced urban connections.

LEO YU, JESSICA HENDROPURNOMO



ARCH 402B. COVERS

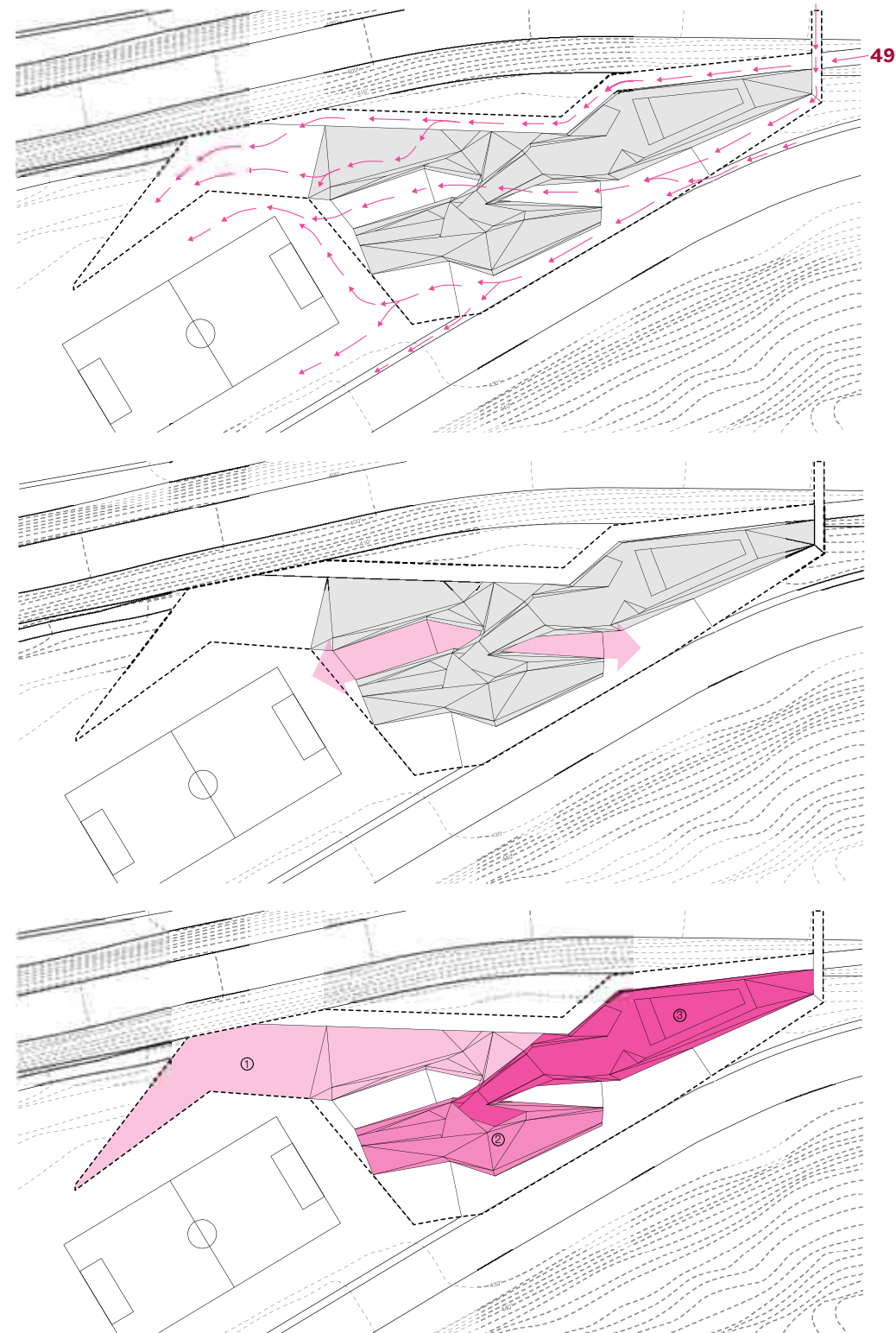
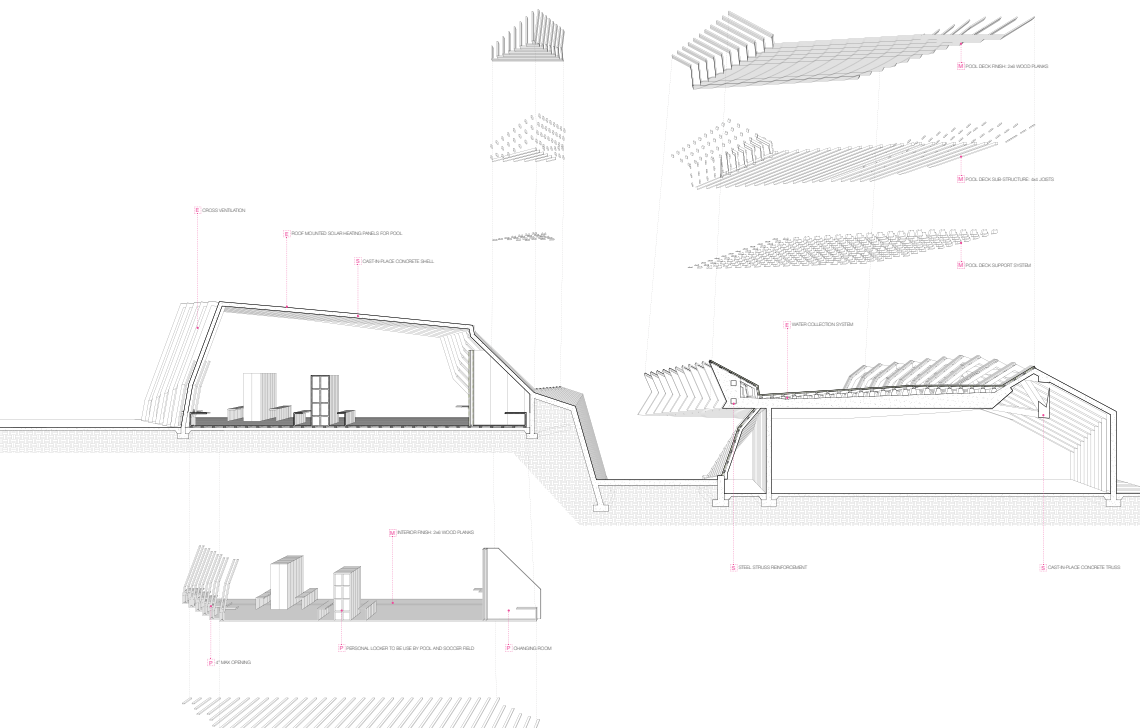
INSTRUCTOR: Anthony Guida

In popular music, artists perform and record cover versions of previously recorded songs in a number of ways. Tribute and cover bands play faithful renditions of beloved classics. Revival artists perform covers but also compose new songs inspired by a particular artist or genre. In these two instances, the cover version closely imitates an original performance that is recognized as authentic and superior. Other artists perform covers in a way that showcases their own talents or techniques.

The study of architectural precedent remains informed by a modernist approach. Precedents may influence, inform, inspire, or be (carefully) alluded to in design, but the invention and novelty of new “originals” are commonly praised over repetition, reproductions, simulacra, and, more recently, design fakes and knockoffs.

This studio proposed architectural “covering” as an alternative to “clean-sheet” design in the comprehensive design studio. Intensive application of selected design precedent furnished a basis for discovery, interpretation, and adaptation in solving all aspects of the proposed design problem.

CLAUDIA OTTEN, JAVIER MEIER, KEVIN REINHART

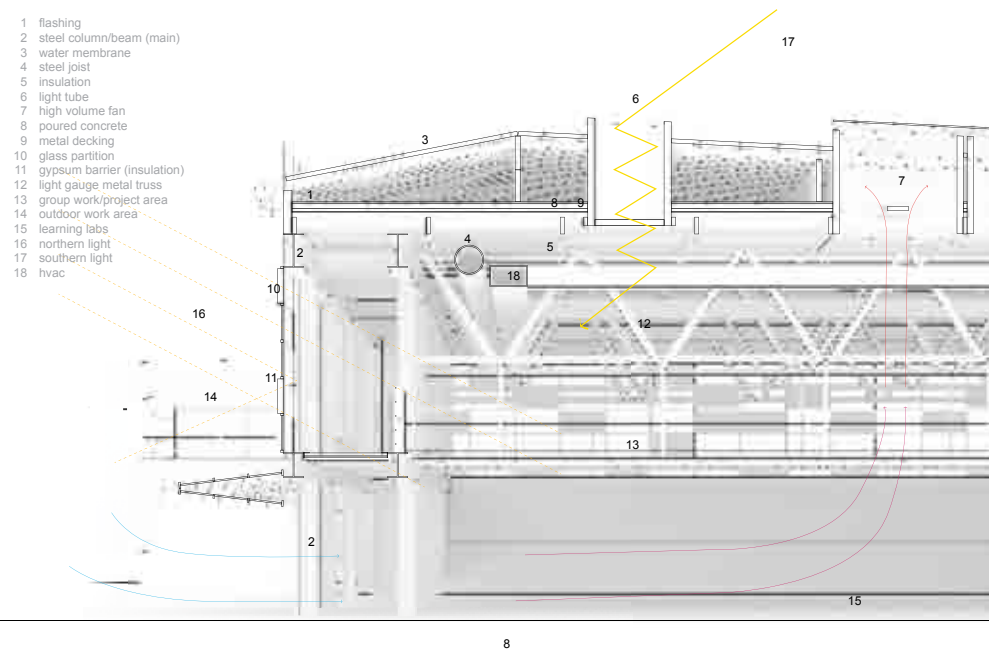


INSTRUCTOR: Charles Lagreco

Imagine education as an opportunity and a provocation both traditional and radical; an activity creative and accessible to all, relevant in a profound manner to our basic needs and expectations. What environments are necessary to support this type of education, and why are they successful? How do we create facilities that anticipate change that is inevitable while supporting continuity that is essential to our learning experience?

The goal of this studio was to design a prototype facility for more than six hundred students in a four-year high school program. Approximately 30,000 to 40,000 square feet, the facility was to focus on independent student learning and student-centric scheduling and was to be heavily dependent on electronic content accessible during an extended school week. The nature of a successful school is to perpetuate and mirror the values of society while constantly improving upon itself. The very nature of architectural design is synthetic, bringing together a host of diverse issues and expertise in order to create places both supportive and challenging of societal values.

CALVIN LEE, DANIEL NGUYEN, SAM RAMPYA

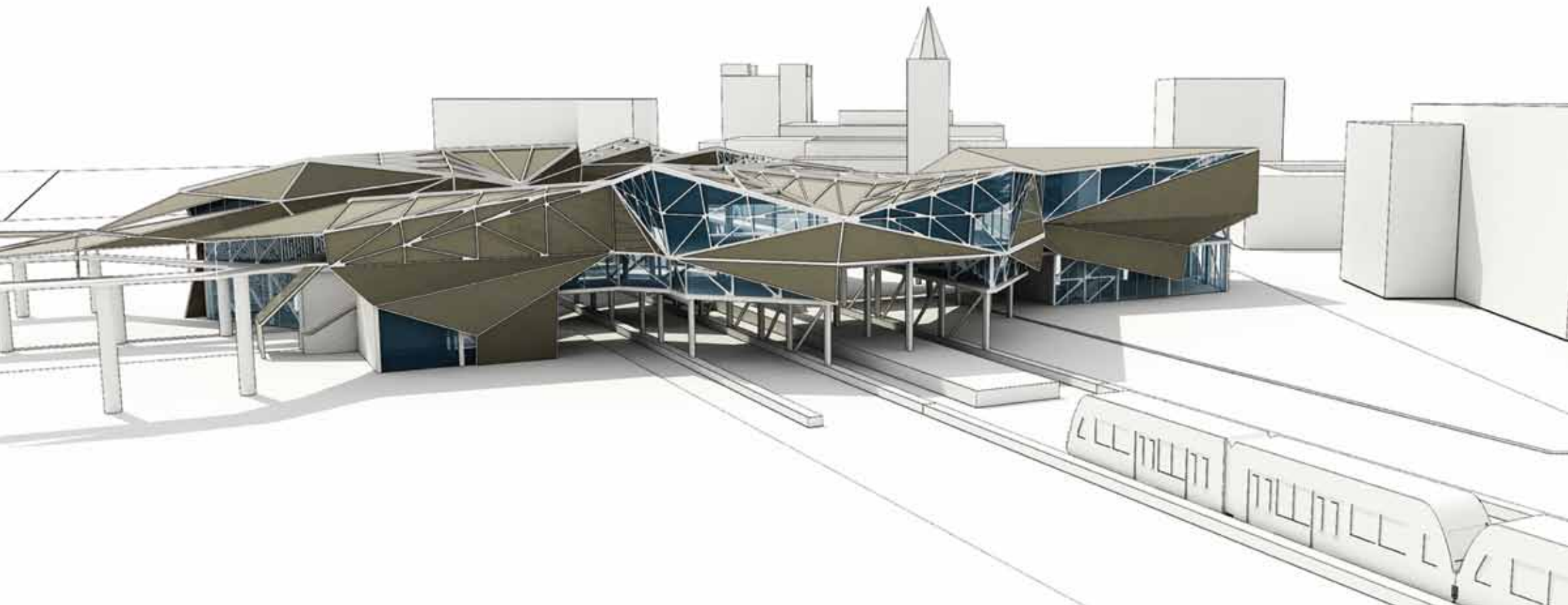


INSTRUCTOR: Graeme Morland

It is anticipated that the new USC / Exposition Park Metro station will become a major regional gateway. The architectural challenge of this studio was the investigation into a mixed-use, public-private program at this location. The station's proximity to USC and county museums—the Natural History Museum, the California Science Center, and the California African American Museum—gives this site the potential for enormous passenger-carrying capacity on a daily basis as well as for museum activities or sporting events at the nearby Coliseum and USC's Galen Center. The propensity for adjunct commercial development yields great opportunities for ingenious public-private, joint-venture investment.

The program included USC museums and related public facilities, a bookstore, a gift shop, lecture rooms, a visitors center, a sporting events office, a hall of fame and trophy room, an exhibition hall, a banquet hall, retail commercial stores, and restaurants. It also included a “fun” palace, the final program for which was created by the students.

ADELFRID RAMIREZ





ARCH 402B. CLIPPER STUDIO: JOSHUA TREE NATIONAL PARK

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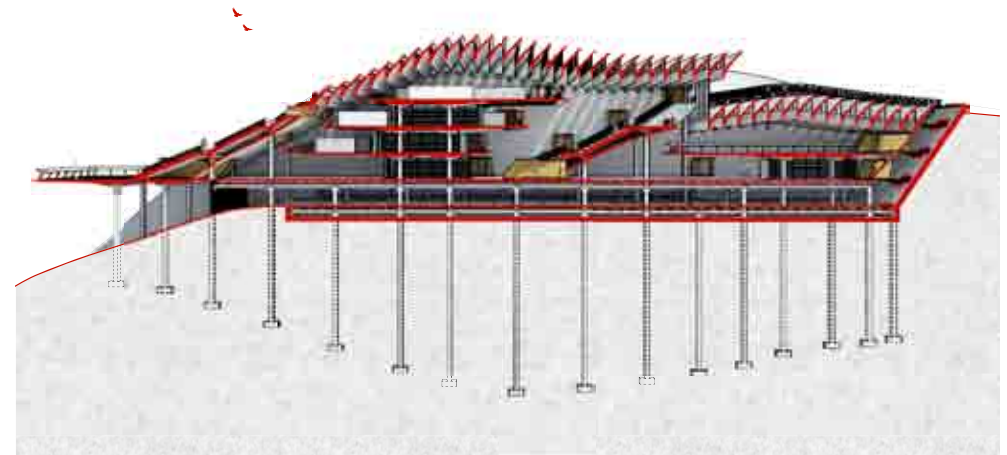
INSTRUCTOR: Doug Noble

Joshua Tree National Park is a place of sublime beauty. The climate of the Sonoran and Mojave Deserts—which converge within the boundaries of Joshua Tree—is formidable and uncompromising. A study of the plants and animals that have adapted to this inhospitable place teaches us the importance of living and designing with nature.

The work of students in this studio provided the National Park Service (NPS) with design guidelines and speculative building proposals for Joshua Tree. Project types included visitors centers, rangers headquarters, and education and research facilities.

Students worked directly with NPS staff and included NPS representatives in reviews. Multiple visits were made to Joshua Tree during the semester. One visit included an overnight stay at the park's campground. Studio participants worked closely with professionals and consultants to help develop their proposals.

ALEXANDER SHEFT, ALEXANDER DIMENTO



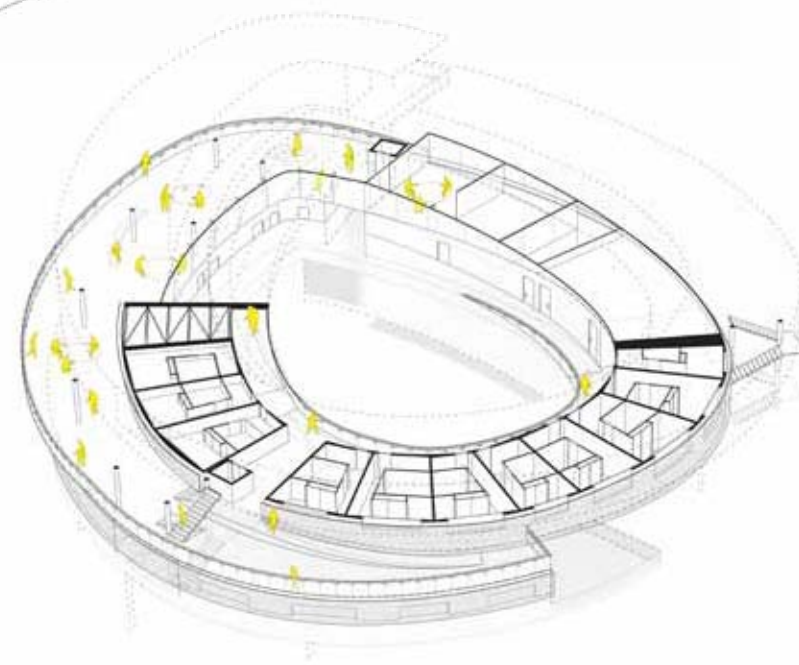
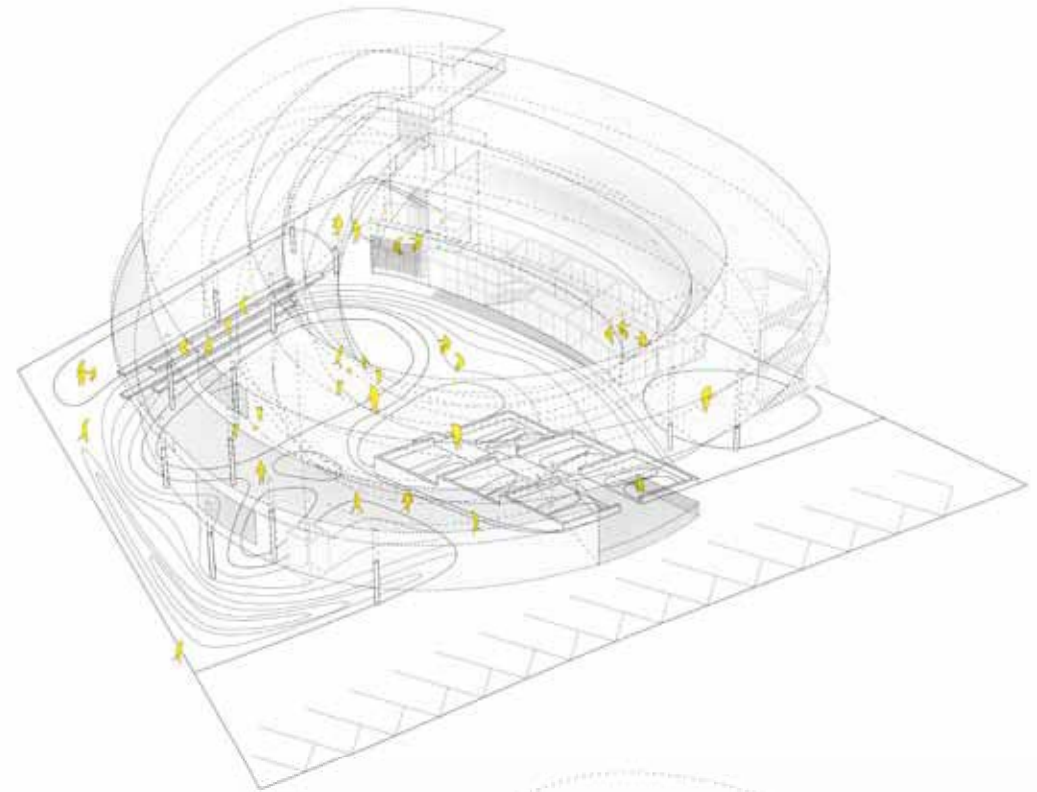
ARCH 402C. MARGINALIZED: PERMANENT SUPPORTIVE HOUSING FOR LOS ANGELES

INSTRUCTOR: Valery Augustin

As its principal point of departure, this studio explored the potential for buildings to transcend their physical properties and become catalysts for change in the lives of traditionally underserved populations. The program for the project was mixed-use permanent supportive housing. In recent years, permanent supportive housing has proven to be a highly effective model for transitioning people from the cycle of chronic homelessness into stable, productive lifestyles.

The building program was based on established models of successful housing projects. However, students were encouraged to expand, revise, and augment the program through a series of critical investigations into context, habitation, and function. These investigations became the means for establishing formal and programmatic parameters while simultaneously recognizing architecture as a component of larger networks of sociocultural systems. In addition, projects were undertaken that address the fluid programmatic needs of an emerging typology and the diverse needs of the target population.

JESSICA CHANG, TIMOTHY HO



ARCH 402C. SCHOOL FOR THE BLIND

INSTRUCTOR: Frank Escher

Our reading of buildings relies on the eye. Yet, it is the invisible, or the barely visible, that elevates a building to architecture.

The project for this studio involved a school at the north end of Silver Lake with living quarters for blind and partially sighted adolescents. These individuals orient themselves through extreme contrasts of light and dark; read and understand space through sound, materials, and haptic qualities; and pay more attention to the architectural space than to the architectural object or form.

Students developed their spatial and intellectual programs with spaces for dwelling, learning, and making, ranging from private to public activities. Various aspects were examined through one-week exercises and case studies, including “Space, Program and Movement,” “Space, Structure, and Material,” “Space, Infrastructure, and Skin,” and “Site and History.” After midterm reviews, technical, engineering, and constructive questions were addressed in detail.

AARON YIP, CHRISTIAN CHANDRA, JOANNA TAN

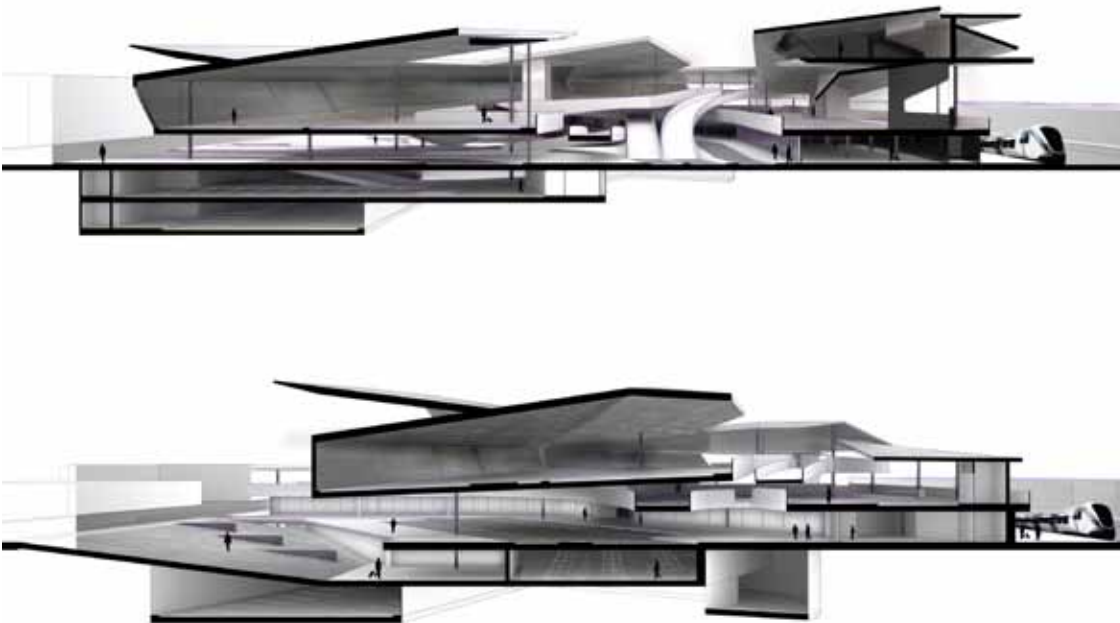
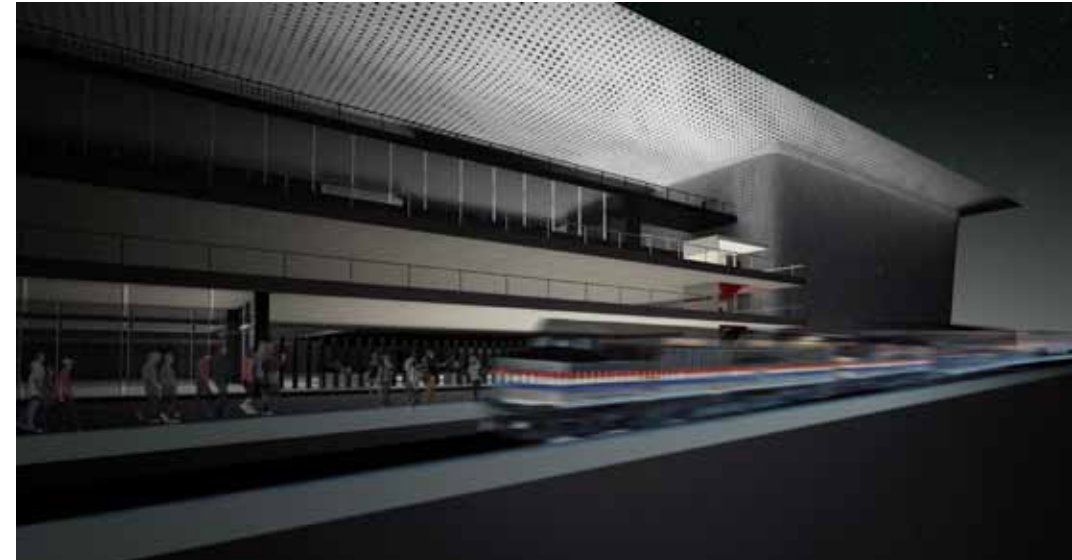


INSTRUCTOR: Andrew Liang

As the population in major US urban centers grew throughout the twentieth century, patchwork suburban communities outside the urban core also grew. By the close of the century, the existing infrastructure had started to reach maximum service capacity, in turn stressing the entire performative system. The recent resurgence of discourse about the city has refocused the importance of integrating the social/cultural (live) and commercial (work) life in the urban core, resulting in much rethinking about urban center revitalization, regeneration, and repurposing strategies. Although the renewed attention on the urbanized center is necessary and timely, failure to include its suburban counterparts in the macro urban/suburban performative indexing is furthering the isolation of the parts of the larger urban system.

The studio's objective was to explore urban/suburban interconnectivity and integration with a focus on strategic and opportunistic intervention that can serve as a catalyst to provoke, stitch, and induce social, cultural, economic, and morphological urban and suburban (inter)activity and (inter)relationship.

DEBRA HAKIMI, MALONE DETRO, NICOLAS VALENCIA





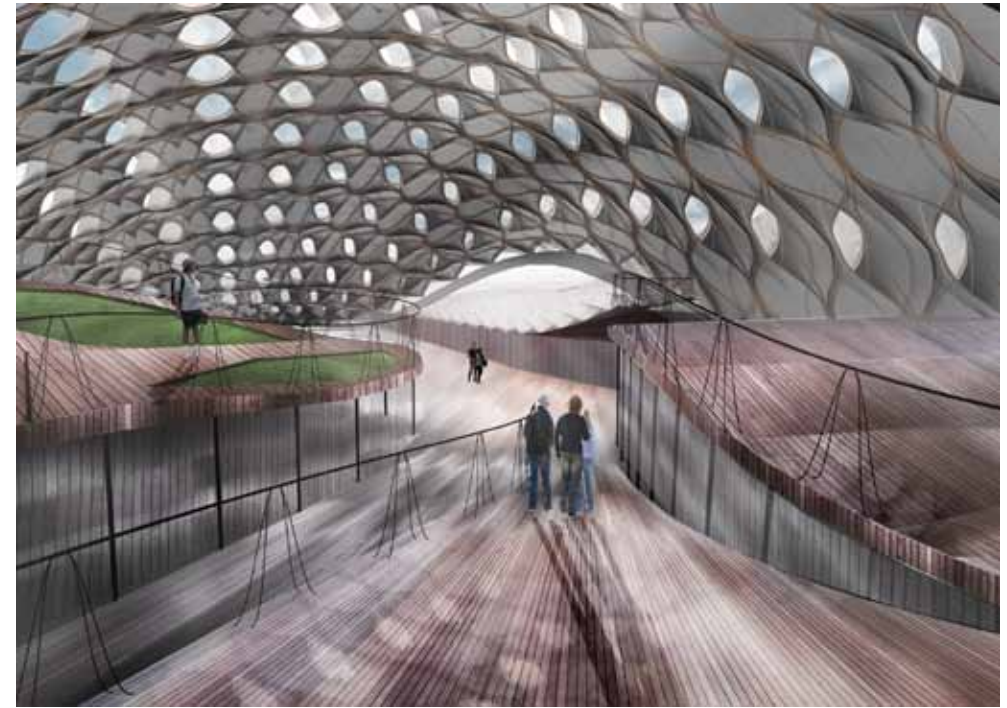
ARCH 402C. DEGREES OF PUBLIC SAFETY: DESIGNING A METEOROLOGICAL AND LIFEGUARD WATCH STATION

INSTRUCTOR: Doris Sung

Students in this studio tackled issues of public safety in developing their individual comprehensive projects. They found that the degree of delivery of “public safety” varied from location to location and that the quality of the provision was dependent on the level of financial stability of the local government. Fabricated by society to ensure physical and mental safety of its constituency, public safety was considered a privilege in many underdeveloped countries. In Los Angeles, the division of lifeguards—operating as part of the Los Angeles County Fire Department—is a relatively well-managed department. Without weapons or firearms, lifeguards ensure beach safety by policing crime, reducing pollution, saving lives, recording surf/weather changes, and measuring coastal erosion.

This studio pursued the meaning of public safety, heroism, and public service and formulated a position on architecture’s role in a peaceful state under the threat of climate change, political instability, and terrorist targeting. Clearly, students found, safety could not be taken for granted.

VICTOR OTTER



67



INSTRUCTOR: Roland Wahlroos-Ritter

It exists; at most, it coexists. Its subtext is fuck context...
—Rem Koolhaas, in “Bigness or the problem of Large,” *S,M,L,XL*

The skyscraper, by its own logic, inevitably reaches a critical mass beyond which we can call it, in Koolhaas’s terms, a “Big Building.” As such, the skyscraper defies modernist paradigms. Ironically, at the same time it serves as the iconic representation of progress in modern architecture. Conceived as spaces of proposed flexibility, the skyscraper unmasks, again in Koolhaas’s words, “the imposition of a theoretical average at the expense of both character and precision—entity at the price of identity.”

The studio challenged the contemporary notion of the skyscraper. Students were asked to develop speculative but comprehensive high-rise concepts that addressed the complexity of contemporary urban life in Los Angeles and allowed for the intense proximity of differences within the city.

BENJAMIN IRINAGA, ILANA AMOUYAL





ARCH 402C. ORPHANAGE IN ZAMBIA

73

INSTRUCTOR: Eui-Sung Yi

The design project for the semester was one with a real client, site, and users. Students had a special and rare opportunity to explore the relationship between advancing a strong concept and realizing that concept through a comprehensive and integrative set of technical documents. The studio balanced innovative and intelligent design with a focus on resolving and preparing a complete set of schematic drawings. The project was driven by a mantra based on true, sustainable design that utilized an initial strategy of passive systems supplemented by a strategy for the community to maintain and expand the facilities as needed.

ALEX MOTODA, MIKE COCHRAN, WESLEY LUNA



**UNDER
GRADUATE
5TH YEAR
STUDIOS**

ONE THAT GUIDES THEIR FUTURE DIRECTION AS THEY TRANSITION INTO THE PROFESSION

ARCH 502. FIFTH-YEAR STUDIOS

77

Arch 502 has evolved from a vehicle that rigorously closes out students' pragmatic training to a laboratory that synthesizes their acquired skill sets into a bold, sophisticated framework—one that guides their future direction as they transition into the profession.

This past spring, fifth-year students were tasked with devising individual parameters and criteria within a selected studio offering, choosing from research topics that ranged from theoretical to cultural to digital to tectonic. Andrew Liang's studio examined what happens at the margins of an urban systems network, while Victor Jones's group investigated the retrofitting of urban infrastructure. My studio and Marcos Sánchez's studio addressed cultural issues by designing, respectively, for the supernatural/superhero and for security and safety, and the students of Kris Mun and Alvin Huang embraced the digital realms of coding and form finding. Finally, Jennifer Siegal and Lee Olvera took a more hands-on approach: their students studied mobility and craft in a world where the future is unpredictable.

Overall, the range of projects expressed the diversity of students' backgrounds and interests, as well as the outcome of a broad and rigorous but interdisciplinary-minded and culturally grounded curriculum.

Doris Sung

ARCH 501/502 COORDINATOR

ARCH 502. INFORMED FORM

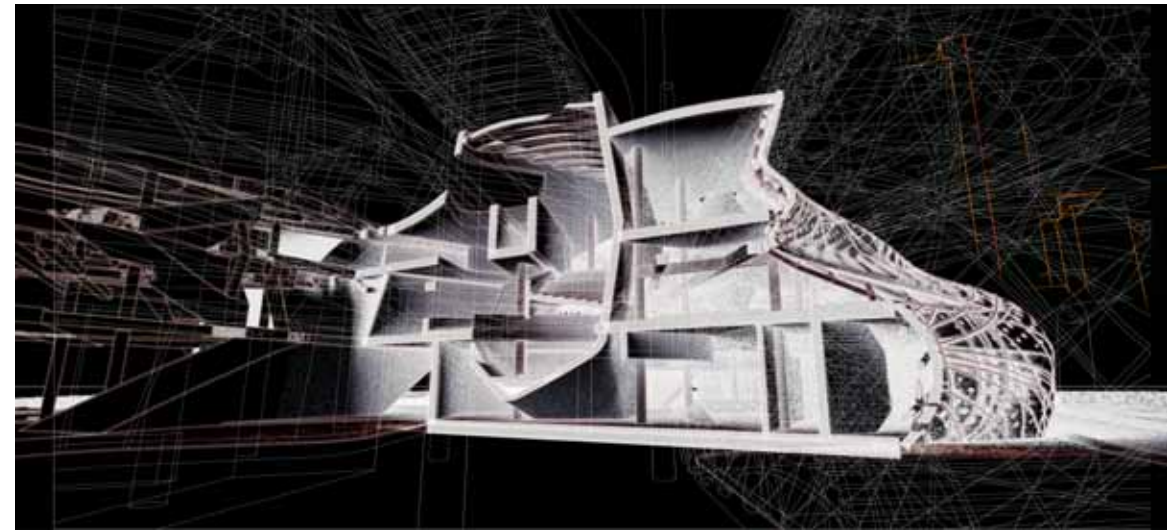
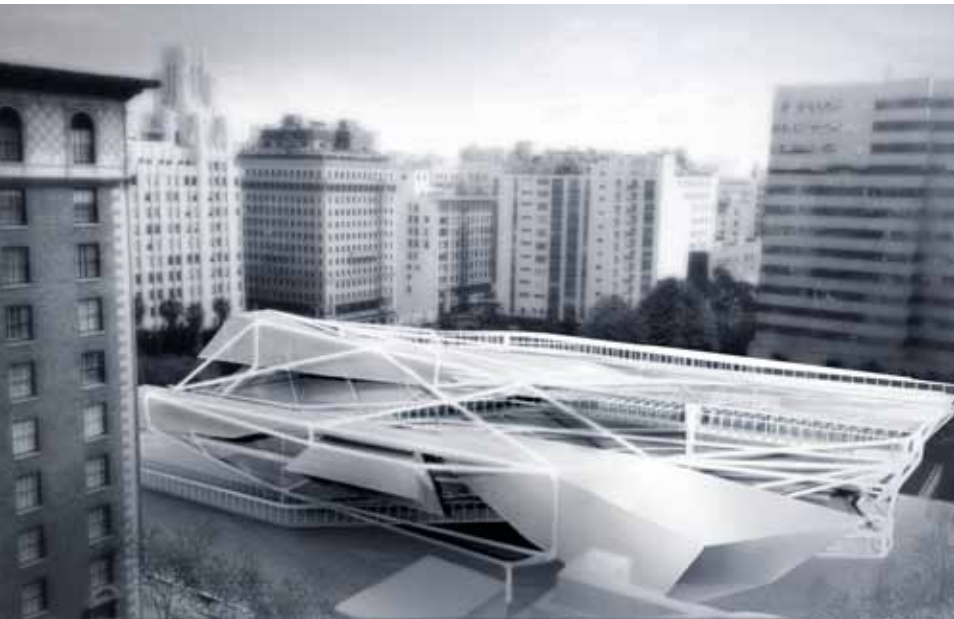
79

INSTRUCTOR: Alvin Huang

This studio explored the relevance and meaning of form as a product of reciprocity between geometry (form), force (performance), matter (organization), and craft (fabrication). The intent was to develop formal strategies that considered structures as complex systems emerging from the reciprocal relationships between form and performance. Performative feedback of all types and structural, environmental, material, and visual criteria were examined as catalysts for design solutions. Emphasis was placed on design experiments and exploratory processes to unearth architectural possibilities.

Sited in Pershing Square, the projects redefined the role of the public library in a post-digital era in which the contemporary library has been augmented by the development of digital information technology. Students were asked to challenge the concept of the library as it evolves from a physical collection of books into a multinodal network of distributed information, an alternative library that redefines the typology as a shared public resource.

JESSICA CHANG, LOIS LEE, YOON HER



ARCH 502. ANOTHER SIDE OF INFRASTRUCTURE

INSTRUCTOR: Victor Jones

Provoked by concerns of safety and ecology, architects, artists, engineers, and landscape architects are seeking new solutions in the retrofitting and replacement of dilapidated infrastructure. This inquiry moves beyond the singular utilitarian function that infrastructure has traditionally played in American cities. Whether in terms of form, performance, or materiality, much of the way urban infrastructure has been rationalized, designed, and constructed in the United States originates in the myth that infrastructure is the result of rational analysis and problem solving intended to produce the most practical and expedient solution.

Departing from this narrow utilitarian definition to one of environmental, cultural, and social significance, this studio advocated pioneering infrastructural models that carefully weave multiple design objectives to give rise to a rich network of purpose. The design projects were grounded in ideas that place value on manifold performance and variation—the potential for infrastructure to facilitate diverse ecological, civic, and cultural objectives.

MICHAEL NATALI



**ARCH 502. EMERGENCE, THE PROJECTIVE, AND URBANISM:
AN ALTERNATIVE URBAN MODEL FOR LOS ANGELES**

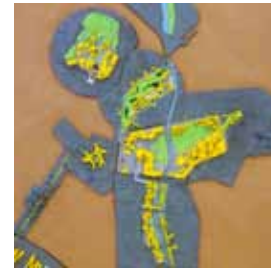
83

INSTRUCTOR: Andrew Liang

A city and its parts create the “intended” platform for our physical engagement and daily life experiences. However, to the extent that our cities have to “perform” and witnessing the mounting urban dysfunction as a result, one must question the ability of the master framework—conceived as an end state—to deal adequately with the perpetual shifts and changes required of intelligent urbanism. Arguably, the degree of intelligence emerging from our cities hinges not only on how the built environment can accommodate complex behaviors but also on how it can trigger adaptive behaviors through positive feedback loops.

The conceptual premise of this studio was to speculate on an alternative model of urban thinking in which the morphology of a city and its design process can effectively engage in a perpetual reiterative process through continual aggregating effects, interfaces, and trending imperatives. This approach argued that patterns and intelligence arising from complex adaptive systems that display emergent behaviors might be better positioned to effect relevant change when each successive tactic or strategy is informed by the resulting behavior from previous positions.

RYAN CONOVER, MINDY CURTIS, MONICA HEIMAN, ISABEL HERMANN, OSAMA IQAB, BENJAMIN IRINAGA, EDDIE KAHEN,
JASON LEE, MINTRA MANEPAIROJ, ISAAC WILHELM



ARCH 502. VITALIZED GEOMETRY

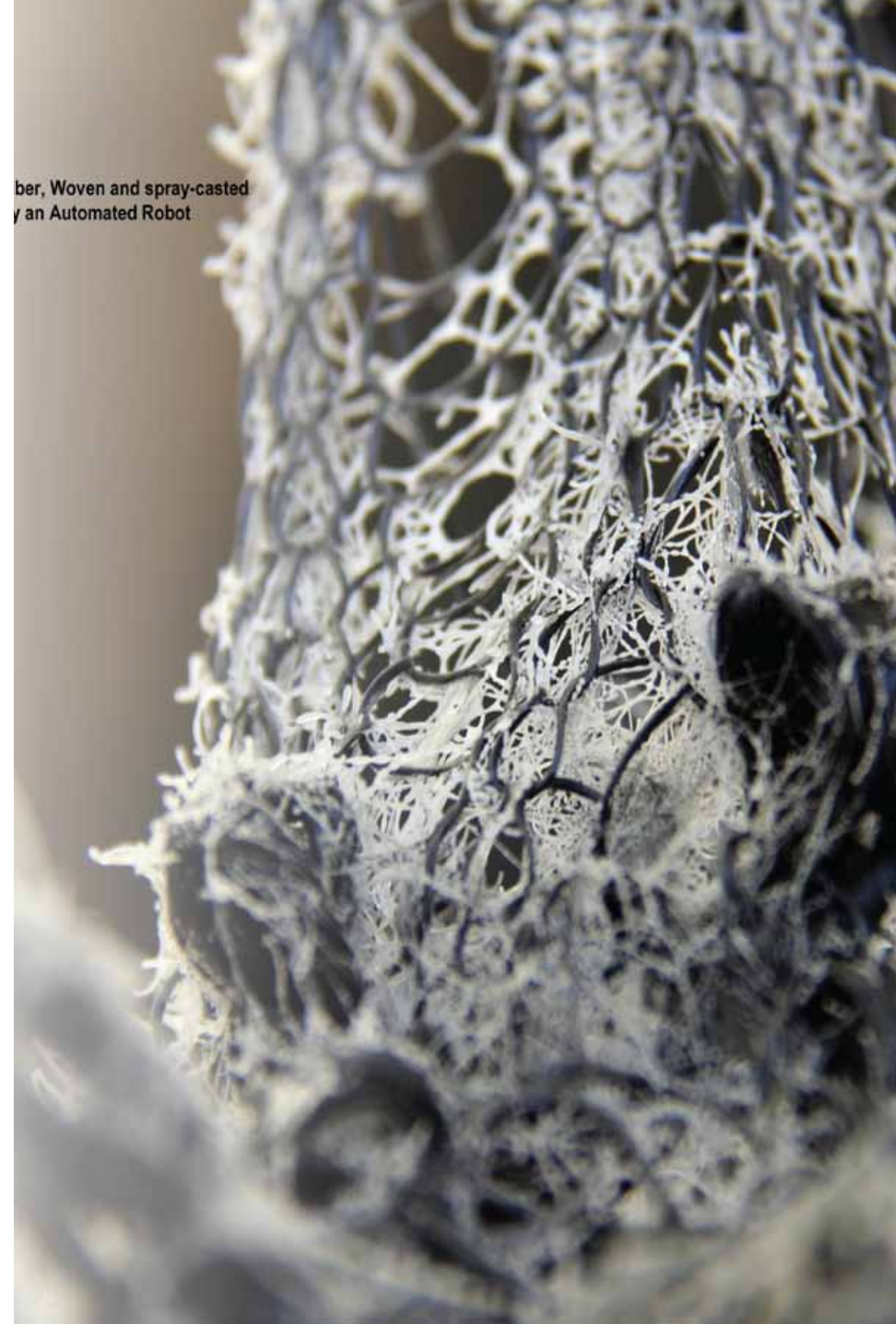
INSTRUCTOR: Kris Mun

This studio created, fabricated, and coded dynamic responsive territories using advanced computational processes and machining technologies actuated with force-feedback devices. Students came to understand geometry as a force and explored three areas of engagement to produce and engineer responsive empathic systems. These empathic forms—which sense, feel, and respond to the environment—created haptic textures (visual, actual, experiential) that developed subtle registers of relations between humans and environment, with architecture as the interface. Examined from a broad perspective in historic traditions, a discourse of matter philosophy and beauty in the arts, science, and technology from the seventeenth century onward encouraged a processual reality, creating the most exquisite forms. William Hogarth's principles of beauty combined with material performance set up the logical construct to build the aesthetics of code that sit as haptic textures toward an empathic architecture.

CHRIS CHIOU, DANIEL KIM, SHAHAB RAHIMI



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y an Automated Robot



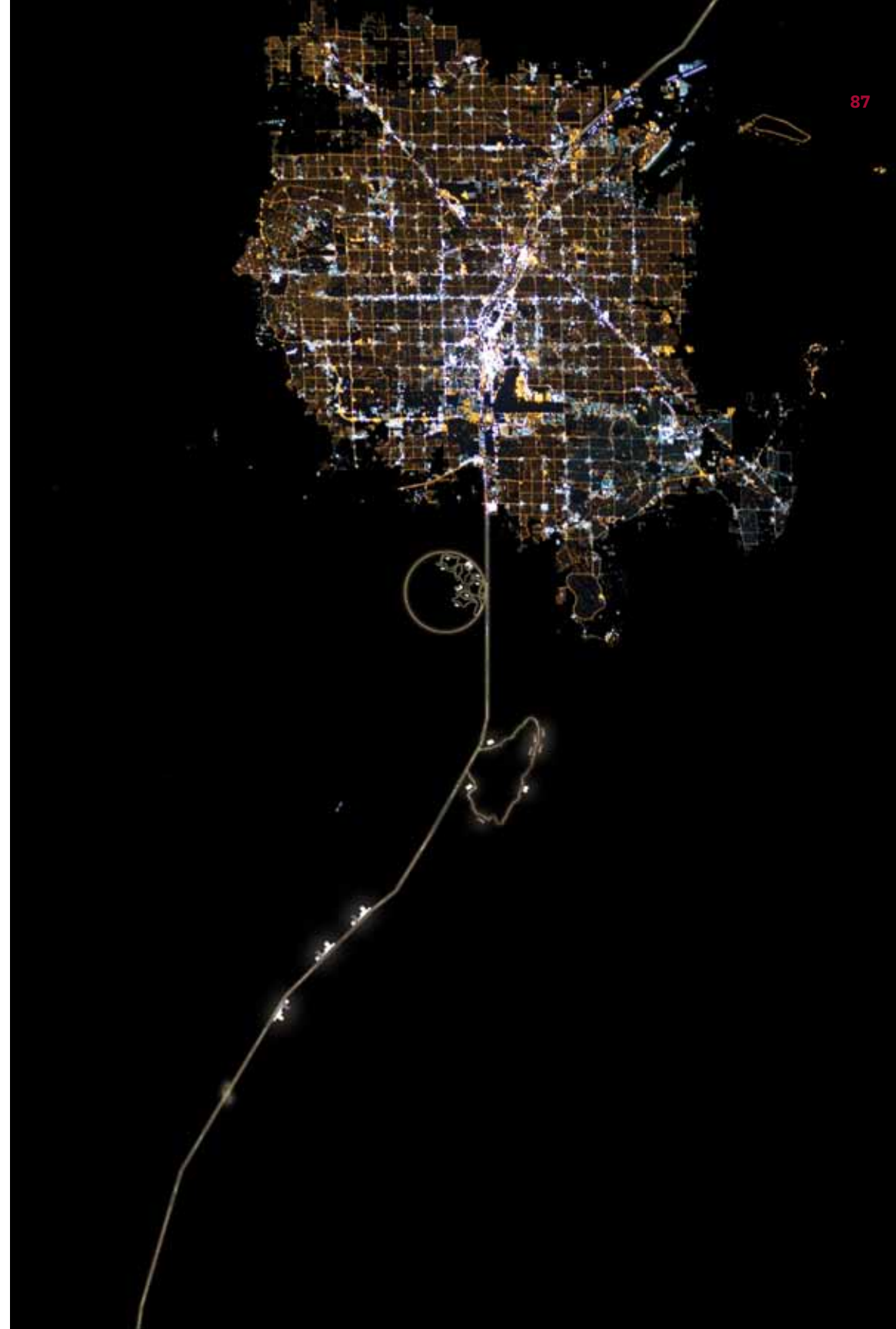
ARCH 502. THE CRIMINAL TYPE: SOUTHLAND EDITION

INSTRUCTOR: Marcos Sánchez

Architecture has long negotiated a fascinating relationship with crime. From the anti-revolutionary utility of Georges-Eugène Haussmann's boulevards and J.N.L. Durand's spatial classification of prison inmates to Adolf Loos's argument linking murderers to the architectural surface in *Ornament and Crime* (1908), the scientific control of criminality was fundamental to constructing modern life and its architecture. The contemporary city, accompanied by technologies of surveillance, generates similarly intricate links between architecture and social order. One visible manifestation of contemporary policing, the helicopter with its spotlight, is ideally suited to the Los Angeles basin; its circling flight pattern is as familiar as the security perimeter of a gated community. If these examples indicate new architectures of control, they also frequently betray blind spots and loopholes. In these gray areas, struggles for control of city space continue, and ambiguities in policing systems become opportunities for the aberrant architectures of marijuana dispensaries, white-collar crime and the ingenious getaway.

This studio organized its work around topics of criminal intelligence, seeking clues for ways in which architecture cleverly organizes and occupies these grey areas. Independently conceived projects exploited this transgressive intelligence, imagining various nighttime architectures, programmatic "double crosses," and spaces of dubious legality.

BRYANT LEUNG, KEVIN TAZALLA





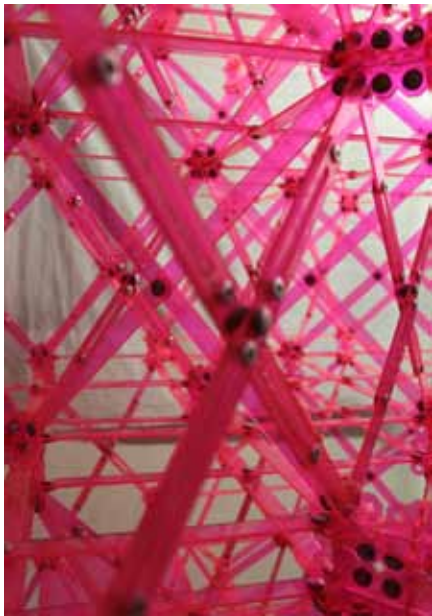
ARCH 502. TRUTH IN MAKING, CRAFT: AN ARCHITECTURAL INQUIRY

INSTRUCTOR: Lee Olvera

The 502 degree project studio developed an individual-driven range of responsive architectures based on a variety of material processes and precedents, ranging from the boutique (the artisanal) to the industrial (mass produced).

The first project of the semester was object-based, the second was space-based. Both were grounded in the experiential presence of materiality and designed as catalysts for the explicit fusion of the tactile and the technological. Direct and hands-on, they confronted the parallel strands of formal, structural, spatial, and functional issues inherent to all design. By exploring and implementing the concept of generative detailing—detailing through doing—the projects developed a system of working and making so refined and informed that its language and meaning were revealed only through the physical discovery of manipulative action rather than by representational means. Detailing, conceptually and physically so specific, navigated the exacting requirements of instructional pattern and optimal function with equal grace and rigor.

DEVON MOTT



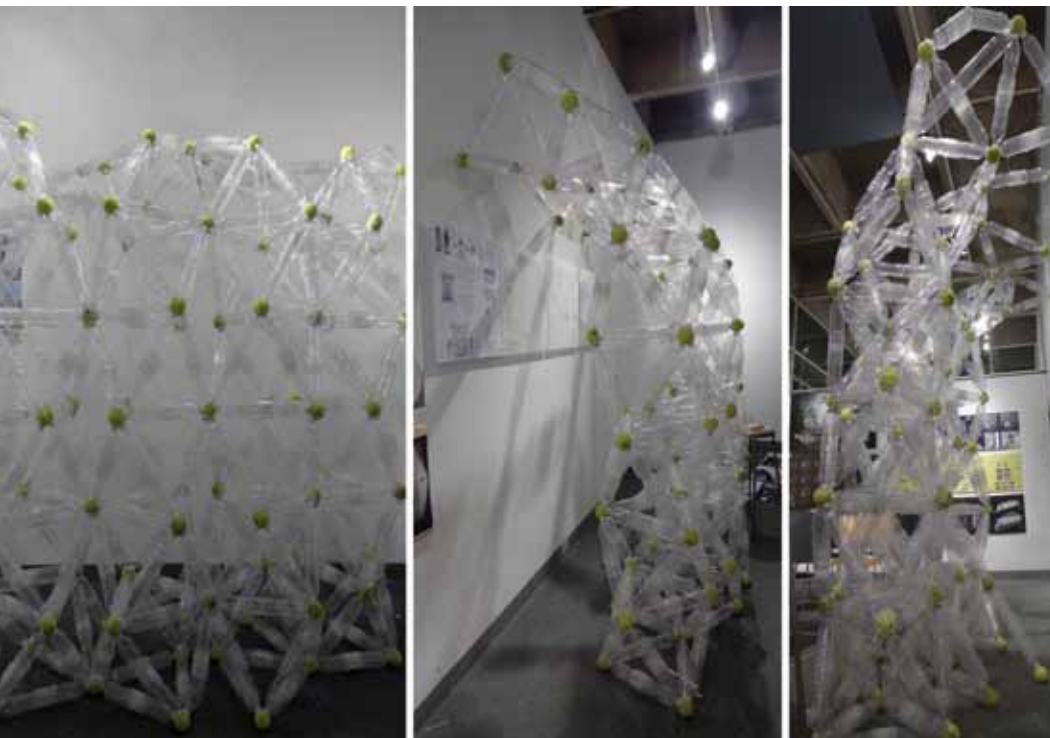
ARCH 502. ETHOS OF IMPERMANENCE: ARCHITECTURE THAT RESPONDS TO CHANGE

INSTRUCTOR: Jennifer Siegal

This thesis studio explored issues of architectural mobility and portability alongside developments in materials and fabrication.

The desire to create increasing degrees of flexibility and adaptability in a changing environment has shifted the way architects think and design. With constant advances in technology, the emergence of new materials and manufacturing methods has led to opportunities in fresh territories. The exploration is not simply limited to the formal and tectonic qualities of “virtual” architecture but is also focused on the creation of smarter and highly performative environments around these new technologies and materials. The merging of long-separated manufacturing and building industries allows architects to rethink the design process and the performance abilities of these tools. As a result, there are more opportunities for architects to become innovators on multiple platforms.

CHRISTIAN CHANDRA, DEBRA HAKIMI



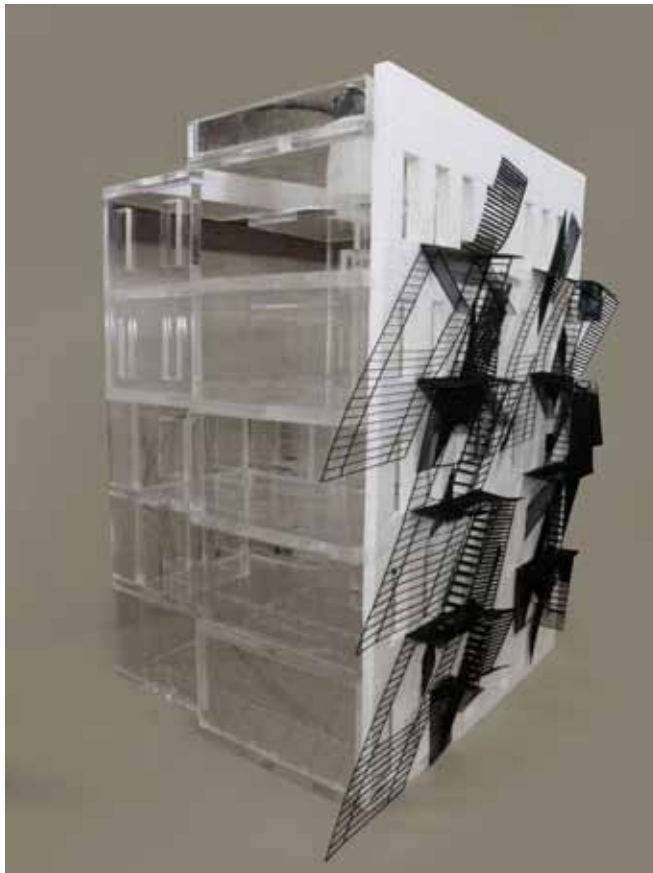
ARCH 502. X-ARCHITECTURE: DESIGNING FOR THE MUTANT SUPERHERO

INSTRUCTOR: Doris Sung

A current theme of the developed society involves looking beyond the normal. Stories of “plain folks” are not half as exciting as stories of vampires, warlocks, or superheroes. What does this say about a society that looks beyond the basic needs of survival for something more? Some may think that prosperity and technology have catapulted us to a place where the fabrication of realities and new worlds is the only way to house our swollen egos. Others may think the opposite. In the wake of an economic crisis and recession that has left many of us “plain folks” financially wounded, escape is sought through stories of flawed superheroes as a metaphor for our own demise.

Presuming the blockbuster movie and best-selling novel industries are more a mirror of our society than a leader, this studio examined the cultural effects on design and speculated on what might influence the future. Size—as well as scale, strength, and superpower—does indeed make a difference.

SARAH MCGILLVRAY





GRADUATE STUDIOS

METHOD MUST CONTINUE ARCHITECTURE'S FUNDAMENTAL DIALECTIC TO BRIDGE TECHNOLOGY AND ART.

MASTERS PROGRAMS IN ARCHITECTURE

99

What is architecture?

Now more than ever, the issues of globalism, technology, and culture have converged, giving rise to a complexity to which architecture must respond with dexterity. This complexity demands a speed of operation with intrinsic feedback loops for iteration and adjustment and mandating maneuvers and responses along the way.

The time has come for critical specificity, not vagueness. Nothing can be static. Nothing can be done in isolation. Everything must be inclusive. New technologies and expanding tools allow us to confront these issues with ever-increasing sophistication and synthesis, establishing new processes and opportunities. The results no longer resolve merely in form but in tactics and methods.

Method must continue architecture's fundamental dialectic to bridge technology and art. Method must be inclusive to engage equally the fundamental issues of light, space, and form while responding to the new essentialisms of performance, sustainability, and social consciousness. It is in this process that architecture asserts itself and is perpetually reborn, where a voice can be found as a thinker and maker.

The Graduate Programs in Architecture at USC are uniquely invested in these processes of architecture. By understanding the methods of operation, streams of information and inquiry, and control points and variables within the systems, the architect can insert and redirect.

The challenges ahead are large, the expectations even larger. Architecture should not be about wholesale change but iteration through process. Let the process begin.

Gail Peter Borden, RA, AIA, NCARB

DISCIPLINE HEAD OF ARCHITECTURE

DIRECTOR OF GRADUATE ARCHITECTURE PROGRAMS

ARCH 505B. GRADUATE ARCHITECTURE DESIGN STUDIO

INSTRUCTORS: John Mutlow (Chair), Valery Augustin and Lorcan O'Herlihy with Kyle Konis

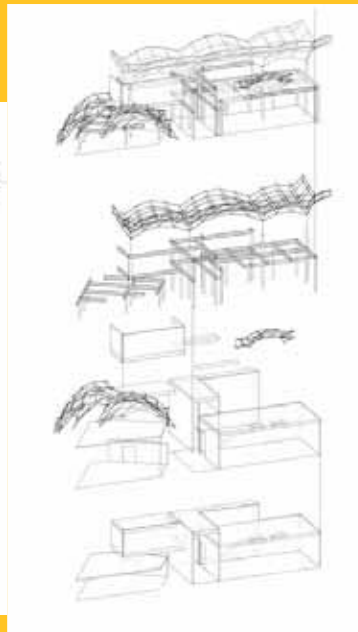
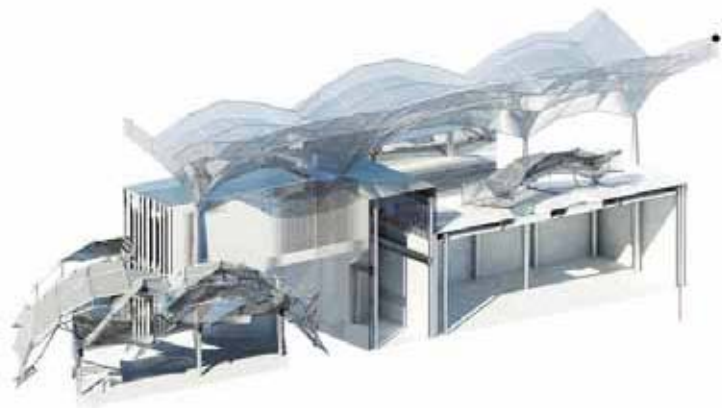
The evolution of contemporary architecture and urban planning can be viewed as the movement away from inelastic, low connectivity models to increasingly elastic models of connectivity marked by an increasingly complex culture. Change, impermanence, engagement with the social complexity of culture(s) are often indices of informal 'elastic' cities; the challenge for architects and urban planners today is to support the development of cities as dynamic networks, transitioning from top-down models toward greater connectivity and diversity.

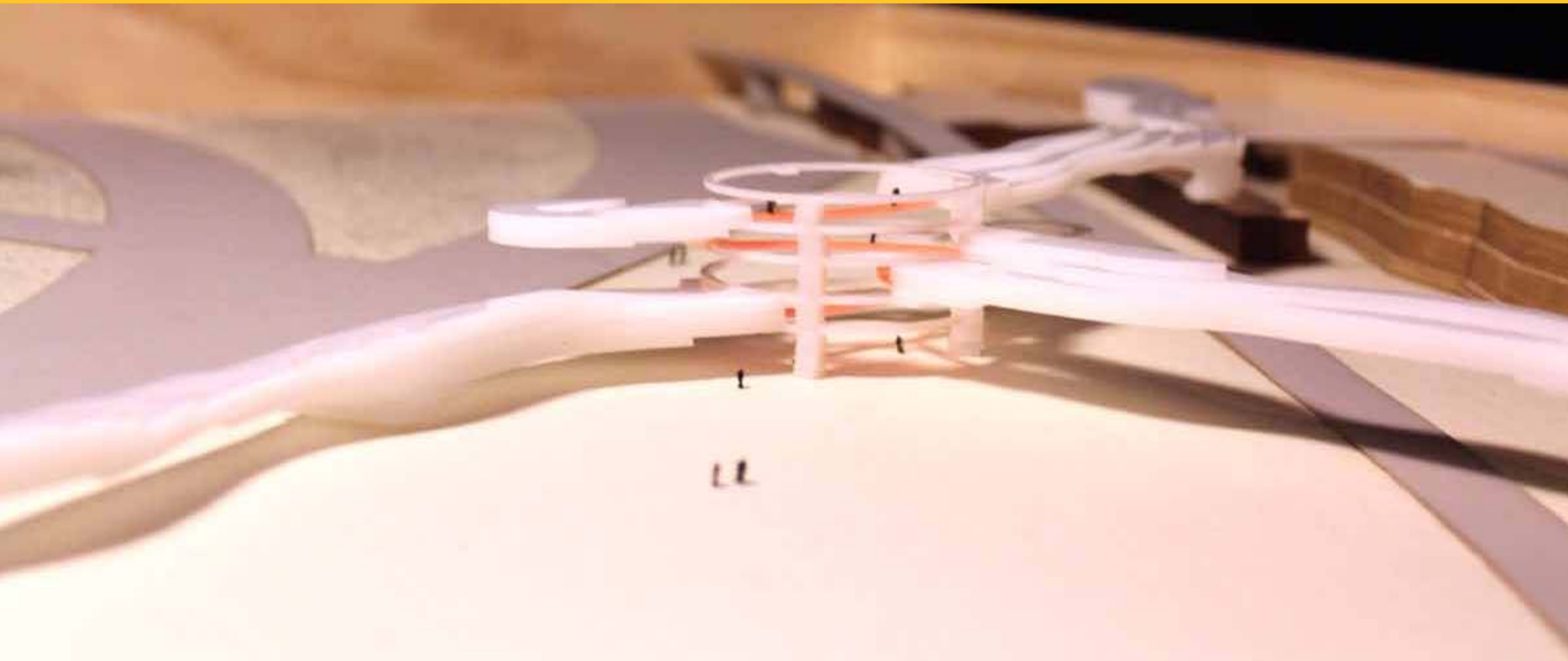
Urban strategies and architectural production can learn from forms of social connectivity and apply them to build performative, robust and sustainable modes of urban connectivity. These models are more loosely organized than previous hard-wired examples and unlike current unsustainable trends promoting autonomy and isolation, they expose, connect and encourage new forms of use and occupation.

REGIONAL LIBRARY AND COMMUNITY CENTRE

The library's demise has been trumpeted since the advent of digital technologies. However, instead of fading away, libraries have evolved and adapted to play more complex roles within the communities they serve. Contemporary libraries maintain vestiges of their predecessors while also creating new paradigms. The project was a regional library and community centre located in Los Angeles.

ZHICHENG HUANG, MENG ZHAO







ARCH 605A. GRADUATE ARCHITECTURE DESIGN STUDIO.
122 MILLION MILES: A NEW EXHIBITION GALLERY FOR THE SPACE SHUTTLE ENDEAVOUR

COORDINATOR: Selwyn Ting. **INSTRUCTORS:** Andy Ku and Rob Ley with Anders Carlson

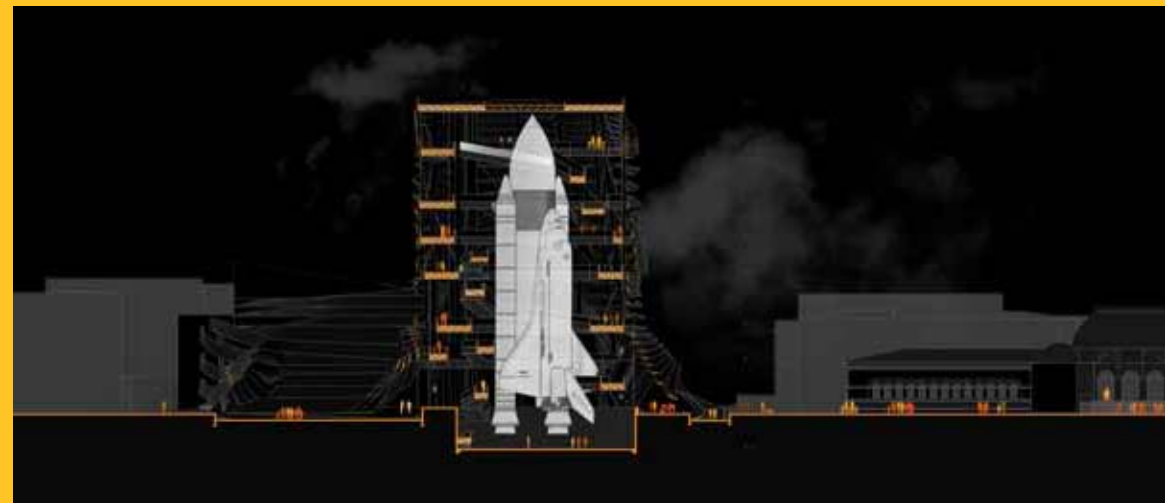
Southern California is the birthplace of the space shuttle fleet. Orbiter assembly, along with the design and testing of critical components, helped drive the region's aerospace economy for nearly forty years. In 2012, after flyovers throughout the state, Endeavour returned to southern California and its new home, the California Science Center.

This studio proposed a new gallery for the orbiter as part of the larger Air and Space Hall addition to the Science Center. The Endeavour Gallery would comprise generous exhibit spaces, and non-shuttle-related areas would house exhibits related to space and flight and provide various support services.

The shuttle could produce a powerful urban effect: its scale, historic significance, and ability to attract an audience reveal this capacity. At 188 feet high, the shuttle's launch configuration is massive. Visible from downtown Los Angeles and its freeways, the project will mark the southern terminus of the city's Figueroa Corridor.

This project provided the Endeavour with its final mission: to inspire interest in science, technology, and space exploration. The studio wishes to thank the California Science Center for its generous participation, and ZGF, architects of the new Science Center addition, for engaging students in reviews.

YUSSEF ALZOUKAIMI



**ARCH 605A. GRADUATE ARCHITECTURE DESIGN STUDIO.
LOS ANGELES BIG PICTURE HIGH SCHOOL**

109

INSTRUCTORS: Will Bruder (Jon Adams Jerde, FAIA Visiting Chair) and Mario Cipresso

This studio explored skills related to site and program as students developed a concept for a creative learning environment. The resulting schemes balanced pragmatism with celebrations of form and space to enhance user experience.

Students worked from “the inside out and the outside in,” and major attention was focused on developing skills related to scale and proportion, material and structure, natural light, and sustainable design strategies.

The studio’s concepts built on the site’s adjacencies and unique land form, which inspired a challenging set of architectural solutions. Incorporating hand sketching techniques as well as physical and digital modeling, the studio also encouraged students to develop storytelling skills.

Students designed an environment for Los Angeles Big Picture High School (LABPHS), a college preparatory high school in L.A.’s downtown. The project constituted 40,000 square feet on a site adjacent to the USC campus where light rail, bus, and freeway systems converge.

LABPHS has adopted the Big Picture Learning model, assisting at-risk students in pursuing a collegiate career. Students spend considerable time working in the community under the guidance of volunteer mentors. Assessments are based on achievement and motivation, reflecting the real-world challenges all of us face in our lives.

TODD SPANGLER



INSTRUCTOR: Eric Haas

The correspondence between a project's conceptual basis and the logic of its construction is an ongoing architectural problem. Nineteenth-century theorist Gottfried Semper argued that architecture brought brings together four practices: textiles, ceramics, tectonics, and stereotomy. While qualities derived from these pursuits vary over time, the desire to ascertain such boundaries remains.

In this studio, stereotomy (or carving) and tectonics (or assembly) were explored. Dialogues were created between a building's upper and lower worlds—that is, between connections to the earth and superstructures—to consider how such logics may be exploited.

These perspectives inspired the studio, whether working from the “ground up,” in which form emerges from material practices, or “top down,” in which a translation from intention to realization is desired.

Lying between the Mojave Desert and the Central Valley, the studio's site in Tehachapi, California, has a history of essential connections, from the first railway connecting northern and southern California to the planned high-speed rail.

The program was a resources museum and exhibition facility. Expanding on the interest in carving and assembling, the program would support interest in gold, silver, borax, and yttrium resources and the contemporary extraction of wind, sunlight, water, and other natural resources.

MOLLY BELL



INSTRUCTOR: Olivier Touraine

In 2011, a new political slogan emerged referring to the state of economic inequality: “We are the 99%.” The remark generated the following thought about this studio: More than 85 percent of architectural work and projects happening in the real world relate to the reuse of existing buildings.

“Re-set” was the theme of the Dutch Pavilion at the 2012 Architecture Exhibition at the Venice Biennale; “Adaptive Re-use” was the official name. The pavilion, retooled by Petra Blaisse and her design firm Inside Outside, was reset in such a way that it will be “reusable” for future biennials. Reuse is probably a subproduct of the economic recession, an impact of an environmentally responsible generation—a trend that will last to the point of being a standard.

This studio dealt with conditions for “re”:

- Reuse
- Recycle
- Retool
- Reprogram
- Rejuvenate

The project involved a midsize mixed-use building. Part of it had to be preserved, as it had historical value, but the life of the existing building had to undergo a total change. Some parts were to be entirely new, others were designed for a sophisticated and smart reuse for a new programmatic life.

WENJIA XU, GEORGE SOVICH



**ARCH 605A. POST PROFESSIONAL GRADUATE ARCHITECTURE DESIGN STUDIO.
INFORMED FORM**

INSTRUCTOR: Alvin Huang

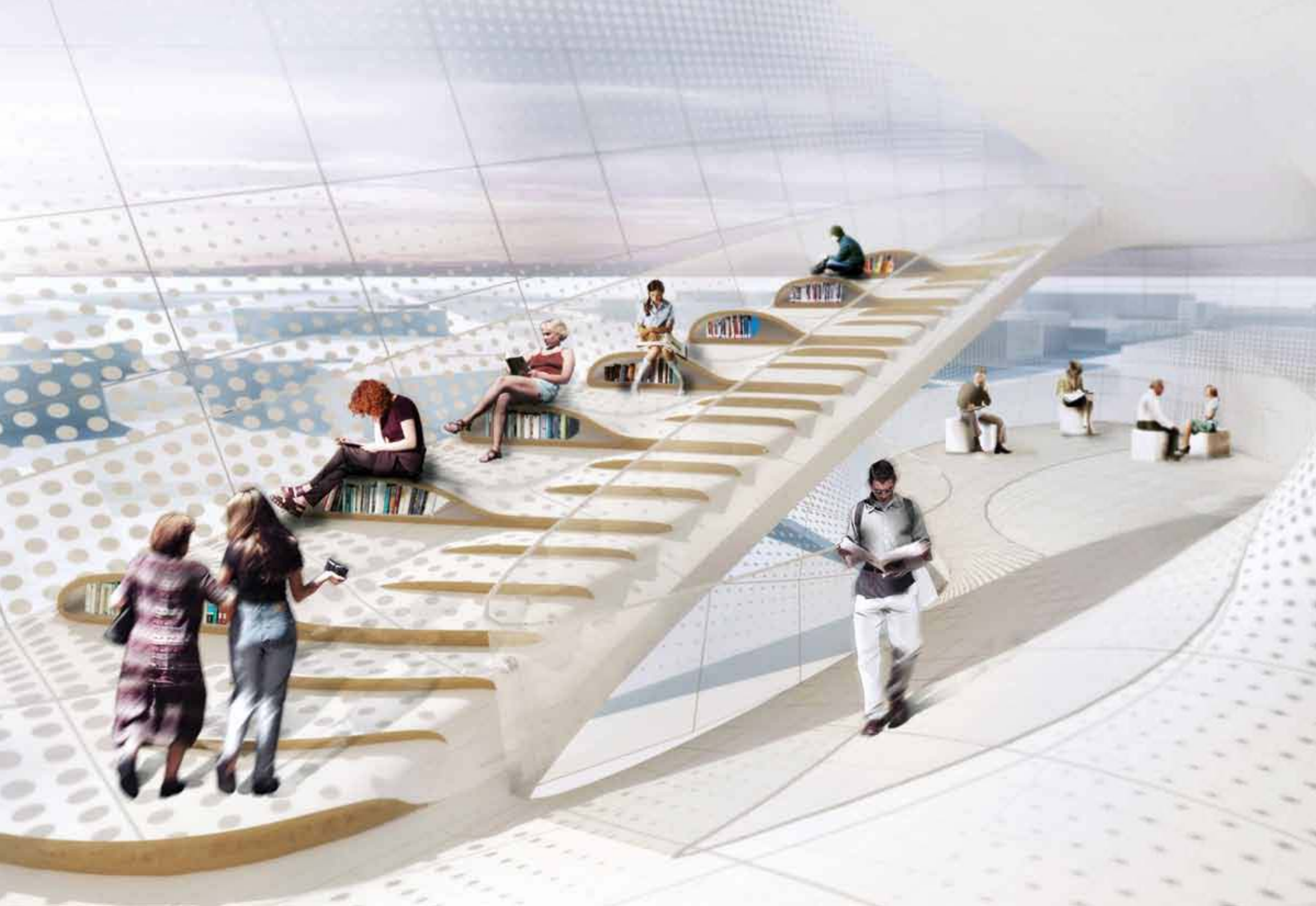
This studio explored the relevance and meaning of form as a product of reciprocity between geometry (form), force (performance), matter (organization), and craft (fabrication).

The intent is to develop formal strategies that considered structures as complex systems emerging from the reciprocal relationships between form and performance. Performative feedback of all types—structural, environmental, material, and visual criteria—were explored as catalysts for design solutions. Emphasis is was placed on design experiments and exploratory processes to uncover architectural possibilities.

Sited in Pershing Square, the project redefines redefined the role of the public library in a postdigital era in which the contemporary library has been augmented by the development of digital information technology. Students are were asked to challenge the concept of the library as a physical collection of books and transform it into a multinodal network of distributed information—an alternative library that redefines the typology as a shared public resource.

WENDONG WANG





ARCH 605A. POST PROFESSIONAL GRADUATE ARCHITECTURE DESIGN STUDIO.
SEMIDETACHED: CONFLICT, AMENITY AND THE PAVILION

INSTRUCTOR: Markus Miessen and Marcos Sánchez

Over the past decade, the architectural pavilion has become an increasingly institutionalized site for architectural experimentation. International expositions provided the pavilion's most familiar historical context, from Ferdinand Dutert's 1889 Machine Pavilion and Le Corbusier's 1925 Esprit Nouveau Pavilion, to Eero Saarinen and Charles Eames's 1964 IBM Pavilion/Information Machine, cementing the type to modernist ideas of technological advancement. More recently, New York's MoMA PS1, London's Serpentine Gallery, and a multitude of biennials have sponsored pavilions of their own, joining older international organizations to increase this population. At the same time, the digitally modeled and hand-assembled pavilion has become a staple of the architecture school courtyard.

Instead of addressing the contemporary (and curious) marriage of increased processing power and an architectural type associated with various forms of leisure, many recent pavilions retrace older ambitions, attempting to conjure a new "tectonic" or rework modernist perceptual effects such as dynamic space and the interplay of light and material.

This research studio examined the pavilion's relationship between computer power and leisure as well as formal and informal politics. Two questions emerged: Can the pavilion provide environments that do not subsume differences in amenity? Can the pavilion become a space for, and staging of, discourse?

JASON MULLER AND ZHENYU YE



**ARCH 605A. POST PROFESSIONAL GRADUATE ARCHITECTURE DESIGN STUDIO.
RESPONSIVE THRESHOLDS**

121

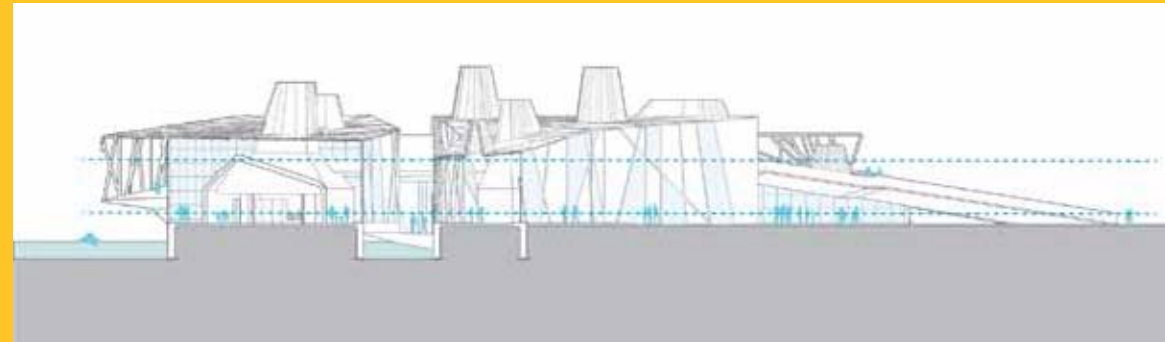
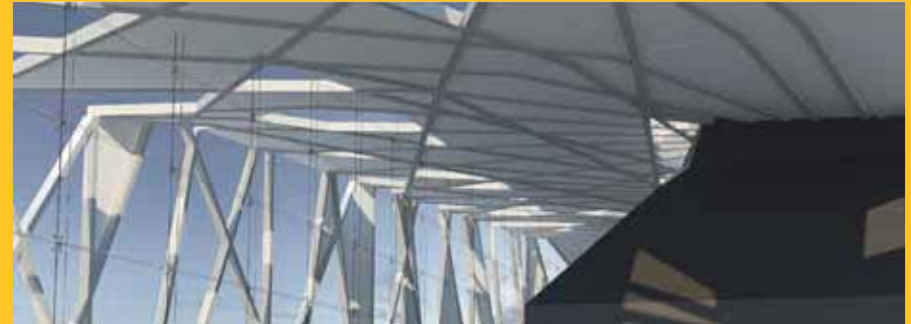
INSTRUCTOR: Aaron Neubert

According to the World Wildlife Fund, more than 80 percent of marine pollution is generated by land-based activities, a large portion of which consists of waste generated in the last sixty years. As environmental damage to our oceans becomes increasingly apparent, architecture's role in mitigating these forces and transforming the built environment becomes paramount. With this responsibility to oceanic stewardship through design solutions comes the opportunity to explore aesthetic potential.

This studio examined the dialogue between the aesthetic and the performative through the analysis of thresholds between water and earth, building and landscape, structure and skin, material and effect, product and by-product, interior and exterior, and singular and collective. The mining of source material from within and outside the discipline served as a point of departure into imagining a responsive and responsible architecture.

The site was Long Beach's Marine Stadium, where rowing events were held during the 1932 Olympics. The program was a rowing facility developed in response to students' project statements. Main programmatic requirements included equipment storage and display, exhibit and education, training and community interface, reception, café, offices, locker rooms/restrooms, gym and fitness rooms, treatment rooms and spa, workshop/ research and development, and launching/docking.

ETHAN BARLEY



INSTRUCTOR: Lorcan O'Herlihy

This studio sought to develop elastic strategies that took clues from the confluence of field (ocean) and convergent (urban waterfront) conditions, investigating relationships between architecture and ecology, urbanism and emerging technology.

The majority of the world's waterfront metropolises face an uncertain future. Currently, 634 million people live in coastal areas within a 30-foot elevation change of sea level. In the following decades, rising sea levels could lead to catastrophic conditions for shore-based populations and marine ecosystems alike. Recent projections anticipate this rise to over 39 inches during the twenty-first century, rendering many of these metropolitan regions uninhabitable. How can we make one of the largest contributors to the problem generate a solution?

With elastic infrastructures responsive to possibilities inherent in these regions of confluence, students examined how programmatic complexity could be utilized to promote social interaction while mitigating environmental and ecological impact. The studio investigated fluctuating edge conditions to create hybrid arcologies that would dramatically alter our relationship to this new ground. Can we preserve its distinctive nature while introducing models of hybridity aimed at uncovering its economic, cultural, environmental, political, and societal potential?

CHEN HUANG



**ARCH 605B. MARCH GRADUATE ARCHITECTURE DESIGN STUDIO.
PLAYFIELDS**

INSTRUCTORS: Biayna Bogosian and Victoria Coaloa

The expression of architectural form is rarely singular or homogeneous. In addition to producing the scalar and spatial variety demanded by program and site, formal systems can integrate and transition between heterogeneous modes of expression.

The studio required students to develop a coherent formal system that synthesized latent principles of design and formal operations. These systems were later developed and refined to address concerns of program, site, and ultimately the fabrication of a 1:1 prototype.

Founded in 1979, MOCA's mission is to be the definitive museum of contemporary art. One of the museum's three facilities is the Geffen Contemporary at MOCA, located in Los Angeles's Little Tokyo district. This facility was renovated in 1983 by the architect Frank O. Gehry, who transformed a former warehouse into 40,000 square feet of gallery space. The studio site was the courtyard of this renovated complex.

PLAY MOCA is an annual event series that has been held at the Geffen Contemporary since 2009. It aims to foster collaboration in Los Angeles's creative community on a series of cross-disciplinary projects, musical performances, and exhibitions. Proposals aimed to transform the museum courtyard into an enveloping yet dynamic performance space with the potential for future growth.

RODRIGO SHIORDIA



ARCH 605B. GRADUATE ARCHITECTURE DESIGN STUDIO.
CROSSINGS: A NEW U.S. LAND PORT AT OTAY MESA, CA

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INSTRUCTORS: John Dutton and Julie Snow

This studio explored a new form of public infrastructure resulting from US investment in border security. These public buildings are restrained by the rigorous security protocols of the Customs and Border Protection (CBP), constrained sites, and large traffic volume. The studio, however, sought a new form of public space within these programmatic and site constraints.

We began by understanding the project's program and site and by identifying opportunities to enhance the building and site as public space. We sought a new understanding of public space outside the traditional forms of grand lobbies, parks, and plazas. We proposed instead ways in which the space itself could convey public values.

To challenge students to find opportunities within everyday architectural constraints, we chose the politically and culturally charged site of the Port of Entry at Otay Mesa.

The US/Mexico border is economically, politically, socially, and culturally complex. This understanding of site context was necessary to create architectural proposals. In considering this architectural problem, the studio sought new rules to define public benefit from the port design. We examined the border crossing as a way of delineating nation-state boundaries in a culturally fluid, increasingly complex world.

KAM KO, CHRISTINA SALAZAR, BROOKLYNN SHORT



ARCH 605B. GRADUATE ARCHITECTURE DESIGN STUDIO.
HIROSHI TESHIGAHARA FOUNDATION FOR THE ARTS

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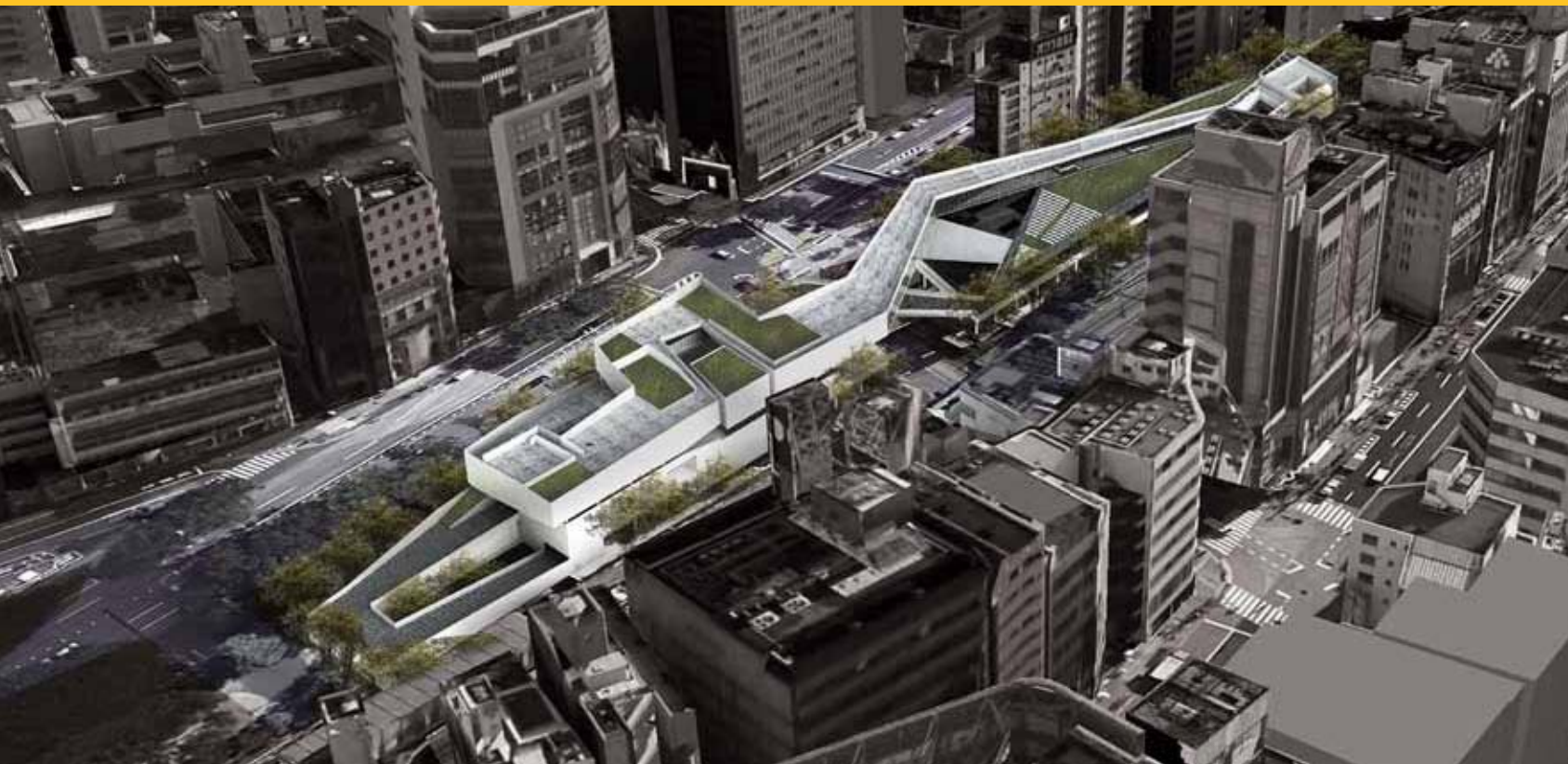
INSTRUCTOR: Yo-ichiro Hakomori

The work of Hiroshi Teshigahara as a modernist filmmaker, Bizen ceramicist, and master of the Sogetsu School has had a profound influence on modern Japanese film and art. The Teshigahara Foundation for the Arts intends to create a center for scholars to study the work and life of this prolific artist's work and life, to house exhibitions, and to participate in the activities of the Sogetsu School of Ikebana.

The foundation wishes to attract scholars, film enthusiasts, young adults, families, and students; it will host residencies for scholars and individuals affiliated with the arts. The institution will be located in Shibuya, one of Tokyo's major commercial and transportation hubs, and will build on the city's existing museum culture, including the Bunka-mura Cultural Center.

A community garden is proposed as an integral part of the facility and a stand-alone destination. It will extend exhibitions to the foundation's exterior and provide space for large-scale Sogetsu School installations. The garden is also intended to provide a respite from Shibuya's cacophony and will host contemporary film- and art-related events. The studio sought to question how the foundation and garden will address the area's urbanism, and how program components could create an experience appropriate for the foundation.

BINGLIN LI



**ARCH 605B. GRADUATE ARCHITECTURE DESIGN STUDIO.
PAVILIONS, TEST BEDS, AND SKUNK WORKS**

INSTRUCTOR: Rob Ley

A pavilion can be a large or small freestanding structure, typically sited a short distance from a main residence and intended primarily for uses relating to relaxation or pleasure.

A test bed is an experimental platform for the development of a larger project. It allows for rigorous and replicable testing of scientific theories, computational tools, and new technologies.

A skunk works project is typically developed by a small group of people to develop a radically innovative project and often denotes a high degree of autonomy unhampered by bureaucracy.

Pavilions often serve as a test bed for spatial, material, and/or construction innovations. Though often temporary, many have transitioned into permanent fixtures in landscapes and urban environments.

As fields outside of architecture evolve through technological developments, architecture, too, stands to benefit from advances in material science and computational capacity. We focused on the application of “performative” materials and assemblies, emphasizing digitally enabled fabrication techniques.

Students utilized Rhino and Grasshopper in the development of a pavilion and explored how various materials perform in differing configurations and assemblies. Complementing these studies, students examined contemporary fabrication practices by producing mock-ups, eventually leading to the fabrication of a full-scale pavilion.

TING TING ANDA LAM, XIAOYUN LI, MAX MILLER, JESSIE LYNN RABIDEAU, XI CHEN, ANDRES LINSHIU, HEATHER LOSEY, XUEYINRAN WANG





ARCH 605B. GRADUATE ARCHITECTURE DESIGN STUDIO.
APARTMENT FOR LIFE WITH EMERITI AND USC OUTREACH PROGRAMS

INSTRUCTOR: Victor Regnier FAIA with Michael Lehrer FAIA

This project combined three uses for a significant site on the USC campus, each of which share complementary goals. The first is a housing development for aging staff, faculty, and alumni. The second expands and replaces the USC Emeriti Center, and the final use is a center for engagement between the university and neighboring residents. The site occupies the corner of Vermont Avenue and Jefferson Boulevard and is the last developable area of the original USC campus.

“Apartments for Life” is a European housing concept that has become popular in recent years and involves housing that can be adapted to residents’ needs as they age. This housing type makes it unnecessary for aging residents to move to assisted living or skilled-nursing housing.

The studio studied synergistic possibilities for staff, faculty, and alumni with the Emeriti program, as well as volunteer opportunities with neighborhood outreach programs. Similar projects on college campuses are becoming increasingly popular. Stanford, UCLA, University of Michigan, University of Virginia, MIT, and other major universities have projects on or near campus. A sixty-unit project size was selected for economical reasons. Extensive common spaces were reduced, since the USC campus could provide possibilities for various activities.

CHEN HUANG, ZHUOJUN SHEN





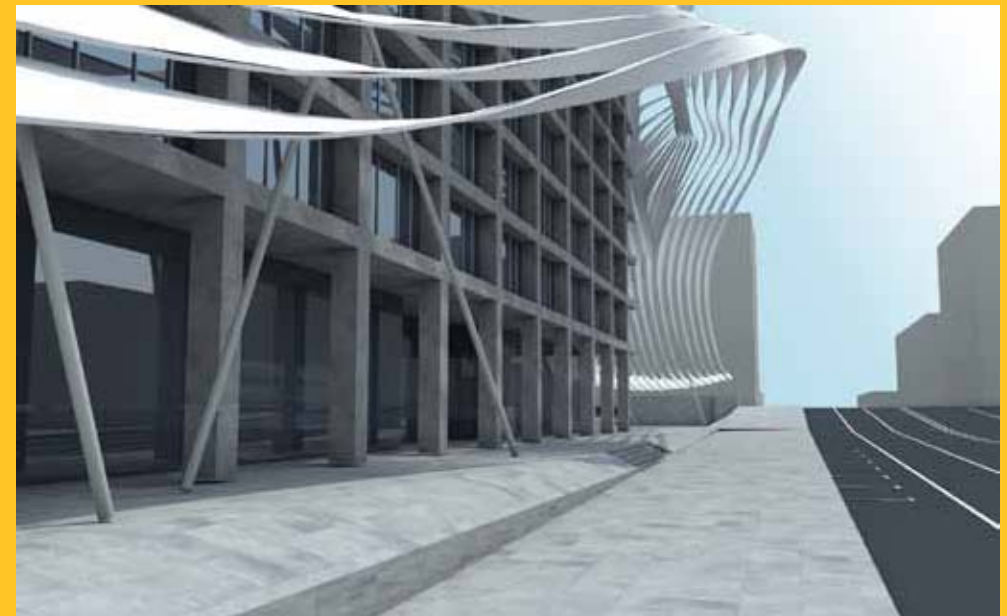
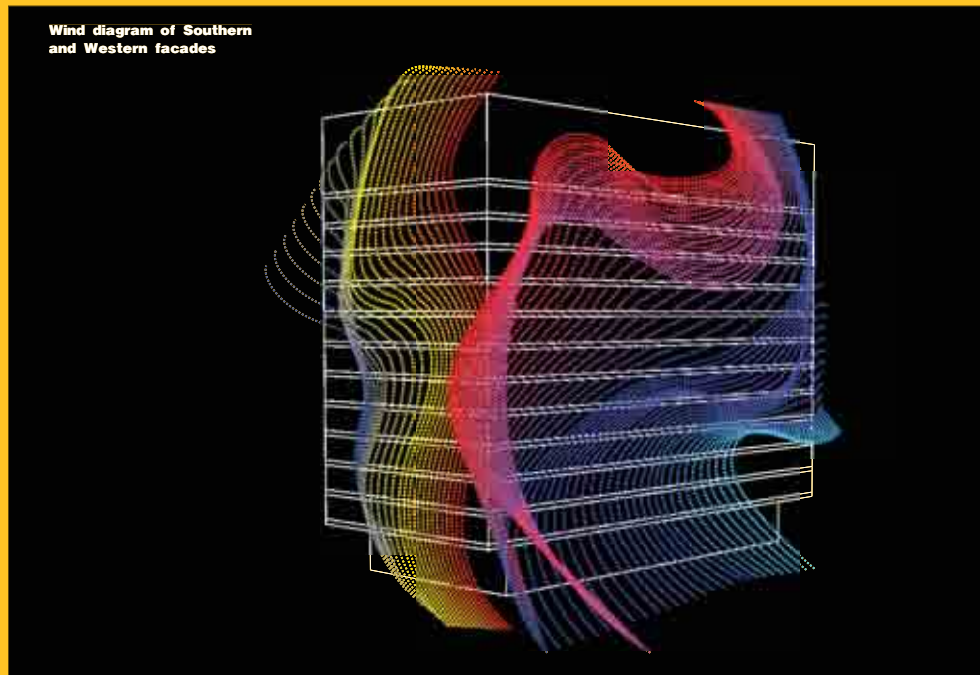
STUDENT: Oleksandra Kazymirska

ADVISORS: Gary Paige (chair), David Gerber, Alvin Huang,

This thesis takes the modern building envelope as a point of departure for design research. It focuses on developing strategies and tactics for optimizing the energy performance of a generic office building through the design of a new envelope system.

The site for the project is the former Pacific Bell Building in Pasadena, California. Situated on 2.71 acres, it was the tallest building in downtown Pasadena when it was constructed in 1971. The complex consists of two structures: a 12-story concrete and glass office tower containing 276,000 square feet of space and a 13-story parking structure.

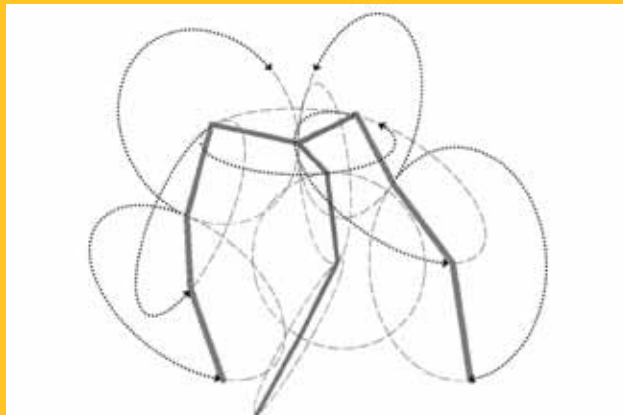
Following analysis and testing, a set of functional and formal problems characteristic of many modern envelope systems were identified and served as a basis for a new performance agenda. Instead of a repetitive and hermetically sealed curtain wall system, the new facade employs strategies of layering, differentiation and operability as design tools to optimize performance, resulting in an envelope system that is not only environmentally responsive and easily controlled by the occupants but also provides a contemporary identity for the building.



STUDENT: Tianlin Gu

ADVISORS: Kris Mun (chair), Gail Borden. Alvin Huang, Doris Sung

The idea of flexible structures was the key question in this research. It stemmed from the reflection that as lifestyles become more mobile with pervasive mobile technologies, architecture must create adaptive structures that can be as mobile as we are. The focus of the research was to create various systems of flexible “mesh” that can be easily transportable, self-standing, and erected by one or two persons. Inspired by Chuck Hoberman’s work, a hinge system of unfolding and collapsing members were implemented to maximize tight closure and maximum expansion of the structure.



STUDENT: Behnaz Farahi Bouzanjani

ADVISORS: Alvin Huang (chair), Michael Fox, Neil Leachx

This project aims to produce an environment that can empathize with emotions by physically adapting to the user, overcoming shock or conditions of alienation.

“Alloplastic” is a psychoanalytic term referring to an individual causing an environment to change. In Mark Goulthorpe’s reading, it indicates a reciprocal transformation between subject and environment. For this exchange to occur, user and environment must share a logic of behavior. One possibility could be to use tensegrity structures operating in an alloplastic fashion. The human body operates as a tensegrity structure, with muscles operating in a tension and bones in compression. An environment could be governed by a similar logic, engendering mutual modeling of behavior.

Recently tensegrity structures have been developed that can change their form. This project used Shape Memory Alloy springs operating as “muscles” to realign a structure while maintaining overall equilibrium.

This research could engage the neuroscientific concept of neuroplasticity, the capacity of neural pathways to change in response to environmental stimuli; through it, humans respond to, and model themselves on, the environment. This refers not only to the choreographies of the human body within a space, but also to the capacity for human beings to design that space.



LANDSCAPE DESIGN MUST BE THE ACTIVITY THAT SORTS OUT AND WEAVES TOGETHER EVOCATIVE AND HEALTHFUL URBAN FUTURES.

MASTER OF LANDSCAPE ARCHITECTURE

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LANDSCAPE ARCHITECTURE RESEARCH, TEACHING, AND PRACTICE: Δ160 THE TIME IS NOW, AND THE PLACE IS LOS ANGELES AND USC

The Los Angeles laboratory is a major asset for examination of the nature of landscape places and projects, the operative issues of contemporary urban conditions, and for understanding challenges and opportunities related to natural processes in an especially dynamic cultural landscape. Leading edge as well as historic places are enjoyed and studied. Los Angeles and USC support the spirit of critical inquiry and creative energy that characterize the culture of southern California. Art thrives here. Meanwhile, the region faces challenges from projections of significant population growth amid water shortages, improved but still hazardous air pollution, natural systems in need of restoration, and an aging and incomplete infrastructure. Los Angeles is a puzzling complex of urban centers that are not easily characterized and related. Landscape design must be the activity that sorts out and weaves together evocative and healthful urban futures. The time is now, the place is Los Angeles, and USC Landscape Architecture is the research and teaching center for compelling urban landscape futures.

USC LANDSCAPE ARCHITECTURE IS READY

The sixty-five year history of landscape architecture education at USC finds the Master of Landscape Architecture program thriving in 2012-13. Twenty-seven courses and studios have been offered to fifty-five graduate students plus a large number of non-majors—over 500 individual course enrollments. The program is nationally accredited and its faculty of prominent landscape architects are recognized for both their professional and scholarly accomplishments. Every course and every design studio is home to exploration of the life potential of projects, places, destinations and infrastructure. Heritage and trajectory are but lead-ins for “next.”

EVIDENCE MATTERS – MUCH IS BEING ACCOMPLISHED

Talented students are ambitious, hard-working, and successful. The design studies included in this publication indicate the ambitious nature of the studies and the quality of the design proposals. Graduates are finding employment in the best offices and in non-profit and public agencies. National and regional awards are numerous. There is a palpable energy present, consequential achievements, and much more to come.

Robert S. Harris, FAIA, Hon.ASLA

DIRECTOR, GRADUATE LANDSCAPE ARCHITECTURE PROGRAM

**ARCH 542A. GRADUATE LANDSCAPE ARCHITECTURE DESIGN STUDIO.
ON NATURAL GEOMETRIES: FRACTAL GEOMETRIES AND THEIR VALUE AND ROLE IN
LOS ANGELES AND ITS AQUEDUCT”**

INSTRUCTOR: Alex Robinson

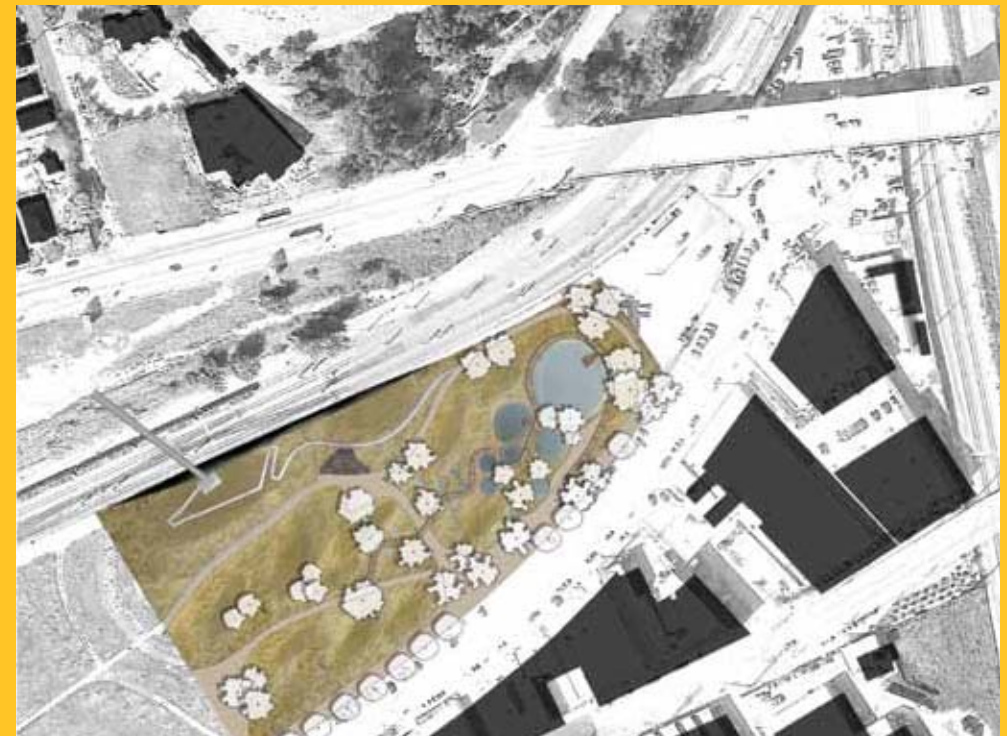
The builders of the urban environment increasingly employ natural services to perform functions formerly achieved by “hard” solutions. Biological water treatment systems, for example, can replace a mechanical piped system while providing more benefits. Landscape architects are empowered by this prevailing of reason, since they are uniquely qualified to integrate a living system into urban geometries.

Many believe that the design of natural systems should draw from their original form in nature. However, designers with nature-based design ambitions who attempt to make something look “natural” are often criticized for creating a “shallow copy” of nature.

Are we losing something by rejecting the geometry of nature and embracing Euclidean geometries? Until recently it was difficult to address this question due to a limited understanding of the geometric qualities of natural systems. It was not until Benoit Mandelbrot published *The Fractal Geometry of Nature* in 1982 that there was a fundamental shift in the understanding of the natural geometries: topographic form.

In this studio we explored fractal forms and function and incorporated them into the urban landscape. After studying the Owens Valley at large and small scales, a site in Los Angeles became the focus for a final design.

BRENDAN KEMPF, KAREN MOMPER, NICOLE IVES, RACHEL KLEIN



**ARCH 542A. GRADUATE LANDSCAPE ARCHITECTURE DESIGN STUDIO.
LANDSCAPE ARCHITECTURE IN PLACE”**

INSTRUCTORS: Tiffany Beamer, Jennifer Jones and Jennifer Toy

The goal of this studio was to analyze the complex layers of systems on and in urban sites, and to propose elegant and provocative interventions that improve infrastructure, movement, health, and livability at multiple scales.

The Landscape is the infrastructure that underlies and connects all urban systems, and each landscape has within it the potential to function on many levels – to provide an ecological service and a platform for social sustainability. Green infrastructure thinking infuses the studio work throughout the semester at a variety of scales and approaches. The landscape of infrastructure (both green and otherwise) has become the most effective means to explore the relationship between natural processes and the city.

YANGWEN HUO, AH RAM YANG



ARCH 542B. GRADUATE LANDSCAPE ARCHITECTURE DESIGN STUDIO.

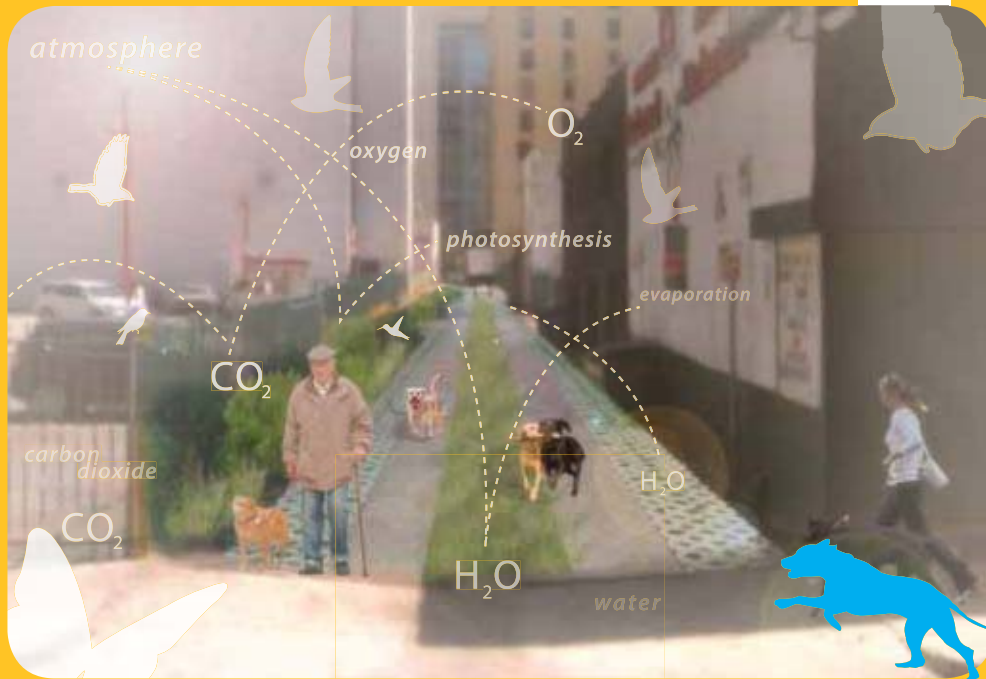
INSTRUCTOR: Takako Tajima

This studio investigated the possibilities for new parks and new park typologies for Los Angeles. We utilized the 50 Parks Initiative as our departure point and proposed additional parks to enhance the lived experiences of people's everyday lives.

The city's experiential aspects remain a dimension of urbanism best perceived as the byproduct of all that is tangible and calculable: the "soft" outcome to the "hard" inputs. Instead of depending on approaches to planning and design that emphasize built components to shape our cities, we concerned ourselves first with the experiential. Furthermore, the studio tackled the problem that faces most large cities aiming to increase park space: the lack of available land.

The anthropologist Arjun Appadurai argues that goods and services can become decommoditized, partially decommoditized, or their commodity value can be temporarily suspended. By projecting this idea to land, we imagined a new model of land tenure that reveals underused and invisible sites that we can appropriate for parks. By combining these "park lands" with ideas to improve experiential aspects of our city, we created new types of parks that addressed the needs and desires of multiple publics.

KAREN MOMPER, JEAN YANG



**ARCH 542B. GRADUATE LANDSCAPE ARCHITECTURE DESIGN STUDIO.
LOS ANGELES RIVER BOW TIE STUDIO**

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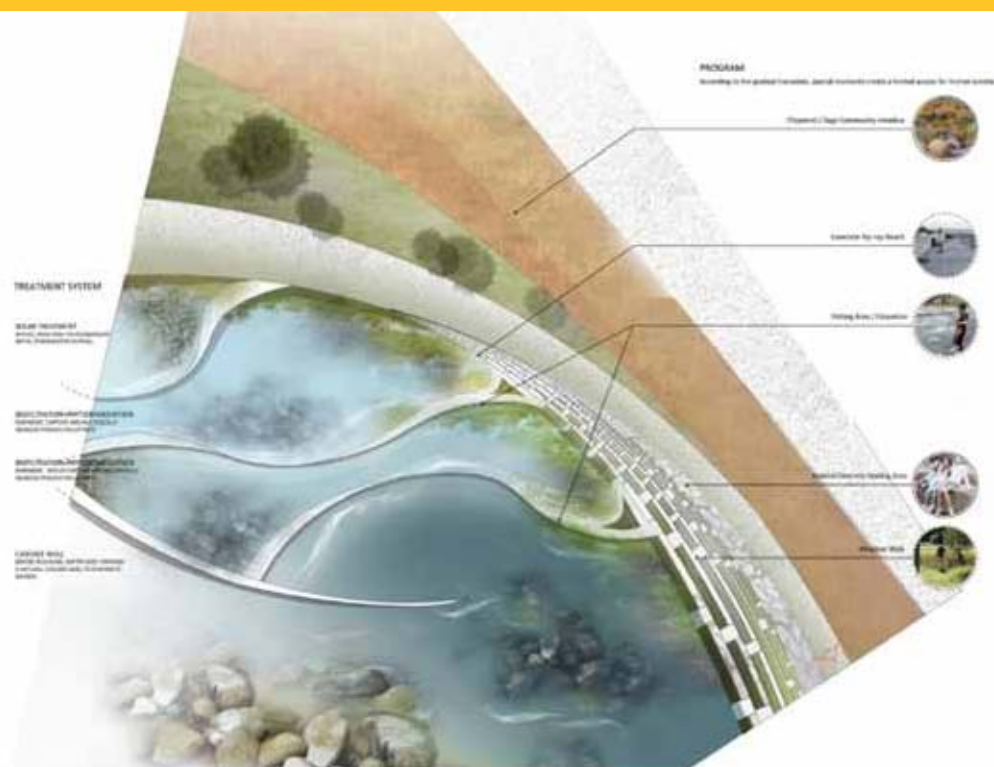
INSTRUCTOR: Alex Robinson

When the concrete banks of the Los Angeles River assured citizens that the floods of the 1930s were a nightmare of the past, perhaps they were seen in a soft focus, a concrete blanket keeping the city safe. While some have lauded the channel's engineering, citizens almost universally lament the river's concretization. Yet, as the flood of 1994 showed, the river remains untamed, complicating intentions to "green" the river.

Concrete made the water flow faster, avoiding the volume that caused flooding. Where concrete is replaced, as with vegetation, it usually slows the water, reducing flood protection. Until now designers have been unable to exploit opportunities in this scenario, resulting in little advancement in the channel's design: engineers' proposals pay little attention to design quality and landscape architects' designs remain speculative.

This studio designed a new form for the banks adjacent to the Bow Tie site, where vegetation and sediment persist. The studio collaborated with the City Bureau of Engineering and the Army Corps of Engineers, and was aligned with recent studies of flow conditions in the Bow Tie area. The studio employed design methods to align these engineered forms with the river's potential to generate cultural, urban, and ecological processes.

YUSHAN PANG, AH RAM YANG



INSTRUCTOR: Rachel Berney and Oliver Schulze

Livability, lively cities, public life and other concepts describing vibrant and stimulating urban environments are frequently communicated in new visions for the future of our cities. This focus on “urban life” is a reaction to 20th century urban realities, where increasing standards of living and associated city-building processes produced socially and geographically isolating urban areas.

People no longer need to use the urban realm as in the past; many of life’s functions now take place in private and internalized environments. Transit, leisure and retail environments and other invitations for people to experience the city are therefore of special significance.

In Los Angeles, we are challenged to integrate new metro stations into the urban fabric over the next decade. The opportunities to reshape the city fabric through their construction are immense.

At present, most public space (PS) investment in Los Angeles occurs by “piggybacking” PS projects onto larger capital improvement projects. The metro system’s expansion represents a unique opportunity to seed new public spaces into the city. In order to develop design strategies for LA’s complex urban fabric, urban ecologies, and policyscapes, the studio generated themes designed to help us create wonderful public places despite difficult political and economic circumstances.

TINA CHEE, DANIEL NERI



ARCH 698B. MLARCH THESIS STUDIO.
RE-TRANSFORMING LANDSCAPE AT THE CONFLUENCE OF ARROYO SECO AND THE
LOS ANGELES RIVER

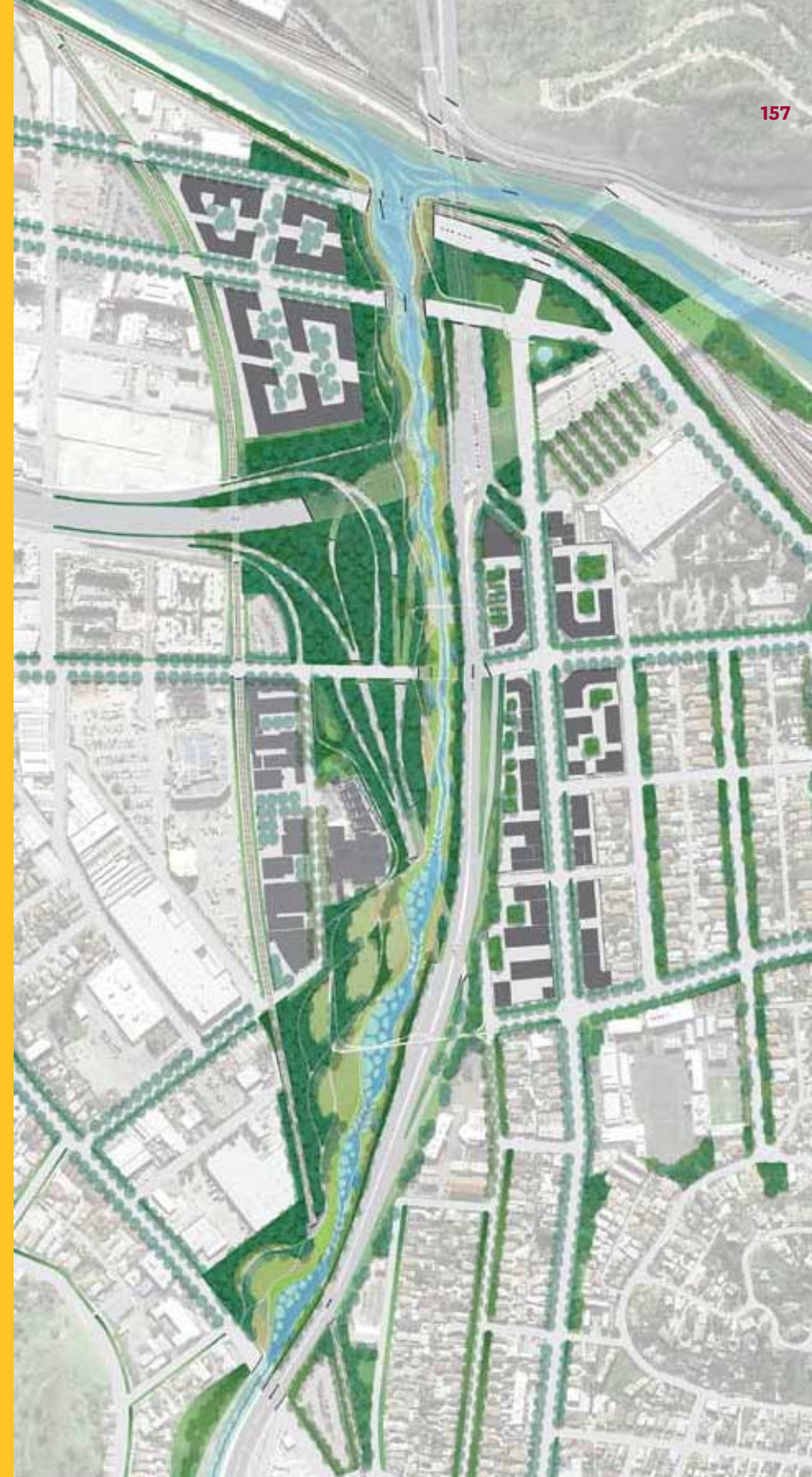
INSTRUCTOR: Robert Harris. **STUDENT:** Yingjun Hu

In today's world, where "green" means more than the presence of trees and "health" goes beyond the absence of illness, it is our responsibility to make a city that is more than a place to live; it is to cultivate a place to live well.

Urban rivers and riverfront areas are commitments to multi-purpose, multi-use spaces in which residents and visitors can interact with their new surroundings. However, in many countries, rivers are channelized and seriously polluted. This leads to ecological degradation of urban rivers, lack of accessibility, lack of open space around urban river fronts, disordered development of urban riverfront area, and a crisis of historical continuity and heritage protection.

The site, located in northeast Chinatown, is complicated with freeways, rail infrastructure and rivers. Further, the Confluence is a site with immense potential. This study aims to transform the Arroyo Seco from a single-functional channel to a multi-functional corridor of natural and cultural value, to provide safe access for people within the maze of infrastructure, and to elevate an river-front landscape to a harmonious balance of complex systems where modern infrastructure meets natural ecology.

[This design research study won the ASLA Honor Award for Analysis and Planning and was published in the October 2013 issue of *Landscape Magazine*.]



ARCH 698B. MLARCH THESIS STUDIO.
VALUABLE PLACES OF WILDNESS IN LOS ANGELES: THE ISSUE OF NEGLECT AND THE ASSET OF WILDNESS

INSTRUCTOR: Robert Harris. **STUDENT:** James Lively

In Los Angeles, where urbanization has pushed the natural landscape to the county's edges, leftover spaces function outside the laws of built and natural environments. Wild space in this context is socially uncharted territory, resembling wilderness with regard to civic function, but often resembling an asphalt slab with regard to ecological function. This design study seeks to demonstrate how wildness is an asset to the city.

Wildness is often destroyed when open pockets are redeveloped. Seeming solutions to neglected open space, however, often result in places with a museum-like quality. Even if the solution is to retain open space, wildness is often gutted in the process of remediating a highly controlled and managed place.

The Crown Coach Brownfield is a vacant 20 acres of land located southeast of Downtown. Fenced off and unused, it has become a place of wildness, abiding by the rules of its own ecosystem. There is an opportunity here to anticipate a future need and to begin cultivating the solution. If the need for a place of wildness is still 10 years away, there is an opportunity for Crown Coach to become ecologically and programmatically established before it is heavily used.



INSTRUCTOR: Robert Harris. **STUDENT:** Tina Chee

What makes a great city? Great large parks. From New York to Boston and Washington DC, every great city has a strong association with at least one great large park. These parks represent a societal richness, indicating that open space has been afforded, equally valued to buildings, and is the necessary breathing space for its residents. History illustrates the value of open space and parks as integral symbolic gestures in cities. Today as we face environmental challenges we are called to refocus our efforts, since the landscape is integral to our sustainable future. Perhaps due to Southern California's favorable climatic conditions, nature has been overlooked in Los Angeles. What propositions can we make that shape the city's future for social and environmental sustainability?

Los Angeles is commonly thought of being park-poor. Despite being the second most populous American city, it is ranked 12th in terms of parkland acreage per resident. However Los Angeles does have large parks that seem inaccessible although they are in plain sight. This Directed Design Research project examines the nature of the city's current park network and the potential of reclaiming sites surrounding Elysian Park to form the Great Park of Los Angeles.





**IT IS ALSO A
PLACE FOREVER
SEEKING THE
NEW, PROVIDING
OPPORTUNITIES
TO PROTECT
THE BEST OF
THE PAST WHILE
EMBRACING
THE LANDMARKS
OF THE FUTURE.**

MASTER OF HERITAGE CONSERVATION

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Los Angeles provides a unique laboratory in which to learn and challenge conservation issues. As a relatively young and diverse global city, it is the ideal place to explore a relatively young and diverse global discipline. Our wealth of recent past resources raises a new set of research challenges and the city's richly diverse communities woven throughout the tapestry of the built environment push us to acknowledge the many layers of history and meaning revealed in the city. It is also a place forever seeking the new, providing opportunities to protect the best of the past while embracing the landmarks of the future.

Imbedded in the School of Architecture at USC, heritage conservation students are instantly part of a multidisciplinary environment, linking landscape architecture, building science, architecture, and conservation. As such, the program curriculum is designed to expose students to a broad range of topics including materials conservation, policy and planning, conservation theory, global conservation efforts, architectural and landscape history, best-practices in resource documentation and evaluation, sustainability, and historic site management. Students are also encouraged to take advantage of the many academic resources in the broader university, including taking courses in real estate, regional history, urban planning, and spatial sciences. Program faculty are leaders in the field, a blend of academics and practitioners who grapple with conservation in real time, seeking creative solutions that balance the integrity of the past with a sustainable future. Through this broad exposure, students begin to formulate their professional path within the discipline.

The creation of a graduate thesis enables students to stretch themselves in the direction of their choice; the abstracts that follow reflect this diversity. Topics are chosen based on the interests of the student and vary from architectural and landscape history to policy analysis, from materials-based inquiry to industrial archaeology, and beyond. What follows is really just the tip of the iceberg - a complete full-text version of the featured theses, as well as others from our program, are available online.

Trudi Sandmeier

DIRECTOR, MASTER OF HERITAGE CONSERVATION PROGRAMS

**MASTER OF HERITAGE CONSERVATION.
CONSERVATION PRACTICES IN INDIA: A CASE STUDY OF JAISALMER FORT**

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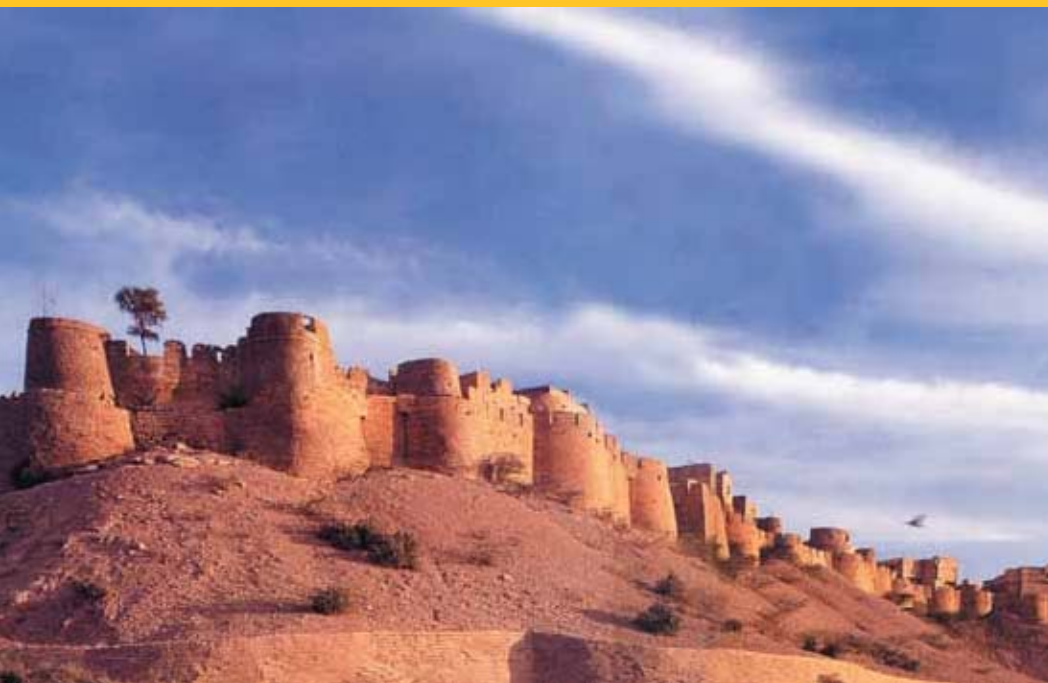
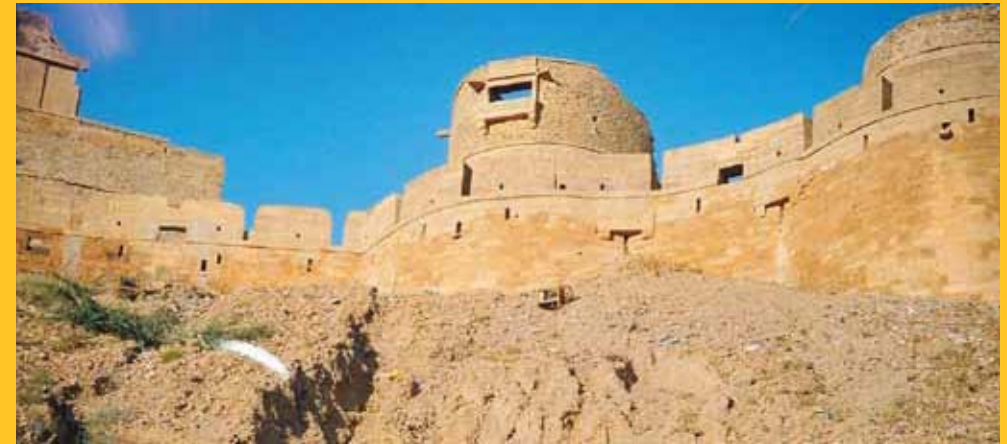
STUDENT: Neha Jain

This thesis examines the practical issues involved in the conservation of architectural heritage in India through the lens of recent conservation projects at Jaisalmer Fort. Jaisalmer, built as a residence for the royal family and those who served them, is known as “the Golden City” because of the yellow-brown sandstone used in the fort’s construction. The Archaeological Survey of India (ASI) and the Indian National Trust for Art and Cultural Heritage (INTACH), major entities (government and nongovernment, respectively) working to conserve heritage resources, have projects in Jaisalmer. Both entities, however, face issues in enforcement and updates to their administrative systems. This thesis attempts to find out where conservation practice presently stands; the practical, social, and legal issues involved; and what opportunities the future holds following these major legislative changes.

Below: Jaisalmer Fort (Sonar Quila)

Opposite Above: Increased rainfall is causing severe erosion on the slope, threatening the fort’s stability.

Opposite Below: View of the fort with houses and fort wall



**MASTER OF HERITAGE CONSERVATION.
SOCIETY'S CHILD: THE GARDENS OF THE FELIPE DE NEVE BRANCH LIBRARY**

STUDENT: Jonathan Froines

The Felipe de Neve Library was built in 1929 in the Westlake neighborhood of Los Angeles. Over the following years, community groups advocated for unique landscape insertions to the site. In response, the Los Angeles Department of Recreation and Parks added a lily pond and a series of terraces. Members of the public installed a Shakespeare Garden and, later, a Fragrant Garden for the Blind, both designed by the noted landscape architect Edward Huntsman-Trout.

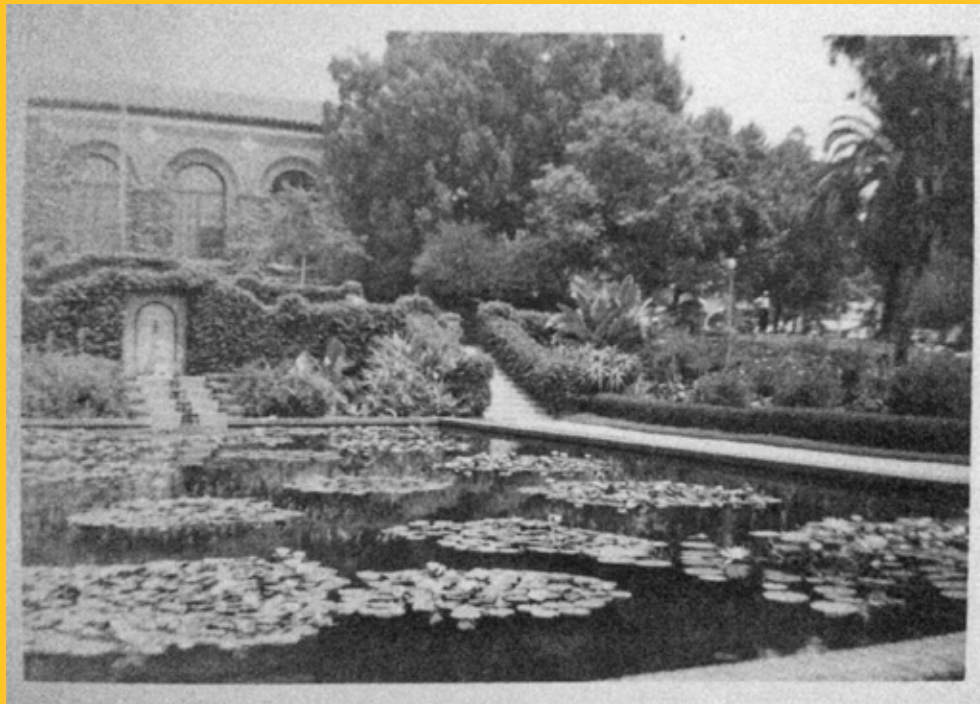
Today the lily pond has been drained and the gardens lie in ruin. The plaques to Shakespeare have been carried off by thieves, and the Fragrant Garden for the Blind is being used as a parking lot.

In this study, the nature of the site is investigated and evaluated through its history. How do the physical remnants of the site relate to the people and events of early Los Angeles? How does this history then impact the ways we seek to restore the gardens to active use?

Below: Felipe de Neve Branch Library Gardens, lily pond and Shakespeare Garden parterre, photographer unknown.

Opposite Above: Felipe de Neve Branch Library Gardens, Anne Laskey, 1978. Los Angeles Public Library Photo Collection.

Opposite Below: Felipe de Neve Branch Library Gardens, Drained lily pond, Jonathan Froines, 2012.



**MASTER OF HERITAGE CONSERVATION.
A DIFFERENT KIND OF EDEN: GAY MEN, MODERNISM, AND THE REBIRTH OF PALM SPRINGS**

STUDENT: John LoCascio

The contribution of the gay community—gay men in particular—to the cause of historic preservation in the United States has long been tacitly accepted but rarely documented. This thesis fills that gap by documenting, as a singular case study, the role played by gay men in rediscovering, rehabilitating, and reviving the faded resort city of Palm Springs, California.

Over the course of the twentieth century, Palm Springs transformed from a modest spa town into an exclusive wintertime resort and, later, after World War II, into a popular middle-class vacation destination. The city's period of greatest development peaked in the two decades following the war, coinciding with the rise of modernism in the United States before declining dramatically in the 1970s. Palm Springs became a virtual ghost town that happened to boast the largest and finest concentration of mid-century modern architecture in the country.

This thesis documents how, at its popular and economic nadir, Palm Springs was rediscovered largely by gay men, many of whom worked in the fields of architecture, design, and publishing. Together they built a community, rehabilitated neglected modernist houses, and led the effort to recognize the city's unique architectural heritage.

JOHN LOCASCIO

Opposite: A butterfly-roofed house in the Vista Las Palmas tract, Alexander Construction Co., 1958. The quality of design, relative affordability, and sheer number of Alexander houses in Palm Springs – more than 2,200 – made them attractive purchases for preservation-minded gay buyers in the 1990s.





Palm Springs Visitors Center, formerly the Tramway Gas Station, Albert Frey and Robson C. Chambers, Architects, 1965. The 1996–98 fight to prevent the demolition of the iconic gas station, led largely by gay men, was the catalyst for an organized movement to preserve Modern architecture in Palm Springs.

MASTER OF HERITAGE CONSERVATION.
DEFINING THE CITY OF GARDENS: CONSERVATION OF PASADENA'S BUNGALOW COURTS

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STUDENT: Isabel Rutherford

In 1909, builders constructed the first bungalow court in Pasadena, California. The building type subsequently thrived and was embraced for its landscape-dominated composition and community-oriented courtyard space. This unique form of multifamily housing remains relevant today, largely because of the city's multifaceted preservation efforts over the last thirty years.

A coalition of community members, architects, urban planners, public officials, and developers played an important role in acknowledging Pasadena's bungalow courts as a valuable and practical building type. Backed by a progressive policy measure known as the City of Gardens Ordinance, the density and design concepts inspired by the bungalow courts have been preserved through replication and reconstruction of several multifamily housing projects throughout the city. The resulting urban environment demonstrates walkability, communal engagement, affordability, and regionally inspired architecture.

This study examines this building type as a practical housing solution and whether its context in Pasadena is inimitable in other cities. Can the bungalow court model work in areas with declining property values? Can form-based regulation function without the support of a broad array of interest groups? Finally, what are the shortcomings of the bungalow court in comparison to suburban amenities?

Below: Marengo Street Court.

Opposite Above: Bowen Court.

Opposite Below: Gartz Court.



THE COMPLEX INTERPLAY OF ENVIRONMENTAL, STRUCTURAL, AND MATERIAL ISSUES WITH HUMAN NEEDS AND GLOBAL PROBLEMS IS A RICH FIELD FOR STUDY.

MASTER OF BUILDING SCIENCE

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Building science and technology studies at USC recognize that exemplary architecture requires an understanding of, and innovative response to, natural forces. The integration of the study of building sciences with an understanding of current practice and development of new tools and technologies creates synergistic and holistic architectural design that satisfies informed performative goals, requiring good judgment and knowledge for the creative use of architectural technology.

The Master of Building Science program is intended for students with a degree in architecture, engineering or related areas. The typical program length is two years. Students with a professional five-year architecture degree may qualify for advanced standing. Studies are centered on each student's thesis and are supported by research seminars and electives from architecture, engineering and other related fields. Students are individually guided through their study and thesis by three faculty advisors. The faculty has academic, research and professional practice experience in architecture, civil and structural engineering, environmental control system design, system integration and computer applications. Many papers based on thesis work have been co-authored by students and faculty and have been published and/or presented at professional conferences.

DESIGN AND RESEARCH DIRECTIONS

The need exists for a new generation of individuals whose education has prepared them to bring appropriate technology to the design of a sustainable environment including the building and re-building of humane and supportive cities. The complex interplay of environmental, structural, and material issues with human needs and global problems is a rich field for study. The environment and evolving technologies impact buildings and the buildings we design have a huge impact on those issues in return. 21st century issues affecting building environments include changing energy needs and sources, the growth of urban density, and solutions for adapting our aging inefficient buildings. Every decision we make has consequences. In the USC MBS program we study these decisions and consequences in order to design a better future.

Within this context, the program emphasizes:

- The integration of planning, design and technology to form a coherent and interdependent force for the appropriate construction of urban places.
- Recognition of the ecological importance of energy-conscious design and construction as well as the high social value of places in which natural forces and systems are being utilized rather than suppressed.
- The development of research and design methods suited to the complexity of building in urban settings and effective in the use of extensive information.

Douglas Noble, PhD, FAIA

DIRECTOR, MASTER OF BUILDING SCIENCE

**MASTER OF BUILDING SCIENCE.
ECONOMIZER PERFORMANCE AND VERIFICATION: EFFECT OF HUMAN BEHAVIOR ON
ECONOMIZER EFFICACY AND THERMAL COMFORT IN SOUTHERN CALIFORNIA**

STUDENT: Tighe Lanning

COMMITTEE MEMBERS: Joon Ho-Choi, Karen Kensek, Tim Kohut

California has set a zero net-energy conservation goal for the residential sector to be achieved by 2020. To reduce energy consumption in the building sector, buildings should incorporate sustainable performance standards involving renewable systems and climate-specific strategies for users. In climates with significant diurnal temperature swings, environmental controls designed to capitalize on this should be considered to reduce cooling-related loads. One strategy is the air-side economizer, which uses daily outdoor temperature swings to reduce indoor temperature swings. Economizers reduce the amount of thermal mass typically required by naturally ventilated buildings. This type of system can be simulated with reasonable accuracy by energy-modeling programs; however, because the system is occupant-driven, any unpredictable occupant behavior can reduce effectiveness and create misleading results.

This study investigates to what extent human behavior affects the performance of economizer HVAC systems based on physical observations, environmental data collections, and energy simulations of a residential building in Los Angeles. Tangible measures for alleviating problems, such as user-friendly interface design and the incorporation of human behavior into energy models, are recommended based on these observations.

**MASTER OF BUILDING SCIENCE.
EFFECTIVE LIGHT SHELF AND FORM FINDING: DEVELOPMENT OF A LIGHT SHELF
DESIGN ASSISTANT TOOL USING PARAMETRIC METHOD**

STUDENT: Yue Liu

COMMITTEE MEMBERS: Kyle Konis, Douglas Noble, Marc Schiler

The transmission of sufficient daylight to offset electrical lighting while maintaining comfortable conditions for a building's occupants is the central objective of effective daylighting. Utilizing a light shelf is a common strategy for enabling daylight transmission while controlling direct sun and discomfort glare.

It is difficult for designers to optimize light-shelf performance during the design process, since they are required to choose from many different configurations, each with multiple variables (e.g., geometry, surface properties, and position within the facade). This paper presents a method for optimizing light-shelf daylighting and visual comfort performance that utilizes Diva for Rhino combined with parametric analysis and optimization to develop an integrated solution based on multiple variable input by the user. The method is discussed in the context of results from room simulations and facade optimization of a large commercial office building located in downtown Los Angeles. The paper concludes with recommendations for implementing this method in the context of early-stage design decision making to support energy reduction and improved occupant comfort in commercial office buildings incorporating light shelves.

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DISCIPLINE.**

PH.D IN ARCHITECTURE

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The Ph.D. program at USC admits students of exceptional intelligence, character and commitment. Graduates will add to the knowledge base of the field of architecture while they gain knowledge and experience about the teaching, research and service aspects of academic careers. Graduates will be prepared for leadership positions in academic, research and practice settings.

The USC Doctor of Philosophy (Ph.D.) in Architecture addresses the rapidly growing global demand for leaders in environmental design research. Our highly qualified faculty guides students through a rigorous and highly demanding program of advanced study and original research. The program maintains a commitment to the highest standards of academic achievement. Admitted students are exceptionally well prepared to structure and communicate ideas and to make scholarly contributions to the built environment discipline.

Re-established in 2008, the Ph.D. program is an umbrella degree designed to grow into additional areas of specialization as the graduate program positions appropriate coursework, faculty, and research support. As we originate the program, we will build in the strengths of the previous “Doctor of Building Science XE” degree program that was established in the School of Architecture in the mid 1960s.

The program is structured around intensive seminars and an individualized program of study. Students gain a fundamental knowledge base in building science and technology, including advanced analytical and research methods. Students are expected to master a defined field of scholarship that constitutes a foundation for critical inquiry required by research. Graduate Certificate XE “Graduate Certificate” programs offer students the opportunity to establish additional areas of expertise. After completion of a core set of required and elective coursework, the program of study culminates in the development of a dissertation of original scholarly research guided by a faculty team. The Doctor of Philosophy is awarded to students who complete a substantial dissertation of original research that adds new knowledge to the field. The Ph.D. program seeks to address serious challenges and global implications. Admitted doctoral students will join the faculty and continuing students as we investigate topics.

Ph.D. candidates are colleagues of the faculty and are expected to contribute to and foster the intellectual community of the USC School of Architecture. Candidates will be prepared to function in research, academic and professional environments as university faculty, consultants, professionals, and scientific researchers. Faculty and students are held to the highest standards of academic excellence and environmental ethics that help create the quality of experience expected at one of the world’s finest universities.

Doug Noble, FAIA, Ph.D.
CHAIR, PH.D. PROGRAM

PHD IN ARCHITECTURE. GREEN SKINS FOR OLD BONES: CURTAIN WALL STRATEGIES FOR SUSTAINABLE FAÇADE RETROFIT

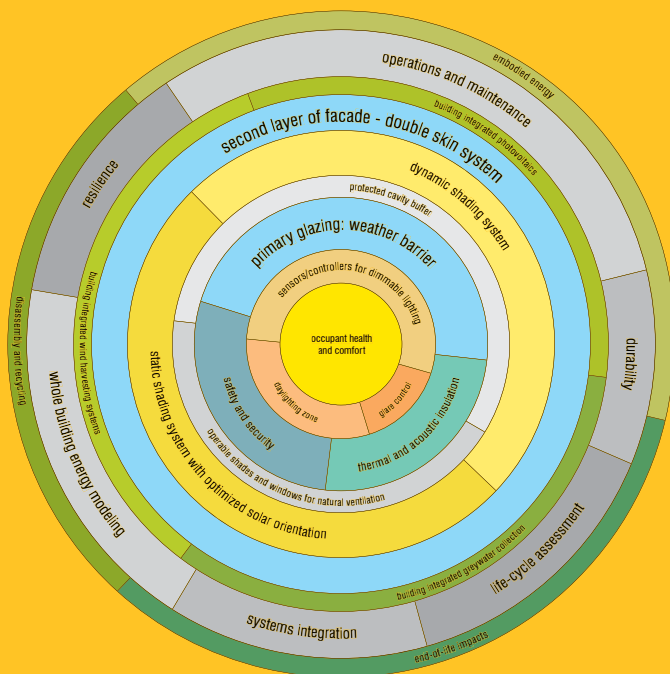
STUDENT: Michael Robert Patterson

COMMITTEE MEMBERS: Douglas Noble (Chair), Tridib Banerjee, Karen Kensek, Marc Schiler

The existing building stock in developed nations such as the United States accounts for nearly as much energy consumption and carbon emissions as the transportation and industrial sectors combined. Buildings now being constructed to improve energy efficiency and emission standards will represent only a small percentage of this building stock by 2030.

Existing buildings represent the greatest opportunity to improve performance in the commercial building sector. This sector comprises diverse building types, and unique among these are tall buildings. The tall building boom of the 1960s was brought on by the advent of curtain wall systems that made extensive use of glass as a transparent panel material. Early curtain walls were not particularly efficient and incorporated single glazing well into the 1970s. The first of these applications are now approaching forty years of service and are showing their age in terms of both appearance and performance. There is an imminent need to retrofit these aging facades, an undertaking that could have significant positive effects on the energy and emission performance of cities worldwide. The means and methods to facilitate this transformation, however, are unclear. Poor execution could result in more damage than benefit. This research project explores these issues.

Below: The building facade is the nexus of a multitude of performance considerations that are often competing, like the layers of an onion, with the ultimate goal of providing optimal conditions for health and comfort.



PHD IN ARCHITECTURE. SOUND FLANKING OF GLASS FACADES: AN INVESTIGATION OF ACOUSTIC BEHAVIOR IN CURTAIN WALL ELEMENTS

STUDENT: Elizabeth Valmont

COMMITTEE MEMBERS: Douglas Noble (Chair), Jerry Christoff, James Moore, Marc Schiler

The sound isolation performance of curtain wall systems is typically measured in accordance with ASTM or ISO standards. The transmission loss results from these tests may not clearly identify which curtain wall element contributes most to overall performance or primary resonances. This research investigates three elements of the curtain wall system: the facade glazing, the aluminum mullion extrusion, and the mullion connection to an interior wall. The behavior of sound-flanking transmission among these elements is currently unknown.

It is hypothesized that independent tests of sound transmission loss among the three elements will identify the acoustic behavior for each element and inform the frequency regime controlling overall sound isolation performance.

This dissertation aims to identify existing methods of measuring transmission loss for curtain wall systems, to identify current interventions to control sound isolation performance, and to profile the frequency regime contributing to an achievable acoustic rating. It proposes a testing method in accordance with ASTM E90 in which each element defines a test phase.

The intent of this research is to explore cost-effective improvements for interspatial curtain wall sound isolation performance and inform the design engineering of mullion extrusions.

STUDENT: Shih-Hsin Eve Lin

COMMITTEE MEMBERS: David Jason Gerber (Chair), Burcin Becerik-Gerber, Marc Schiler

Multidisciplinary design optimization (MDO) has been identified as a means for integrating design and energy performance domains, but it has not been fully evaluated for early-stage architectural design. This research establishes and validates an MDO design framework to provide a “designing-in performance” environment incorporating energy performance feedback during the early-stage design process.

The research starts by developing an early-stage MDO design framework titled Evolutionary Energy Performance Feedback for Design (EEPFD). It proceeds with case studies by which to validate EEPFD and its impact on the early-stage design process. The contributions of this research involve establishing EEPFD, which combines complex geometric form exploration with energy performance feedback. This addresses gaps in current precedents, allowing further MDO applications to early-stage design. Considering the varying nature of early-stage design in architecture, which consists of subjective and objective elements, time constraints, uncertainty regarding components, and unique design problems, the research suggests that the best MDO application may vary from seeking a mathematically defined convergence “best fit” solution. Finally, it seeks to provide a context in which designers can make informed decisions during early stages, where such decisions will have the greatest impact on overall design performance.