

USC ARCHITECTURE
COURSEWORK
2010-2011

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DEAN'S NOTE

Leadership is not a formula of personality, social skills, or decision-making ability, although these attributes do imply Leadership. Leadership is the commitment to pursue knowledge with ever-growing depth and the renewing courage to challenge the status quo. What could be asked is whether curricula can nurture the essence of leadership.

Here at the USC School of Architecture, we address this question through negotiations between two curricular dynamics—that of preset sequences of fixed agendas and that of strategic collisions with unintended consequences. The tension in between these creates an environment of agitation which is critical to leadership.

In the graduate programs, we see a wealth of production across a broad array of disciplines, and we focus on meaningful interfaces between four enterprises—landscape and urbanism, building science, architecture, and historic preservation, which enable us to reach out aggressively and make powerful connections across campus (merging with science, cinema, engineering, art, and new media). How to harness the somewhat uncertain and diverse scope remains a great challenge of the graduate programs as a whole, but student work has benefited enormously from this very environment, as you can see in these pages.

The undergraduate programs occupy a position of relative stability – and there is need in them for some positive turbulence also. Such turbulence was introduced this past year, with special workshops such as Top Fuel, public lectures given at odd hours, and exhibitions such as Blue Tape that created ripples felt throughout the school. Not always in harmony with the base curriculum, these anomalies provided the necessary collisions and opportunities to take risks that were previously not felt. The output of these extra-curricular productions points, perhaps, to some necessary but undeclared ingredients of leadership.

Reflecting on the past year's accomplishments in this way, we come back to ponder once more the essence of leadership, echoing the eastern wisdom, "Heroes are the sons of chaos."

Qingyun Ma

Dean

Della & Harry MacDonald Chair

USC School of Architecture

ON EDITING

With this edition of IDWRK we are hoping, somewhat unrealistically, to compress a yearlong range of student work and in this way to capture the school at a moment of transition. While student work at USC has always been optimistic and intellectually challenging, the school is perhaps now best characterized by divergent voices and thus a great variety of architectural work.

We hope the projects collected in this publication convey this promising and somewhat risky development; the course introductions speak to the variety of approaches operating in the school, and the work was chosen to reflect this new diversity of production as well as the dedication to intellectual intensity that has always characterized the best work at USC. In making IDWRK faster, simpler, and perhaps less polished than previous editions, we have attempted to catch up with these new developments, and to reflect the restless, energetic, and productive environment the school has recently become.

Laurel Broughton

Undergraduate Editor 1011

Marcos Sanchez

Graduate Editor 1011

UNDERGRADUATE
CORE STUDIOS

UNDERGRADUATE CHAIR

INTRODUCTION

What marks a great undergraduate architecture curriculum? Unlike smaller and more focused graduate programs that exhibit (if not strive for) a certain elitism, undergrad programs must instill a breadth of knowledge and skills. Our undergrad course is BIG. With the resources that come with our bigness, and an intimacy that is achieved despite our bigness, we give graduating students the tools to enter into positions of their choosing - and into choice positions. More significantly, we challenge them to shape our future environments through a synthesis of technological and cultural innovation that only skillful designers can achieve.

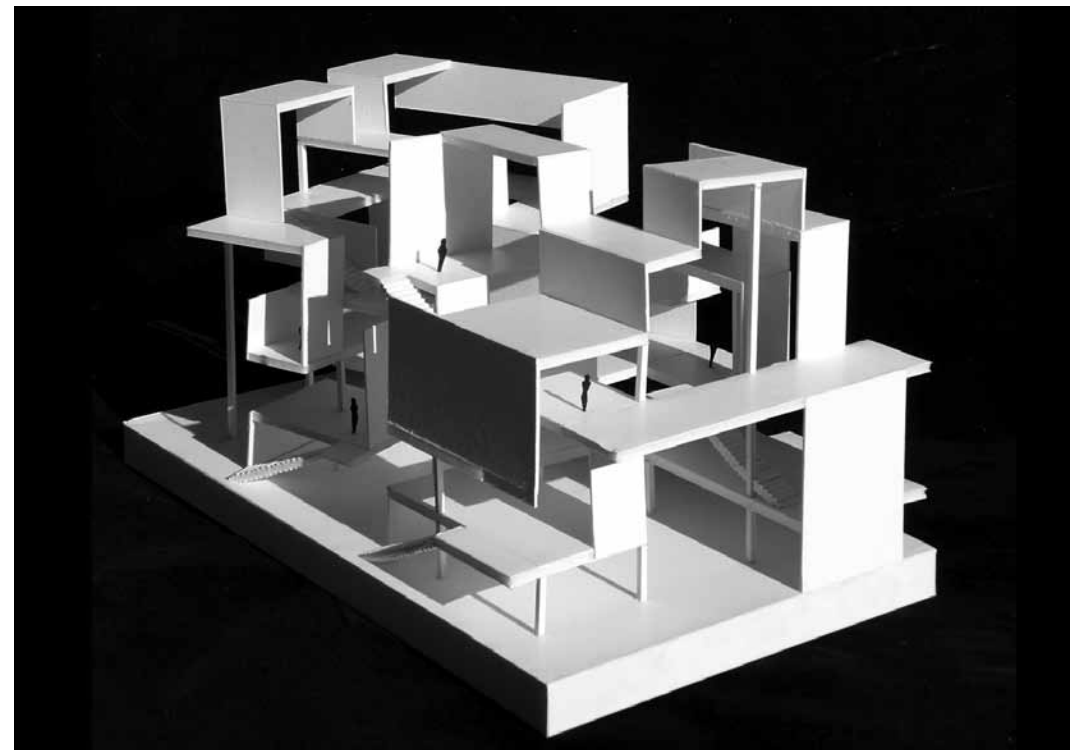
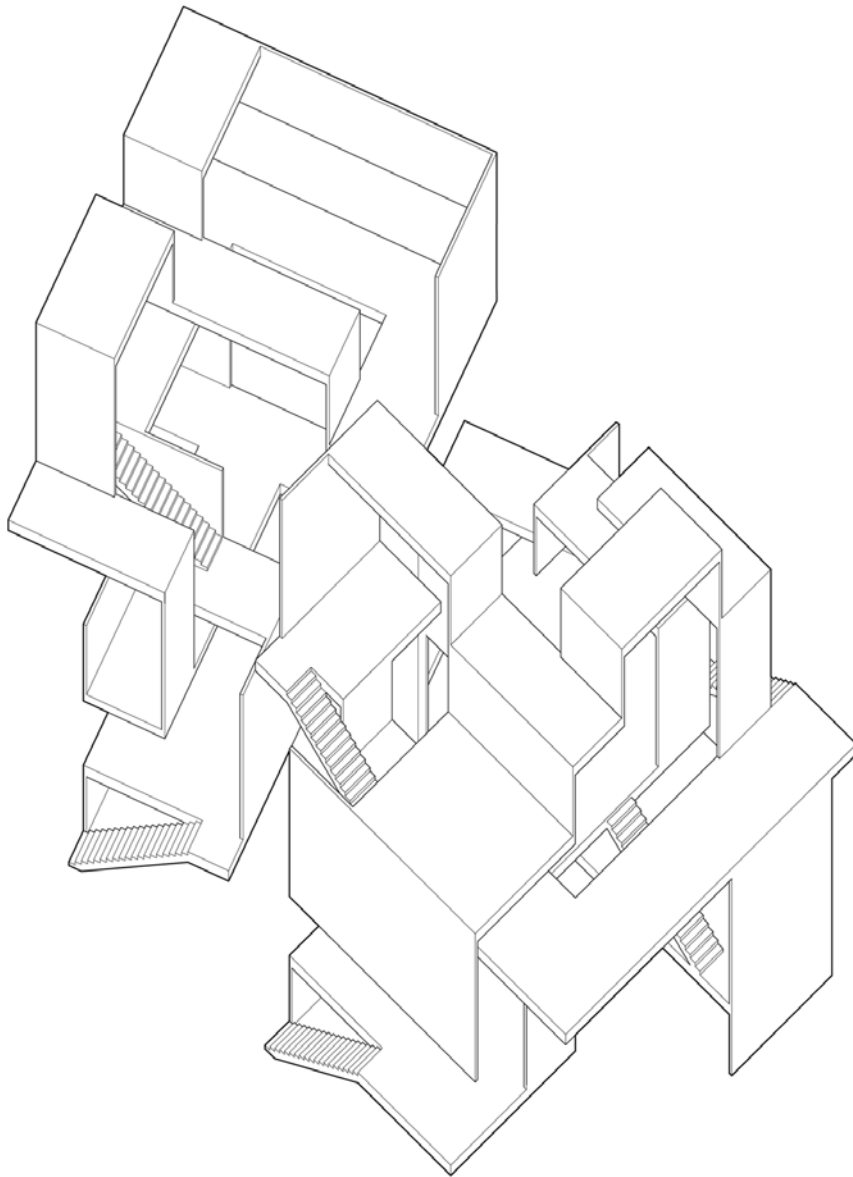
USC's undergraduate program has, in fact, always been good at empowerment. But there is always more knowledge, more tools, more stuff, to absorb, and the hugely accelerated pace of progress demands adaptability. Our culture is in massive transition. Processes by which tools can be quickly absorbed and put to work take precedence; the very definition of craft, and craftsmanship, must change. We are in a unique epoch: Architecture as static symbol has given way to architecture that is itself in motion. So our program must fluctuate at its topmost layers, as a mandate, so that it can both embody a new and dynamic excellence at the same time that it provides the underlying bedrock. If we succeed, then our program becomes a true gateway – between youth and adulthood, certainly, but more significantly, to a full immersion in and leadership of our cultural zeitgeist.

The work of 2010-2011 was quite vibrant. Transparency and integration underlay our efforts to promote digital processes, performance, design-build, community, and advanced practice through events and curricular overhauls that touched students in all years. The First Year studios were transformed by Anthony Guida and Valery Augustin with an ambitious new digital emphasis that acknowledges the forces of a burgeoning and inescapable global information culture. Exhibitions of both terms were impressive as well as purely beautiful. The Second Year fall studio, recalibrated by Victor Jones, emphasized site and context and began a conversation about urban interactivity and community, a dialogue without end. The Gail Borden-led Second Year spring studio continued to explore the tectonics of materials, capturing our attention with an installation of full-scale benches that was at once rigorous and humorous. The strong Third Year work in housing and comprehensive building design continued under Warren Techentin and Eric Haas. Topic studios expanded to include some of the brightest advanced architectural practitioners in the city. And the culminating fifth-year research seminar/studio sequence, coordinated by Doris Sung, hosted sparks of true innovation across an array of subject matter.

Notably, beyond the required studio sequence, several new initiatives were implemented: Top Fuel invited Frank Barkow and Thomas Auer to lead a one-week design-build performance-based workshop on facades. Funding Social Change, a one-day WorldStudio event, showed students how to secure funding for community design projects. And Andrew Liang led students up north to participate in a design charrette for Facebook's new Menlo Park campus. Throughout all of these as well as all design studios, the imperative of sustainability was ever-present. Its integration into the undergraduate curriculum is ongoing and pervasive - as it must be so that our students can be at the leading edge of reducing, through intelligent and humane design, the impact that we humans have on our long-forgiving—but now tired—planet.

Finally, we instituted Blue Tape. An all-school Final Review held off-campus, Blue Tape is a massive temporary installation of all work of all studios across all disciplines; 700+ projects are critically reviewed over two days. Blue Tape could inspire a new identity for our School – one that is dynamic and adaptable, strikingly graphic (we cannot deny that we are a design school) – but brimming also with skill and spots of real wisdom. As we advance, Blue Tape could be our best means to project, to a wide-reaching audience, a critically represented menu of delectable architectural discourse(s) as produced by our students.

Alice Kimm, Chair of Undergraduate Studies



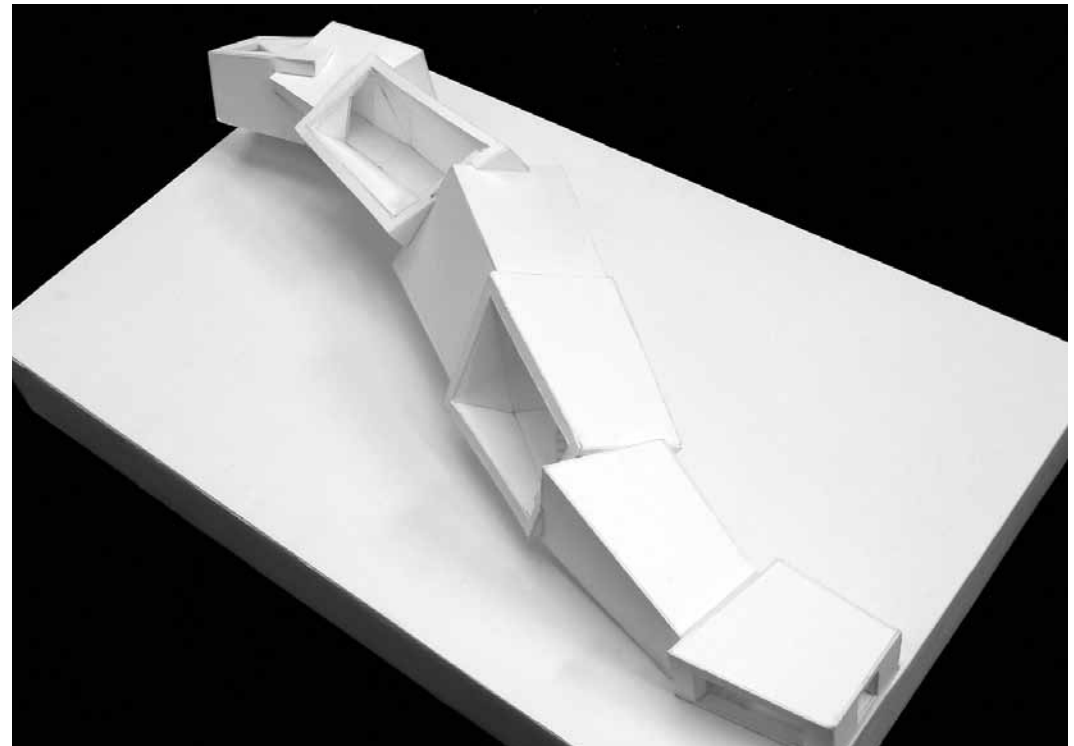
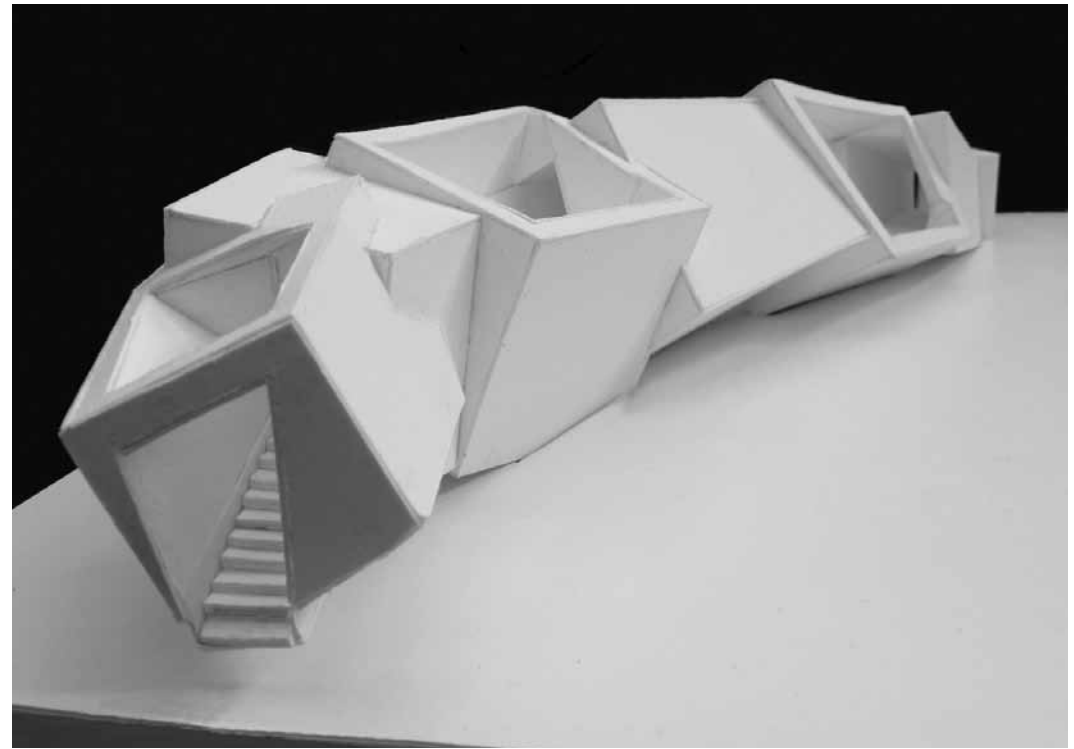
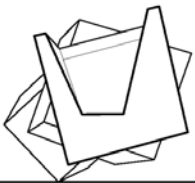
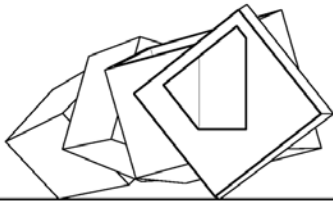
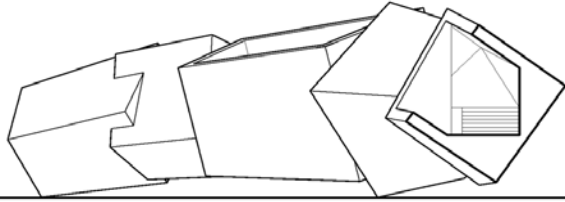
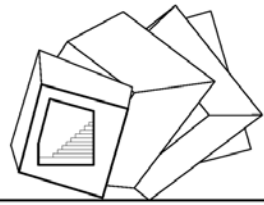
SPATIAL LITERACY

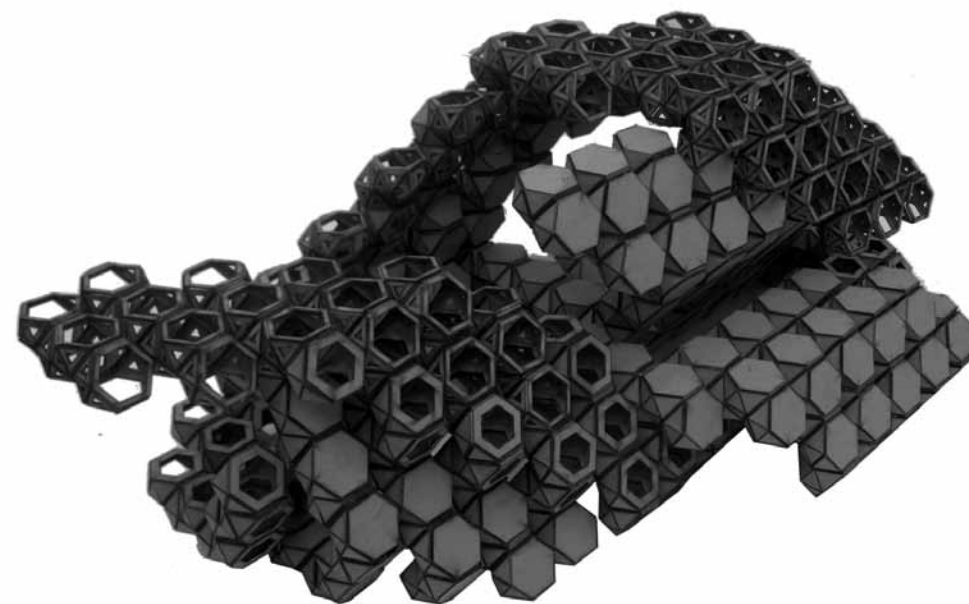
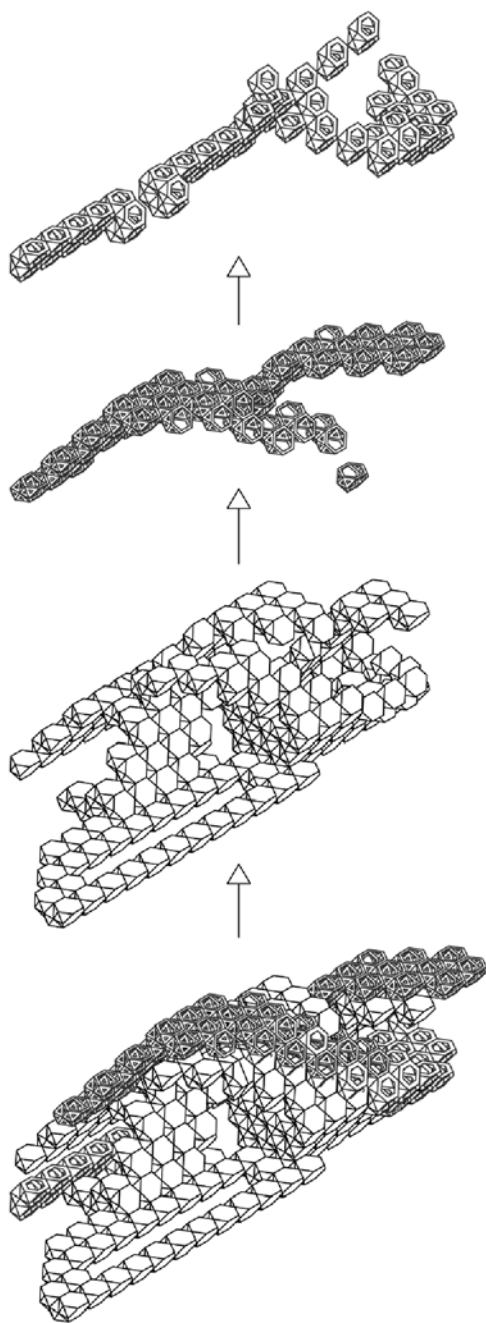
ARCH 102A. Coordinator: Anthony Guida. Instructors: Kara Bartelt, Lauren Matchison, Colin Sieburgh, Carlo Aiello, Anna Neimark, Daniel Carper, Victoria Coalo, Valery Augustin.

The first semester design studio was an introduction to the discipline of spatial design practice through geometry and technique. Four projects of varied scale and increasing complexity addressed fundamental lessons of scale, proportion, formal organization, spatial definition, sequence and movement. Prescribed themes and processes were intended to focus on conceptual understanding, advance technical skills and an awareness of spatial conventions, as well as to stimulate critical thinking and creativity in interpreting limits.

In each of the four design problems, diagrams and digitally produced orthographic drawings were the primary instruments of design inquiry and the iterative development of formal solutions. Physical models supported visualization and the testing of ideas in three dimensions. Refined graphic and verbal presentations were developed to successfully communicate design intent.

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THINKING + MAKING

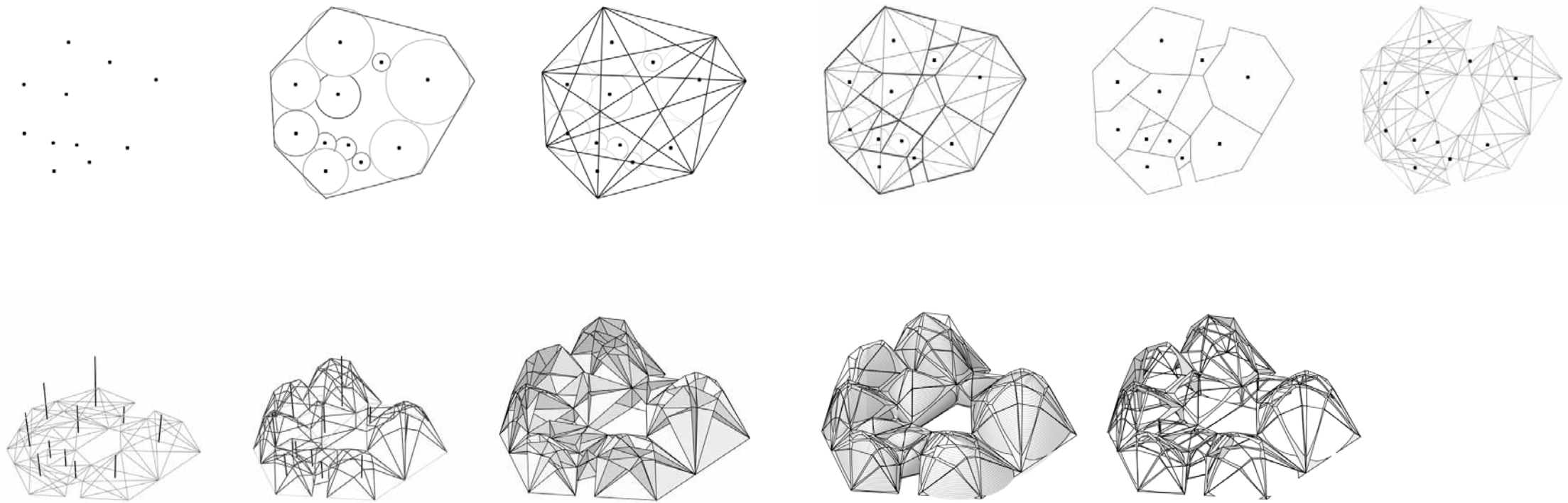
ARCH 102bL – SP11. Coordinator: Valery Augustin. Instructors: Carlo Aiello, Dana Bauer, Victoria Coalo, Daniel Carper, Anthony Guida, Rebecca Lowry, Linda Samuels, Colin Sieburgh.

The second semester of the first year design studio actualizes the dual mechanisms of making and thinking. 102b is structured around a series of exercises that investigate the lineage of active design processes. From object making, to representation, to spatial dynamics, the studio encourages a generative approach to architecture. Drawings and physical models operate not only tools for design but also as tangible prototypes contain speculative information and are in a state of constant transformation.

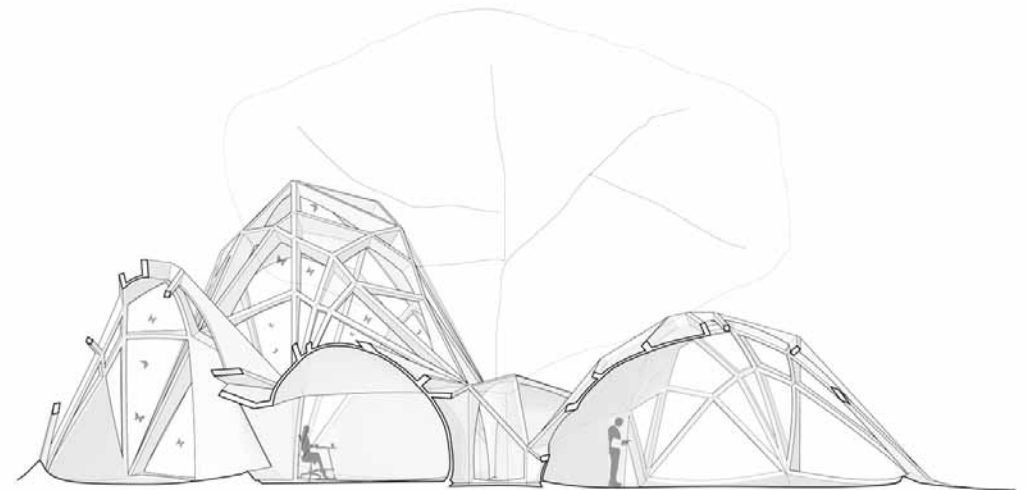
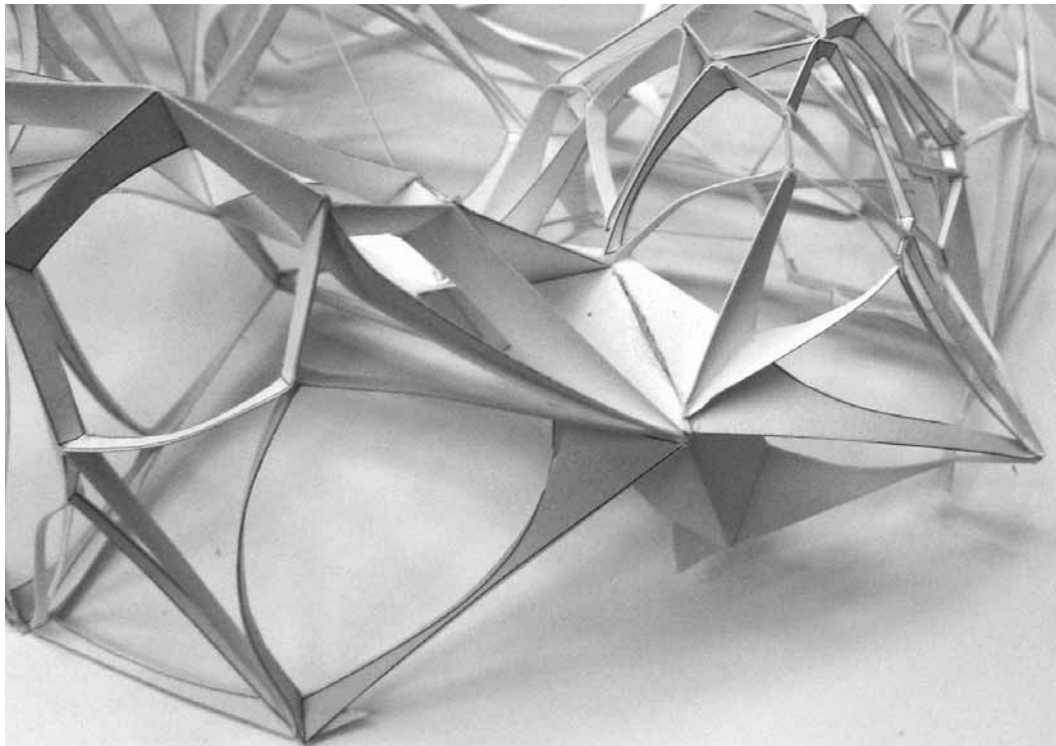
The first nine weeks of ARCH 102bL center on an investigation of three distinct but interrelated form-making logics: solids, surface and line. Within each, students are tasked to develop proposals that are spatial, structural, organizational and capable of generating variation. Each of these proposals will then be developed to accommodate a specific architectural program.

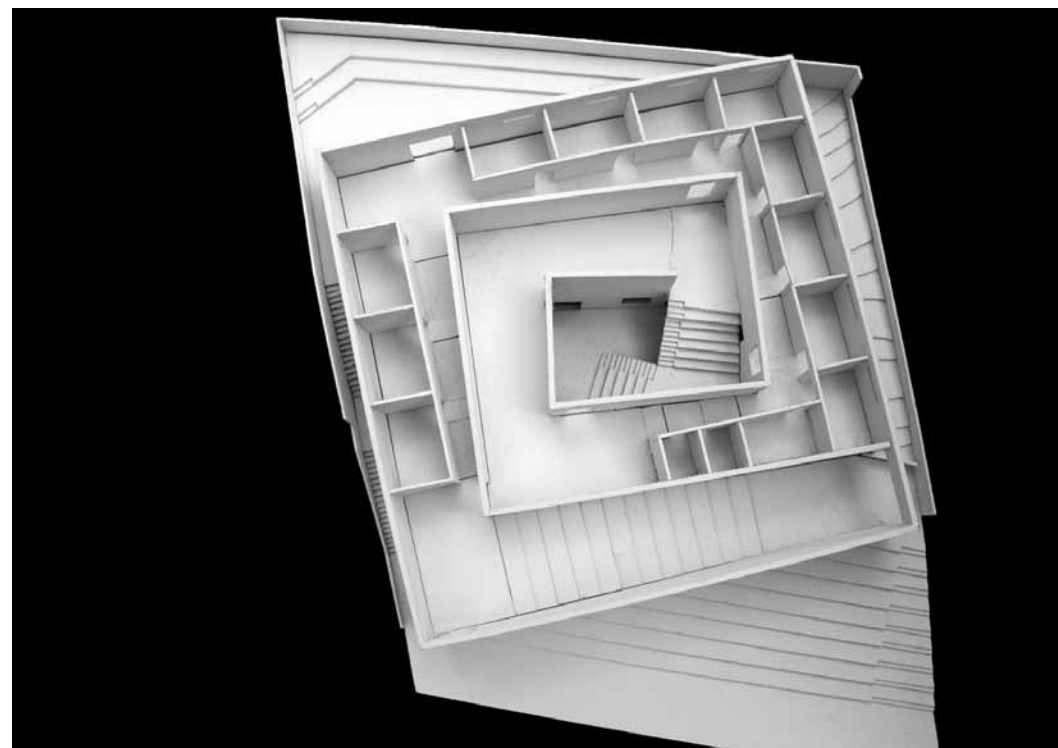
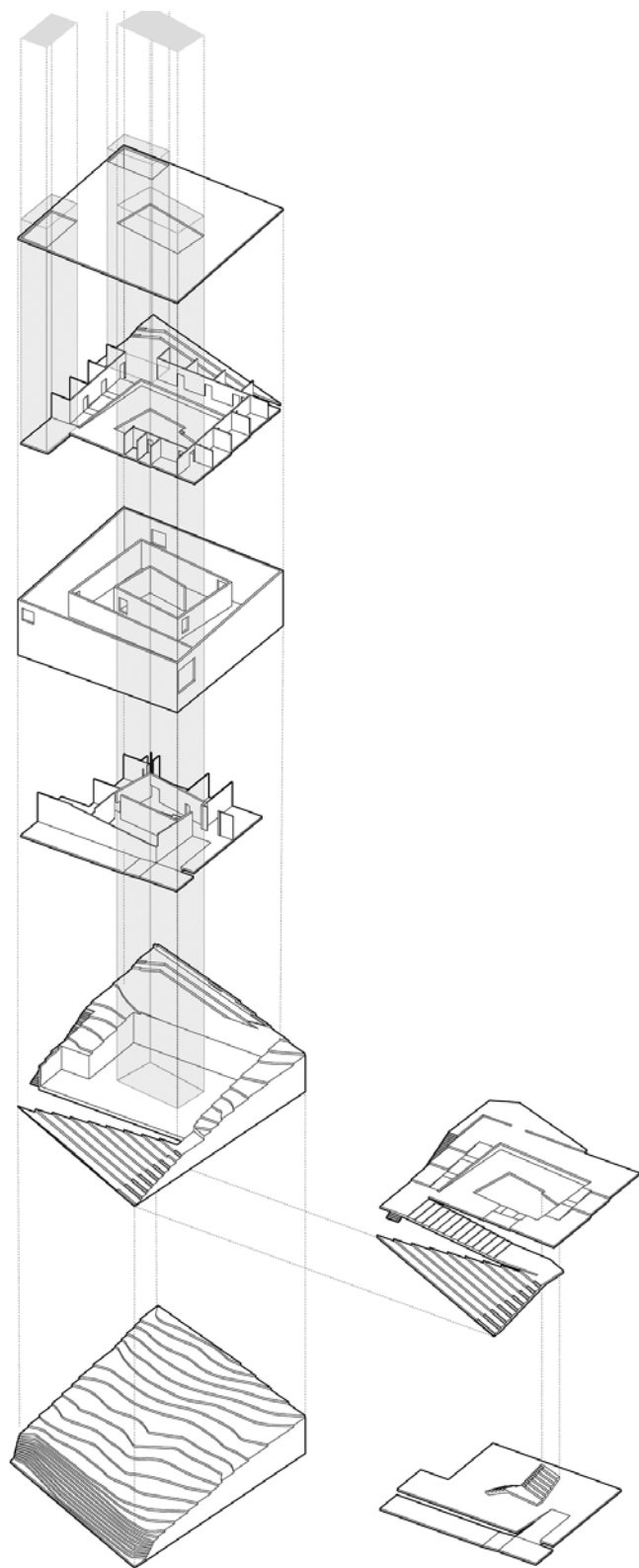
Rhinoceros 3D digital software is used in tandem with analog models and drawing techniques. An emphasis on the instrumentality of digital modeling/drafting that favors analysis over visualization encourages students to translate between solid, surface and line idioms in order to generate and understand complex form through drawings, diagrams and physical models.

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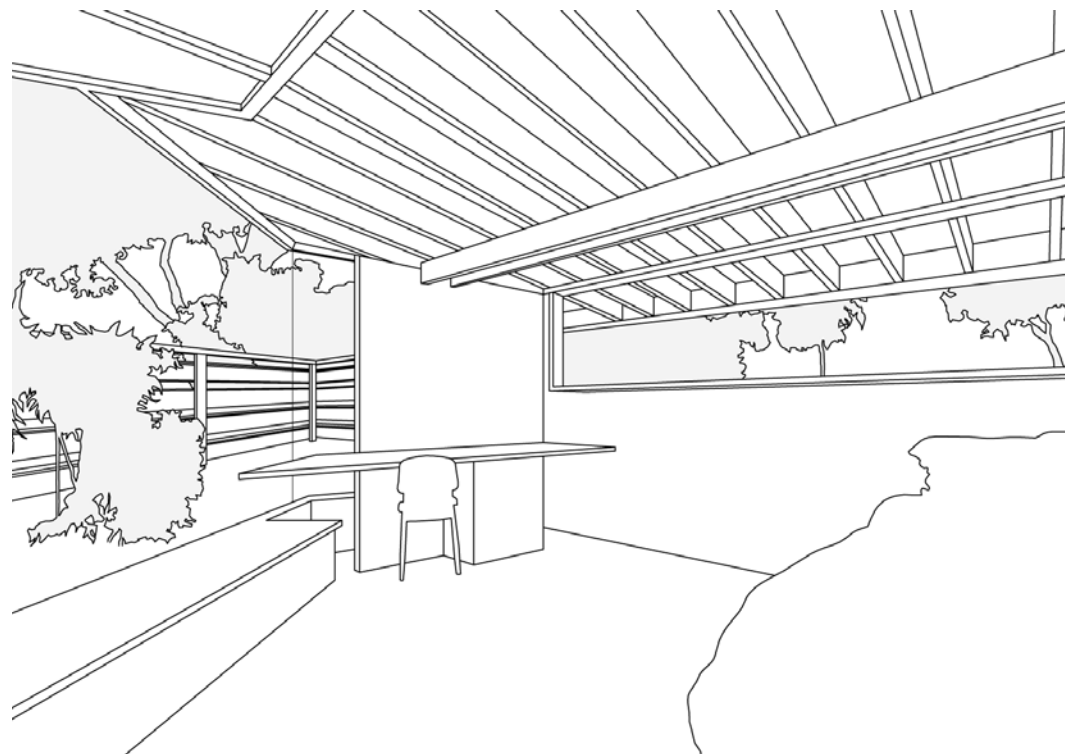


SITE WORKS

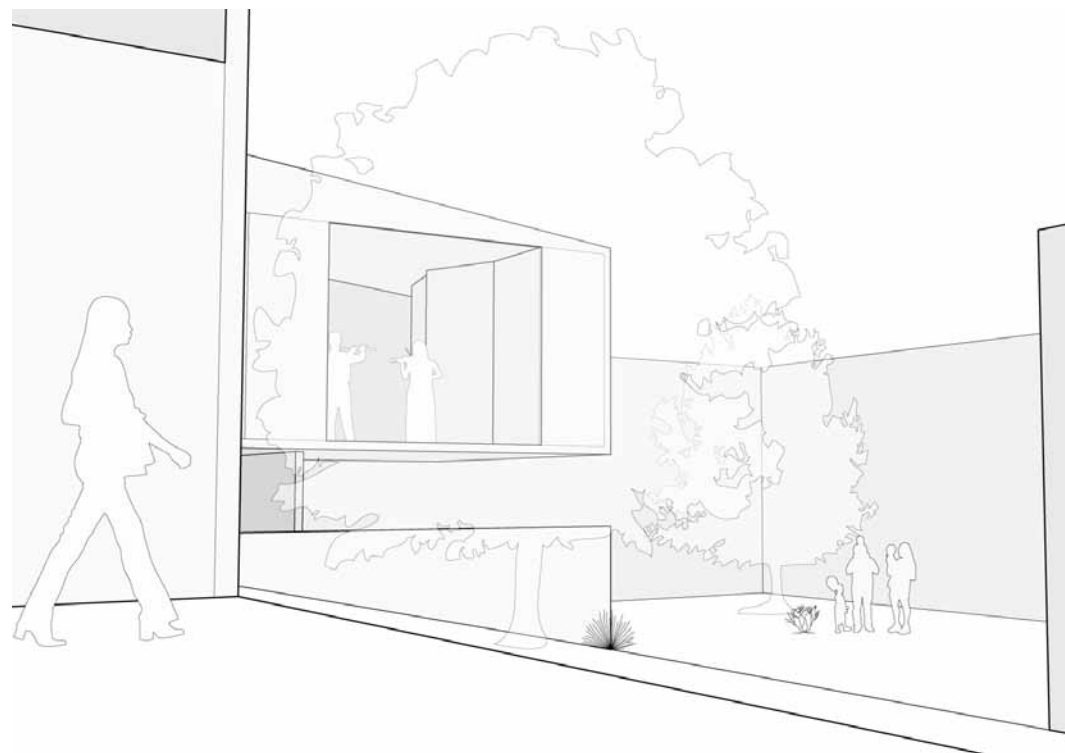
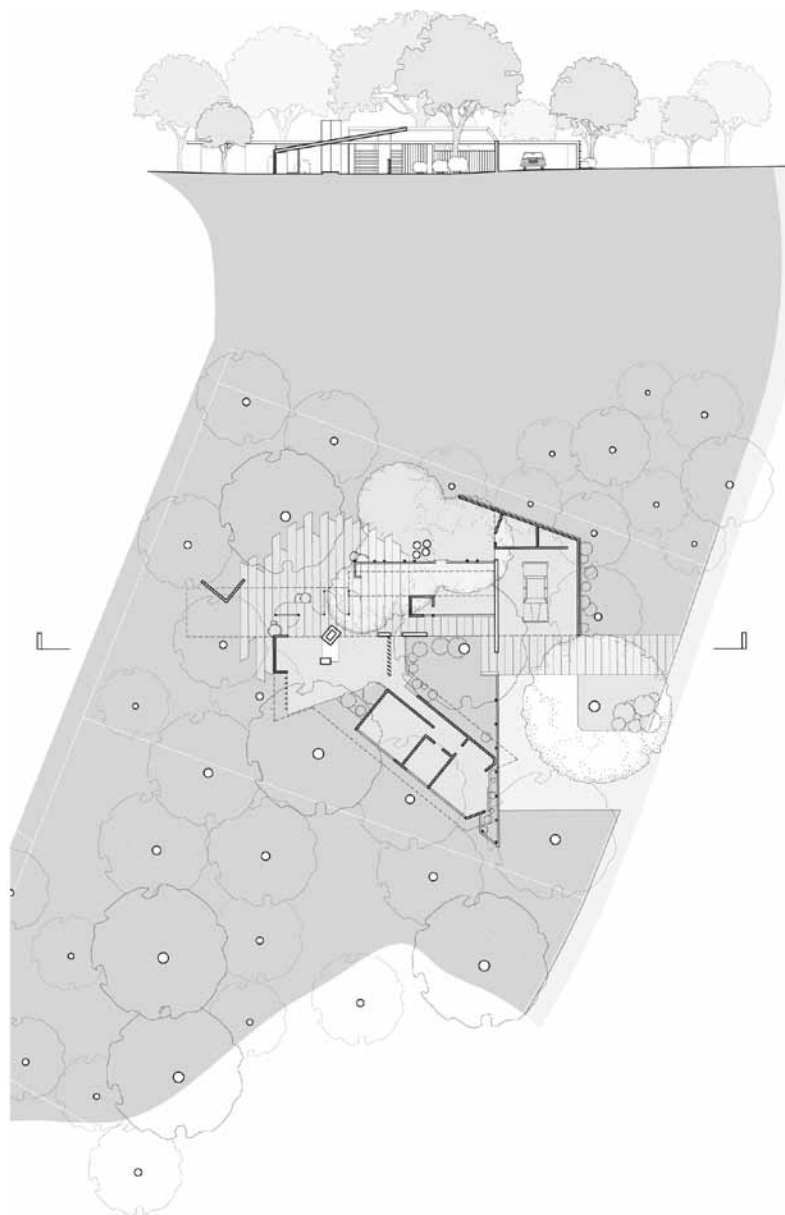
ARCH 202A. Coordinator: Victor Jones. Instructors: Laurel Broughton, Mario Cipresso, John Dutton, Steffen Leisner, Brendan Muha, Linda Samuels, Chris Warren.

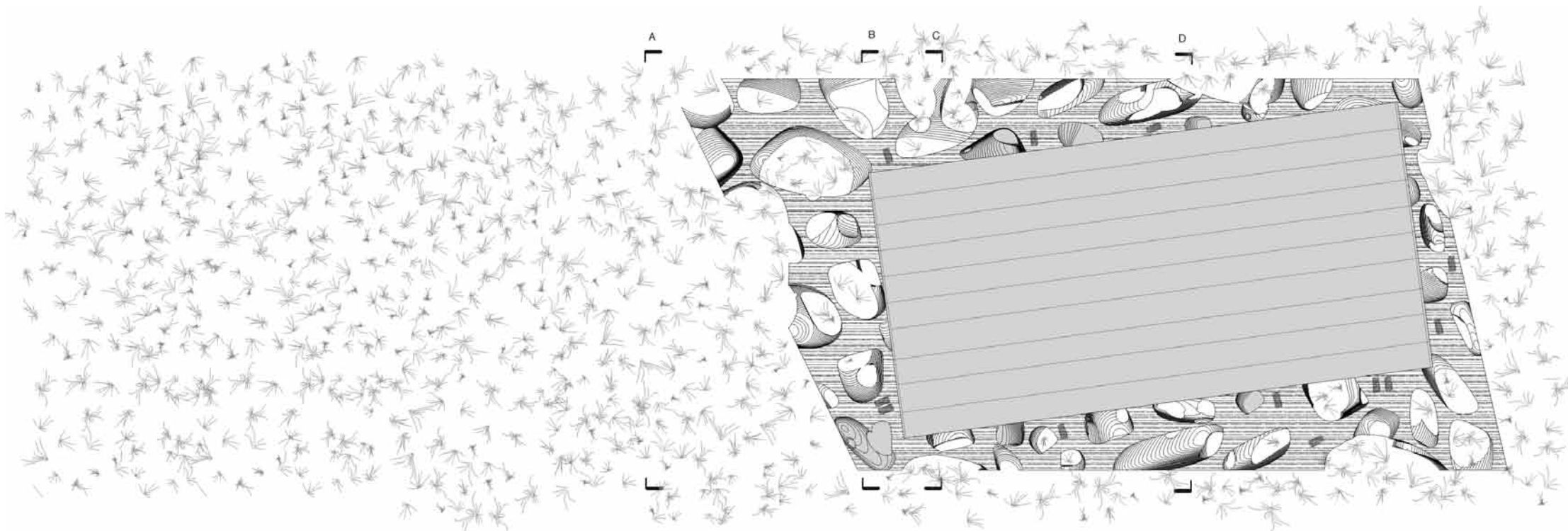
In the fall, the Second Year Design Studio introduced fundamental knowledge about building community through design approaches centered on site and context. Students explored a range of ways in which architects contemplate site as a means of making place. Studio assignments, lectures, readings and fieldtrips concentrated on the performative aspects of site across a range of scales: from discrete design issues of topography to more expansive topics of building design in an urban context. The semester began with two three-week assignments focused on representational tools and drawing techniques. The final eight-week comprehensive design project explored the interface between site and program by designing a new arts facility for SLANGUGE, a non-profit organization dedicated to assisting artists at various points in their careers. An emphasis on pattern and geometry was paired with extensive investigations into operative techniques to offer new architectural strategies that could cultivate innovative spatial organizations within the city.

THIS PAGE: JAVIER MEIER, NEXT PAGE: JENNY YOON



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ARCH 202B. Coordinator: Gail Peter Borden. Instructors: Andrew Atwood, Laurel Broughton, John Frane, Anna Neimark, Eric Nulman, Erik Mar, Brendan Muha.

The translation of an idea into architecture is a complex process but its expression ultimately comes through the presence, ability and tectonic of material. This studio promotes an understanding of how a material and its systems of assembly are intertwined with the design process to generate the performance, form and experience. The semester proceeded as a series of segmented investigations.

Material/Precedent: The first segment was the focused deployment of an architectural material case study. Through the unpacking of a precedent of specific historical significance, students in teams produced a collection of analytical and representative models focused on the tectonic and material implications of design.

Assemblies: The second segment engaged the relationship of connections and larger systems of assembly. Given a unit and a limited collection of operations [cutting, drilling, notching] each student developed an individual tectonic. Assembly drawings focused on the sequencing of the system and the collective field effect.

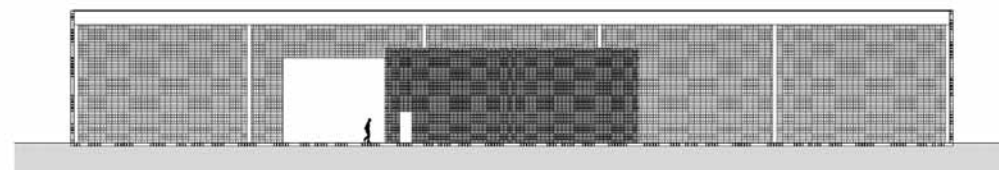
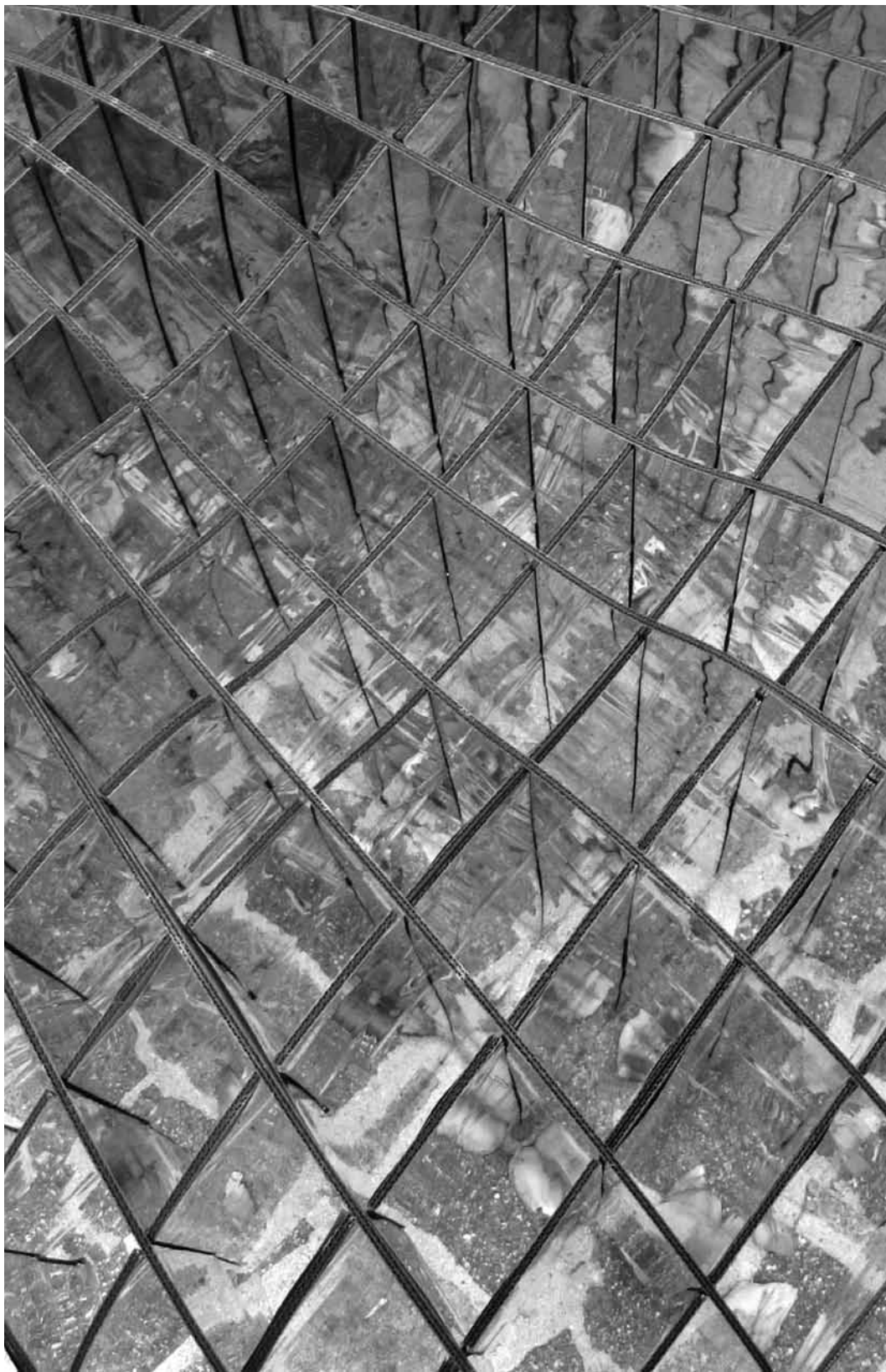
Performative Object: The third segment was focused on design through making. Adopting a specific function, the associated

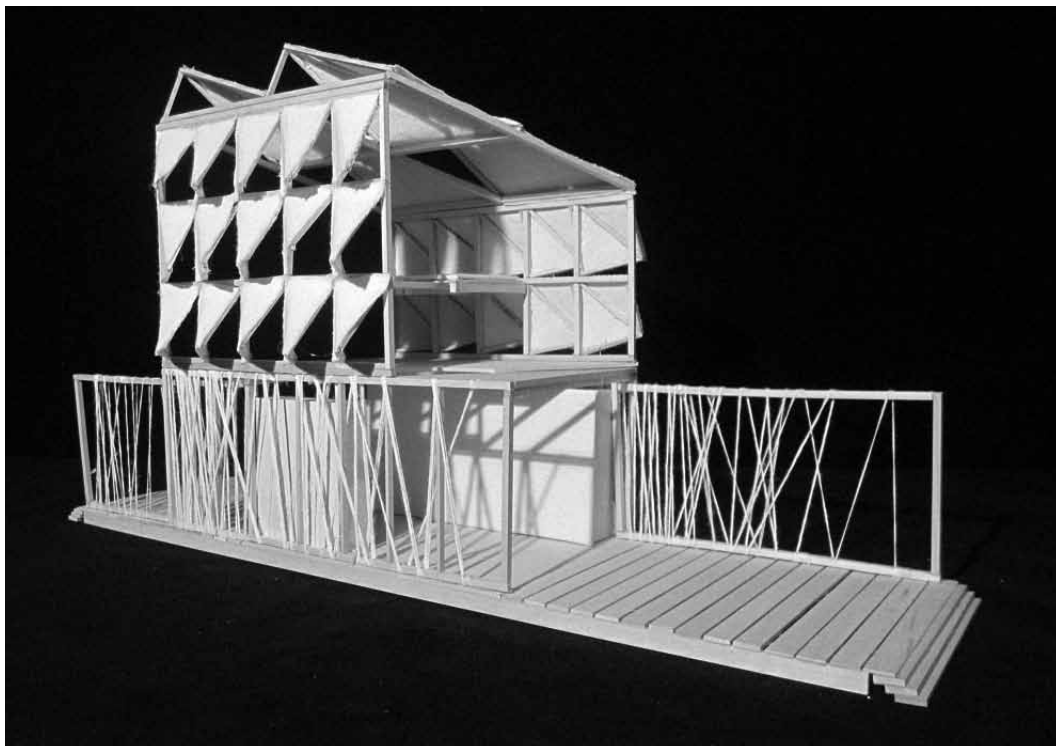
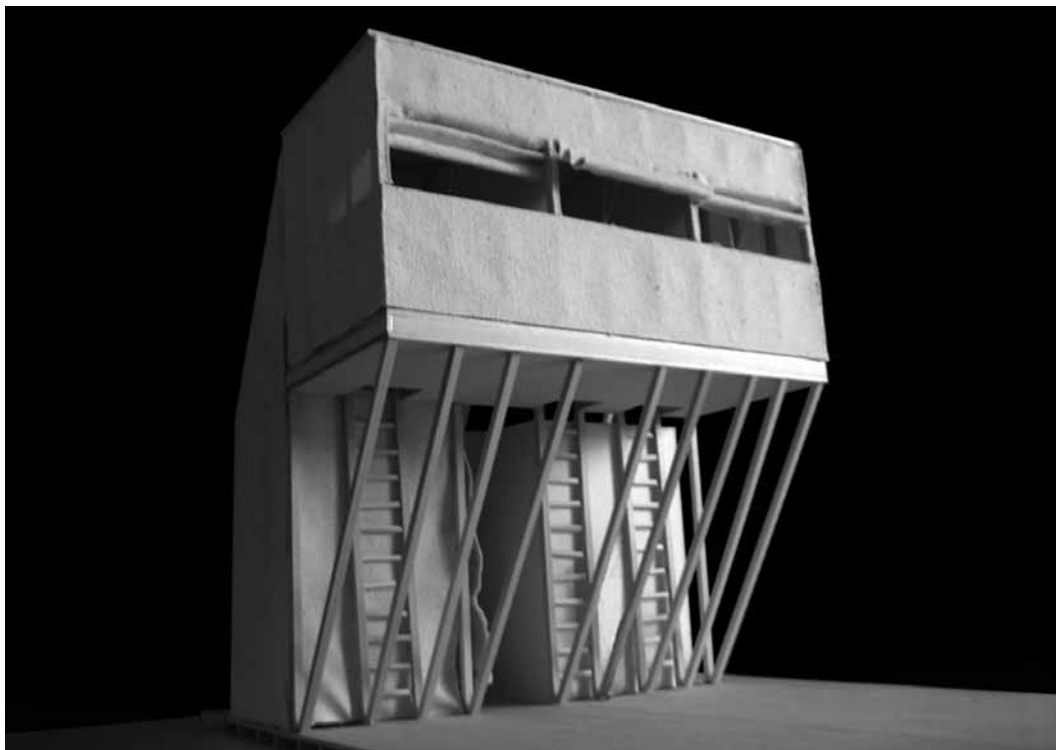
rituals and needs collaborated with material to define form. The end result was a full-scale fabrication.

Material Systems: The fourth segment engaged the limitations and capabilities within existing systems of materials. Using concrete masonry as a base framework, the modules, shapes, capabilities and effects of working within a system were engaged. A simplified program allowed for the complexity of focus to be on the material application.

Material Architecture: The fifth and final segment integrated process, material, and program in a specifically sited context. The program required an integration of previous projects as well as site and material to develop a clear concept of design through making. Resolving all the complexities of structure, materials, program, site, and experience all organized with a clarity and cohesiveness, the scheme required a total aggregation of tectonics, history, and representation through design.

THIS PAGE: ALEX HAGENTORN, NEXT PAGE: JESSICA ENDROPURNOMO, ERIC KHATCHATURIAN, ROHAN WANG, LEEN KATRIB, CHRISTIAN GOMEZ, MELVIN ARDIJANTO





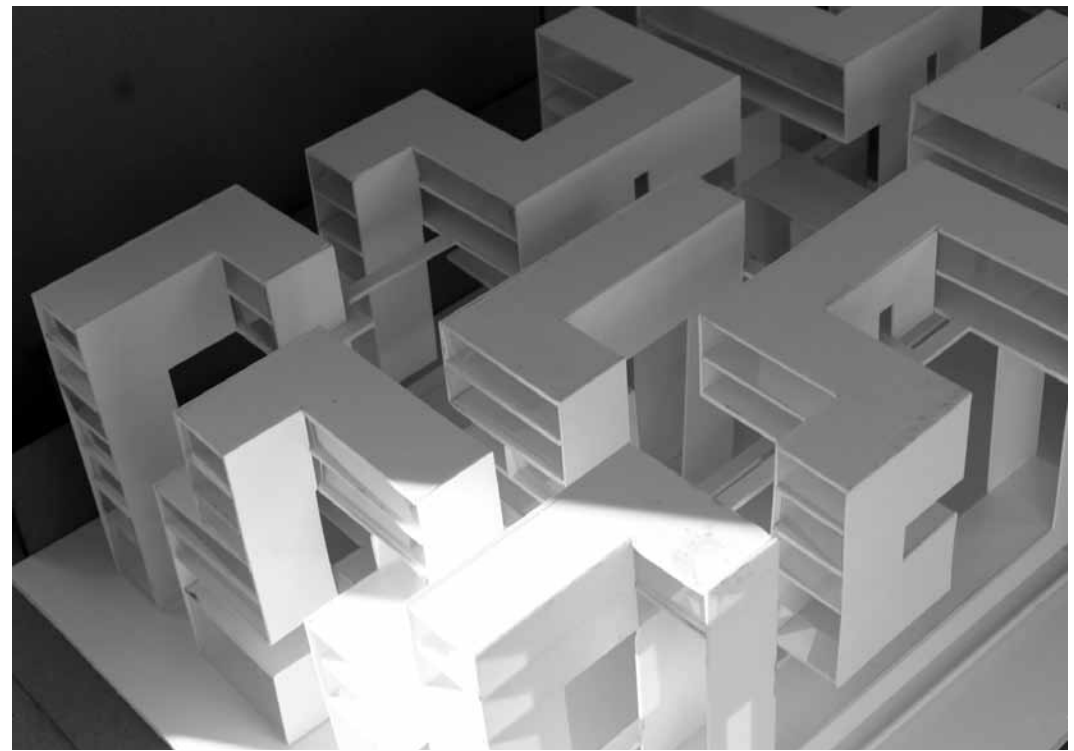
ARCH 302A. Coordinator: Warren Techentin. Instructors: Rick Corsini, Liz Falletta, M Ferguson, Eric Haas, C. Kapeller, Aaron Neubert, Olivier Touraine.

The Third Year Housing Design Studio asked students to understand architecture as an integrative process – architecture created by a synchronized network of parameters and systems: social, political, structural, technical, mechanical, modular, dimensional, typological, and sustainable. Housing design reflects the way in which we organize our living environments, interface with nature, relate to our families and neighbors, and participate in our communities. It is the building block of our cities and the background of everyday life.

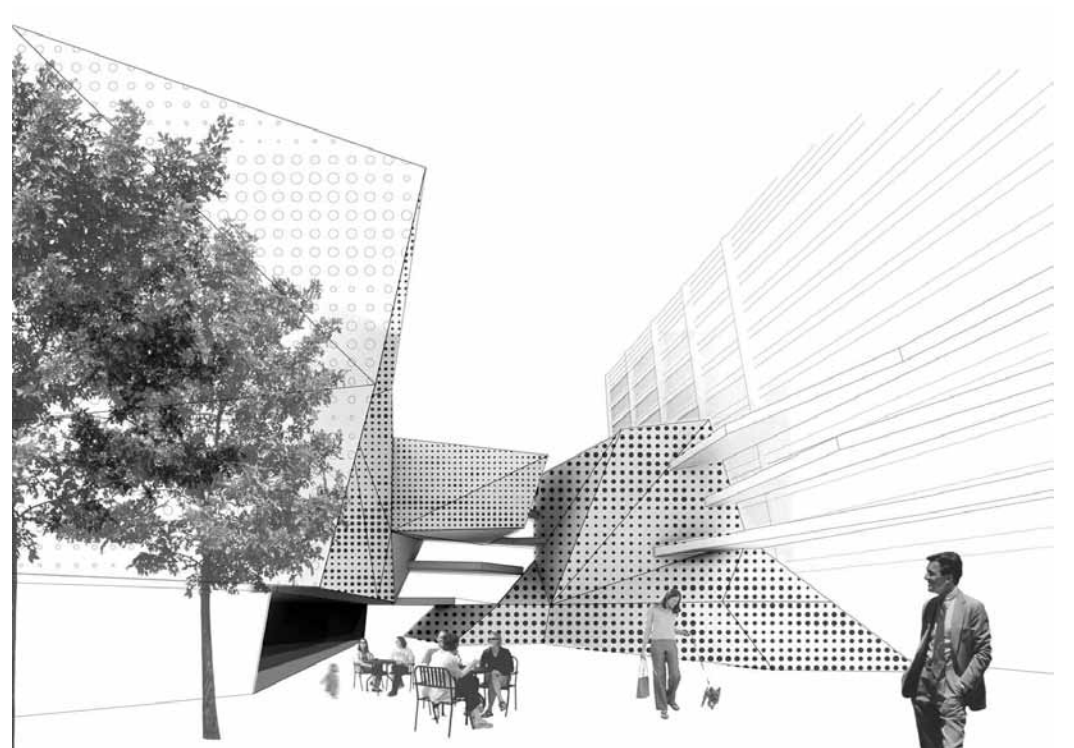
Additionally, the studio challenged students to integrate and innovate a variety of passive and active sustainable strategies deployed in an effort to reduce the ecological footprint of their designs, while also helping to build sustainable, dense, and expandable neighborhood networks.

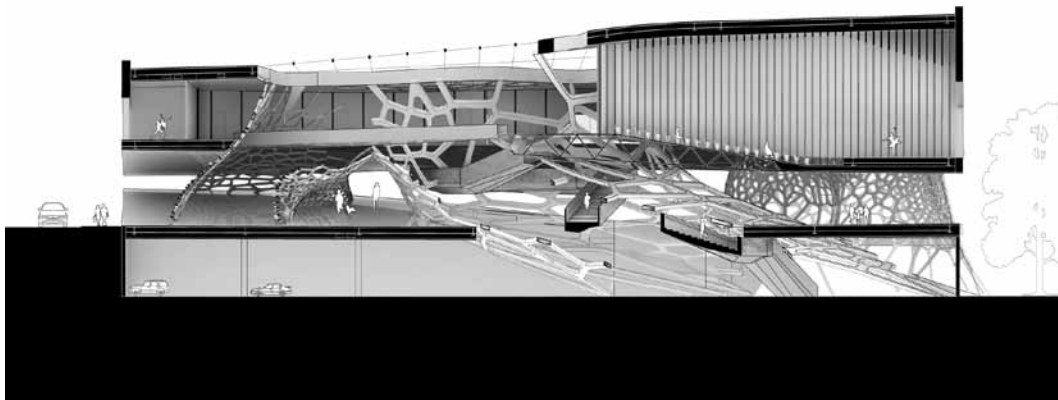
The students were assigned four projects throughout the course of the semester, each of which addressed the subject of housing from a different perspective.

THIS PAGE: [1] TIM HO, [2] YOON HER, [3] ILANA AIMOUYAL
NEXT PAGE: [1] BONGKYUN LEE, [2] REBECCA GILBERT, [3] YUNGU ZHONG, [4] JESSICA CHANG

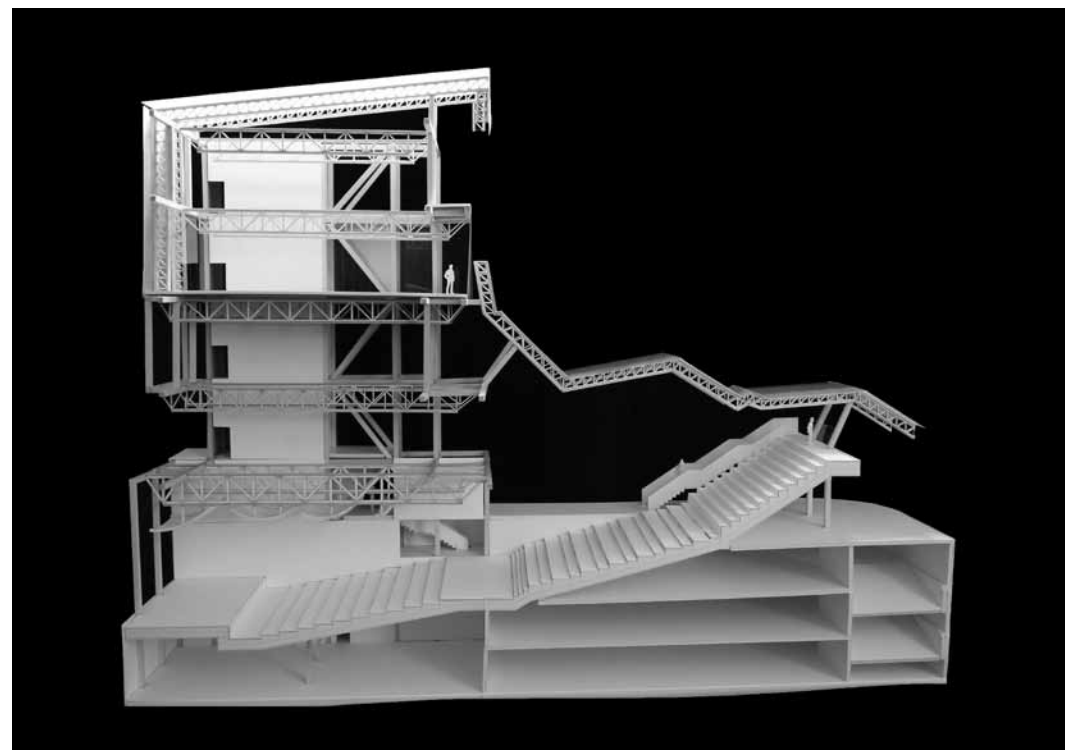
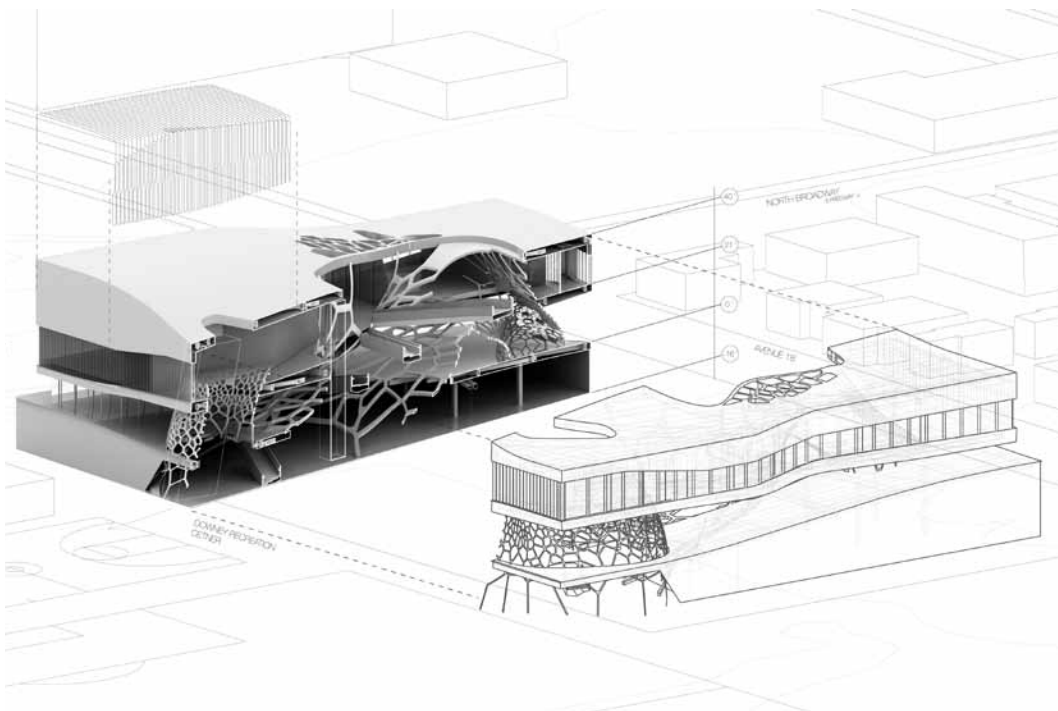


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PROGRAM/SYSTEMS/SITE

ARCH 302B. Coordinator: Eric Haas. Instructors: Mario Cipresso, John Dutton, Jeff Kim, Selwyn Ting, Scott Uriu, Chris Warren, Ed Woll.

This semester occupies a critical position in the studio curriculum. At the crossroads of the highly structured core sequence and the differentiated, increasingly self-structured focus of the topic studios, it serves as summary and codification but also provides for the development of nascent individual interests.

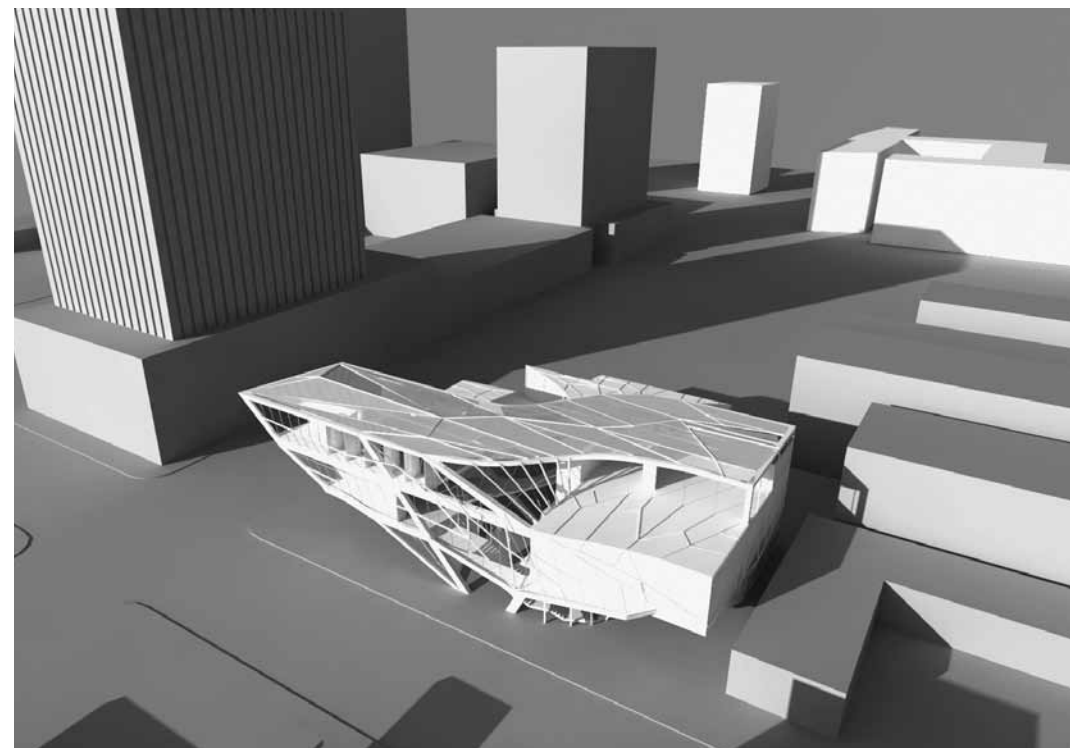
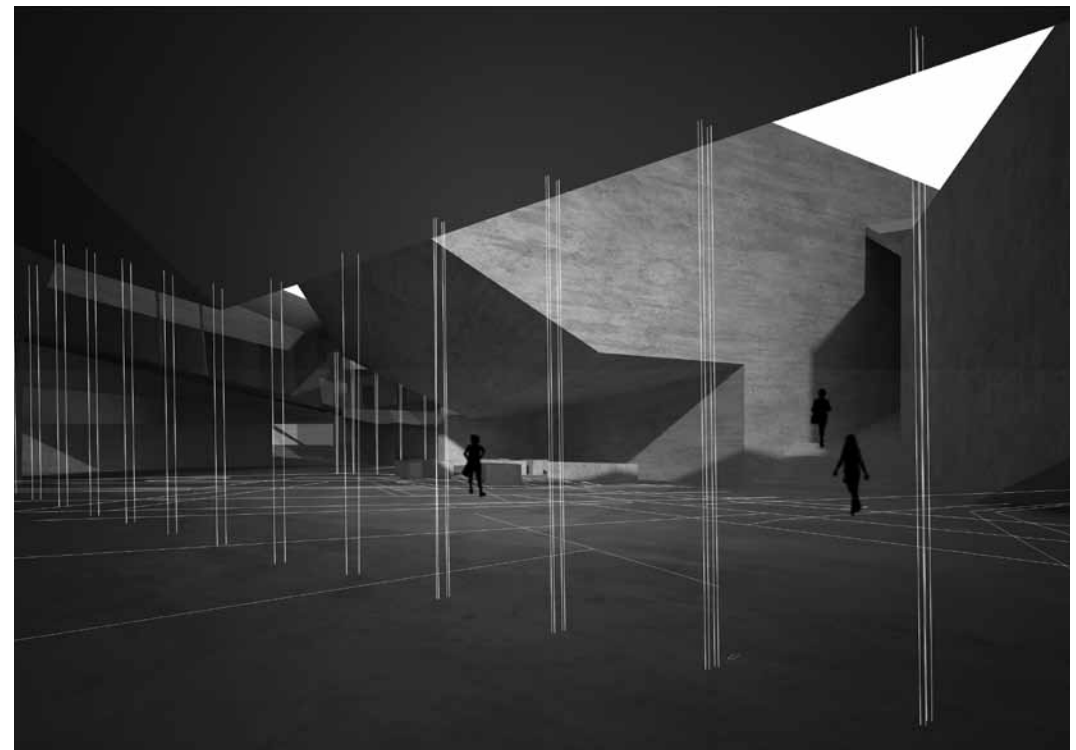
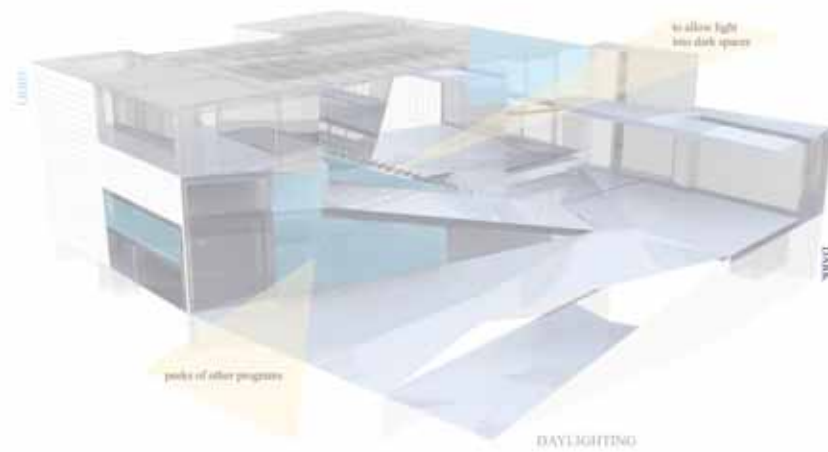
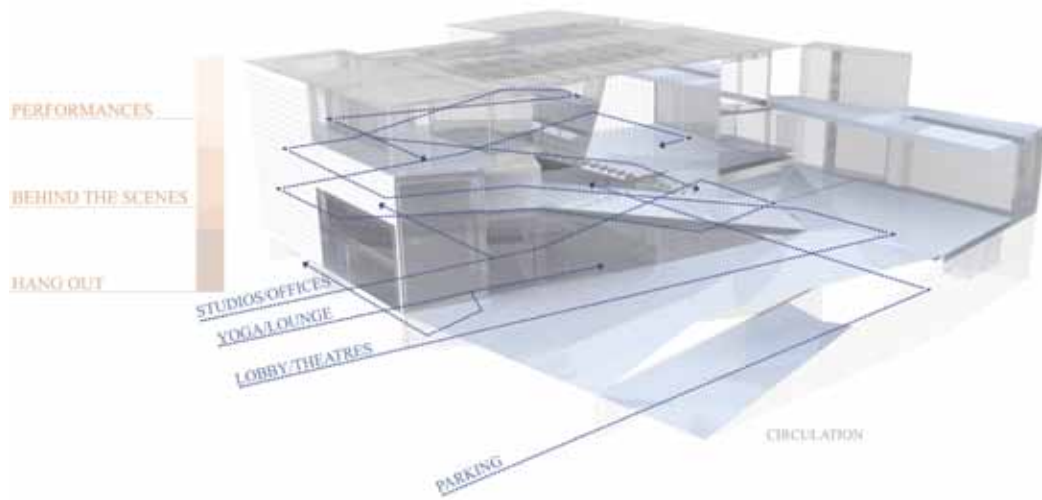
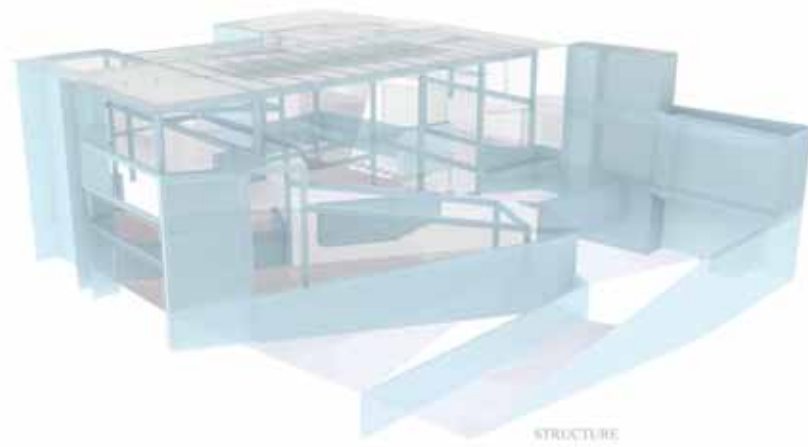
Students addressed a comprehensive design problem that required them to implement the knowledge and skills accumulated during the previous five semesters, to extend the depth and breadth of their understanding of design issues, and to deal definitively with the interaction of the formal, experiential, regulatory and technical requirements of architectural design.

The studio provided an opportunity through a semester-long design project for students to develop a deep understanding of program within their designs. A base program was given, augmented by an individually generated catalytic component that required students to interrogate and expand the notion of program to enhance their conceptual ideas.

The studio focused extensively on building systems, from physical and material (e.g. structure and enclosure) to experiential and environmental (e.g. circulation and climate), emphasizing their relationships to conceptual and programmatic goals. Students provided for ventilation, heating and cooling (both natural and mechanical), for daylighting and artificial lighting, and for acoustic amenity. They built into their designs life-safety, egress and accessibility requirements, and developed a portion of their projects in detail to investigate, understand and ensure integration of the various systems in their designs.

Students also continued to develop their ability to integrate their thinking as architects with greater territories, here through a focus on broadly considered sites. Both program- and systems-based decisions were directly in dialog with those regarding site, constructing relationships that were intensely considered throughout the semester.

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UNDERGRADUATE

TOPIC STUDIOS

TOPIC STUDIOS

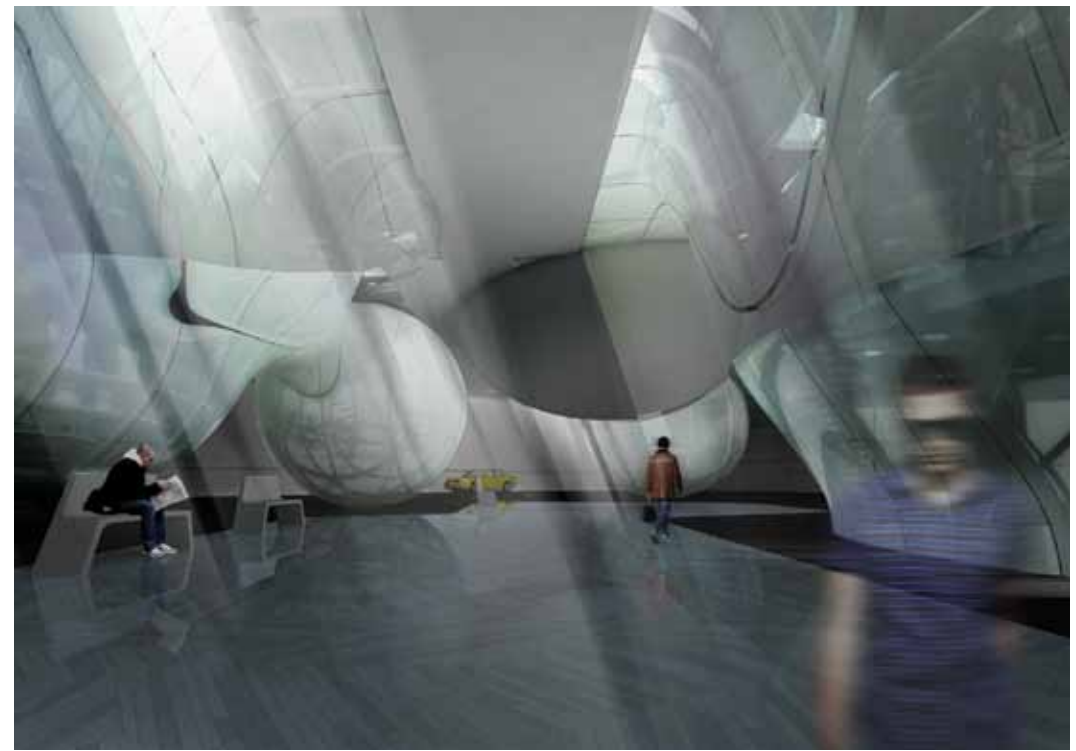
The 2010-2011 undergraduate topic studio offerings were collectively broad in range, scope, scale, and social and pedagogical intent - not to mention toolsets. This aligned with the curricular intent of the topic studio sequence: to allow students who have successfully completed three years of core work to research, and design to, subject matter of personal interest.

Ten topic studios were offered in the fall, six in the spring. Instructors were drawn from LA's talented community of design practitioners as well as from our own experienced faculty. Several studios used sophisticated digital tools to explore research topics ranging from urban farming (Doris Sung) to mobile cities (Neil Leach) to institutional typologies as merged with landscape and surface (Hagy Belzberg). Others examined current environmental and cultural phenomena through the design of architectural prototypes (light filtration inspired Kevin Daly; the food truck phenomenon caught Jennifer Siegal's fancy). Other studios were influenced by the worlds of fine art (Frank Escher), landscape (Doug and Regula Campbell), and planning (David Gray). Several explored the challenge of housing design (Lorcan O'Herlihy in Los Angeles, Erik Mar in the Philippines, Olivier Touraine as a programmatic cap to the 10 Freeway over the PCH in Malibu). Others addressed specific building types such as parametrically-designed high-rises (David Gerber with Scott Johnson and Dan Janotta) and libraries (again, O'Herlihy). Hadrian Predock and John Frane examined land art vis-a-vis performative and sensory criteria; Chuck Lagreco revisited charter school design. And Christophe Cornubert asked students how they would define urbanism, or re-define city – one of several studios that asked how designers can generate participatory strategies to make our quickly densifying cities more communal and interactive.

These topics yielded provocative explorations at differing scales and with varying degrees of tectonic and programmatic complexity. Ultimately, what we look for in the work of the topic studios is each student's ability to perform research, to then generate or interpret a critical design challenge, and to respond to that challenge with thoughtfulness, dexterity, and innovation. There was an encouraging yield of such work this past year.

Alice Kimm

Chair of Undergraduate Studies



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ENDOTERRA STUDIO



ARCH 402A. Instructor: Hagy Belzberg

Nestled between the Rand Corporation headquarters, Santa Monica City Hall, the termination (or commencement) of the 10 interstate freeway and the Pacific Ocean lies a stretch of land that is proposed as an urban park. The area is a confluence of diverse urban conditions and offered opportunities for the students to explore convergence of various typologies and the possible impact they impose on the program, an institutional building for the Pardee RAND Graduate School at the RAND Corporation. The goal was to maintain the proposed park's open space while infusing the site with a building program and the necessary circulation routes. The successful integration of landscape and structure was the paramount challenge to the student. Spatial experiences defined through transitional conditions were the principal examination of the studio.

Students optimized the use of volumetric variation while integrating natural light into a semi-subterranean condition. Students were asked to employ and compose parametric programming to elevate textural surface articulation in support of their design criteria.

THIS PAGE: JOHN FARRACE

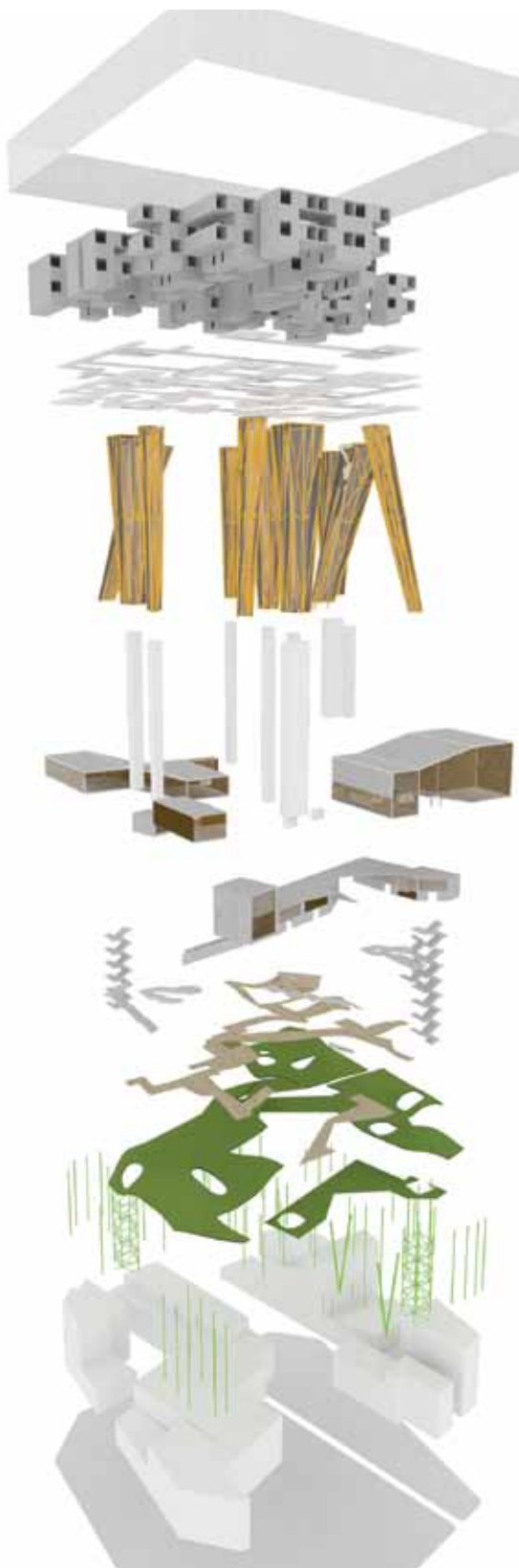


ARCH 402A. Instructors: Doug Campbell, Regula Campbell.

Enduring icons of environmental design gain strength, authenticity and a sense of completion through their engagement with their natural contexts. Imagine the Pyramids of Giza without the Nile and Sahara, imagine Suzhou and its gardens without the Yangtze and Taihu Lake, imagine the Sydney Opera House without the harbor and Tasman Sea, or even the Hollywood Sign without the hills. Sometimes these works demonstrate an organic relationship with their environments clearly drawing from and emerging out of their settings such as F.L. Wright's textured block houses in Los Angeles or L. Kahn's Salk Institute in La Jolla; sometimes in complementary contrast such as Pierre Koenig's Case Study House 22 in Los Angeles or the Eames' House in Pacific Palisades. Whatever the inherent conditions and qualities of the natural site, whatever the project, their power and long-term success lie in their fundamental recognition and creative expression of and relationship to their natural environments.

This studio is structured in a series of interdependent exercises of varying scope and complexity starting from regional scale moving to urban and campus design, finishing in specific project design. All will conceptually engage the culturally and scientifically significant landscapes of islands. We will start with research and theoretical sketch problems exploring the multicultural, metaphorical roles of islands then move (literally with a required field trip September 17-19) to actual projects on the Isthmus of Santa Catalina Island. Careful site explorations and analysis, dialogue with Island representatives, study of as-built documents and planning materials will form the basis for student team development of long-range master plans, design guidelines and goals for the town of Two Harbors or USC's Wrigley Institute. Students will select individual final projects from those identified and sited in the master plans (infrastructure, landscape, architecture). The aim is for you to gain an understanding of the interwoven relationship between concept and reality; between natural environment and design; between master plan and specific project; between the expression of poetic and scientific truths in environmental design; between choreographic design and the perceptual experience of place; between ethics and physical design. Finally the studio will investigate the intersection of environmentally sound planning, landscape design and architecture to the production of powerfully meaningful, lasting works.

THIS PAGE: JESSICA PALEY



GLOBAL STUDIES: BARCELONA STUDIO

ARCH 402A. Instructors: Mark Cigolle, Kim Coleman, Sophia Gruzdys.

The Cerdà Plan for Barcelona incorporates formal structuring principles of MAT, STRAND, NUCLEUS, and NETWORK to create a strategy of urban organization that has been shown to successfully accommodate growth and change over time. As a model for urban organization, this mixed-use block approach suggests a framework for further engagement and study. Project strategies that densify neighborhoods, activate streets and examine the hybrid building as a microcosm of urban life were tested in designs for Poble Nou 22@, an area that the City of Barcelona has designated as an urban renewal zone. The plan for 22@ encourages the integration of renovated industrial structures with new buildings and hopes to draw high technology firms to this area of Barcelona, as well as develop a mix of housing, commercial, educational, and cultural functions, resulting in a mix of both scale and use and a commitment to public open space.

The studio began with students assigned to one of five teams analyzing different zones of Poble Nou, including the edge to the sea, the edge to Ciutadella Park, Plaça de Les Glòries Catalanes, and two areas along the connecting axis between the City and the sea. After developing an urban strategy as a group, each student identified a site within the zone they studied and designed a building/landscape project for that site. A postulate of the studio is that re-urbanization & hybridization of program offer models for sustainable urbanism and dynamic urban life that encourage infill of underutilized urban zones, dynamic re-growth, and reclamation offering a more sustainable strategy for growth than continued sprawl, which has led to overextended systems of connection, inefficient use of resources, and collapsing centers of cultural diversity, energy and engagement. Barcelona's efforts are an important precedent for urban intensification in Los Angeles, a city with similar climate and similar locale between the mountains and the sea, but very different urban traditions.

THIS PAGE: VAN PHAM



GLOBAL STUDIES: COMO STUDIO

ARCH 402B. Instructors: Mark Cigolle, Kim Coleman, Michael Dolinski, Giuseppe Filippetti, Cara Lee, Stephan Mundwiler.

The sites and context for the three design projects for the studio are all in Como, Italy where the studio was based. The program for the first project, *Thermae*, is a modern community spa or public bath. Design intentions focused on developing vocabularies that create atmospheric qualities to engage users in meaningful ways and on multiple levels. In designing a facility centered in and around water, students explored the qualities created by light and shadow, by space, proportion and appropriateness of scale, and by qualities of sound – silence and echoes. The studio visited existing bath facilities, including the Zumthor Baths at Vals, Switzerland to experience and observe how architectural language may serve the public in calculated and strategic ways.

The two subsequent design workshops were both collaborative, with students working in teams to develop the projects. USC students worked in mixed teams with students from the architecture department at the Politecnico di Milano to design *After Terragni: Light Project* on Como War Memorial for a proposed installation by the City of Como for the Milan Expo of 2014. The final project, *Villa Olmo REFRESH*, revisited ideas of a 1972 Museum of Modern exhibition, Italy: The New Domestic Landscape, exploring the forms, ceremonies and behaviors that make a domestic landscape meaningful. Following days of research at the Milan Furniture Fair, each team developed a Refresh proposal for Villa Olmo, a landmark building along Lake Como that has been the home of the USC Italy design studios for the past twenty years. The projects proposed ways to reprogram and reinvigorate the role of the Villa through intensifying activity, hybridizing function, and designing scenarios that directly engaged forward-looking possibilities offered by new technologies and means of social interaction, production and presentation.

THIS PAGE: SOYOUNG (CHRISTINA) HWANG



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PUBLIC SPACE INC.

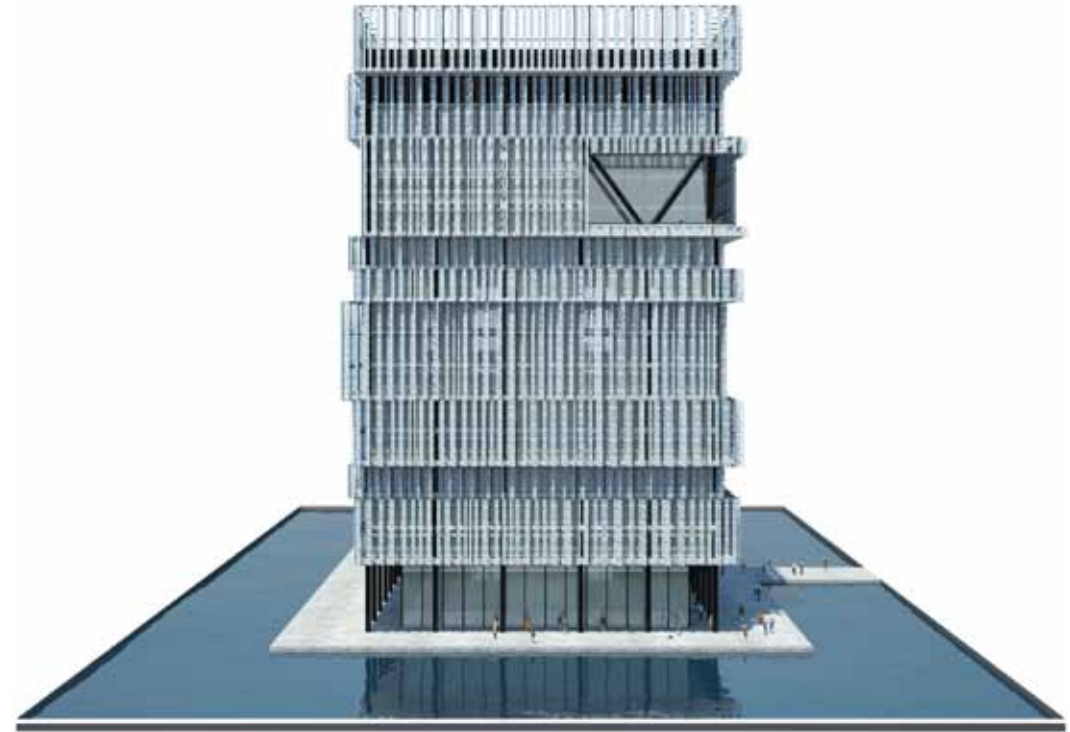
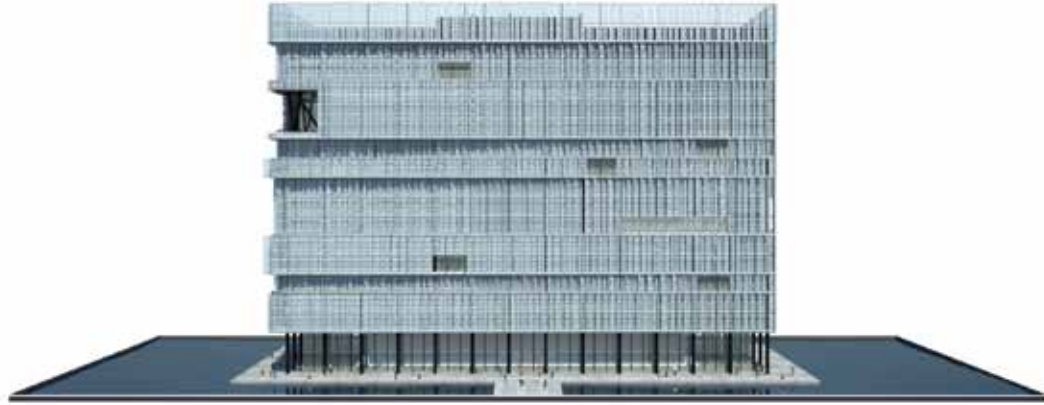


ARCH 402B. Instructor: Christophe Cornubert.

LA 2011. Starbucks, the Grove, iPad, the social network. Is public space as knew it obsolete and relegated to the dustbin of urbanism and late-capitalism? Do we still need public space and did LA ever even have such space?

Public space has traditionally been the benchmark for defining "city." The studio explored the recent history and possible futures for public space—the point of encounter between urban landscape, flows, program, technology, the individual and the collective. The project involved an initial research period to benchmark attributes of collective environments of various global cities and relevant contemporary concepts and theories of urbanism. Then the studio identified a site or sites in LA that formed the common ground for all participants. The findings and ideas for public space applied to program hybrids—including TOD, work-live, open space, civic, leisure, and cultural—drove the design development of the architecture projects. This was a research-based design studio focused on strategies for architecture.

THIS PAGE: EVAN SHIEH AND SAMANTHA NG



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LIGHTNESS: RECONSIDERING DWP

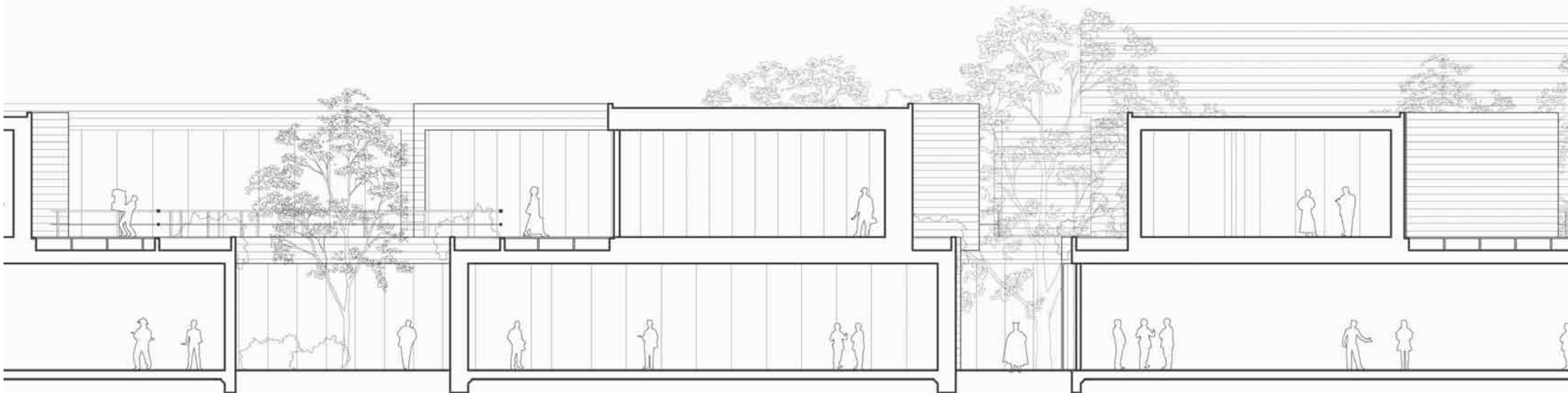
ARCH 402A. Instructor: Kevin Daly.

The 1965 LADWP Headquarters Building, designed by AC Martin and photographed by Julius Shulman, is a Los Angeles icon. It symbolizes the unprecedented expansion of Los Angeles during the Cold War years by making manifest the virtually unlimited supply of water and power available for the growth of the City. Technically sophisticated, the building is not merely a demonstration of the use of natural resources: the pool of water surrounding the building is integrated with the building's cooling system, and the relentless arrays of fluorescent light fixtures that illuminate the building are part of the building's heating system. Still, it is a building that characterizes an era of perceived energy abundance during a time of increasing awareness of the environmental cost of intensive energy use. In this topic studio, each student imagined that the new owners of the building wanted him or her to reconsider the envelope of the building to convey what a public utility should look like today.

Lightness was a theme that was returned to throughout the semester. In transforming the building from one that demonstrates an aesthetic of energy consumption to one embodying an aesthetic of energy conservation, the building's capacity to distribute light was considered, and students generated systems to transform the building from one that emits light to one that might gather and adjust light in a manner responsive to its context, orientation, program, and status as one of the iconic buildings in Los Angeles. Parallel to this work, research was conducted on FIDU technology which allows thin sheet metal assemblies to be inflated with hydraulic or pneumatic pressure into stable, three-dimensional shapes. Students worked in teams to develop form studies for building elements; several prototypes were fabricated at Quality Vessel Engineering, a manufacturer of vacuum chambers and high technology environments.

THIS PAGE: ENOCH CHOW





ARCH 402B. Instructor: Frank Escher.

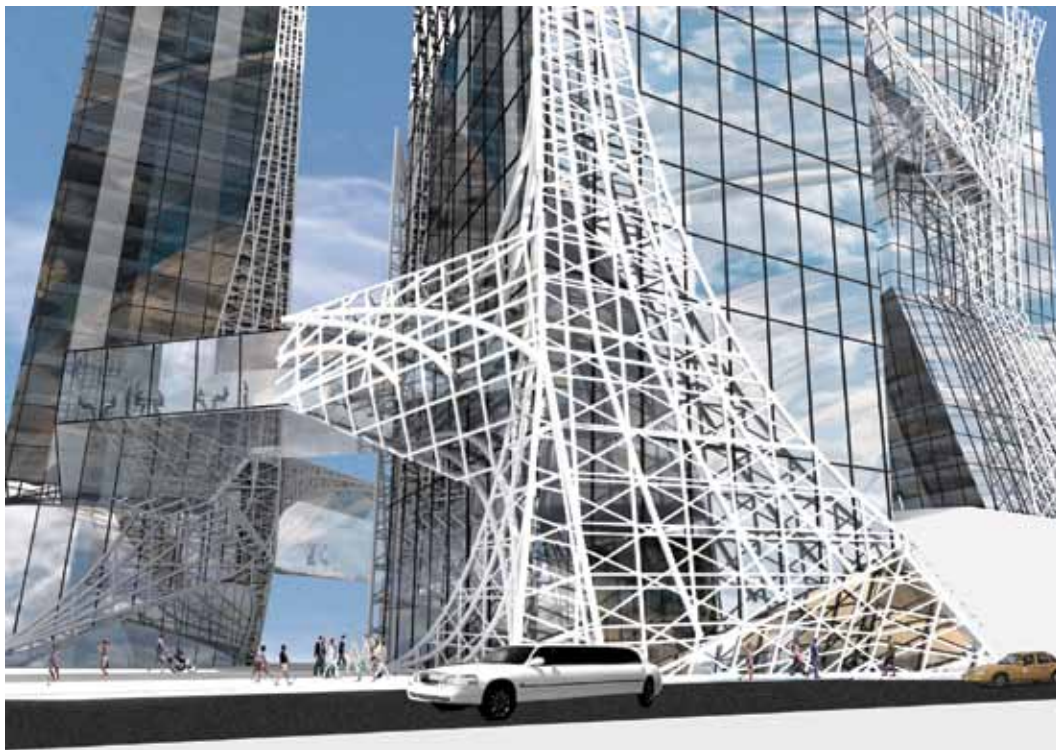
Los Angeles has a tradition of cultural experimentation from which emerges what is internationally considered one of the most important contemporary art scenes. This art scene is sustained in equal measure by various museums with contemporary art programs, significant art galleries, as well as influential local art schools. The list of such schools, all with faculties of internationally known artists, critics and curators, includes Art Center (Pasadena), Cal Arts (Valencia), the UCLA Department of Art, the Otis College of Art and Design, and the USC Roski School of Art.

The topic for this studio was a new building for the USC Roski School of Art on the site of the current Harris/Fisher Hall.

The students developed the spatial and intellectual program for their projects themselves in a process that came as close as possible to interacting with a client. In the first two weeks, students met with several Roski faculty members, including Dean Rochelle Steiner; artists Edgar Arceneaux (Adjunct Faculty, Public Art Studies), Frances Stark (Assistant Professor, Painting and Drawing), Sharon Lockhart (Associate Professor, Photography), and Evan Holloway (Adjunct Faculty, Sculpture), who discussed the programs, facilities and needs of the Roski School of Art. Further, site visits were arranged to major Los Angeles Art Schools and galleries (UCLA Department of Art, Otis College of Art, Blum & Poe Gallery).

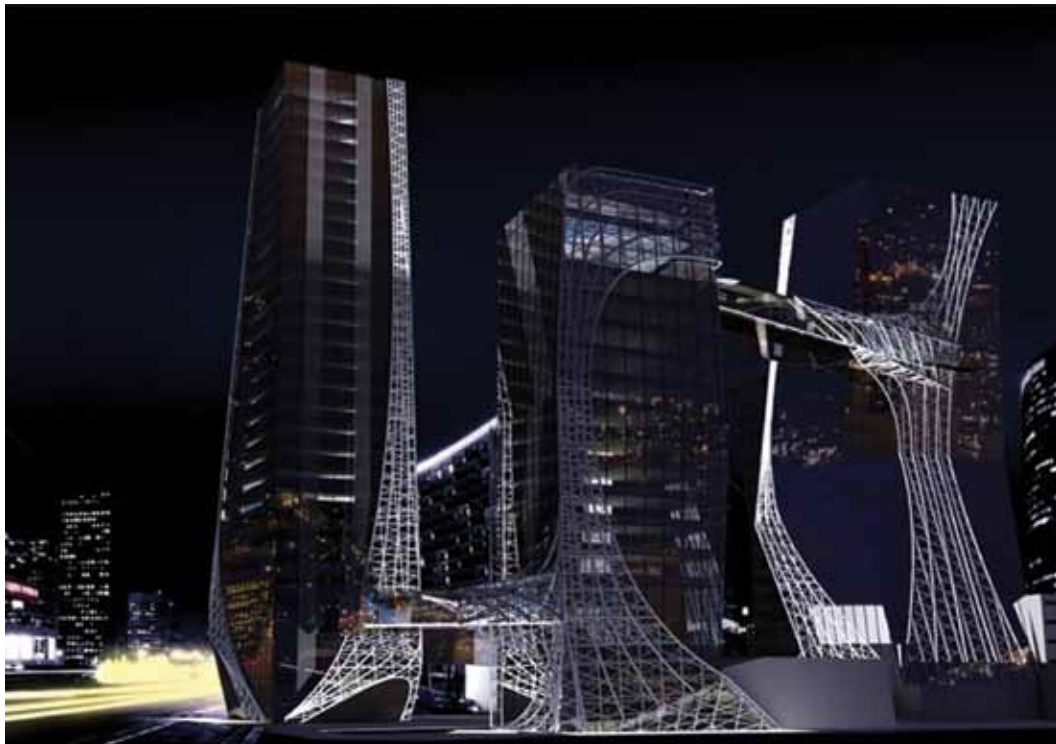
The students addressed broader issues such as the relationships of art and education, art and architecture, art and society, and developed spaces for thinking, making and exhibiting, i.e. spaces ranging from private to public activities. Programmatic components included studios and ateliers for different artistic disciplines, spaces for lectures, performances and exhibitions, art library and guest quarters for visiting artists.

THIS PAGE: ISAAC LUNA



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HOLLYWOOD TALL



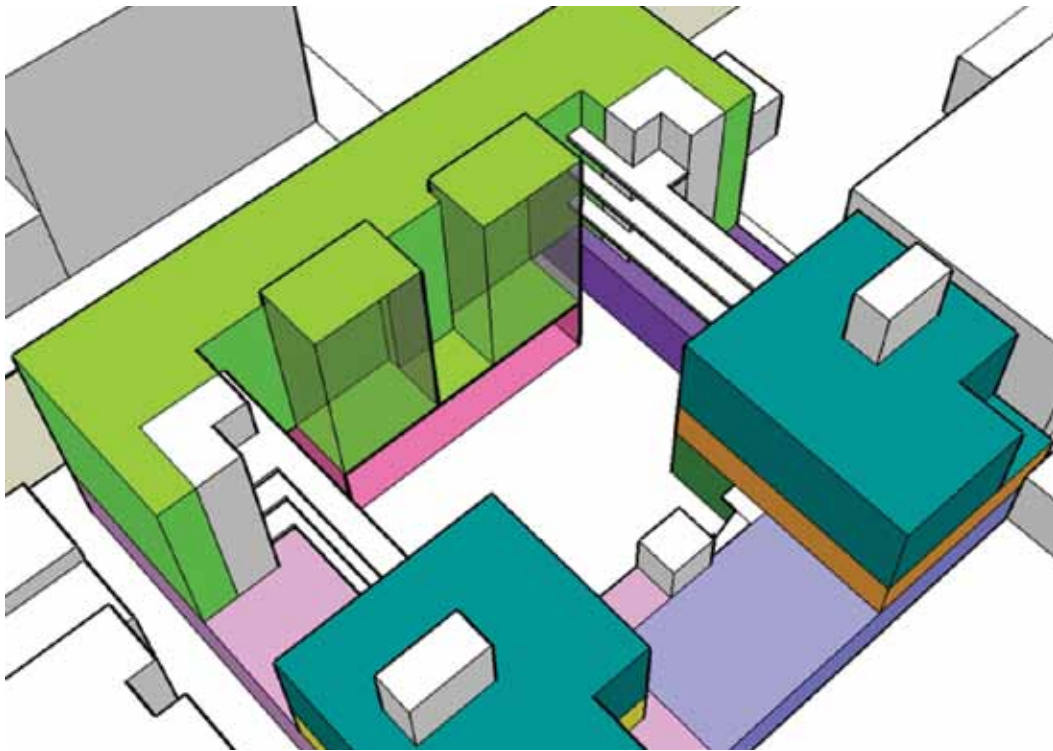
ARCH 402B. Instructors: David Gerber, Scott Johnson .

The ongoing economic recession has stalled commerce and real estate development in Hollywood during the past several years. In an attempt to stimulate activity, capitalize on new synergies growing out of entertainment, media and electronic gaming and draw attention to Hollywood, the Community Redevelopment Agency (CRA) and the Mayor's Office of Economic Development have purchased a major site at the corner of Sunset Boulevard and Gower Street. They are delivering that site to a real estate developer, who is your client, and are subsidizing occupancy in a future project you have been commissioned to design.

Following its tenure as Hollywood's first film studio, the site later became the home of the former CBS Radio Headquarters (1938, William Lescaze), otherwise known as Columbia Square and housed early live radio broadcasting. Later, these existing buildings accommodated sound recording and live television. One of the goals of the commission is to restore and reoccupy the historic building and integrate it into the new project. The overriding goal was to materialize a project that anticipates the future state of the media/entertainment/communications nexus.

The program was a tall building plus the necessary collateral construction to house flexible workplace environments, residences for commercial occupants and others, service retail and recreation. Each student undertook the premise that the principal building should be no less than 60 stories in height, making it Hollywood's tallest building and by virtue of its architectural design signifies the importance of a convergence of electronic media, entertainment and communications and Los Angeles' central role in that event.

THIS PAGE: RENATA GANIS



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ARCHITECTURAL DESIGN AND REAL ESTATE DEVELOPMENT



ARCH 402A. Instructor: David Lawrence Gray.

The studio intention was to build wealth, change the environment and influence a major share of the growth of urban cities. Architects for most of the last 200 years designed and built buildings. What they did not do was determine many of the parameters including where the building would be built, how much the building would cost, and what the programmatic requirements would be. All these critical decisions were made historically by the owner/developer. In this time of recession, we as architects should review our roles and the way we provide design services for the future.

Each student formed a development corporation with elected officers and a board of directors as a vehicle for developing their own project. This included locating the land, determining costs, defining program and getting the approval of their board for the design. The students "owned stock" in their corporations and the failure or success of the projects would substantially raise or lower the value of their stock.

THIS PAGE: DIANA TSUNG



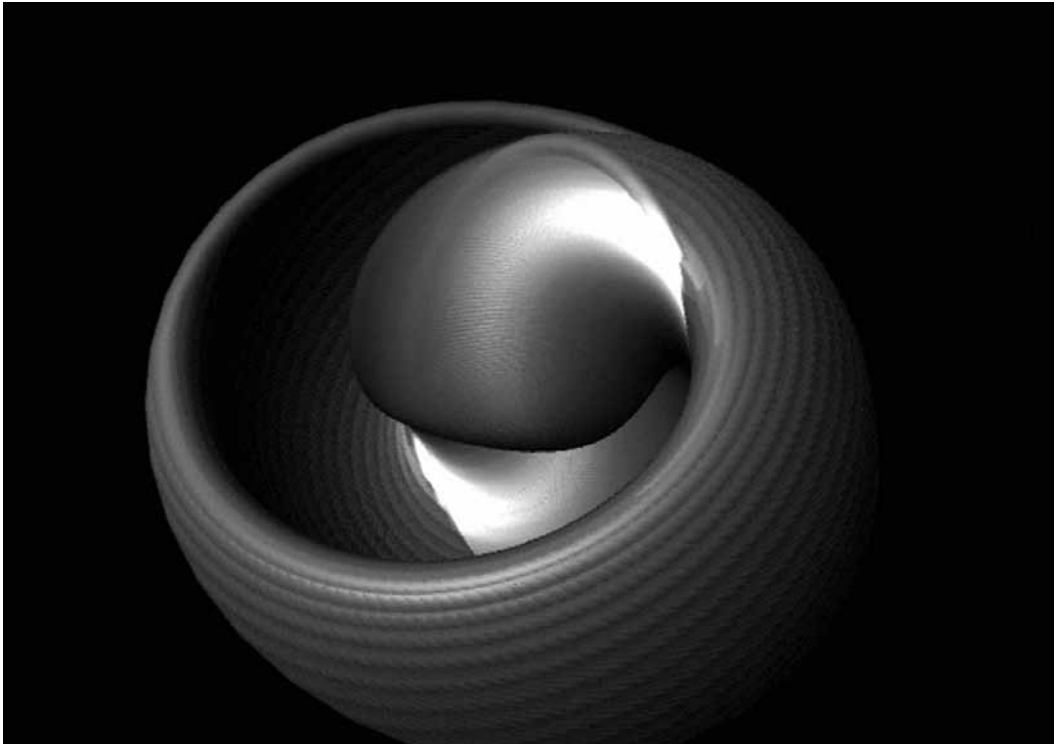
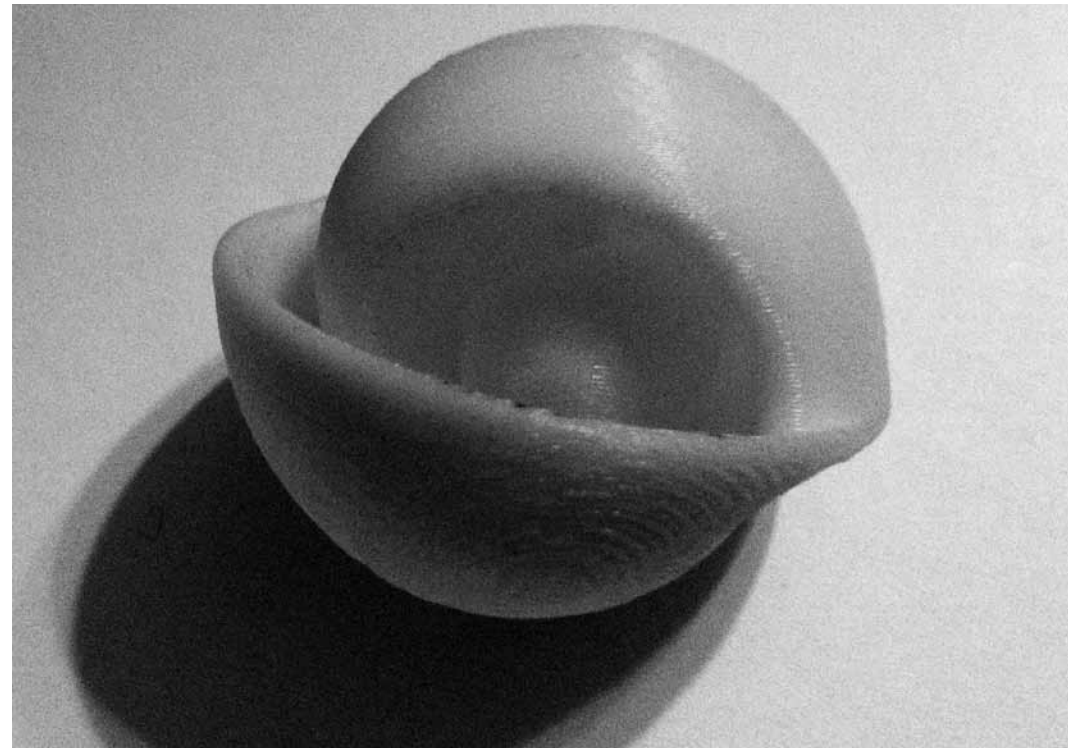
ARCH 402B. Instructors: Chuck Lagreco.

This topic studio asked each student to begin to take responsibility for the community in which we live, to work to influence the direction and priorities of the University, to consider alternative sites for an important community resource—a charter school—and the impact that might have on the development of the neighborhood around the school site, to address a new building type or adapt an existing one to fit a new set of conditions and activities, and to test the impact of technology and sustainable strategies on the building design process.

The School of Education is heading up a research effort to initiate a new kind of charter high school to provide an alternative educational experience that can address student needs that are not being met by current school choices. This initiative is on track to start classes in the USC / Hybrid High School in September 2013 but does not currently have a facility to accommodate the program. This facility will act as a prototype for other schools using the same curriculum and methodology which is focused on independent student learning and student-centric scheduling and heavily dependent on electronic content accessible during an extended school day.

The studio approached the problem from three distinct perspectives using urban context, building / educational program, and tectonic experimentation to define the criteria for individual project proposals. The primary emphasis was on the proposals and testing of individual design initiatives resulting in a developed building design that demonstrated a full range of architectural and urban design issues. Students had the opportunity to interact with educators in the testing of alternative strategies for addressing the prototype school design. The results are currently on display in the School of Education Learning Lab B06.

THIS PAGE: STACY KWOK



ARCH 402A. Instructors: Neil Leach, Nick Pisca.

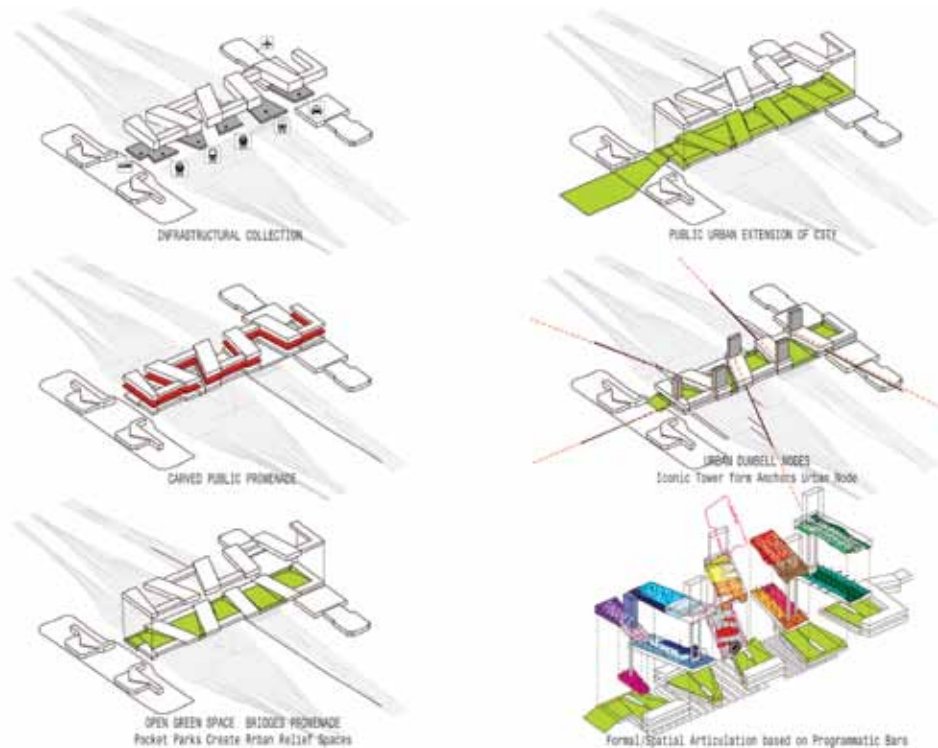
The mining city of Kiruna in Lapland is the northernmost city in Sweden. Located far above the Arctic Circle, it endures one of the harshest environments on earth. It also endures one of the most extreme conditions in terms of sunlight. From early December to early January the sun never rises, and from the end of May to mid-July the sun never sets. Kiruna is a city of extremes.

The city is also sinking. Born to service the mining industry, Kiruna, is suffering at the hands of the very industry that gave it birth. Iron ore mines dug deep beneath the city are collapsing and the city subsiding.

This was a live project. A new city of Kiruna is being designed on a fresh site. But the mining companies will not guarantee that they will not mine underneath this site as well. So the city has to be mobile. Think Archigram's walking city in one of the harshest environments on the planet.

This studio designed a new city of Kiruna. One that is sustainable and capable of moving at a moments notice. The studio was completely digital. All designs were generated using MEL scripting.

THIS PAGE: DYLAN WOOD



ARCH 402A. Instructor: Andrew Liang.

Hybrid conditions are the result of mediation between different objectives. They provoke an encounter in which the traditional notions of 'boundary' take on the complex implications of 'place'. This has become a vehicle to deliver contemporary global experiences and exchanges. The conceptual and operational potential of hybrids can be applied to architectural and urban speculations. Their impact on architectural syntax can reframe architecture from a static typological model to an intelligence-based dynamic model – one that can be subjected to evolutionary, mutative, predatory and parasitic analogies, patterns and formations.

Adhering to the premise outlined above, the studio investigated and speculated on the implications of hybrid urban scenarios through hyper-density and performative programming that crossed infrastructure, architecture and urbanism to reach the formation of sustainable urban nodes. The two sites in the city of Shanghai were selected, the Hongqiao International Airport Transportation Hub and the 2010 World Expo site.

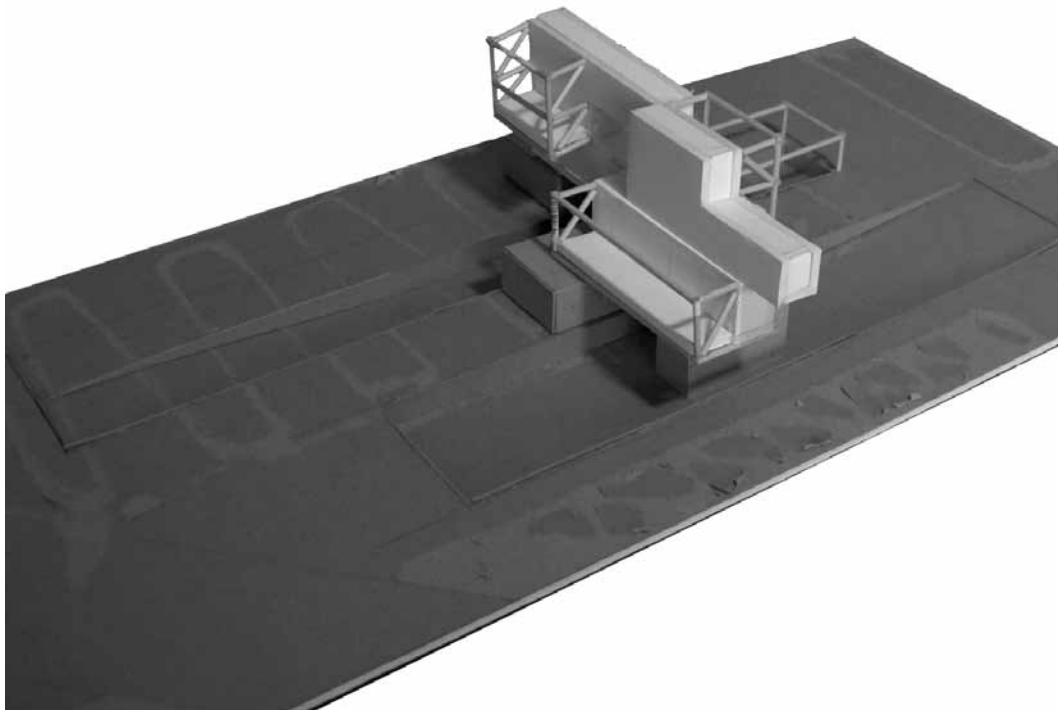
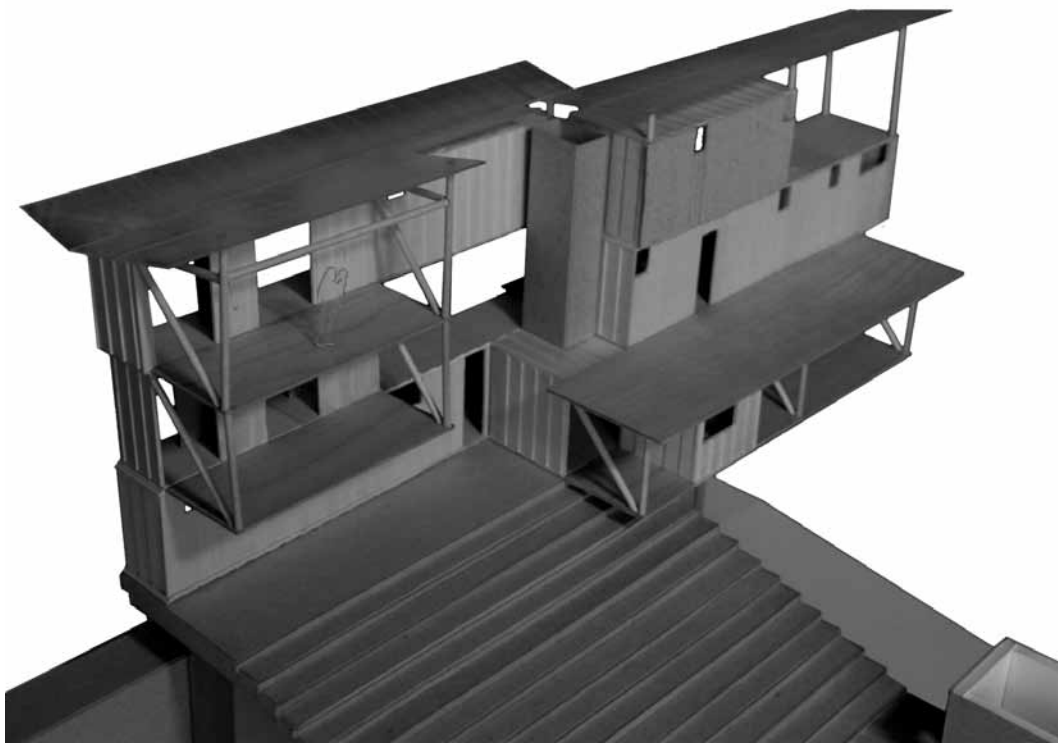
HONGQIAO INTERNATIONAL AIRPORT TRANSPORTATION HUB

The students sought to re-envision Hongqiao International Airport as a regional and an international transportation hub where air, rail and ground transportation infrastructure converge with 1 million+ daily users. The scale transcends definition beyond a mere airport, station and depot. Our projects took the laden potential to become a new kind of urban organism with a rich complexity.

2010 WORLD EXPO SITE

The 5.28 square meter site of the 2010 World Expo was to be cleared post expo events. Five key structures concentrated in a cluster are to remain and be converted to an exposition center, a museum, a convention centre, a performance centre and a central connection spine leading to the water's edge. The site will benefit from the modern infrastructure and transportation links created for the expo. This new hub's central location to the larger metropolitan area of Shanghai and the river's edge sets up the pertinent question of what constitutes a vibrant urban node within a city.

THIS PAGE: EVAN SHIEH



DESIGN AGAINST THE ELEMENTS

ARCH 402A. Instructor: Eric Mar.

This studio submitted to the international competition “Design Against the Elements,” located in the Philippines whose aim was “to develop an integrated, environmentally sound, and disaster-resistant housing community in a tropical urban setting..[and] to develop a master plan and detailed design for a socialized housing community - considering the effect of the development towards the community, environment and its biodiversity, develop a high performance structure (energy efficient and optimization of resources) with an extended life cycle and a design that is appropriate to the changing climate to withstand the rigors of the Philippines’ typhoons and consequent flooding, made worse by the increasingly alarming effects of climate change... Moreover, the project aims to present a definitive green building solution in a truly local context. Too often, homeowners, architects, and policy-makers think of sustainable building as a luxury that only privileged landowners and advanced countries can afford to practice. “Design Against the Elements” fosters sustainable development within the built environment and green architecture as essential to survival- planning for homes and communities that can survive for weeks in the severely restricted conditions of a post- disaster situation.”

The winning entry in the Professionals category will be constructed, but all entries contribute to the broader goals: “To build the first green, livable, affordable, and disaster-resistant village in the Philippines that will serve as the blueprint for how families in vulnerable areas can successfully cope with the impacts of climate variability.... [and] to compile an encyclopedia of climate-resilient and affordable design solutions that can be used and repeatedly referred to in the near future, and that can help facilitate the development of facilities that address these humanitarian challenges.”

THIS PAGE: ZLATAN SEHOVIC



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VIRAL URBANISM: TOWARDS NEW MODELS OF SOCIAL CONNECTIVITY



ARCH 402A. Instructor: Lorcan O'Herlihy.

The evolution of contemporary architecture and urban planning can be viewed as the movement away from inelastic, low connectivity models to increasingly elastic informal models of connectivity. Change, impermanence, engagement with the social complexity of culture(s) is often an index 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 and isolationist models towards greater connectivity and diversity through generative bottom-up strategies.

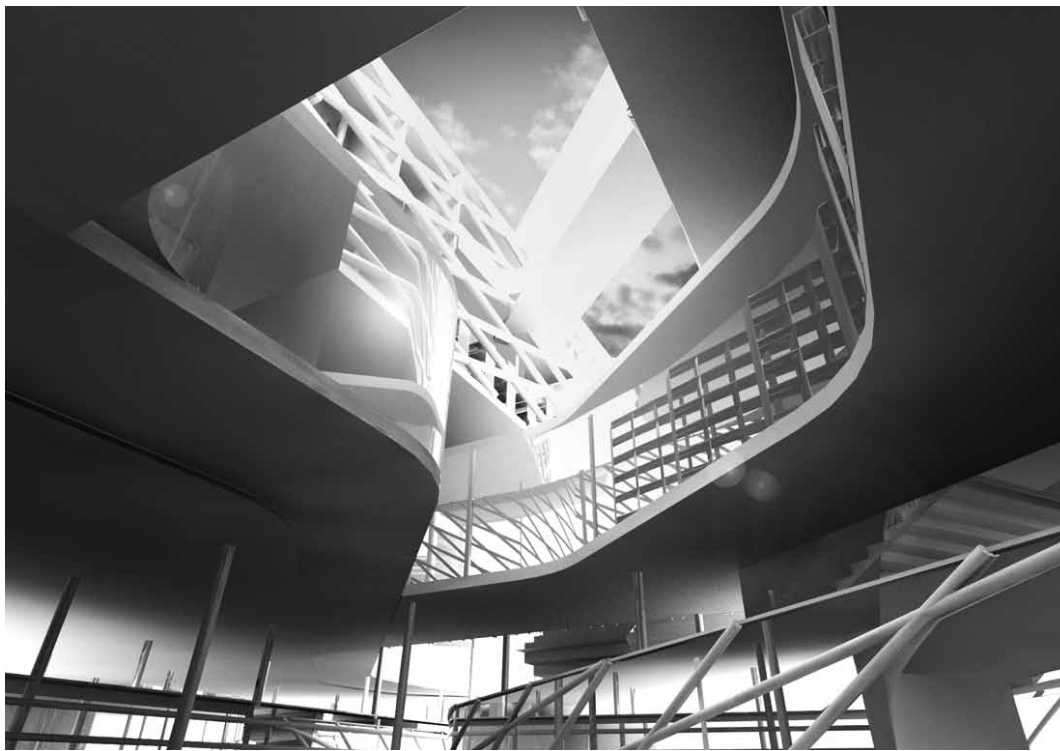
Urban strategies and architectural production can learn from forms of behavioral and social connectivity and apply them in order to build more performative, robust and sustainable modes of urban connectivity. These models favor the informal, they are more loosely organized than previous hard-wired models and unlike current unsustainable trends promoting autonomy and isolation (the new urbanism model), and they support the potential to expose, connect and encourage new forms of use and occupation.

This is becoming the case in Skid Row, an area in Central City East Los Angeles, which is both one of the largest recovery communities in the world, but also remains home to one of the largest concentrations of homelessness in the nation. Beneath the surface, a unique elastic strategy is emerging that may suggest an alternative approach to urban design. Non-profit companies, such as Skid Row Housing Trust have begun to team up with architects with the goal of substantially transforming the quality of life for individuals and communities.

The studio's objective was to identify the critical role of design as an agent in engaging and fostering human interaction, in combining permanent supportive housing, on-site social services and public space for the Skid Row community. At the intersection of politics, project funding, and architecture, this studio will explore the design of housing in relation to density and behavioral and social connectivity to the community.

Key factors include a studio-wide examination of local, national and international housing paradigms, paying particular attention to the role of public/private boundaries between housing and public space. Additionally, guest lecturers/discussions by developers and non-profit organizations will further supplement the design work. The studio is expected to address issues of mass housing such as means of construction and material choices and their impact on design; aspects of energy demands; social factors such as privacy, homelessness and mental illness; and attempts to deliver design in a way that positions the architect as a key participant. It is anticipated that students will demonstrate research capabilities in addition to analog and digital drawing skills. Building physical 3-dimensional models at all phases of the work will be encouraged as well.

[1] AARON BENJAMIN [3] ROSS JEFFRIES



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CONFLUENT URBANISM: TOWARDS NEW MODELS OF SOCIAL CONNECTIVITY

ARCH 402B. Instructors: Lorcan O'Herlihy.

"To build a library today is to believe in the future of our society, to acknowledge a desire to give everyone the tools to participate in our information age."

- Philippe Duron

President Communauté d'agglomération Caen la Mer

Beneath the surface, a unique elastic strategy is emerging that suggests an alternative approach to library design. Increasingly, today's libraries are being redefined as places to get unrestricted access to information in many formats and from many sources. They are extending services beyond the physical walls of a building by providing material accessible by electronic means and by providing the assistance of librarians in navigation and analysis of tremendous amounts of information with a variety of digital tools. Libraries are no longer exclusively dedicated to books, but now increasingly dedicated as information stores where all potent forms of media are presented equally and legibly. They are about creating a space of confluence for both knowledge and people. With information and ideas flowing in both directions – from the library to the user and from the user to the library – library services have the ability to evolve and improve on a constant and rapid basis. The user is participant, co-creator, builder and consultant – whether the product is virtual or physical. The new library model will ultimately replace traditional, one-directional offerings that have characterized libraries for centuries.

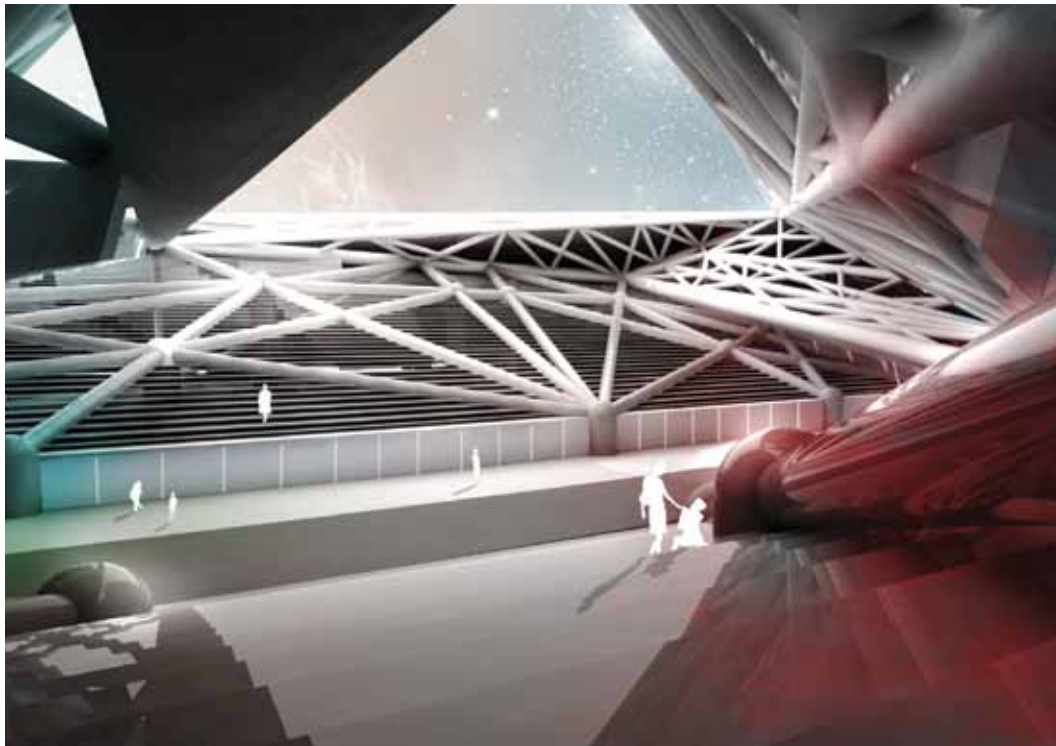
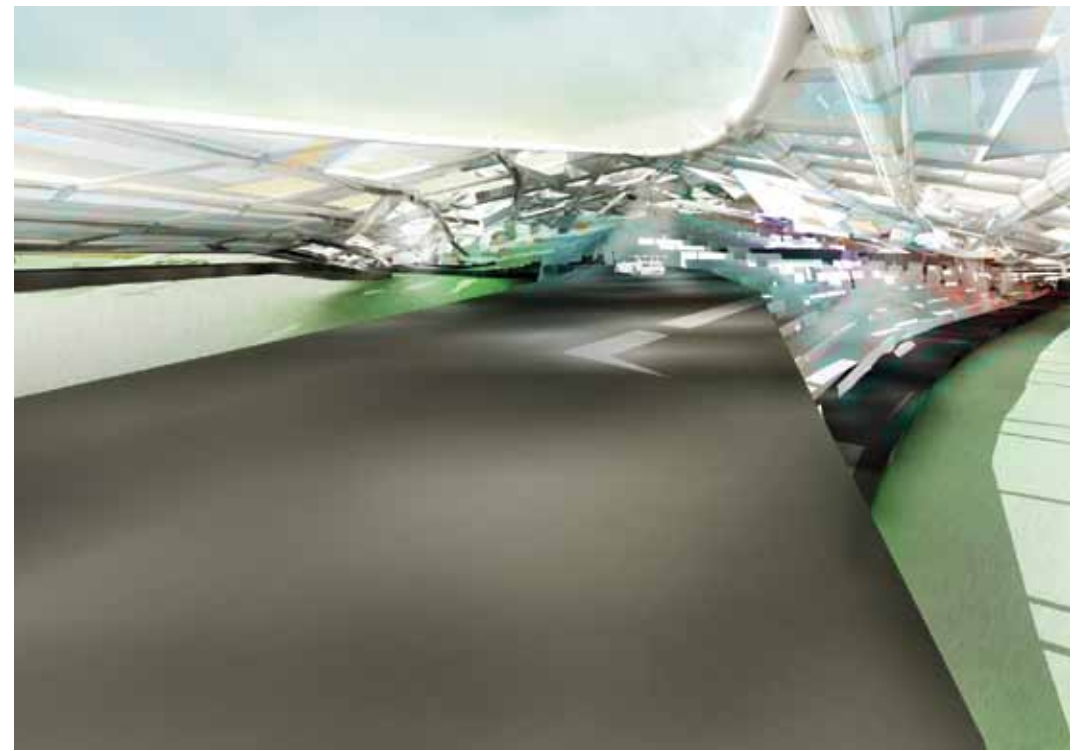
The objective of this studio assignment is to identify the critical role of design in relation to behavioral and social connectivity to the community. While acknowledging complexity inherent with the continued evolution of contemporary technologies and communication capabilities, students are expected to analyze how libraries can adapt formal strategies via programmatic analysis (i.e. branching, network ecologies, compartmentalized vs. uniform flexibility) to accommodate organizational and technological advances.

Students will be expected to continue the exploration through rigorous research agendas carried out using field studies and incorporating knowledge received from specialist consultancies. In addition, investigation via analog and digital drawing skills and building physical 3-dimensional models will be encouraged at all phases of work. These will be explored in 2D and 3D via scale shifts in forms of building taxonomy and production techniques with the aim of making the structure and materiality both organizational and projective.

Addressing the role of public libraries as the last vestige of free public space, this studio will explore ways to exploit rapidly changing environmental, economic and cultural conditions as a springboard for imaginative and innovative socially and environmentally sustainable design.

[1] VAN PHAM, [2] CHRIS LIM, [3] SUNNY COLVEY





ARCH 402A. Instructors: Hadrian Predock, John Frane.

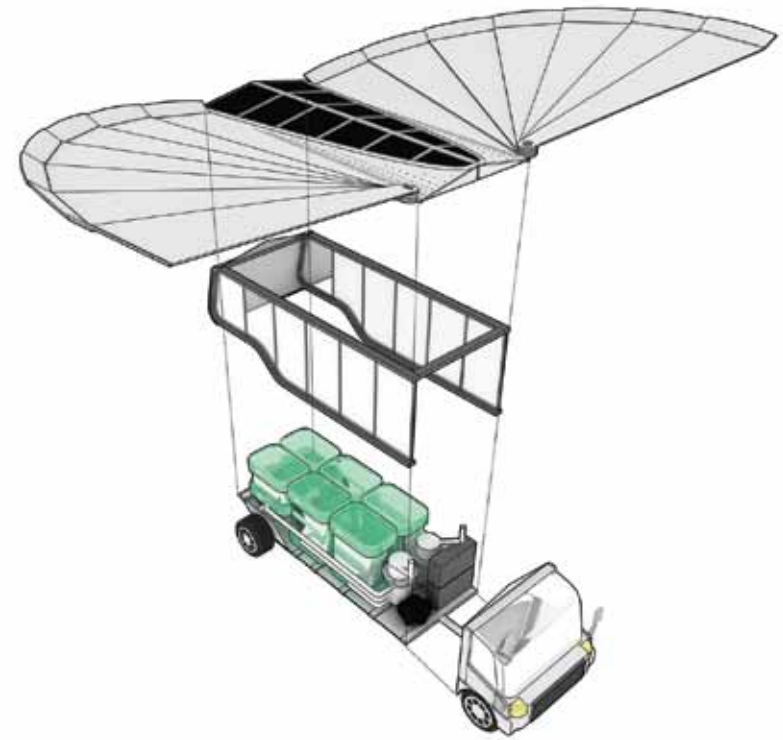
Increasingly, as the built world evolves, there are more and more examples of projects that conflate the traditional boundaries of design disciplines. From object to building to city infrastructure, it is becoming more and more apparent that a system of relationships exists between the micro and the macro. Emerging terms such as “landscape urbanism” and “urban ecology” suggest a new framework of relations that insists on a careful understanding of energy and matter exchanges that inform how we see and shape our built environment.

Within this context of understanding, the prescient movement of clean energy production has thus far attempted two basic design approaches. Whether as a highly local “micro” response attached to existing buildings or as a macro “power farm” approach, each model has limited disciplinary range and tends to act as traditionally “discreet” systems. There remains a world of hybridization that can in fact open up these models and implicate them within both emerging ecological systems and as equally important, an aesthetically charged territory that is normally the realm of Land Art.

The studio explored the convergence of renewable energy production and the intensification of an existing urban site with an investigation of how ideas surrounding Land Art. The studio began with precedent studies of renewable energy ‘farms’, land art, design/infrastructural hybrids, and urban redevelopments. Understanding of the ‘units’ of power generation was be critical to both an understanding of production and as an introduction to the idea of the single unit as the basis for assembling a dynamic and coherent ‘whole’ as a potential strategy for larger scale deployment.

The proposed site is within the convergence of the 10, 101, 110 and 5 freeways. This site currently constitutes and nomadic disconnector tissue of three (plus) distinct neighborhoods, ruptured by the interchange. Potential scenarios could encompass a park, market, and/or a visitation/educational center.

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GENERATION MOBILE: EXPLORING THE DEPLOYABLE 'FREE-RANGE CUISINE' TRUCK CULTURE

ARCH 402A. Instructor: Jennifer Siegal.

Architecture responds to fluidity and possibility...

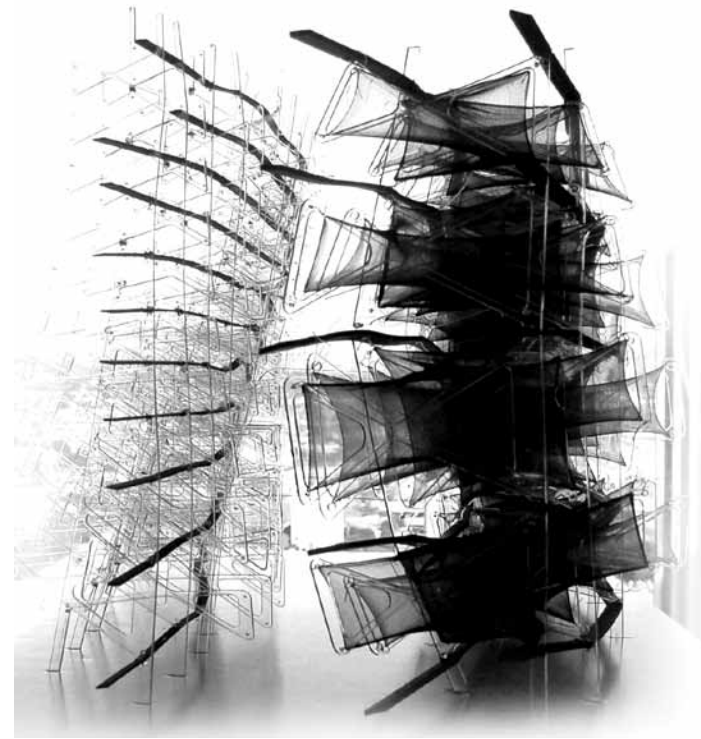
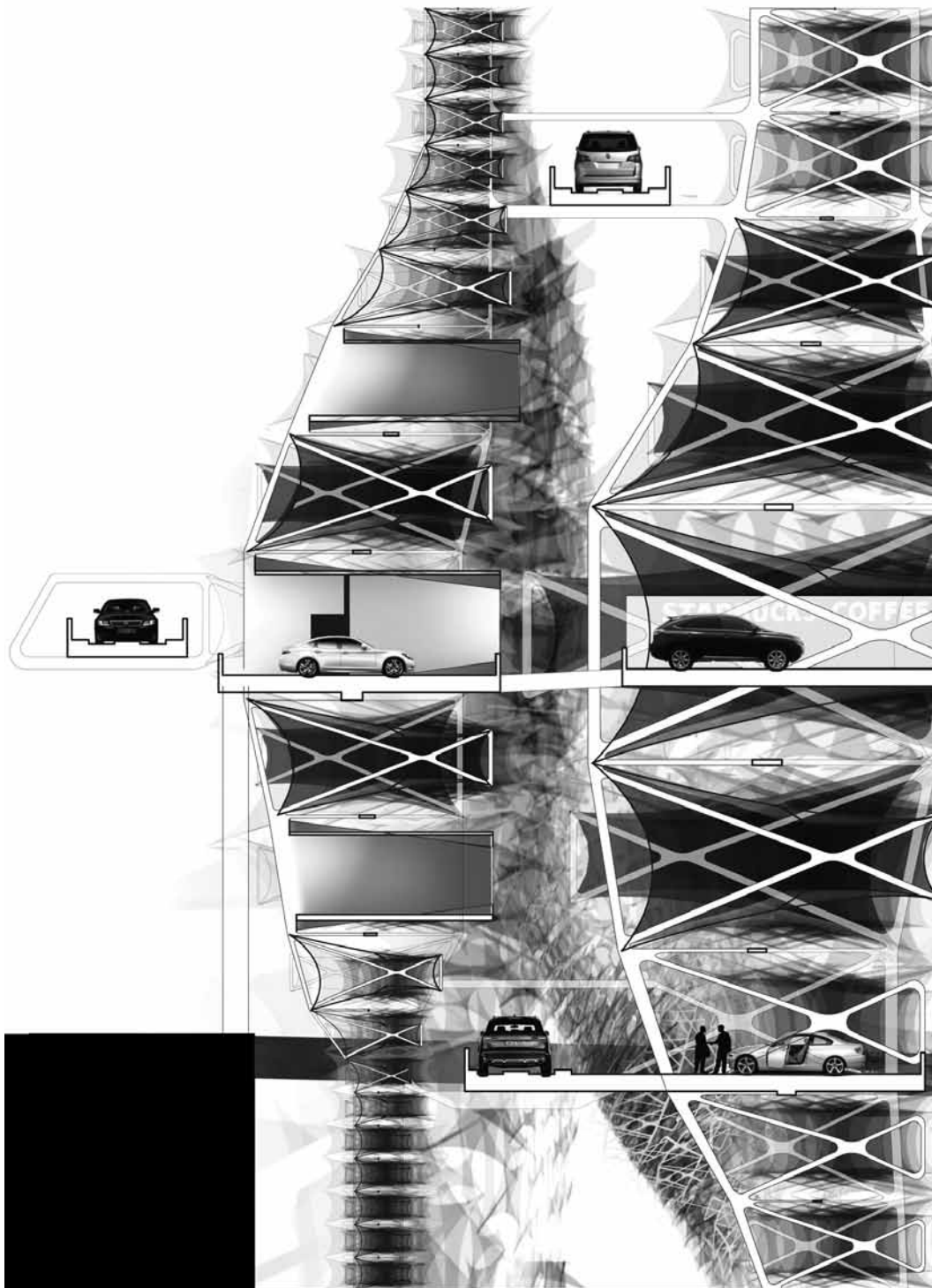
The future of mobile architecture is unfolding rapidly. As our buildings become more portable and adaptable, they become more useful. Before long we will shed the bulk and excess of static environments as we look to Generation Mobile and its long-term solutions for the uprooting of today's built structures. But mobile architecture is not merely product design or a continued modification of the Conestoga wagon or Wally Byman's Airstream trailer. Rather, it is this recognition of the fluidity of circumstances — the mobility of demographics and information — and an increasing capacity for architecture to respond to fluidity, whether through low-tech, ad hoc vernaculars or through high-tech kinetics and embedded computation.

The allure of mobile portable architecture is worldwide and centuries old. From the desert tents of the Bedouin to the silvery capsules of the Airstream, mobile architecture has inspired designers with its singular characteristics of lightness, transience, and practicality. This studio will explore the ever-growing range of possibilities of portable structures and mobile environment.

Specifically, we will explore the burgeoning food truck ubiquitous with the mobile Los Angeles culture. Beginning with precedent studies — WienerMobile, Lonchera Trucks, to the nouveau food trucks, Kogi, Coolhaus, Dogtown Dogs and the ESPN Match Truck — to the role of social networking and instant communication for the digital urban nomad, students will catalogue an index of 'types' and establish a new vocabulary of mobile micro-architecture from which to draw.

The final design challenge is a reconsideration of 'fast' food for the 21st Century's shrinking economy. Invited guest lecturers range from mobile business entrepreneurs, gourmet LA chefs, truck distributors and suppliers to community activists. Individual student prototypes will be produced at scale and mounted for future exhibition.

THIS PAGE: [1] [2] MARCUS CHENG, [3] SCOTT BAIK



SKIN+SKIN+SKIN: **PLUGGING INTO THE INTEGUMENTARY LAYERS OF ARCHITECTURE**

ARCH 402A. Instructor: Doris Sung.

Even during the modern movement, exterior walls in architecture were designed to be static and rigid. Visual access between interior and exterior environments was open with the use of glass and steel, but artificial climate control still determined the impenetrable limits of those glass walls. As times change, more recent public interest in sustainable design, energy conservation and zero-emission building design has infused the industry with renewed impetus to seek alternative solutions. With the emergence of new smart materials, the evolution of digital technologies, evolving and availability of mass-customization methods, those same walls can now be designed to be responsive, interactive and even porous, much like human skin. As a "third" artificial skin (the "first" being clothing, the "second" the automobile), architecture can, in effect, bring man closer to nature by elevating the sensitivity of the building surfaces to simulate organic skins and shells.

The final project for this studio was a comprehensive design of three nesting and 'interactive' layers of skin: a piece of clothing, the skin of a 1946 Airstream trailer and the garage shell that houses all three. Each layer had direct relationship to the next, extending the dexterity of man to reach to the outside while internalizing the sensitivity of the outer skin. Students developed new spatial/perceptual conditions, innovative programming and holistic relationships between the inorganic layers that have separated man from nature for centuries.

Students were required to consider the use of a thermally-responsive materials in one of the layers. When heated these materials (e.g. Thermobimetal, Nitinol and other shape-memory alloys and polymers) automatically deformed and returned to their original form without the need of additional energy. Limited to narrow material widths, methods of aggregation were necessary to cover expansive areas of surface. Three components of envelope design had to be developed simultaneously: form, structure and materiality. To do this, each student produced a series of parametrically-driven pattern studies.

THIS PAGE: ERIN CUEVAS



ARCH 402B. Instructors: Olivier Touraine.

The impacts of urban planning decisions are usually not detectable after decades of implementation. This studio investigated the option of instant gratification. Capping a freeway or similar infrastructural areas ends up being faster and more effective than the tedious and long process of modifying zoning rules. The purpose of this research is to investigate the interfaces between urban infrastructure and the potential use of its adjacent space. The attempt is to create a synergy capable of attracting architectural and programmatic diversity of components.

Metropolitan development often has been associated with a constant growth speed—growth has followed a regular motion: predictable, quantifiable. Today one can question this slow motion path. Development is expanding rapidly in an unpredictable manner, out-of-sync with traditional human settlement patterns.

Space is the most precious commodity of urban development. Compactness and multi-use capacities have been improving urban life from the very beginning of human settlements. One can appreciate the richness and diversity that dense and mixed-uses spaces provide.

Conversely, space is wasted in L.A. in ways inconceivable in other urban contexts. A very low density and a very mono-programmatic organization of space implies that we are spending so much of our time in cars to go from A to B when actually A could be on top or nearby B. The footprint of our infrastructural system is enormous and continuously growing, like a body-builder on steroids.

One can assume that radical zoning rules will become reality and will affect Los Angeles, and in the long term will improve the sprawl situation. But this will be a matter of more than one generation. For these reasons, this studio investigates “immediate urban gratification”: fast and now, working on the containment of infrastructural impact, or even better, on flipping the infrastructural impacts of the city as a positive option.

THIS PAGE: MINH TAM BANH

UNDERGRADUATE

5TH YEAR

STUDIOS

5TH YEAR STUDIOS

The range of topics explored in the culminating 5th year seminar/studio sequence of the B.Arch. program reflects the diverse interests of the students. The paired seminar and studio choices were oriented around themes determined by each individual faculty. From the innovation of small products to the redefinition of urban centers, the topics collectively required students to synthesize in-depth theoretical studies with rigorous processes of design throughout the course of an entire academic year. Students with more individualized applied design research topics enrolled in an additional preparatory course in the fall.

The design projects of the spring were derived from research undertaken in the previous fall term's seminar. Urban design issues were covered in the sequences offered by Kris Mun, Victor Jones, and Warren Techentin. Diagramming was an invaluable tool for Mun's studio in which students redefined the American theme park. Jones' group focused on pioneering models of infrastructure from a bottoms-up point-of-view; Techentin's students pushed the envelope with notions of "radical pedestrianism" and other methods of psycho-geographic wandering and way-finding along Hollywood Boulevard.

Other studios developed specific programs as prototypes for future architectures. Ambitious future housing systems incorporating technological advances and environmental challenges framed Alice Kimm's studio; innovative programming methodologies for new urban building prototypes inspired Kara Bartelt's students to question how multiple facets of future living will converge; and investigations in new nomadism via the redesign of the modern trailer park drove Jennifer Siegal's students to reconsider the typologies of dwelling. Responsive systems underlay the studios of Doris Sung and Lee Olvera: Sung's studio challenged the urban farm program vis-a-vis biomimicry, material developments, structural systems and green technologies; Olvera's group redefined processes such as making, producing, fabricating, and manufacturing relative to current technological trends and changing cultures.

Because the 502 studios support a broad variety of interests, students are able to either test new design processes or investigate familiar ideas to new depths. Aided by structural, MEP, sustainability, and facade consultants from ARUP/Los Angeles as well as new generative form-making softwares, research into performative design principles, new programs/cultures, effects of climate change, energy-efficient strategies, and intelligent design inspired the 5th year students to develop projects from imaginative concept to comprehensive product. The results in both depth and breadth display the robustness of the overall program.

Doris Sung



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DESIGN CONVERGENCE: REVIVING ROUTE 66 **AS THE NEW ENERGY CORRIDOR**

ARCH 502. Instructor: Kara Bartelt.

Route 66, constructed in 1926 and dismantled when Interstate Highways were established in 1984, was once the first long distance road network connecting Chicago to the Pacific and still exists today winding through urban, suburban and rural areas. Along its path are metropolises and ghost towns, symbolic of the once domination of the touring vehicle - now replaced by engineered roadways.

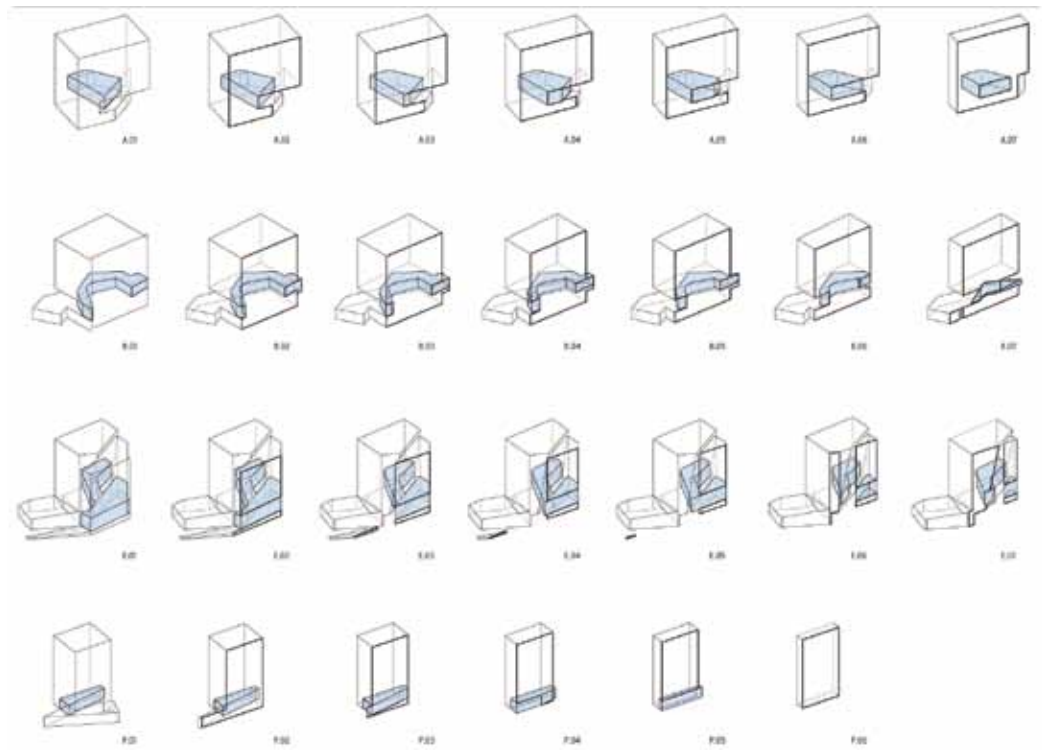
This studio rebuilt Route 66 as a New Energy Corridor. Buildings cannot generate all the energy necessary to power themselves within their own footprint. Even with the addition of positive energy sources in their design, they are still reliant on the city infrastructure to function. For this studio we built a networked infrastructure along Route 66 with the aim of making a Net Zero project in LA.

With land prices high in the LA basin, one needs to go out to find lower prices and space to expand. Outside of LA there are significant industries that use or abuse natural resources to fuel their interests. This creates a contrast of energy production versus energy use, building density versus sprawl, population variety versus homogeneity, etc.

We examined Route 66 from Santa Monica to Barstow. In teams the students chose two sites, one in the midst of Barstow for a New Energy Station - the 21st Century version of a gas station. The New Energy Station was a stop on the vehicular roadway to Vegas or beyond, fueling visitors with food and energy for their vehicles and also an energy farm for its LA counterpart. In Los Angeles, sites were chosen along Route 66 for the Net Zero building - this building was the public storefront for a Fortune 500 company. A smaller energy station, corporate offices, the public showroom for its energy-generating partner, etc. - the specific program was of the student's determination.

THIS PAGE: SOO JIN KIM





ARCH 502. Instructor: Victor Jones.

Entitled, *BOTTOMS UP, Another Side of Infrastructure*, this studio explored the idea of infrastructure as architecture and architecture as infrastructure. Infrastructure in the United States has generally been conceptualized, designed, and constructed by those within the discipline of engineering. The unique capacities of this discipline are, according to the myth, the ability to deploy pure reason with maximum practicality, efficiency, and expediency. In doing so, one might say that infrastructure is pre-disposed to solutions of pure utility—and thus any evaluation of these products performance has generally been narrowly constrained.

If we understand utility as a disciplinary construct—and in fact profoundly subjective – then subjective premises may also inform the practice of designing infrastructure, like architecture. These include social, civic, and aesthetic concerns that define the particular character of each project. By embracing these subjective externalities, pioneering solution may offer an expanded notion of performance in infrastructure design and reinforced its disposition as a creative proposition.

Each student was to develop an innovative model for retrofitting or replacing a piece of existing infrastructure that enables his or her work to transcend the original purpose. Each student was responsible for selecting their own site as well as developing their own program. Additionally, each project focused on constructing new formulas that align themselves more aptly to contemporary culture. Students were asked to formulate inventive methods for integrating higher performance standards for infrastructural projects that are more often defined by a single use. Students drew from a large base of contemporary precedents not only in terms of functionality but also as a means for testing a speculative idea formulated from generations/decades of theoretical propositions within the design disciplines.

The primary objective of the studio was to challenge the prevailing, and limited, ambitions of infrastructure design in the United States. By presenting a critical analysis along with a design proposition, one might offer an expanded concept of performance wherein the distinctions between architecture and infrastructure might begin to blur.

THIS PAGE: DANAH MANGAHIS



LIVING IN EQUILIBRIUM: TECHNOLOGICAL VISIONS FOR FUTURE DWELLING SYSTEMS

ARCH 502. Instructor: Alice Kimm.

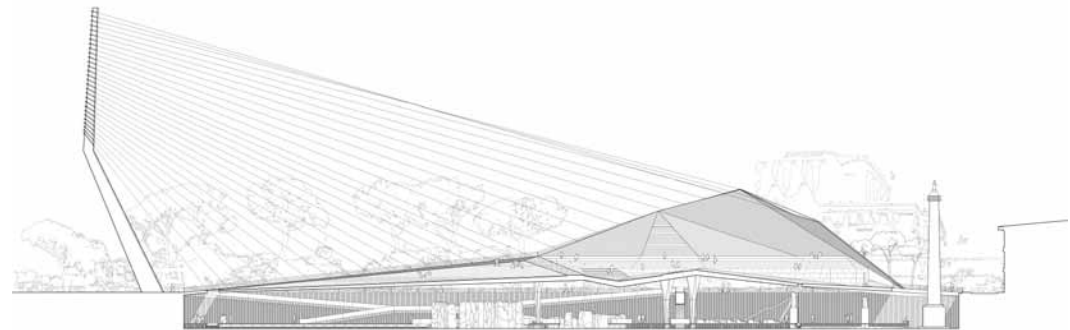
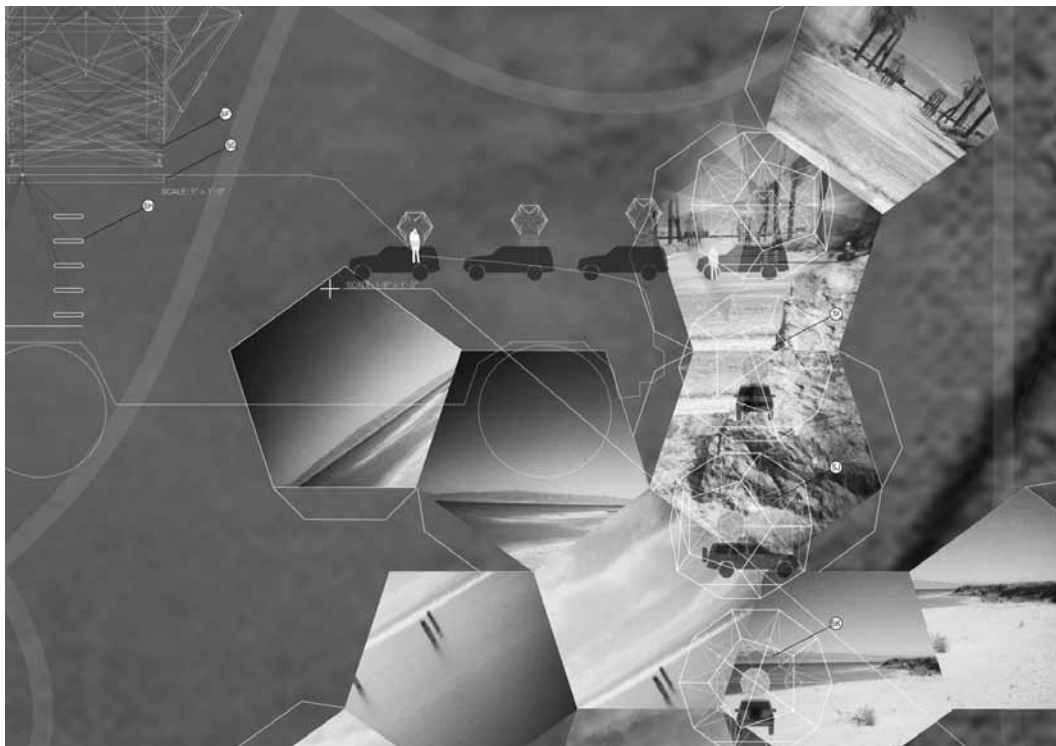
To comment on “the world as we know it” is to deliver an oxymoron. The world is transforming rapidly, and rates of change – whether economic, cultural, technological, climatic, or otherwise environmental – have risen to levels that demand significant alterations in how we interact with our surroundings. What of the dwelling, then, that most basic and heartfelt of designed environments? How might urban dwelling systems of the future respond to these demands? How might these man-made systems interface with existing and increasingly disturbed natural systems to reverse some of the negative effects of environmental flux? Students were asked to become informed (at varying scales) about those aspects they deemed significant in defining the contexts in which we build our dwelling systems, and to explore extreme conditions that might exist in cities on the western coast of the United States and elsewhere in the year 2060 and beyond. Advancing sustainable, structural, and material technologies played an important role in how these conditions were dynamically addressed in the design of adaptable urban dwelling systems for the future. The design brief was broad: to integrate technology and design; to create an architecture that seeks to bring contextual forces or conditions into equilibrium; to offer up an optimistic view of sustainable and self-sustained living; and to not forget that at the core of the design of dwelling systems lies the human experience.

[1] JOSEPH SARAFIAN, [3] MEI NG





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TRUTH IN MAKING, CRAFT: AN ARCHITECTURAL INQUIRY

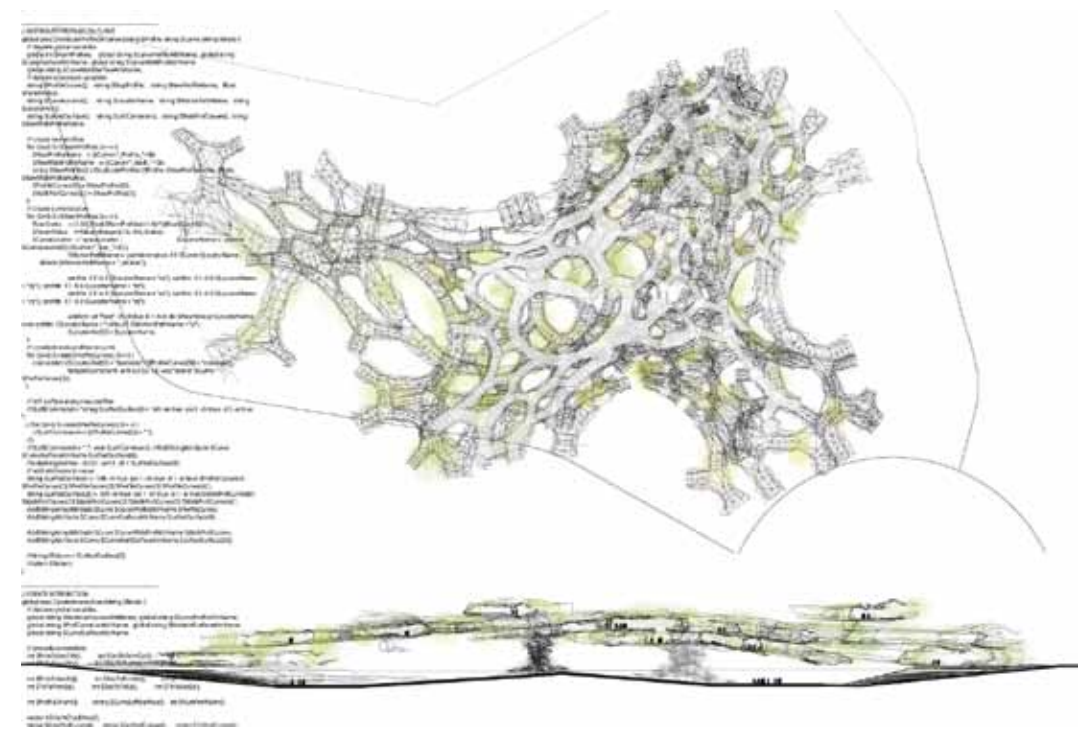
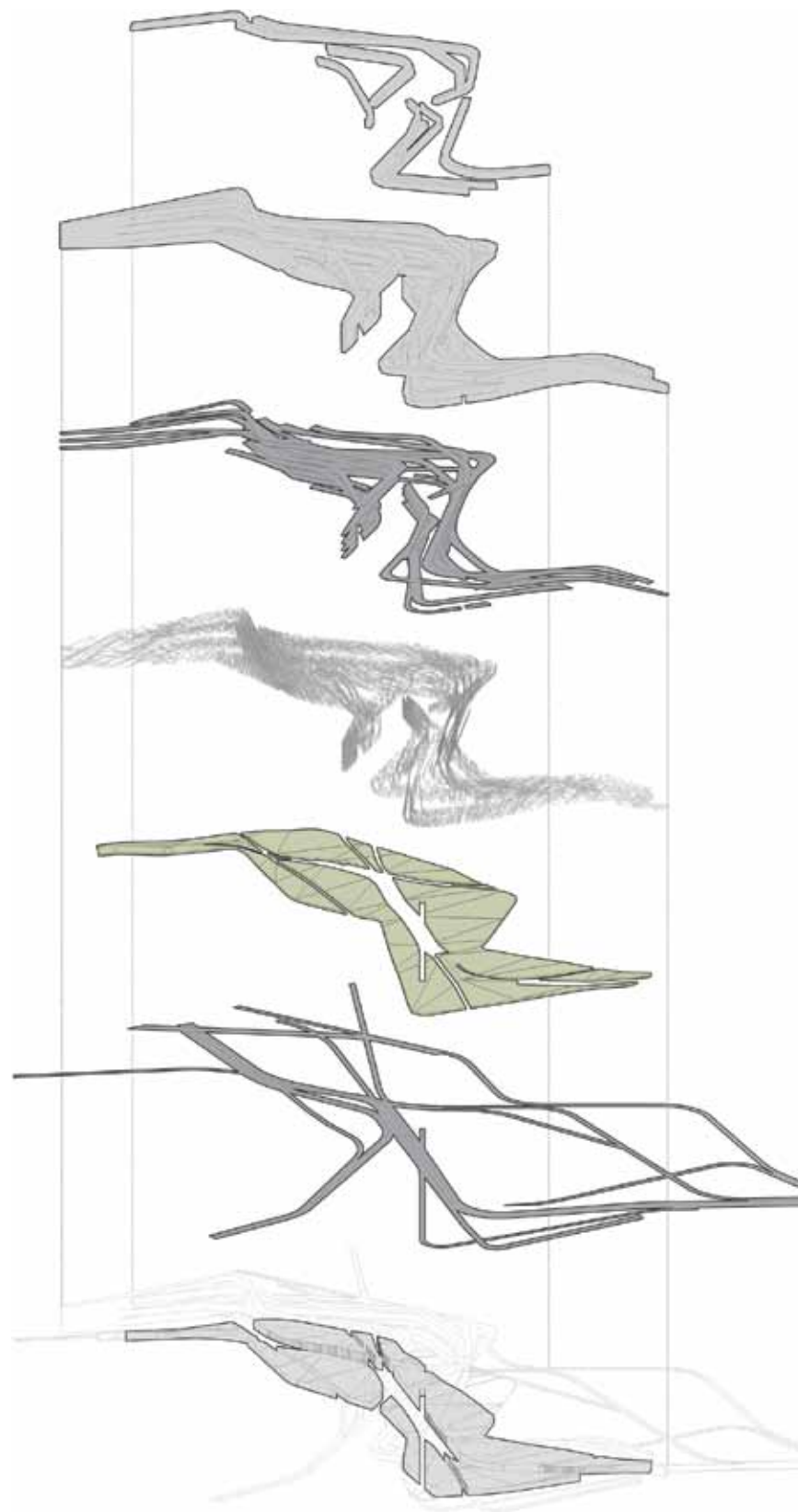
ARCH 502. Instructor: Lee Olvera.

The process of making something, anything and everything from the products we consume to the food we eat has returned to the forefront of our consumer consciousness. The act of producing, once generally eclipsed by the product being produced, now in many instances has risen to a level of equal importance. Consumers at all socio-economic strata demand, even crave 'more-for-their money.' Having transcended base monetary issues, the desire for 'responsible making' has encompassed an ever-expanding range of cost and value parameters including cultural, social, political, technological and environmental.

The preceding seminar presented a limited collection of largely contemporary readings to generate a series of critical dialogues that explore the issues of making. Making not only as a revelation of process and assembly but also as critical investigation into the philosophical and the practical issues of craft, art, and aesthetics, the polemic often presented by their respective definitions and the inherent personal, material, societal and financial investment they require. Spanning the hand-made, machine-made and non-made, the functional and non-functional, discussions cited examples of architecture and building, fine art, practical arts and crafts, product design, graphic design, culinary arts and music.

The studio developed an individual-driven range of responsive architectures based on investigations, semi-independent and otherwise, into a variety of material processes ranging from the boutique –the artisan, to the industrial –mass-produced scale. Students conducted detailed research into a personally determined selection of consumer products and/or services, critiqued their design, technical and cultural merit, and their technical/ technological practices and logistical processes. The analysis led to a critically informed determination of client, site, program, planning proposal and ultimately the design of a 'production' facility. The facility through its architectural scope, scale of development and formal parameters directly demonstrated a complete understanding of product.

[1] [2] SUSANNAH LOEWENSTEIN, [3] LEON WOOD



EXPERIENCE ECONOMY – BREEDING A NEW URBANITY

ARCH 502. Instructor: Kris Mun.

"Without modifications to the social and material environment, there can be no change in mentalities. Here, we are in the presence of a circle that leads me to postulate the necessity of founding an "ecosophy" that would link environmental ecology to social ecology and to mental ecology."

—Guattari, The Three Ecologies

This is the city

...of machines and bodies..

...of bodies and speed..

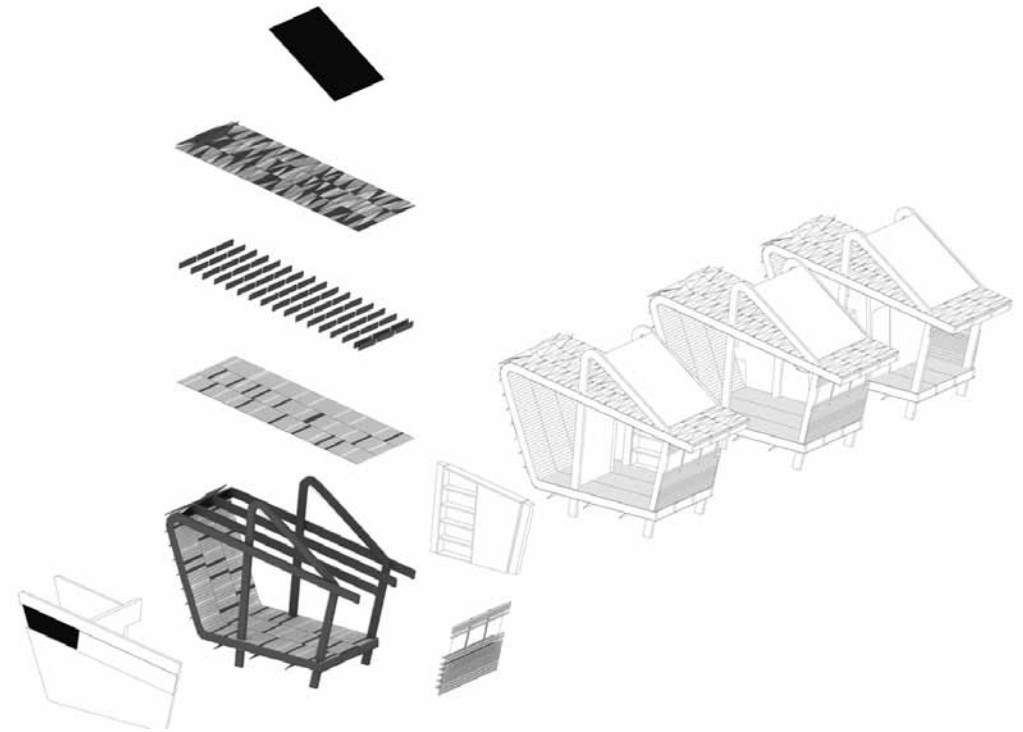
...of the materialization of senses..

...of the structures of experience..

Architecture is a company of forces that drive economies, all forms of economy, money, value, desire, experience, energy, food, privacy, machines, amusement, technologies, socialities. The studio invents diverse systems and programs to create a collective "ecosophic" territory. The site is a "void" of 52 acres of asphalt in the heart of Phoenix Metropolitan area that is reserved for the annual State Fair that takes place once a year for 2 weeks, bringing in approximately one million visitors. Visionaries have merged the ideas of machines and cities, looking forward to a new future (Futurists, 1912) that must be reinvented in light of speed of technology. Like Coney Island (ca. 1840) which became a model for the city of New York (Delirious New York, Koolhaas), the Fun Palace (Cedric Price) that is a machine of events (1962), and Constant's ever-changing New Babylon, and the Situationist City as a pinball machine (1960), the amusement park-city is a city of events, desires and new social orders.

In order to re-think the urban condition of the hegemonic order that is often derived from a few select who "masterplan" the structure of the city, we develop (micro) agencies of different orders that breed the formation of life of a city. The new territory is an experience economy, a "machine" that exists in the presence and absence of the State Fair. Divergent entities/realities produce a metastable condition where tension creates a heterogeneous environment aiming for a (self)sustainable economy.

THIS PAGE: [1] ANDREW KIM, GARRETT HELM, CHIEHHSIANG HSU,
[2] CATHERINE DOLAN, EUNICE LEE, JAMES GUILLOU



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DRIFT HOUSE: LOS ANGELES 2020



ARCH 502. Instructor: Jennifer Siegal.

"We no longer believe in the monumental, the heavy and static, and have enriched our sensibilities with a taste for lightness, transience and practicality...We must invent and rebuild ex novo our modern city like an immense and tumultuous shipyard, active, mobile, and everywhere dynamic, and the modern building like a giant machine."

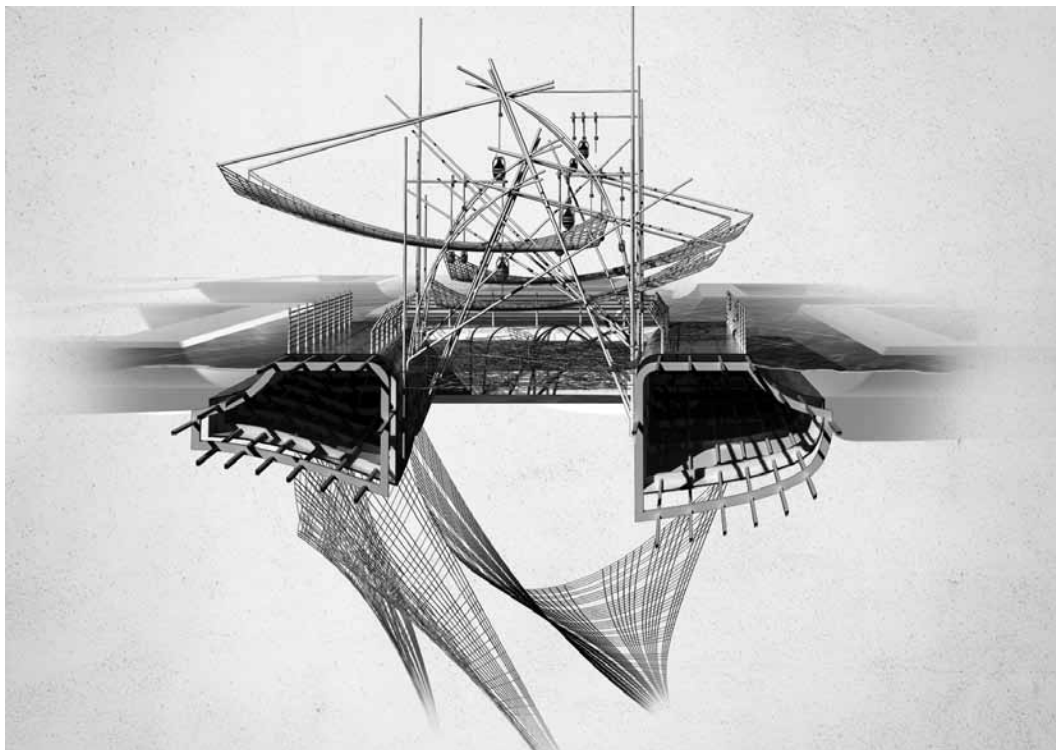
—Filippo Tommaso Marinetti and Antonio Sant'Elia
(The Futurist Manifesto, Le Figaro, 1909)

The information age whets our appetite for the exploration of the unknown. As inquisitive social beings and innate explorers of the universe, we are standing at a new threshold of curiosity and movement. More than idea-sharing over vast distances, we are poised to physically actualize these explorations. Biological and technological advancements reveal themselves in our everyday lives, echoing prophecies and environmental visions from American pulp science fiction. Architecture today rolls, flows, inflates, breathes, expands, multiplies, and contracts, finally hoisting itself up, as Archigram predicted in the early 1960's, to go in search of its next user.

The comprehensive degree studio investigated the properties of prefabricated and mobile architecture.

Considering the scales within and between the body, the home, and the environment, the studio challenge was to reformulate the American trailer park as a heterogeneous collection of prefabricated "intelligent platform" living units as stand-alones and in combination with each other. Think "Mars Rover meets Burning Man meets California campground," as these efficiently designed spaces provided flexibility, mobility and open-endedness. We don't need to look far beyond our own Southern California backyard to glimpse the future of the dwelling. Creatively combining elements of flexibility, real estate values, increasingly fragmented family structures, mass production and disaster relief, the designs proposed sought to upwardly mobilize the conventional trailer park from a marginalized entity to a functional, efficient, communal way of living. We found inspiration from a range of sources: Alison and Peter Smithson, Archigram's Drive-in Housing, the work of Lucy Orta, Reynier Banham, the Arte Povera movement and the Eames House. Residential mobility increasingly challenges permanent settlement in the twenty-first century.

THIS PAGE: ALEXANDER WHITEHEAD



SWELL: DESIGNING PERFORMATIVE ARCHITECTURE(S) FOR A CHANGING WORLD

ARCH 502. Instructor: Doris Sung.

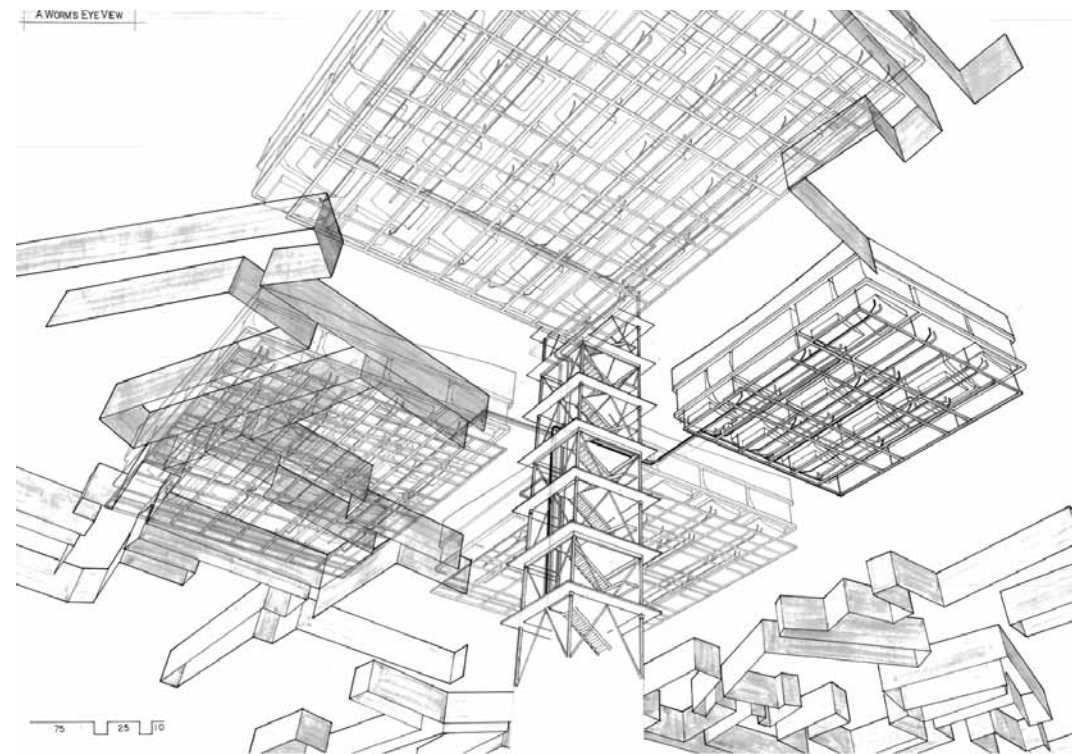
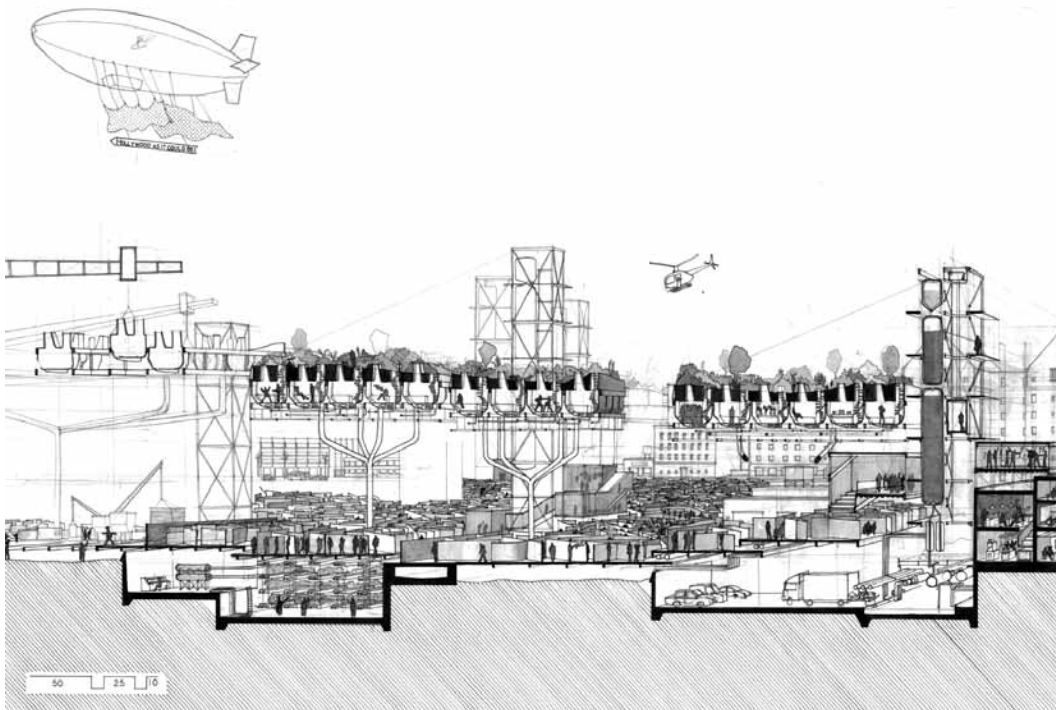
The term performative has become the catchall phrase in architecture that, like the word sustainability, reflects the current cultural interest of comprehensiveness and, as a result, is hard to define singularly or precisely. Branko Kolarevic talked about performance in architecture as a “comprehensive approach to design,” placing it above form-making as a design principle. The term performative means choreography or articulation of the performative. It is the shift of interest to things mutable and transient, not static and fixed. In some ways, it is a temporal condition where contexts and fields continually affect the equilibrium of the organism or architecture. It can be applied to how a people occupy buildings, how parts of buildings go together in the balancing of systems, how generative rules or forms of algorithms influence values and parameters, or how interactive materials and systems respond to outside influences. “In its shift to the performative, architecture has moved its attention from the transcendental and heroic projects of modernism to a more situational and material understanding of architecture as a performative act, a kind of choreography of active systems in the environment” (Stephen Turk).

The Urban Farm was the theme for this studio, which required students to design structures that responded to fluctuations in size, use, and climate. It was up to each student to determine what item is being farmed (information, kelp, seeds, fog, pigs, viruses, etc.), the detailed program, functionality and utility of their farm. Students were encouraged to formulate their own specific programs and visionary concepts within this broad theme in response to an outside “swell” stimulant (context, program, environment, culture, politics) with the goal of designing responsive architectures and incorporating performative systems.

Students chose their own sites within the urban context, contending with climatic change due to global warming such as increasing winds, rising temperatures, changing humidity, rising sea-levels and acidification of the waters. Taking advantage and harnessing some of these changes in architecture challenged the idea of performance in architecture and speculated on the potential tectonics, programs and future for these near-future conditions.

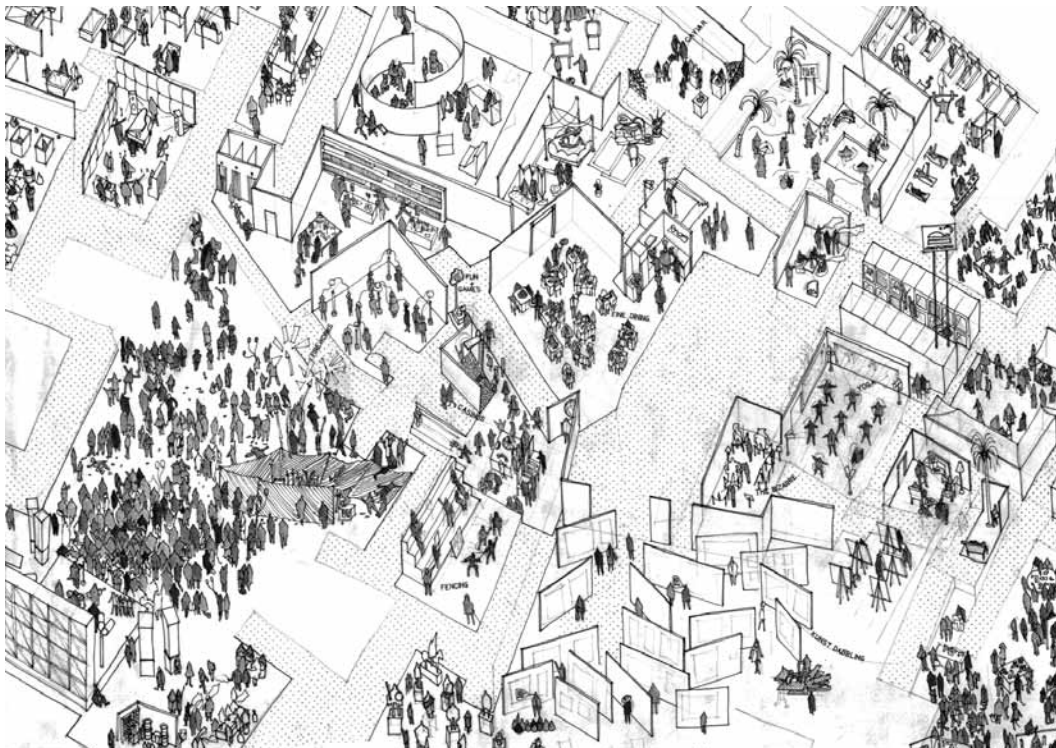
THIS PAGE: GREGORY CREECH





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RADICAL PEDESTRIANISM



ARCH 502. Instructor: Warren Techentin.

This studio asked students to investigate, develop, and invent new architectural strategies for circulation which will augment the Hollywood Boulevard historic district, currently a formless array of cultural, retail and entertainment programming. The cultural merging in recent years of the museographic and retail into a carefully scripted, interrelated and choreographed set of experiences has opened up new modalities of design and media integration in public space and promises to make our environments (and Hollywood Boulevard specifically) more performative and participatory than ever before.

The first part of the studio asked students to use strategies of the *Derive*, *Promenades Architecturales*, psycho-geographic wanderings, desire paths and modes of way-finding to investigate off-Hollywood Boulevard as a social, cultural, and architectural milieu in an effort both to critically understand the un-mapped phenomena of this area as well as to develop inclusive design strategies for urban space and a building which explicitly endeavors – through scripted circulation patterns – to augment pedestrian expectations. The second part of the studio asked students – in a project incorporating an array of programming typical of the district – to graft onto a given set of sites a second, performative, catalytic layer of cultural and commercial programming. How can this programming supplement or even sublate the expectations pedestrians bring to Hollywood Boulevard? In addition to addressing the spectacle of the Boulevard itself, students were asked to investigate mid-block pedestrian development as a viable alternative to the existing, street-oriented programming strategies.

THIS PAGE: PATRICK BOURGEOIS

GRADUATE

STUDIOS

THE GRADUATE PROGRAMS:

2010 – 2011

Graduate students come together with a diverse and distinguished faculty at the crossroads where knowledge of current conditions and history is dissected, extended and transformed. Theoretical explorations are combined with technical and performative examinations. Outcomes are not predetermined in advance, just invariably a step or two beyond current design intentions and production conventions - ready to transform the future in the face of wide-ranging, critically important present conditions and local, social and contextual interpretations and global challenges.

Five graduate programs are located in the new Robert Timme Graduate Research Center. The former roof of Watt Hall of Architecture and Fine Arts has been converted to a light filled steel and glass third floor studio space whose open plan configuration facilitates interaction among students and faculty across distinct but highly related disciplines. The primary intention of the graduate school is to reinforce the integrative approach of the graduate programs. To meet this objective, urban studies and theory classes cross disciplines.

The academic opportunities offered are numerous, thus students are provided options to pursue their own professional interests. The graduate student population of 200 is enrolled in four Master Degree Programs and four Certificate programs in Architecture, Landscape Architecture, Building Science, and Historic Preservation and a new Ph.D. degree. A unique aspect of these programs is that students immersed in any one of the master degree programs can simultaneously obtain a Certificate in one of the other three programs. This form of interdisciplinary collaboration is considered essential to address critical environmental and social issues of 21st century global conditions.

The first professional degree programs in Architecture (MArch.) and Landscape Architecture (MLA) are designed to meet national accreditation standards by providing a comprehensive set of basic comprehensive professional studies. Upon completion of this basic sequence, students are intermixed with post-professional degree students in advanced studios and courses to generate progressive, supportive and sustainable projects, places, and infrastructures suitable to cities around the world, especially cities of the Pacific Rim.

In the Post Professional Architecture degree (March.PP) program, theoretical studios in architecture are utilizing digital parametric software and biometric, algorithm and robotic thought processes utilizing Rhino and Gehry-modified CAITA software. Visiting faculty from both ARUP and Buro Happold offices provide the technical expertise for the parametric investigations and explorations where geometry can be rationalized and tested. The Urban Lab sequence examines past urban successes and failures and projects future potential environmental solutions for expanding new cities. A team approach is encouraged with classes and studios inter-mixing architecture, landscape architecture and SPPD (School of Policy, Planning and Development) students.

LA(P) in LA: the Landscape Architecture (MLA) program focuses on integrating and celebrating the complex natural, cultural and social systems of large cities. Landscape design research addresses parallel forces of natural systems restoration, of cross-cultural diversity, and of the transformation of urban infrastructure. The Building Science (MBS) program emphasizes the integration of current practices with the development of new tools and technologies which evolve into a paradigm of synergistic and holistic, integrated building elements, with an emphasis on performative facades. One theme of the Historic

Preservation (MHP) program includes sustainable, renovation and reuse studies, which are tested and evaluated in the restoration of early modern buildings, including the USC-owned Frank Lloyd Wright Freeman House. In the PhD program advanced tectonic building research includes the testing of complex internal and external performative requirements and analysis of skins, the building's exterior envelope.

Research opportunities continue to be an integral element in both the Building Science and PhD programs, with the two new research centers being formed by Dean Ma: COPE, Center of Performative Environments, and CODO, Center of Design Operatives. Another unique opportunity that exists is the Graduate Research Scholars program (GRS) where graduate students are linked with faculty members in the investigation of scholarly endeavors. This program offers wonderful opportunities for students to engage on-going research studies.

A series of study abroad programs expand educational opportunities and global awareness. Dean Ma has established the USC American Academy in China (AAC) where students are immersed in the culture of both Beijing and Shanghai, fostering academic exchanges with the participation of both local and international universities and led by leading creative minds. A second program involves M.Arch, MLA and SPPD students in an urban studio that currently visits a city in South America.

Recent visitors to the graduate programs include Sir Peter Cook, Rem Koolhaas, Kazuyou Sejima and Ryue Nishizawa, Enrique Norton, Ian Richie, Frank Gehry, Thom Mayne, Francois Roche, Michael Maltzan, Laurie Olin, Charles Waldheim, and Stan Allen.

John V. Mutlow, FAIA

Chair of Graduate Studies

MASTER OF ARCHITECTURE

The graduate program in architecture presents a double challenge: that of building up skills and abilities in incoming students with a broad spread of backgrounds, and that of helping students develop a broad understanding of the field of architecture so as to know how to engage an effective and relevant discussion in a specific context.

The architecture program is situated in the larger framework of the SoA Graduate School, which affords unique opportunities for cross-disciplinary collaborations. The master's programs in Landscape Architecture, Building Sciences and Historic Preservation provide not only support courses and the option of obtaining certificates in those disciplines; they are also invaluable, necessary resources for an expanded understanding of our environment and how we can interact with it.

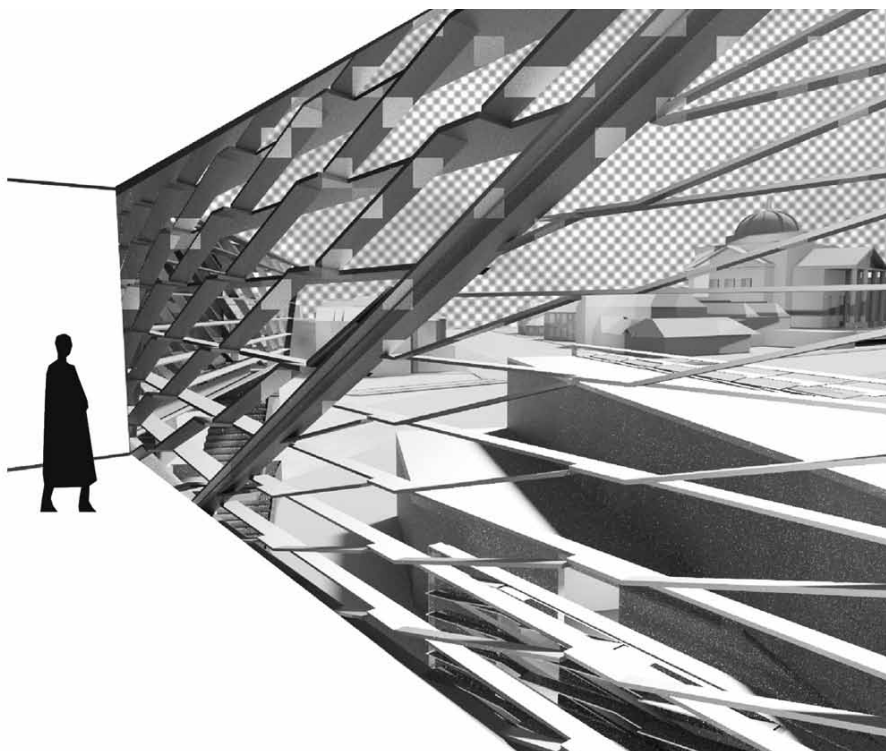
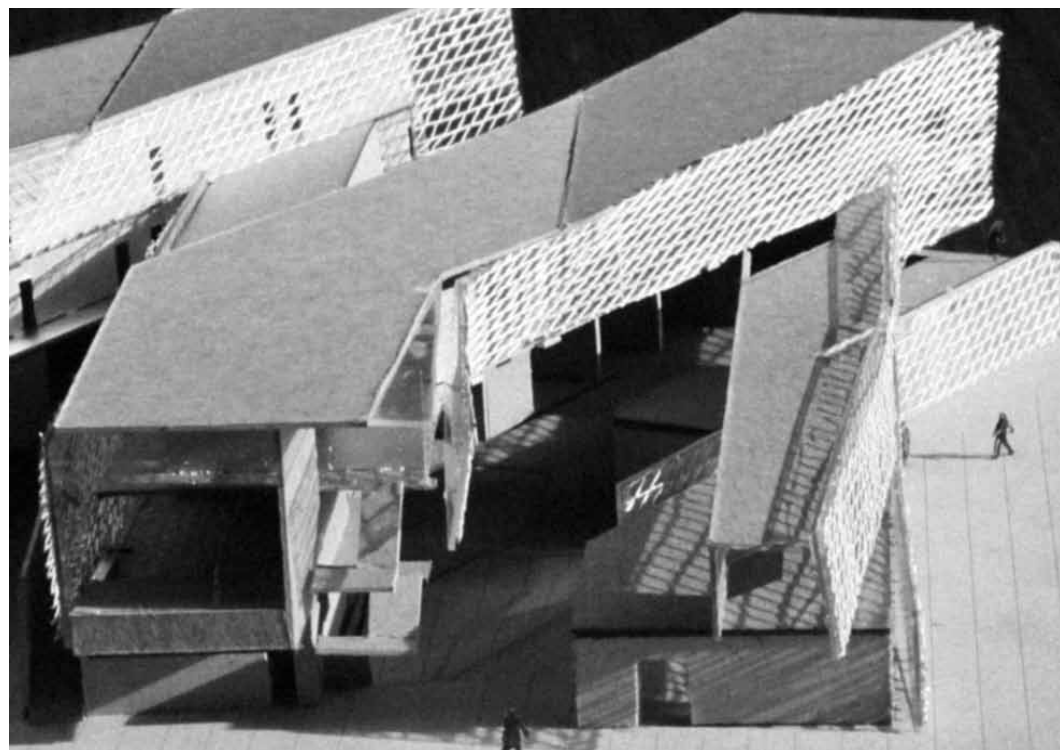
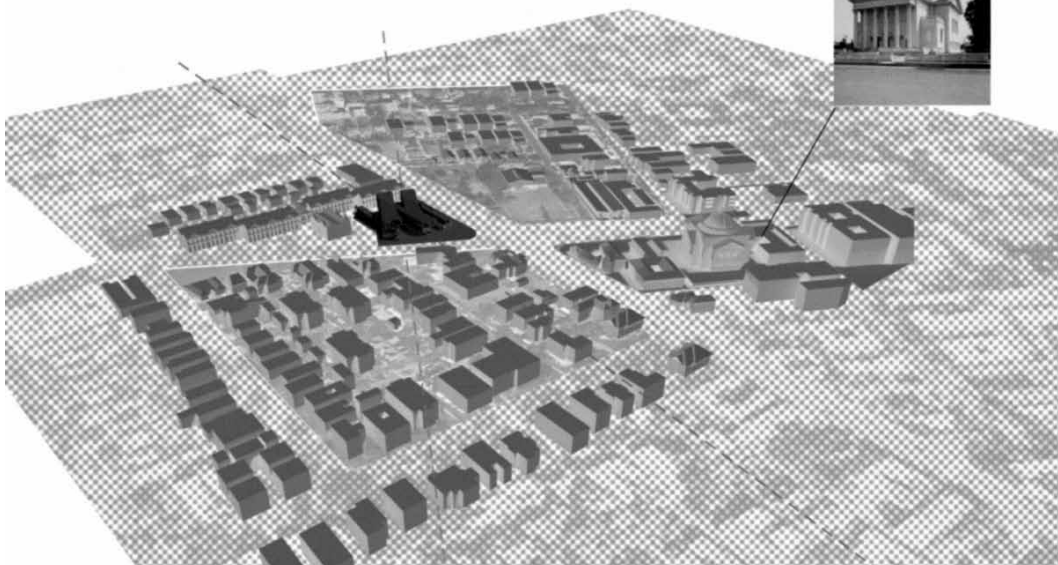
This is not only an epistemological matter; the notion of professionalism itself must come under closer scrutiny. Against a background of manmade and natural events that challenge the finality of our intentions, the question of our mission can no longer be answered by a complacent fulfillment of institutionalized criteria. In architecture school the acquisition of tools and working capacities is balanced with the development of critical perspectives. Working at this intersection is the prerequisite for advancing research and experimentation.

Architecture is on a slow track, in relation to the speed of political, economic, scientific and cultural drifts. It comes into action, if at all, at the end of decision-making processes that invariably overtake it and largely determine its redundancy.

By encouraging an open discussion across programs, collaborations with other USC faculties (these include the Roski School of Fine Arts, the Viterbi School of Engineering, Interactive Media at the School of Cinematic Arts, the Spatial Sciences Institute, the School of Policy, Planning, and Development), institutions and organizations in the Los Angeles region, the program is in an outstanding position to take on these difficult and exciting challenges.

Stefano de Martino, RIBA, ARB

Director, Master of Architecture Programs



ARCH 505AL. Coordinator: Selwyn Ting. Instructors: Andrew Atwood, Jeffrey Kim, Charles Lagreco

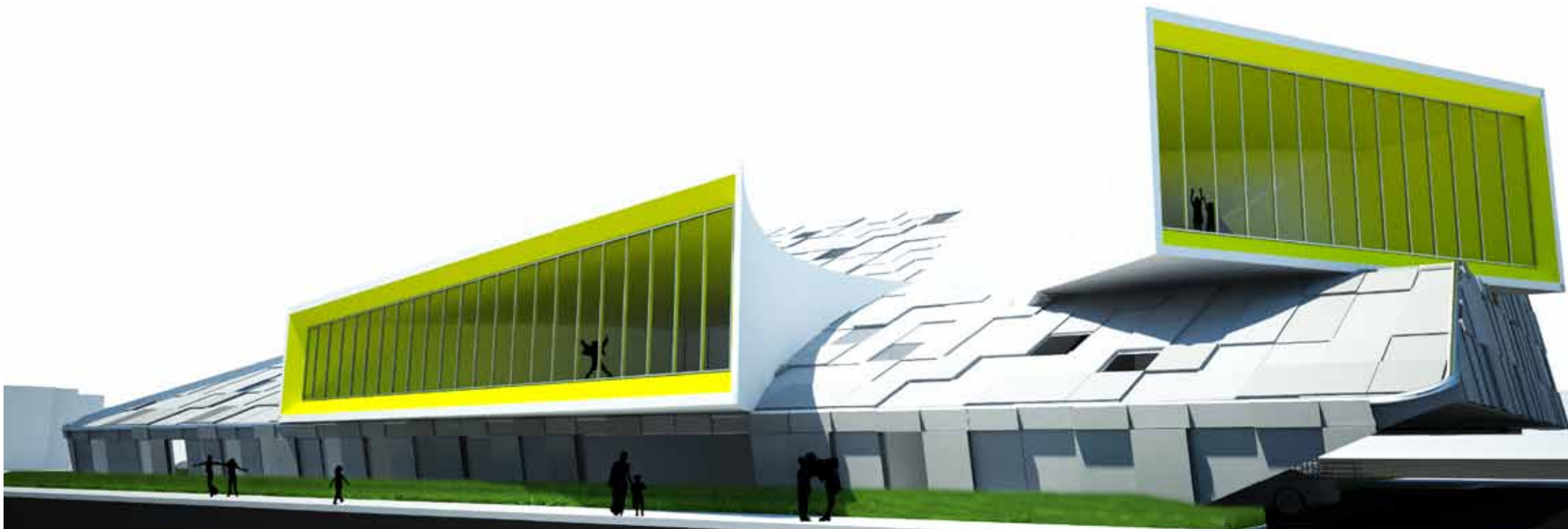
The studio, as the first in the M. Arch +2 degree series, asserted a prescribed sequence of exercises building into and through the project design in order to develop skills and processes fundamental to the practice of architecture. The goals were broad and ambitious, seeking to promote a conscientious community-based program along with developing technical competence in building systems.

Contextual analysis began with exploring a perceptual cartography of the culturally and economically diverse University Park Neighborhood, just north of the USC campus. This exercise ultimately sought to identify patterns, problems, and potentials to generate solutions for a K-5 elementary school. Neighborhood-focused programs of a daycare center and medical clinic further grounded the facility's engagement with the community.

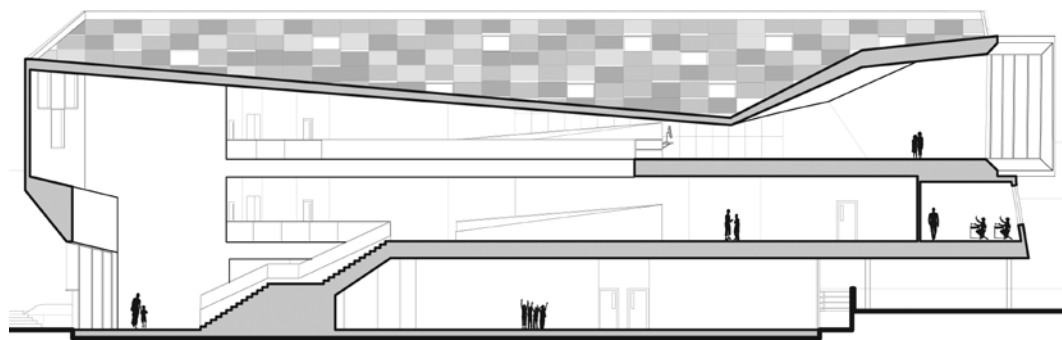
Students' analysis and research were utilized to define physical, cultural, and perceptual parameters that in turn were re-defined as performative components of a generative design process. A series of abstract exercises explored space, form, pattern and organization as an elemental syntax to define program, movement, perception and meaning.

The process sought to integrate form, language, material, and meaning as a singular conceptual gesture. Tectonic and systemic development was integral to the process and extended conceptual execution into the realm of materiality and construction.

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PUBLIC CONNECTIONS IN THE URBAN CONTEXT



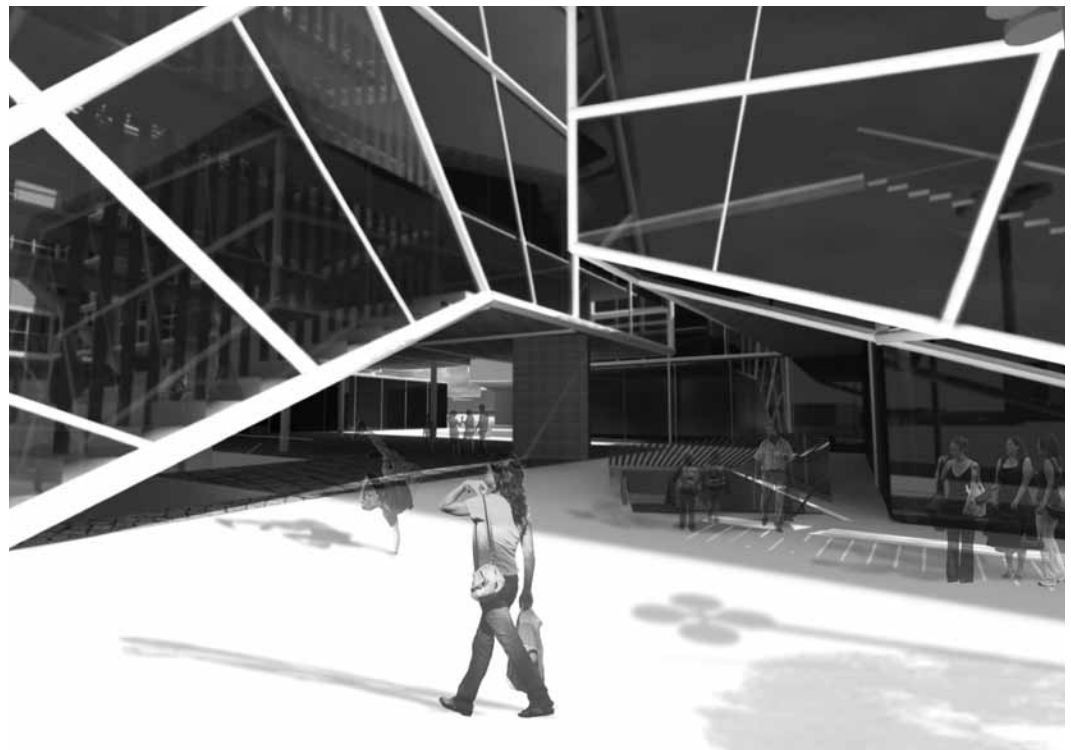
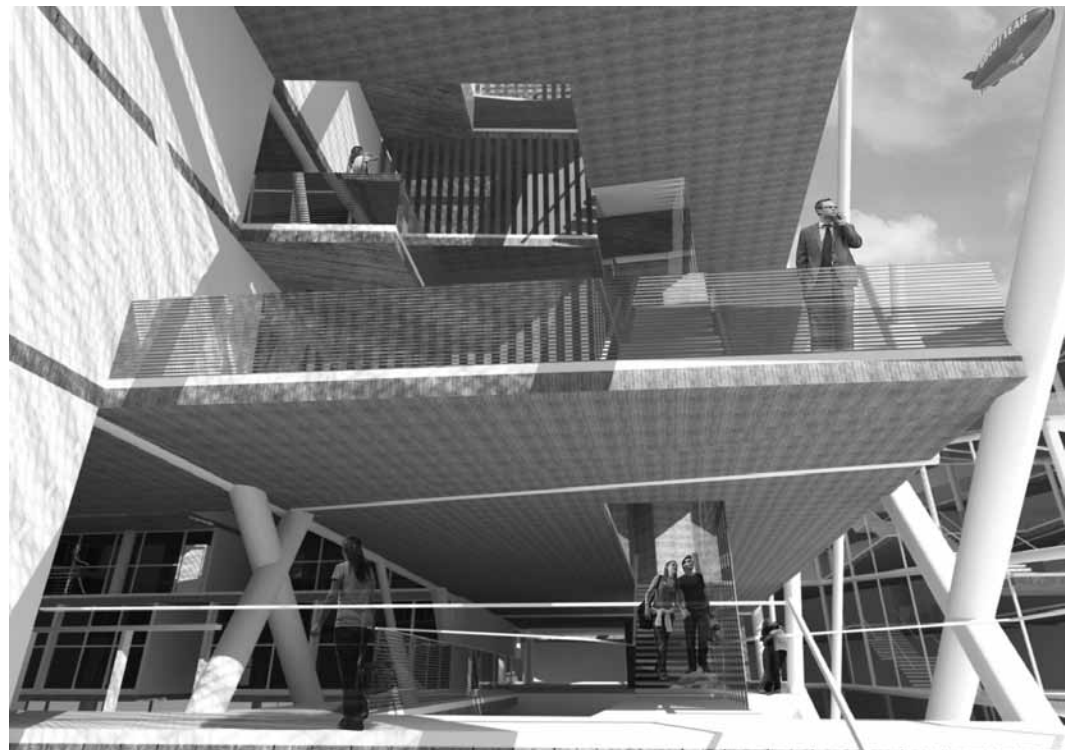
ARCH 505BL. Coordinator: John Mutlow. Instructors: Andrew Liang, Graeme Morland, Marcos Sánchez

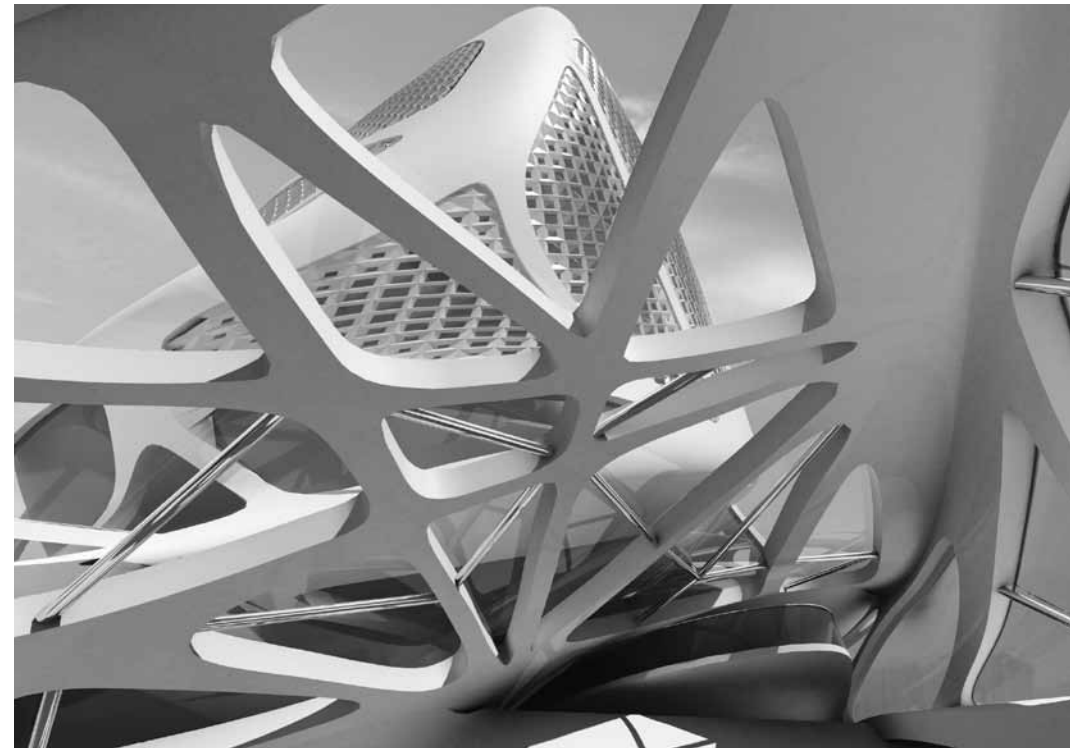
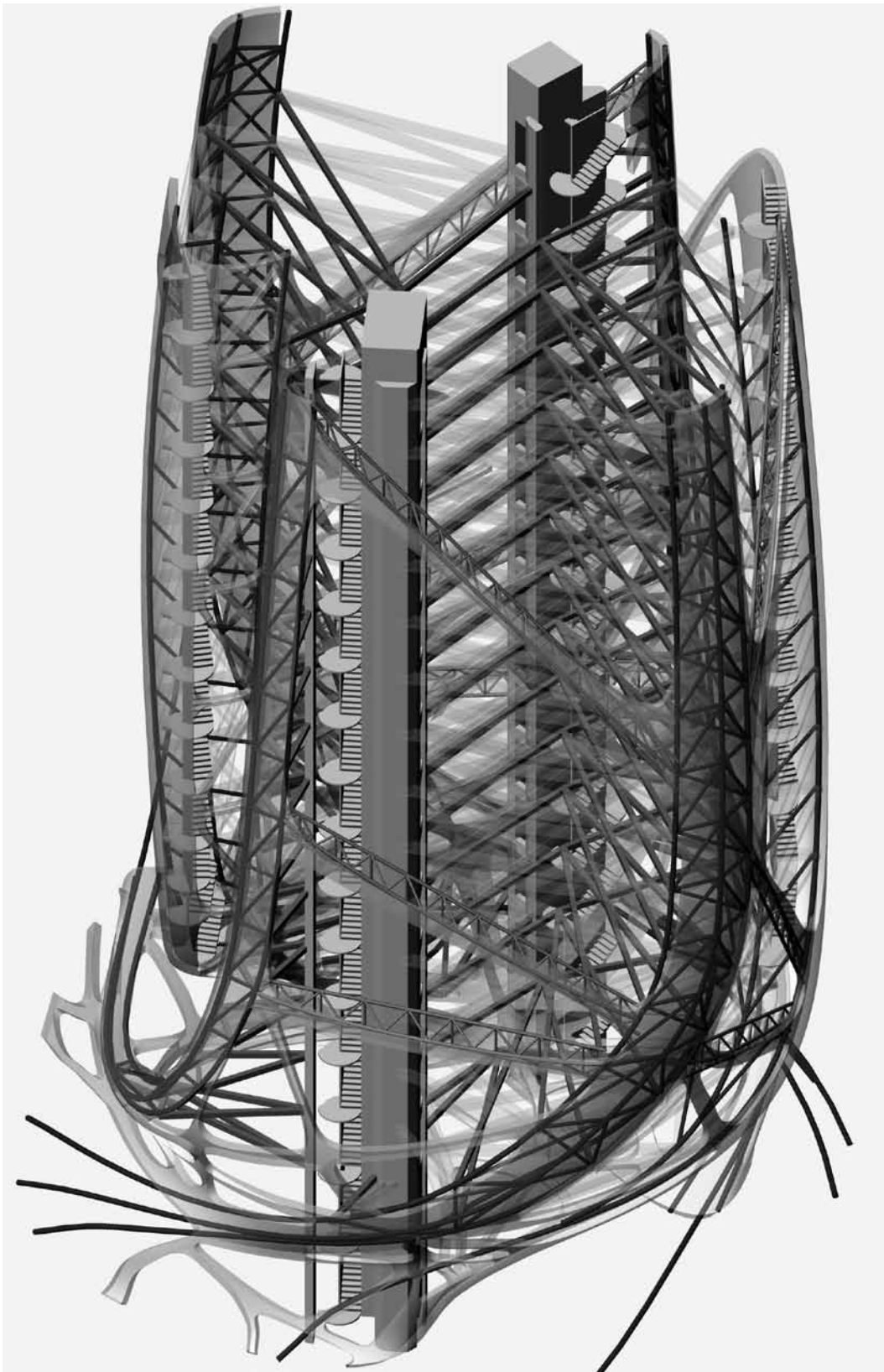
The Graduate Design Studio examines the engagement of architecture and place, where the dialogue between building and context is fundamentally inseparable. At this intersection, buildings reach out beyond the primacy of their program to influence the larger place; similarly, it is where buildings invite the public to engage with the building, consequently dulling the abrupt embarkation of public and private or entry and exit. This transitional domain that belongs to both building and place of building might be described as the entry porch or stoop in a small project, the portico or courtyard in a larger context, or a zocalo or public plinth at the heart of a community.

This dialogue can be extended in the larger urban landscape, where the building takes on the role of marker or campanile, instructing the order of the surrounding city. A classic example of this engagement can be described in the relationship between the Pantheon in Rome and the piazza it engages. The porticoed entrance is not only directly connected to the rotunda within, but also engages an external public room, which it oversees and orchestrates with authority. The Carpenter Center for the Visual Arts in Boston is another useful example, in which the building serves to interlock adjoining streets with continuous public access between. These examples introduce many of the principles of engagement between Building and Place, which are intrinsic to this design studio.

With these intentions in mind, students studied two sites that have the potential of forming an identity and uplifting a less economically advantaged neighborhood. The first was situated at the southeastern edge of MacArthur Park, at the entrance to a Metro Red Line station. The second site lies north of the first, at the intersection of Vermont Avenue and Santa Monica Boulevard, which is also the location of an MTA station. Working with complex problems of public and private space, program integration, density and community amenity, students proposed designs for a mixed-use urban development and public plaza at each of these sites.

THIS PAGE: AARON MALMEDAL. NEXT PAGE: CANDICE WONG





AGENCY AND PERFORMANCE OF THE ARCHITECTURAL SKIN

ARCH 605AL. Instructors: John Enright and Dr. David Jason Gerber

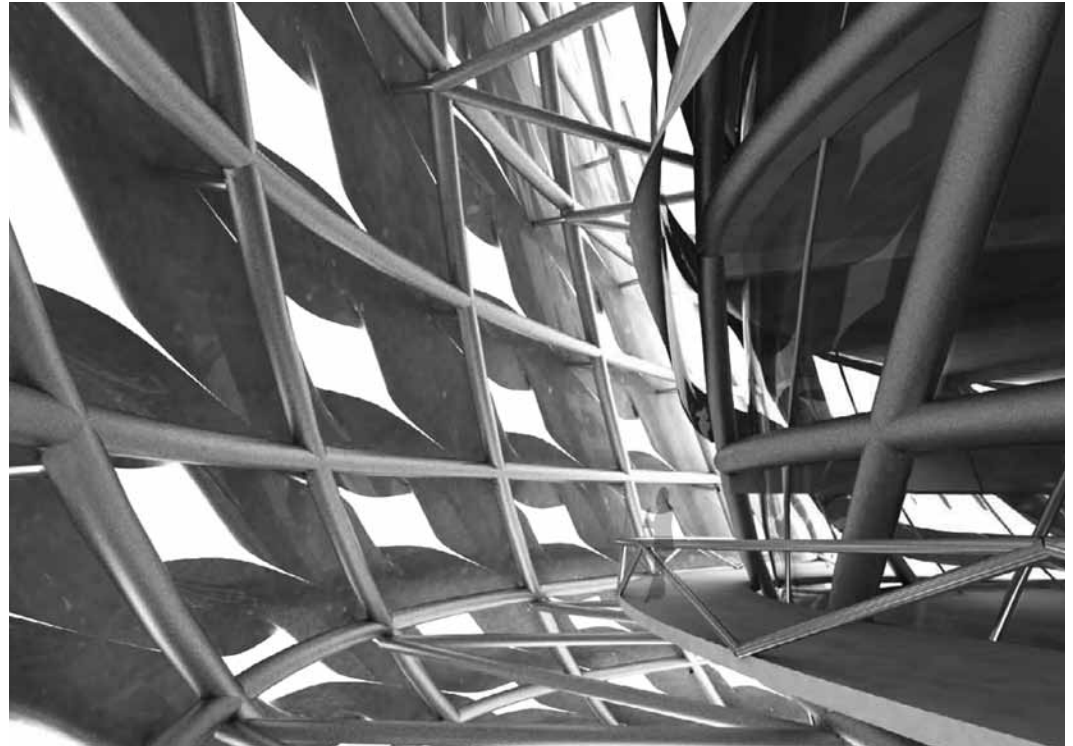
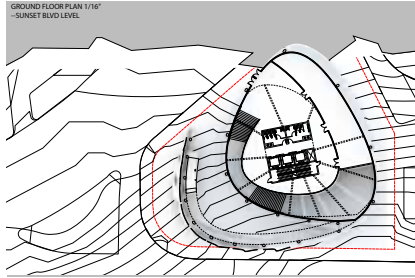
The development of a new hybrid building type, a Sunset Strip mixed use Talent Agency and Health Spa.

Within the field of architecture, we are currently at an interesting time where perhaps there has never been such a plethora of differing architectural strategies fueled by new digital tools. These new modes of design have in the past decade both produced an enhanced efficiency within the design studio while breaking open new possibilities of complex form and tunable organizational strategies. Parallel developments in digital manufacturing and materials research continue to offer new modes of how the built world is assembled, manufactured, erected and realized. Of particular interest is the importance of the surface as the impetus for the emergence of performance driven design techniques that challenge architects to adopt new approaches to the parameters that influence space and material and cultural production.

The studio investigated the Sunset Strip and was tasked with designing a mixed use hybrid building type, that of the new headquarters for the XYZ Talent Agency with amenities; including that of a Health Spa and Gym, street level shops, and a night club and restaurant. The project was expected to engage the city at local, urban and cultural levels and to be developed at a high degree of tectonic and conceptual detail. Taking advantage of Los Angeles and its particular preoccupation with sign and signage, the project addressed issues pertaining to the role of media in structures and urban environments, i.e. billboards, sunset strip advertisements, digital and analog. Of particular interest were the programmatic and surfacial or superficial aspects of a hybrid program; office, talent agency headquarters, health club, nightclub, and public space.

A core set of project provocations were centered around the complex set of questions that inter-related the cultural context of media and cultural production, that of the superficial and surfacial, that of the image and brand production intrinsic to the business of Los Angeles, and that of the architectural surface having to perform in so many ways; that of enclosure, that of image, that of organization, and that of ever changing agency.

THIS PAGE: YIKAI LIN. NEXT PAGE: YING YING ZHANG





CINEMA CITY

ARCH 605AL. Instructor: Geoff Manaugh

In an era of handheld wireless devices, all-you-can-watch DVDs, and over-priced evening tickets, Hollywood needs more than a new distribution model for its products: it needs to rethink the very spaces in which those products are viewed. How can the act of watching films in public be architecturally redesigned?

Today, consumers are just as likely to watch films on their iPhones or home computers—not to mention TVs—as they are at the local shopping mall, changing the spatial nature of how we see and encounter motion pictures. Yet, audiences still seek to watch movies with friends and family; dramatic architectural spaces still bring groups together, enhancing the narrative impact of a film.

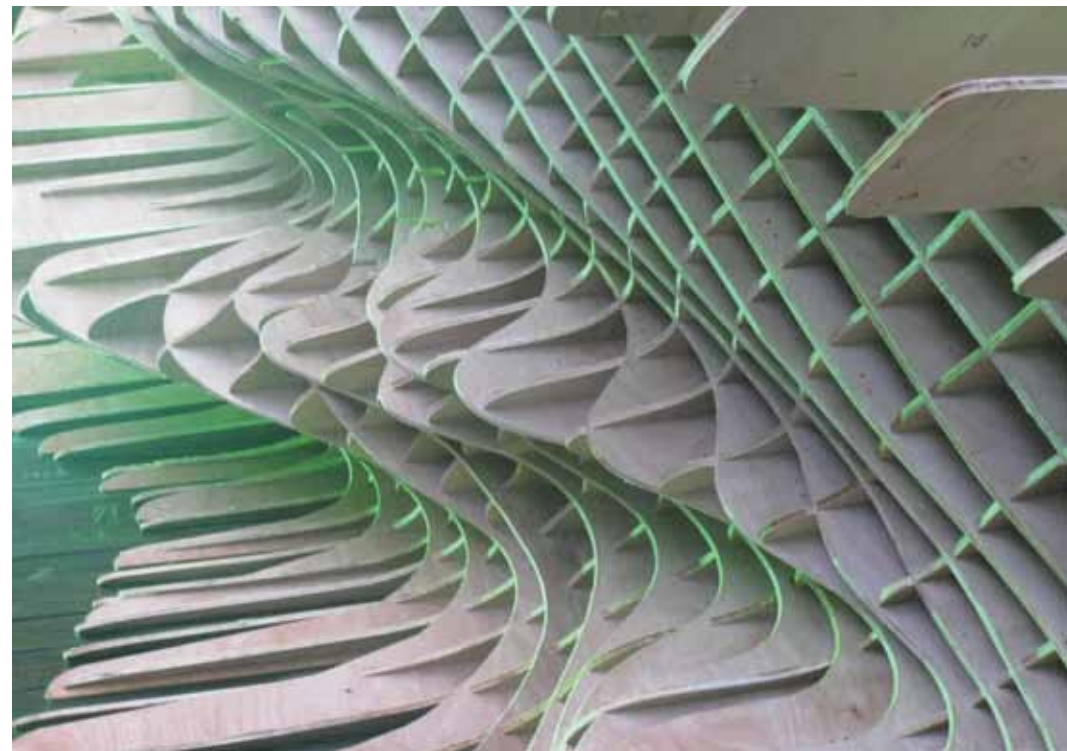
If cinemas, like libraries, face an uncertain social and economic future, what lies beyond the multiplex and the iPad, on the other side of IMAX and at-home on-demand? What spaces or scenarios can architects imagine that might transform—and re-inspire public interest in—going to the cinema? Further, how might these spaces influence and interact with the design of the city itself—and how films themselves are produced?

Using Los Angeles as our target landscape, our studio reconsidered every possible space as a future potential cinema. From private cars stuck in traffic jams to subways beneath the streets; from townhouses to warehouses; from luxury urban lofts to the sands of Venice Beach—what new forms might the cinema of the future take?

To answer this, we visited a number of local cinemas and met with managers and projectionists alike, asking what worked in these spaces and what did not. We also explored numerous design precedents, including drive-in cinemas and in-car screens; illegal cinemas beneath the streets of Paris; rooftop film fests in NYC; specially designed mobile projection vans; and even a cultural nonprofit bringing cinema to the global poor.

We also looked back at the deep history of movie theater and stage design, including rock concert projection technology, outdoor digital advertising, inflatable screens, Baroque opera houses, the “magic lanterns” of Athanasius Kircher, peepshows, planetariums, and even public holograms.

THIS PAGE: JON RENNIE



DIGITALFUTURE AAC 2011, SHANGHAI

Arch 605B/590. Coordinator: Neil Leach. Instructors: Neil Leach, Kris Mun, Roland Snooks.

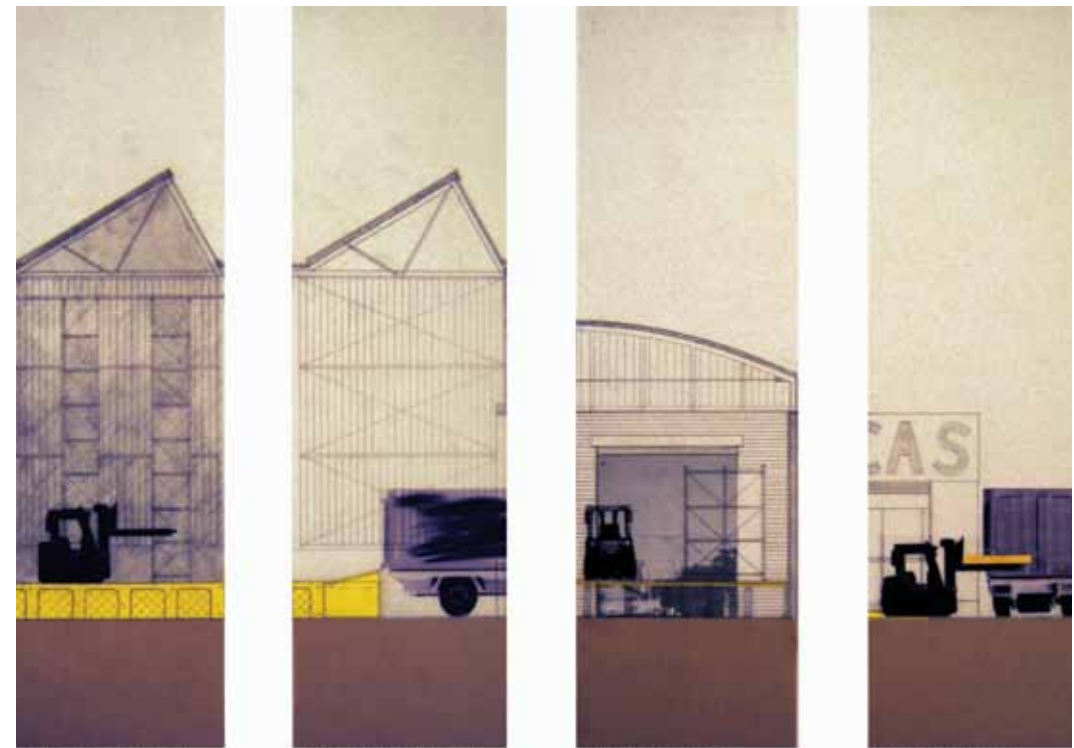
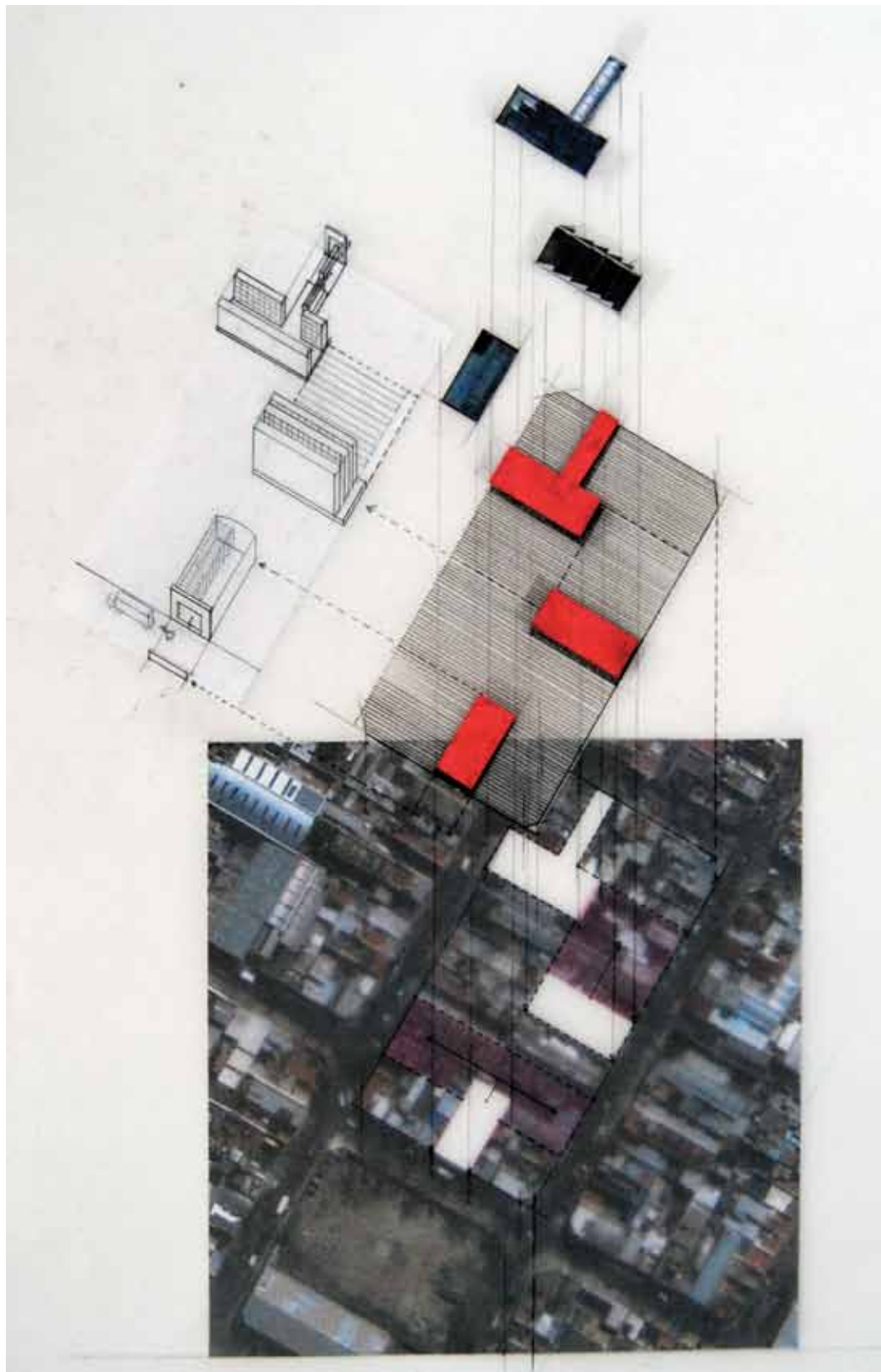
Contemporary digital design practice is in a state of rapid evolution, and no more so than in a country such as China. A significant development in recent years has been the introduction of new fabrication technologies from computer numerically controlled (CNC) milling to 3-D printing, laser cutting and the use of robots of various kinds in the construction industry. These new technologies have introduced a greater degree of control and precision in the construction process, and have opened up a range of new methods of construction. This is especially the case in China, a nation once dominated by manual construction, but where digital fabrication technologies on an unprecedented scale are beginning to transform the construction industry.

AAC 2011 began with the DigitalFUTURE forum that featured many of the world's leading architects, including Zaha Hadid Architects, Gensler, SPAN, Plasma Studio and Kokkugia. This was followed by a 8-day Computation Workshop in which students were taught Grasshopper, Rhino Scripting, Processing and Digital Project. Finally there was a 6-week Fabrication Workshop, during which students were taken on a series of field trips including: E-Grow, an advanced fabrication factory for producing computationally modelled facade panelling systems; Rong Sheng shipyard, one of the world's largest and most technologically advanced shipyards; and the Pudong Tower construction site.

During the Fabrication Workshop USC students explored the potential of digital fabrication technologies, alongside students from Tongji University and SCUT. The objective was to build a series of proto-architectural studies that explore the potential of using digital fabrication technologies to produce innovative structures. These studies were then exhibited in the DigitalFUTURE exhibition in Tongji University, alongside work from some of the world's leading architects, including Zaha Hadid Architects, UN Studio, Biothing, Kokkugia, Greg Lynn, Ali Rahim and Evan Douglass, and leading schools of architecture, including the Architectural Association, Harvard GSD, MIT, RMIT, DIA and UPenn.

The projects are also published in Neil Leach, Philip Yuan (eds.), *Fabricating the Future*, Shanghai: Tongji University Press, 2011.

THIS PAGE: (LEFT) SKIN: PROTO-ARCHITECTURAL STUDY BY USC STUDENTS TUTORED BY ROLAND SNOOKS FABRICATED OUT OF GLASS FIBER BASED ON A CNC MILLED MOLD. THE INITIAL DESIGN WAS GENERATED USING PROCESSING. (RIGHT) WALL: WALL DESIGNED BY USC AND SCUT STUDENTS, TUTORED BY NEIL LEACH. THE DESIGN WAS GENERATED USING PROCESSING AND FABRICATED USING AN INDUSTRIAL LASER CUTTER.



NUEVA POMPEYA, BUENOS AIRES

Arch 605BL. Instructor: Stefano de Martino, in collaboration with MLA, Rachel Berney & Robert Harris, PPD, Tridib Banerjee, Global Studies, James Steele, Coordination (Buenos Aires), Valentin Flores.

This studio presented two important challenges: on the one hand, it engaged a context that typifies urban conditions in a Latin American megalopolis; on the other, it aimed to develop an interdisciplinary platform by bringing together graduate Architecture, Landscape and Planning students for the first time in a joint project. It was intended to serve as a model for subsequent studios with an outward focus, aimed at developing comparative approaches to urban issues by bringing together experiences from diverse cultures, contexts and local conditions.

With some thirteen million inhabitants, Buenos Aires is one of the largest metropolitan areas in Latin America. At the request of its Department of Urban Development, we were invited to focus on Nueva Pompeya, a neighborhood southwest of the city center and bounded by the Riachuelo River.

Nueva Pompeya, with a population of 50,000, formerly served as the primary port for Buenos Aires. It had metallurgical industries and meat packing plants, and its leather industry, which still exists there to some extent, continues to pollute the river. The abolition of slavery in 1853 affected the labor force and this, along with the outbreak of cholera in 1868, prompted the wealthy families in the district to move north. Europeans and immigrants from other South American countries have subsequently moved in, supplementing the district's labor force. Along the way, Nueva Pompeya has lost much of its attraction due to an impoverished infrastructure, the closure of industrial and productive activities, and the general neglect of its public space.

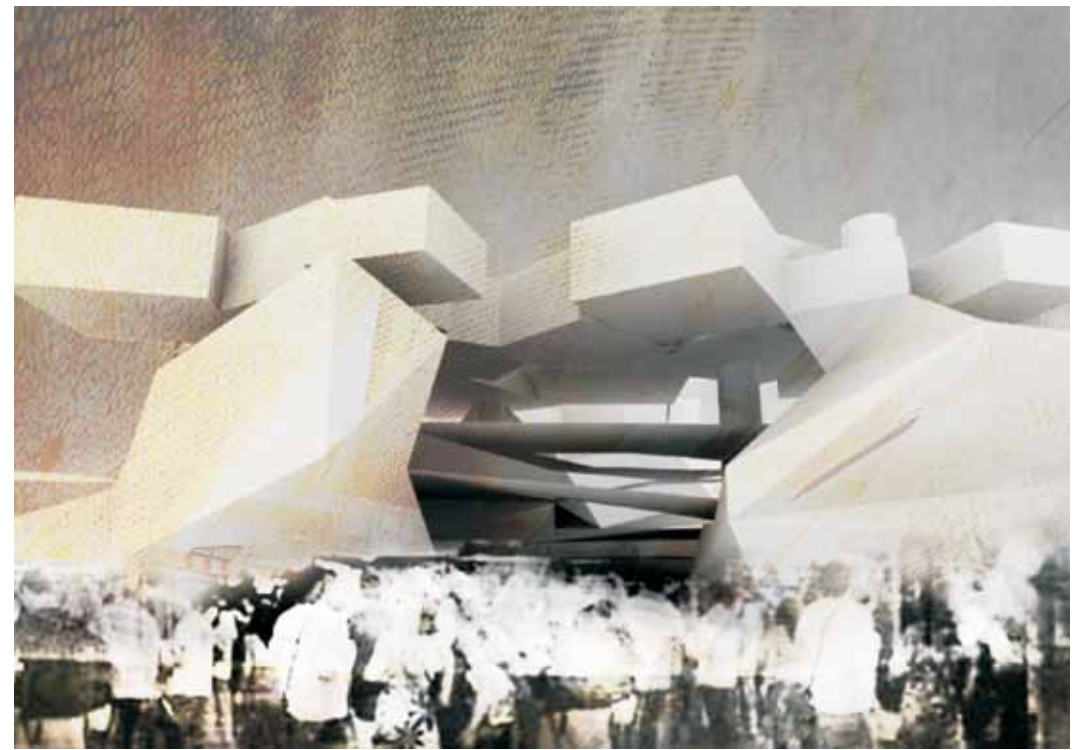
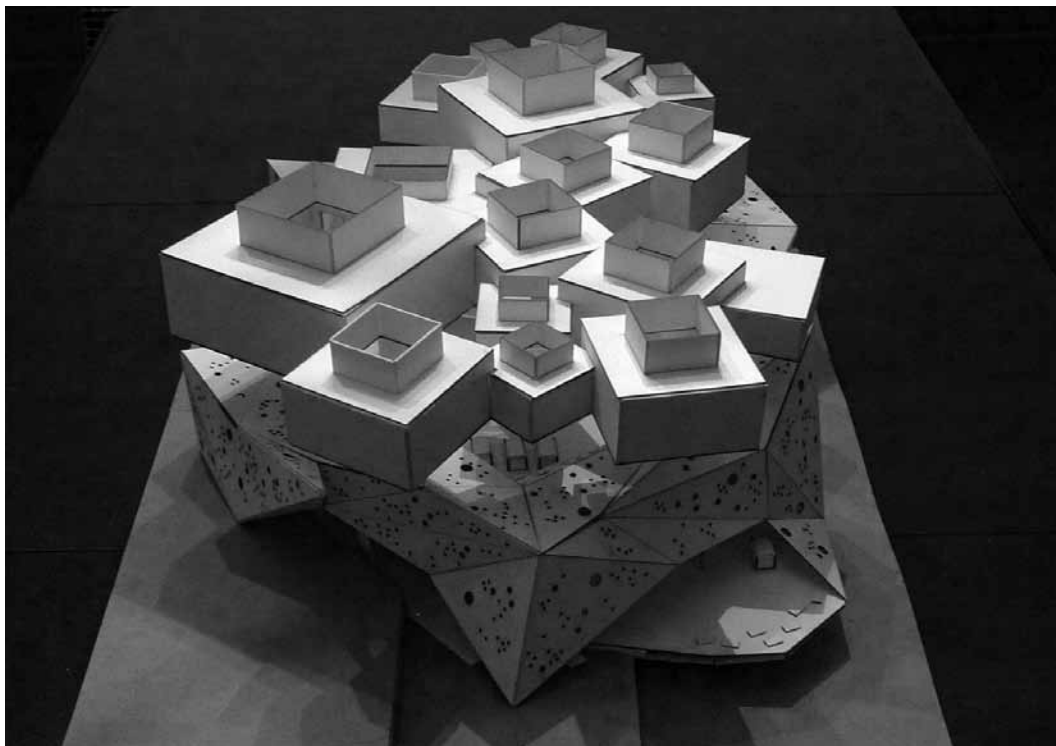
We addressed the role that public space has in affecting this community as a physical location and as a network of social and cultural relationships. While the city is implementing new public transit systems that will connect the barrio to the larger metropolitan area, we considered other infrastructures that might be deployed to engage local qualities and resources.

Ultimately, the studio focused on a single pressing question: if economic fortunes generate a passing occupation of land (witness the present state of most post-industrial US cities), can the articulation of public space be the catalyst to provide another kind of stability, engage existing activities, and promote the emergence of new ones?

THIS PAGE: JON RENNIE



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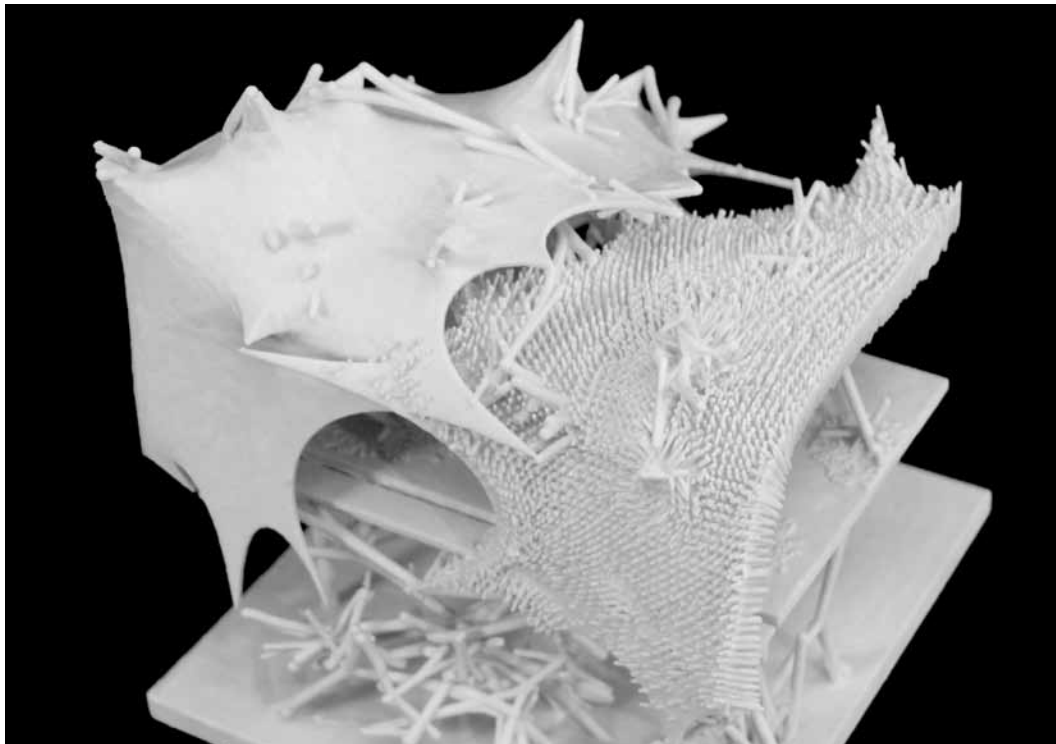
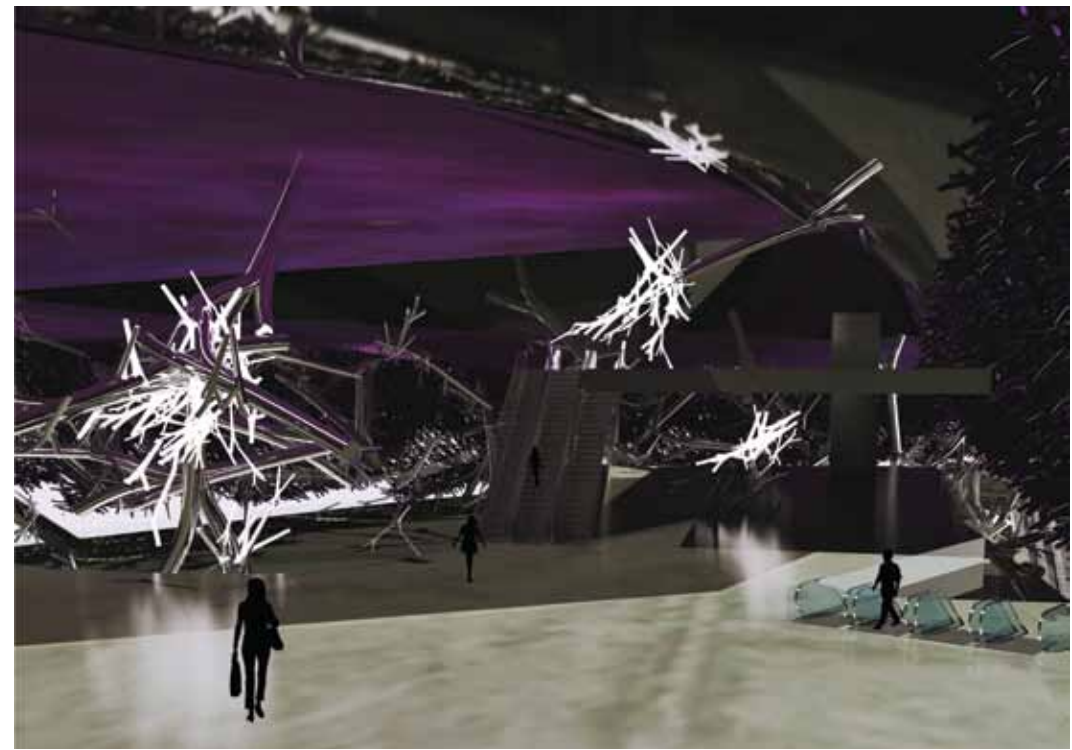
GEHRY STUDIO: MOCA/GRAND AVENUE

Arch 605BL. Instructors: Frank Gehry, Frances Anderton, Edwin Chan, Aaron Neubert, Craig Webb

The premise for the MOCA/Grand Avenue Studio was that the Bunker Hill stretch of Grand Avenue is the disappointing result of marginally realized master-planning efforts dating back to the razing of the original Victorian residential neighborhood. Students researched the historical evolution of Bunker Hill's urban fabric, the layering of various planning and development initiatives, and the relationship of these efforts to the buildings and landscapes that were constructed along the way. Through a detailed mapping of topographical transformations, programmatic and demographic evolution, access and use patterns, street and public space engagement, as well as the philanthropic efforts that gave rise to the ribbon of architectural interventions on Grand Avenue, the students developed an understanding of Bunker Hill as an isolated, inaccessible and therefore historically underappreciated and underutilized area of Los Angeles.

A majority of the realized development, California Plaza, The Music Center, High School #9, The Cathedral of Our Lady of the Angels, The Colburn School, and specifically the current Museum of Contemporary Art, failed to deliver on the promise of activating Grand Avenue in any significant way, transforming it instead into what Jane Jacobs might describe as a "decontaminated cultural district." In response to the current state of Grand Avenue, the studio posed two questions: Could a radically different design for MOCA, one that resists the urge to create another trophy building, serve to transform current patterns of use (ones that leave the area a ghost town at night and during the weekends)? Could an open organizational approach to a large cultural institution transform this isolated site so it could benefit from, and connect to, the urban renewal occurring so successfully in adjacent areas of downtown Los Angeles?

THIS PAGE: HUAMING LIAO



Arch 605BL. Instructors: Greg Otto, Roland Snooks

This studio explored the relationship between behavioral and evolutionary optimization design methodologies and between local behaviors and global concerns such as structural optimization. This inquiry focused on the relationship between the internal logic of a generative system and the external influences of force and environment. We explored the interaction of open behavioral systems and evolutionary systems that seek an ideal outcome

The studio posited a behavioral design methodology, re-conceiving design as the organization of matter. This behavioral understanding of design focused on dissolving normative hierarchies operating within architectural organization and tectonics. We proposed a non-linear algorithmic design methodology, one capable of displacing existing hierarchies through the emergent operation of self-organizing systems.

The studio explored how normative tectonic hierarchies can be dissolved and re-imagined within a systemic non-linear logic. It rejected modernist tectonics (including mass standardization) and contemporary parametric component assemblies (mass customization). Instead we sought an alternative organization of matter that draws from an understanding of micro-structures such as those found in butterfly wings, where color and pattern are determined through the organization of matter as a geometrical configuration rather than through chemical attributes such as pigmentation.

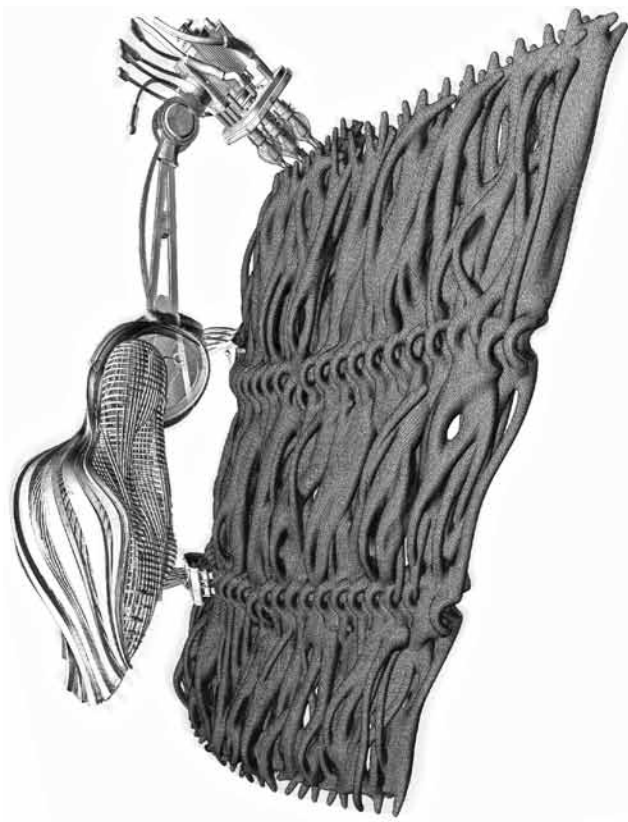
The studio developed an understanding of agency and its role in the formation of complex structures. This exploration rethought the formation of order from the behavior and intent of the monad or agent and explored this theme through the design of a train station.

The first part of the semester focused on the development of an abstract complex system based on multi-agent design models. We explored the operation of swarm logic within natural systems and extracted algorithmic models that formed the basis for a non-linear design methodology.

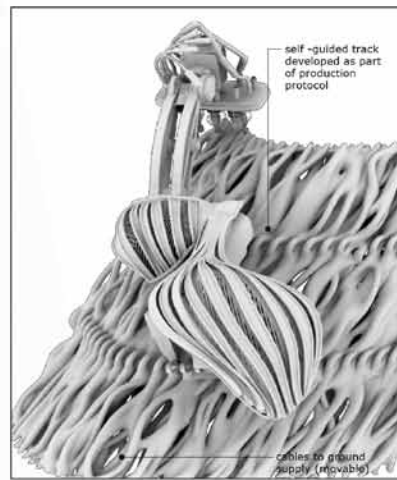
The second portion of the term explored how structural criteria are used to evolve the design toward an optimal position.

The final component of the studio was the design a long-span train station. This project was developed by questioning the hierarchical structural relationships that exist with contemporary long-span structures. The implications of replacing these hierarchical relationships with systems that are engaged in non-linear negotiation were exhaustively explored in developing radical tectonic and organizational structures.

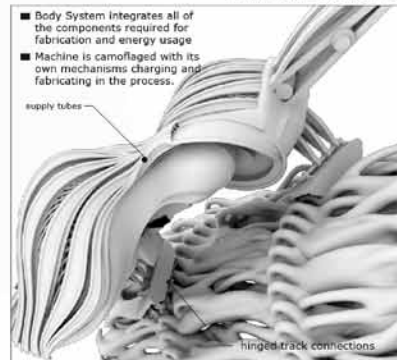
THIS PAGE: ALAN HOTCHKISS, HYUNSOO HA, JIHOON KIM



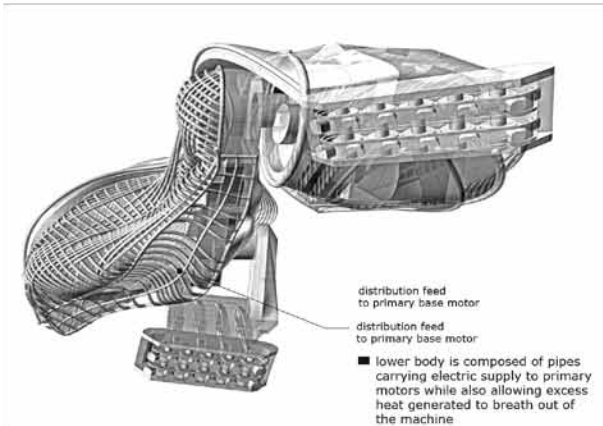
Bio-Extruding "Chameleon"
Self-Generated Track Guidance



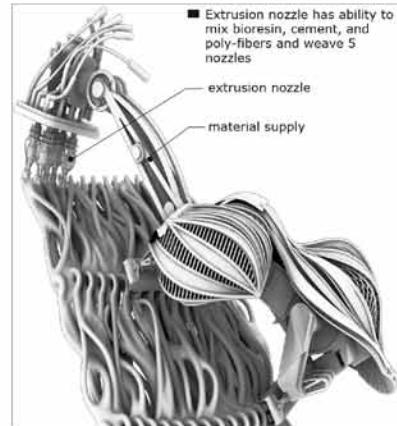
Body/ Material Relationship



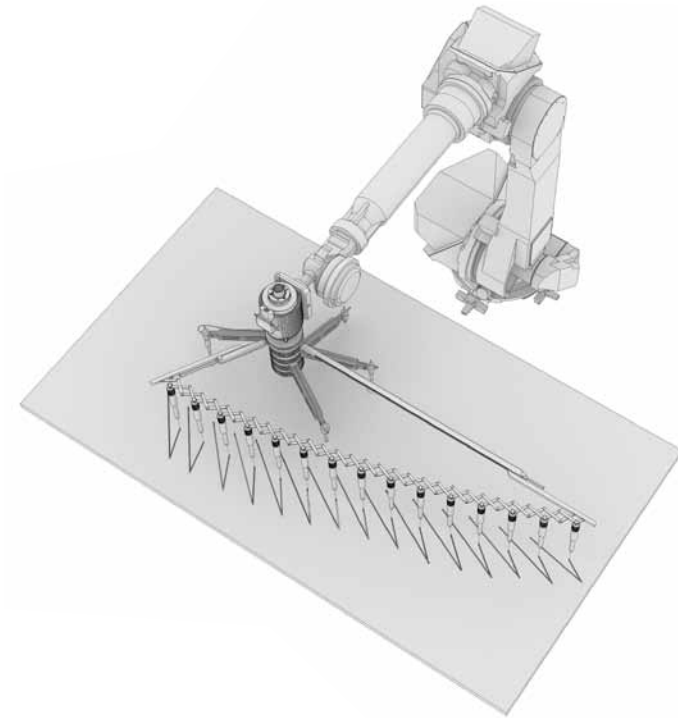
Body Camouflage (material to track connection)



distribution feed to primary base motor
distribution feed to primary base motor
■ lower body is composed of pipes carrying electric supply to primary motors while also allowing excess heat generated to breath out of the machine



■ Extrusion nozzle has ability to mix bioresin, cement, and poly-fibers and weave 5 nozzles
extrusion nozzle
material supply



LAB M4

Arch 605A/BL. Coordinator: Francois Roche. Instructors: Stephan Henrich, Kris Mun, Qi Su

The Lab M4 (Mind, Machine, Material, Manufacture) began in 2010 as an L.A. extension of the (n)certainities research (ongoing at Columbia University's GSAPP since 2006).

The main purpose of this research is driven by the potential of robotic protocol and production on several layers: behavior, material, design and inventive scenarios, forecasted to acquire a unique movable and repositionable machine that performs several processes of fabrication which challenges conventional Know-How in construction on several specific situations.

It articulates logic and illogic between machinism, vitalism and animism processes—in the sense of Leibniz—through narrative-telling, computation and "gestalt," with scenarios that screwed, chewed, shat, sweated, swallowed, vomited, pined and also secreted, weaved, knitted, extruded, staggered, scattered, coagulated, aggregated, welded, pinched, braided, spider-webbed, bonsai'ed, crystallized, calcified, excreted, expanded, branched, pulped, smeared, excavated, assembled, disassembled, bent, blended, as their machine picked, spiked, pinched, caressed, embraced, sliced, cut, laminated and loved...

This (n)certainities research is a vector of speculation embedded in processes of reality with several disciplines (mathematics, programming, robotic design, robotic behavior, chemistry, bio-chemistry, scripting...) as a background knowledge for the next steps...

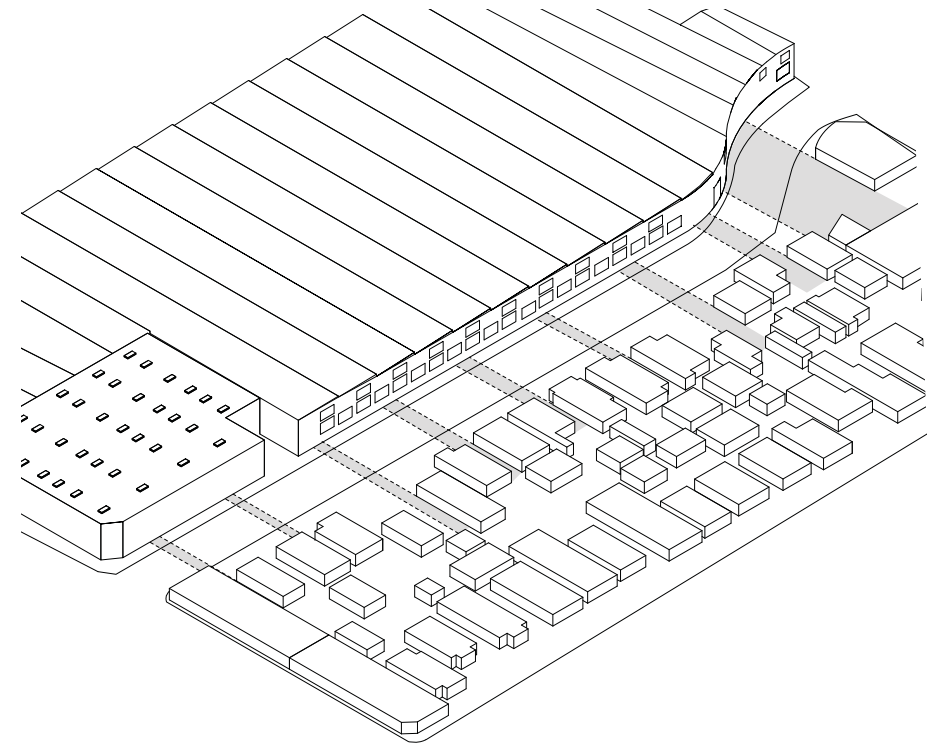
The LAB-M4 was relocated in May 2011 out of L.A.

(More information on BLOG / <http://www.new-territories.com/laboratories-teaching.htm>)

Lab - Researchers team: Francois Roche, France, Stephan Henrich, Germany, Kris Mun, USA, Qi Su, China.

Lab - Students: Guo Jizheng, China, Jili Huang, China, Hong Sun(cc), China, Xiaoliang Lu, China, Chen Lan, China, Song Qin, China, Shujia Chen (Sugar), China, Zhaochen Wang, China, Amir Akbari Hamed, Iran, Anirudh R. Dhawan, India.

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DIRECTED DESIGN RESEARCH

Arch 693BL. Instructors: Victor Jones, Alex Robinson. Student: Yu-Chun (Teresa) Ou.

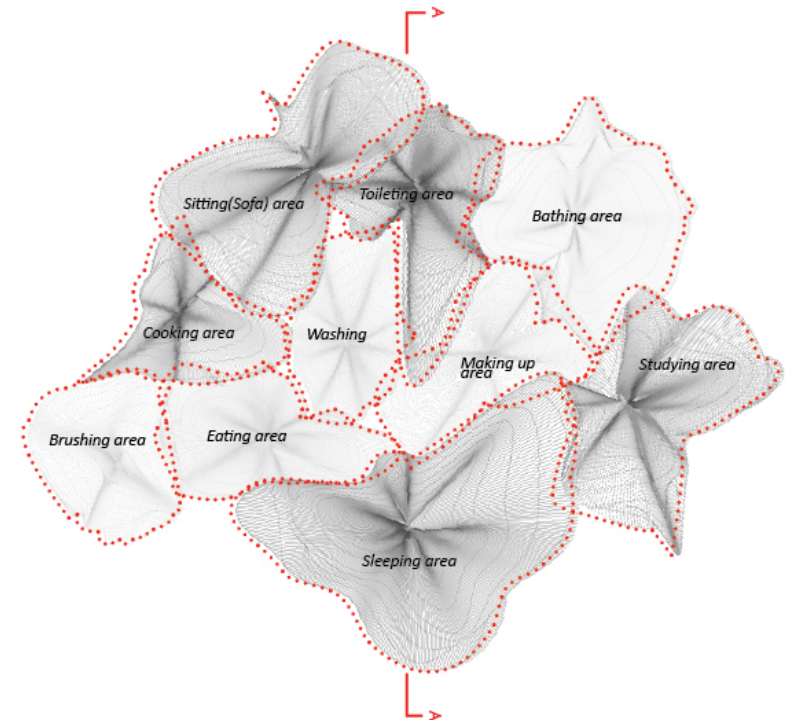
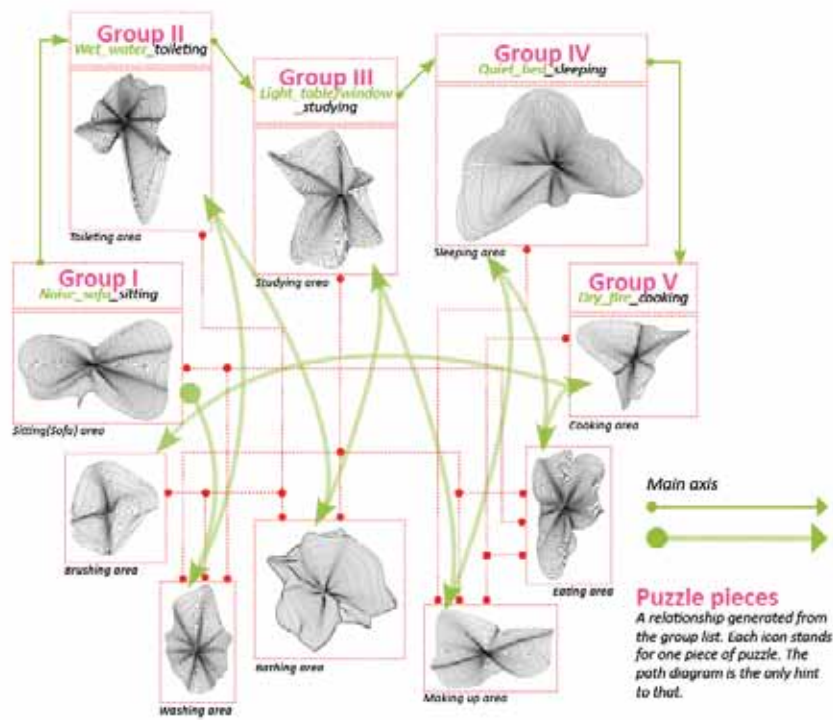
Project Title: Made in U.S.

Made in U.S. investigates an urban industrial landscape in South Central Los Angeles to build a proposal beyond environmental and ecological aspects. Design topics engage dwelling, community and environmental strategies as well as models of affordability to propose new trajectories in urban development. These explorations are intended to change the form of urbanism and planning to reveal complexity and integrated thinking across design disciplines.

Made in U.S. aims to address a spectrum of design and planning issues—landscape architecture, architecture, urban design and planning—thus allowing an examination of the built environment in sustainable cities from many angles. In the first phase, Made in U.S. analyzes the accumulated data, compares the original guiding urbanism principles with the ultimate built product and identifies the particular strengths or weaknesses accordingly. In the second phase the project draws conclusions, highlighting new parameters for the future development of similar experiments.

THIS PAGE + NEXT PAGE: YU-CHUN (TERESA) OU





CUSTOMIZED MINIMUM LIVING SPACE

Arch 693BL. Advisors: Doris Sung, Kris Mun, John Mutlow, Stefano de Martino

In this computer system, clients input their personal information, preferences and requirements for this space. The computer then generates a shape to form the needed space. It is minimum space for living that nevertheless satisfies the clients' needs for action. This computer system helps people to reduce the space they never use.

I used a Miss W. as my model and created a living space for her. In the first step, I asked her to answer 39 questions before this experiment and to choose what actions she wanted to create her living space. I then used my camera to record her actions. I asked her to do what she usually does at home. Next move I found a digital robot, and made it the same height as her body to simulate her actions in the computer. By snapping animation record, I got a shape of her actions, bathing brushing, cooking, eating and drinking, making up, washing face, sleeping, sitting and using the washroom. These actions are what she required before. In the last step I combined them all these criteria and motion records

THIS PAGE: ZHAO YIN



MASTER OF BUILDING SCIENCE

Building science and technology studies at USC recognizes 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:

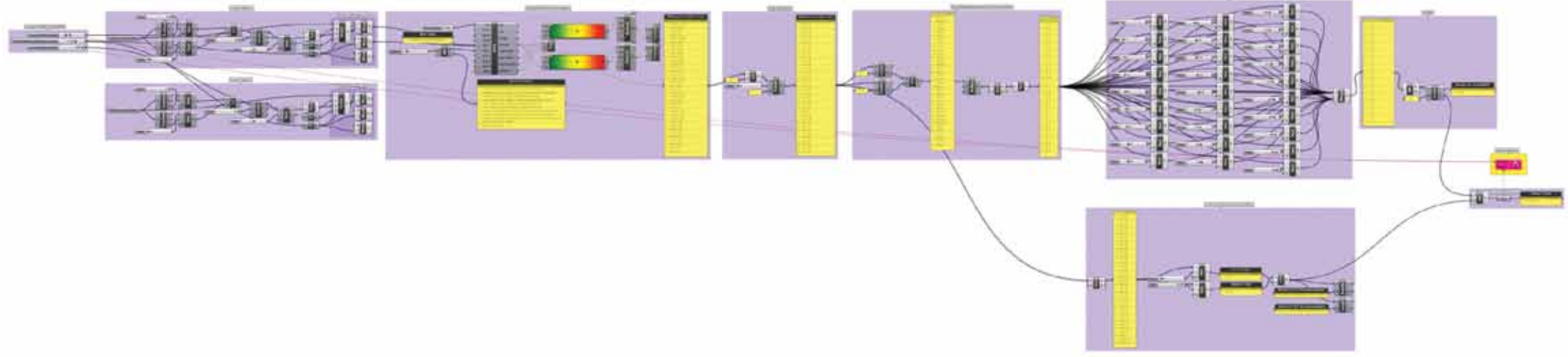
- The integration of planning, design and technology to form a coherent and interdependent force for the appropriate construction of urban places.
- Recognition of the ecological importance of energy-conscious design and construction as well as the high social value of places in which natural forces 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.

AREAS OF STUDY

- Design processes that explore form in response to natural forces: sun, wind water, seismic and thermal
- Building envelope studies
- Lighting and daylight design
- Passive and active solar design for heating and cooling
- Energy analysis simulation and measurement
- Zero net energy buildings
- Sustainability in the environment
- Acoustic isolation and performance
- Systems integration: structure, mechanical, electrical, envelope, for fit and synergy with architectural objectives
- Materials and methods of construction
- Theory of architectural technology
- Building information modeling
- Computer aided architectural design
- Computer applications in architecture
- Computer tools: animation simulation, structural and environmental analysis, simulations of lost architecture, design information systems, smart building technology, stereoscopic visualization, and related topics
- Exploration of unique structures: lightweight, long-span and high-rise
- Static and dynamic simulation models for investigation of structures
- Seismic sustainability
- Structural systems, materials and optimization

Anders Carlson, S.E., Ph.D.

Director, Master of Building Science Program



INTELLIGENT BUILDING SKINS: PARAMETRIC-BASED ALGORITHM FOR KINETIC FACADES DESIGN AND DAYLIGHTING PERFORMANCE INTEGRATION

Arch 692 BUILDING SCIENCE THESIS. Committee: Karen Kensek (Chair),
Dr. David Gerber, Nathan Miller

A high integration of design and research between architects, computational designers, and consultants is important to achieve innovation and efficiency. Communicating to the designer the importance of integrating performance-based approaches in the early design stage and their impact on the design, may shift the logic of executing an architectural project. The integration of daylighting factors into the design phase, through design tools and computation, results in the improved performance of daylight harvesting and therefore tackles issues of human comfort and energy efficiency. One example of performance-based integration is the design, simulation, and validation of intelligent features in building skin design and its impact on daylighting performance.

This thesis presents the design of an algorithm and parametric process developed in Grasshopper, a plugin for Rhino 3D, using DIVA for daylighting simulation. The main objective of the process and algorithm is to evaluate the performance of an intelligent façade, composed of a series of kinetic louvers that actuate in response to dynamic daylighting, and the incorporation of occupants' preferences. Within the framework of this study, Grasshopper as a parametric computational tool allows the integration of Rhino, the design space, and DIVA, the dynamic daylighting tool, into a single process. The parametric tool extracts the designed geometry from the modeling space and inputs it into the DIVA component to be tested for illumination performance, luminous distribution, and daylight penetration depth inside an office space.

The thesis presents the initial experiment, in which the external skin actuates to optimize daylight-deflection, maintaining a desirable luminous indoor environment. In the experiment, the louvers rotate using the concept of independent tilt-angle, where every other louver has the same tilt angle; they could be in a harvesting, shading, or a combined configuration. When skin configuration changes, due to louver actuation, the algorithm detects the alteration and instantly reflects it onto a calculation grid inside the space. This allows the designer to run numerous iterations during the design stage and select the best possible one based on pre-defined criteria.

A genetic algorithm has been incorporated into the definition to enable a search for the best skin configuration at specific dates and times or under different sky conditions. The genetic algorithm works on finding an optimal – although not necessarily the best – solution under certain parameters and conditions. These parameters could range from users' desired illumination levels, to externally-reflected daylighting components. Changes in any of these parameters trigger the system to run and find an optimal configuration for the skin to maintain the desired luminous environment.

Above: Grasshopper definition of incorporating individually-actuating louvers into an automated-intelligent system.

Lower left: Elevation and 3D views of subset of louver configuration simulations showing the transparency to the outdoor environment, highlighting parameter values in conjunction with user viewing and daylight penetration and quality.

THIS PAGE: MOHAMED MANSOUR EL SHEIKH





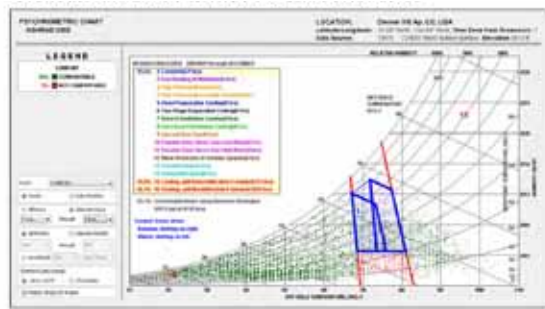
ADVANCED TOPICS IN ENVIRONMENTAL CONTROLS

Arch 515. Instructor: Sandra Novales

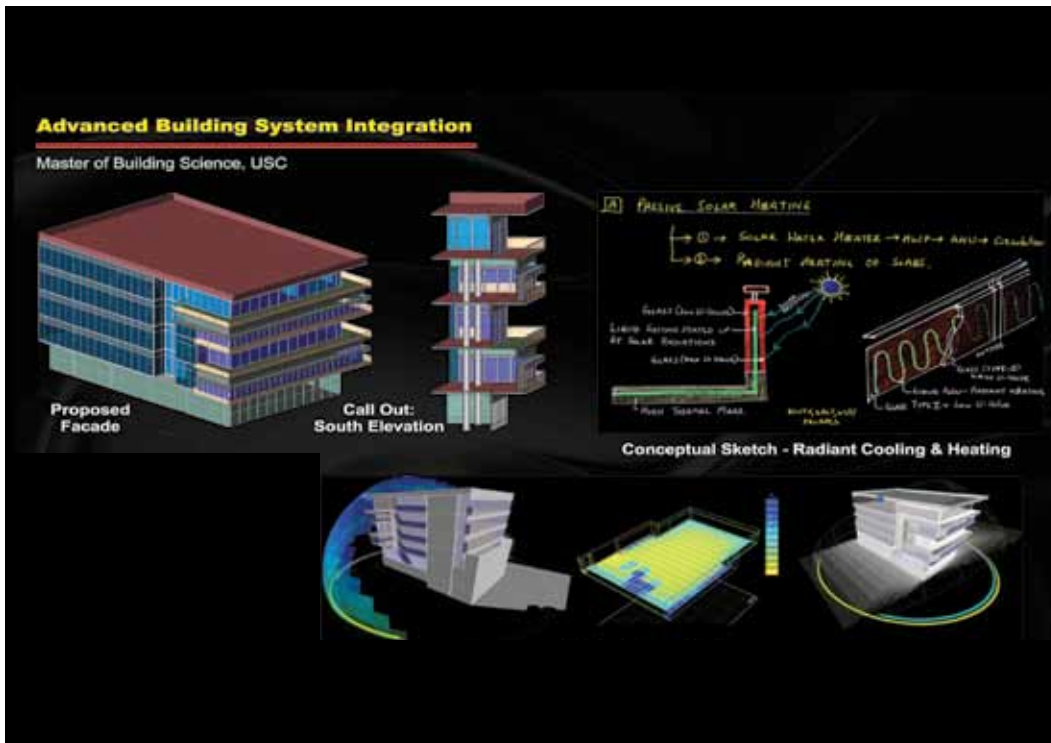
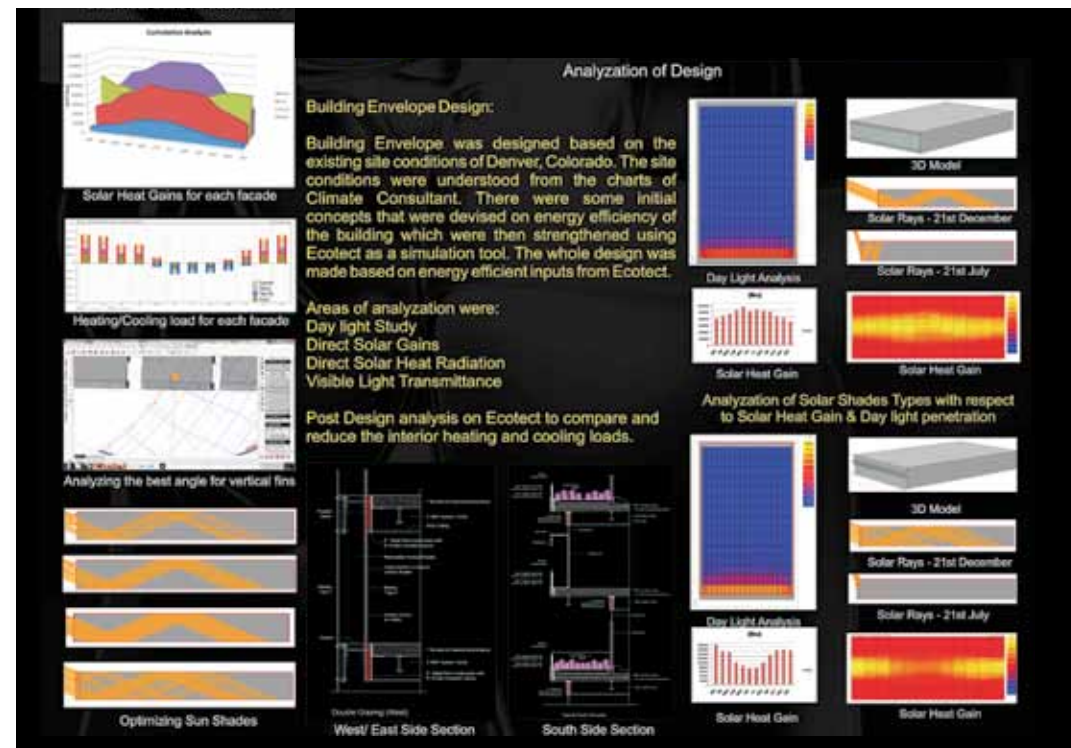
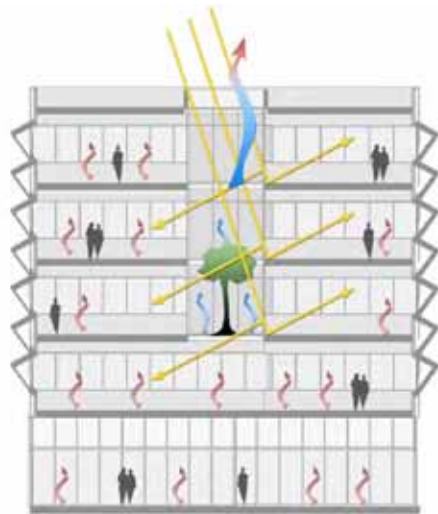
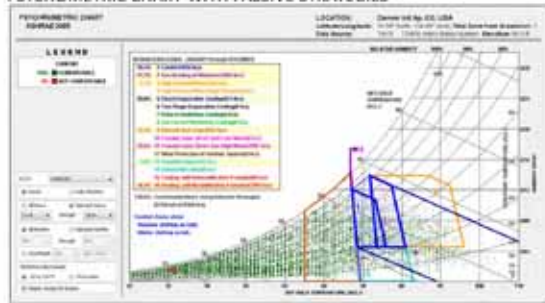
This course examined design criteria and calculation methods for mechanical and passive solar systems (loads, plant system, duct, and storage sizing), lighting and acoustics (CIE and IES methods, dBA and NC systems).

This project attempts to capture analytical techniques for achieving high-performance design as well as aesthetic qualities. The project was awarded first place in the 2011 Saul M. Golden Memorial Lighting Design Competition Awards, held by the Illumination Engineering Society North America (IESNA), Los Angeles Section.

[1] [2] SIMON CHIU



PSYCHROMETRIC CHART WITH PASSIVE STRATEGIES



Arch 611. Instructor: Greg Otto

This is a design drawing summary for optimizing passive strategies on an existing building in Denver, it includes climate analysis, design elevations, construction details and renderings.

[1] WILLIAM VICENT, [2] [3] SUKREET SINGH

HISTORIC PRESERVATION PROGRAMS AT THE UNIVERSITY OF SOUTHERN CALIFORNIA

The USC Master of Historic Preservation (MHP) degree at the University of Southern California was established in the spring of 2002. It grew out of the Graduate Certificate in Historic Preservation, which was first offered in 1997, when Ken Breisch joined the faculty to direct certificate and on-going summer preservation programs. Since his arrival, the program's faculty has grown as well, with three adjunct lecturers and the arrival in 2011 of a new program director, Trudi Sandmeier, which will allow Breisch to devote more time to teaching and writing.

From their inception the USC preservation curriculum was envisioned as having the flexibility to embrace the wide variety of disciplines engaged in conservation practice in Southern California and the diverse interests and backgrounds of incoming students. One of the program's strengths has been its integration with the other graduate degree programs in architecture, landscape and building science, an unusual arrangement, which offers our students unique interdisciplinary opportunities not available elsewhere. These include innovative approaches to design and rehabilitation, the relationship of preservation and heritage conservation to sustainability, and the study of historic landscapes.

The preservation program's presence in Southern California, with its wealth of post-war modernist buildings and landscapes, as well as its rich diversity of communities, has offered additional opportunities for the students. And its location on the Pacific Rim places the program in close contact with emerging fields of conservation in Asia and Latin America and also allows for reexamination of many of the more traditional approaches to historic preservation that are heavily entrenched in the practice on the East Coast. A final strength of the USC program lies in its close connection to Greene and Green's Gamble House (1909) and Frank Lloyd Wright's Freeman House, which presents students with hands-on experience in conservation practice. The school's future acquisition of the Richard and Carol King House (Buff and Hensman, 1978), moreover, will open up new prospects for students in the study of modern and architecture and landscapes.

Kenneth Breisch, Ph.D.

Director, Graduate Program in Historic Preservation



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‘LET ME WALK IN BEAUTY’: THE CULTURAL LANDSCAPE OF THE ARROYO SECO AND BUFF & HENSMAN’S KING HOUSE

Arch 691A. Instructor: Kenneth Brelsch

Buff and Hensman’s King House stands on the banks of the last undeveloped portion of the Arroyo Seco River, just outside downtown Pasadena. While the home is a significant example of modern architecture, the history of the land on which it sits stretches back over two hundred years and illustrates the dynamic relationship between man and nature.

Throughout the 19th century, the site played an important role in the history of early Pasadena, serving as a vital transportation corridor between Pasadena and Los Angeles, a critical water source for early Pasadenans, and also as an early public works project, employing disadvantaged area residents to create one of Pasadena’s first public parks. Over time, the property witnessed the evolution of Pasadena from a tiny tourist outpost to a thriving suburban community. By the middle of the 20th century, the Arroyo Seco landscape bore little resemblance to its original wilderness. When the King House was constructed on the last vacant lot in the area in 1979, architects Conrad Buff and Donald Hensman asked landscape contractor Howard Oshiyama to bring to life their vision for a place "hidden away in nature...more rustic and wild than refined and manicured."

Howard Oshiyama, a second-generation Japanese American and practicing Zen Buddhist, employed native plants to create a landscape that seamlessly merged the former empty lot into the natural surroundings of the Arroyo Seco. Howard went on to maintain the grounds at the King House for over twenty years until his death in 2003, always drawing on philosophical principles to create harmony and balance in the natural landscape. Today, Howard’s legacy lives on in his son, who continues to

care for the King House and follows his father’s spiritual approach to nature and the integration of designed landscapes.

This thesis seeks to explore the rich landscape that has evolved over time at a particular site as a result of man’s evolving relationship with nature, as well as highlight the challenges in identifying and preserving both the tangible and intangible significance in historic cultural landscapes.

THIS PAGE: HEATHER GOERS



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THE DINGBAT APARTMENT: PRESERVING THE CHARACTER OF LOW-RISE LOS ANGELES

Arch 691A. Instructor: Kenneth Brelsch

Largely known and widely over-looked, the dingbat apartment is a property type that is quintessentially Los Angeles. This “one-lot” wonder is the physical embodiment of the hopes, dreams and realities of countless Angelenos; a speculative investment for some, a cheap place to live for most. These two-storey apartments proliferated in the late 1950s and early 1960s, the result of a perfect storm of financial incentives, changing demographics and new building practices. Recognizing the future needs of a baby boom coming of age, opportunistic developers used materials and techniques developed during the war effort to create an almost factory-like style of building. With any number of pre-fabricated products architects and developers could design and build formulaic, yet individualistic buildings.

This thesis seeks to explore the economic, cultural and political factors that resulted in the dingbat apartment. While existing works have focused on the aesthetic qualities of the dingbat, I explore the external forces that led to the proliferation of the type (zoning codes, lending practices, etc.). By exploring Los Angeles’ multi-family history and the growing acceptance of Modernism after World War II, I will relate the dingbat to its much larger historical context. And while the dingbat is related to these factors, it is undeniably unique. The dingbat is a building defined by its surroundings and examining the economic climate, building regulations and construction materials of the late 1950s we can see the exact parameters that led to its ultimate form. Finally, I discuss the specific preservation issues the dingbat faces in the years to come. Because they were built to turn a quick profit, they were often not built to last. By understanding what makes it important, we can determine how (and when) to best save the dingbat.

THIS PAGE: STEVEN TREFFERS

MASTER OF LANDSCAPE ARCHITECTURE

Landscape architecture education at USC is a major West Coast center for landscape studies. It is attracting national and international attention. As the national Landscape Architectural Accreditation Board approved accreditation for a maximum term of six years, its report stated:

“Through careful planning and a compelling vision, the School of Architecture has made an impressive start initiating a graduate program in landscape architecture with enormous potential to provide national and international academic research and scholarship, and practice leadership. USC is a large private university (student population approximately 30,000) located in south central Los Angeles, in the heart of the West Coast’s largest urban region and one of the country’s most dynamic cities. The city’s location, and distinctive character of this place, provides the program with unique opportunities: to work in a wide variety of urban and semi-urban locations, to explore different expressions of urban nature, to repair and restore the urban region’s fabric, and to work with diverse communities. USC’s location on the Pacific Rim also provides the program with exciting global possibilities, evinced by the fact that many of the two-year students entering the program come from China. The program’s innovative mission recognizes these interrelated opportunities and possesses the promise of becoming a unique and distinctive program tailored to the compelling issues and needs of the region and the rapidly developing Asian Pacific Rim.”

In fall 2011, sixty graduate students and seventeen faculty members will engage urban landscape studies. Assistant Professor Rachel Berney succeeds Bob Harris as MLA Interim Director. New faculty members are appointed to augment the teaching program, and a search is in progress for an additional experienced full-time faculty member to be at USC by fall 2012 to serve as Director for an initial three-year term. During spring 2011, USC Landscape Architecture was the host-School for the international meeting of the Council of Educators in Landscape Architecture. James Corner lectured as Distinguished Visitor in Landscape Architecture during the spring. Previous such visitors included Laurie Olin, Chris Reed, Adriaan Geuze, Mark Rios, Julia Czerniak, and Mia Lehrer.

Going forward, three critical aspects of research and teaching continue to characterize the program and to provide a focus for its further development:

Design Research: 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 and historic places can be enjoyed and studied. Los Angeles and USC continue to support the spirit of critical inquiry and creative energy that characterize the culture of southern California. The region has unequaled demographic diversity and cultural richness. 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.

Urban Nature: an essential focus of the 21st century is global urbanity, including the relation of natural systems to built

infrastructure, the necessity for using and inventing resilient technologies, engaging and transforming the skills for design exploration and communication in a variety of places and cultures, and a commitment to participatory processes that embrace cultural complexity. Our nature in nature must be explored to find corollaries for a healthy learning ecology. Urban society has powerful economic and technological tools whose uses promise both amazing as well as disturbing potentialities. The harmonious relation of cities and nature produced by an earlier age of modest technologies inspires research for using new and powerful methods in the interest of healthful and sustainable urban nature.

Advocating Landscape Studies: Program initiatives must continue to create a vibrant center at USC for landscape studies, including a wide scope of curricular interactions, a continuing attraction of distinguished faculty and visitors, and greater visibility of landscape studies as a basis for proper and sustainable urban development. There are only a handful of graduate study programs on the U.S. west coast, and not many more along the entire Pacific Rim.

Landscape is the home of all life, it is the fundamental infrastructure for all cities, it is the essential spatial tissue of cities, and its study is in full force ahead at USC.

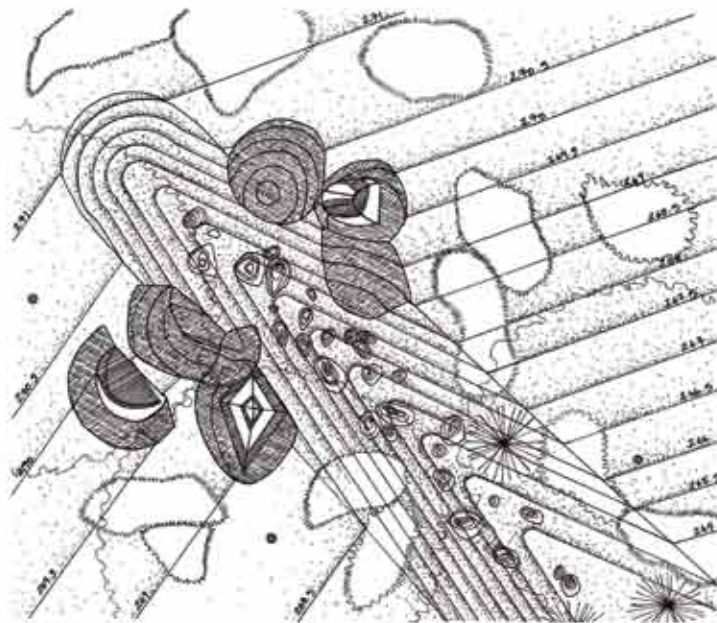
Robert S. Harris, FAIA, Hon. ASLA

Director, Master of Landscape Architecture Program

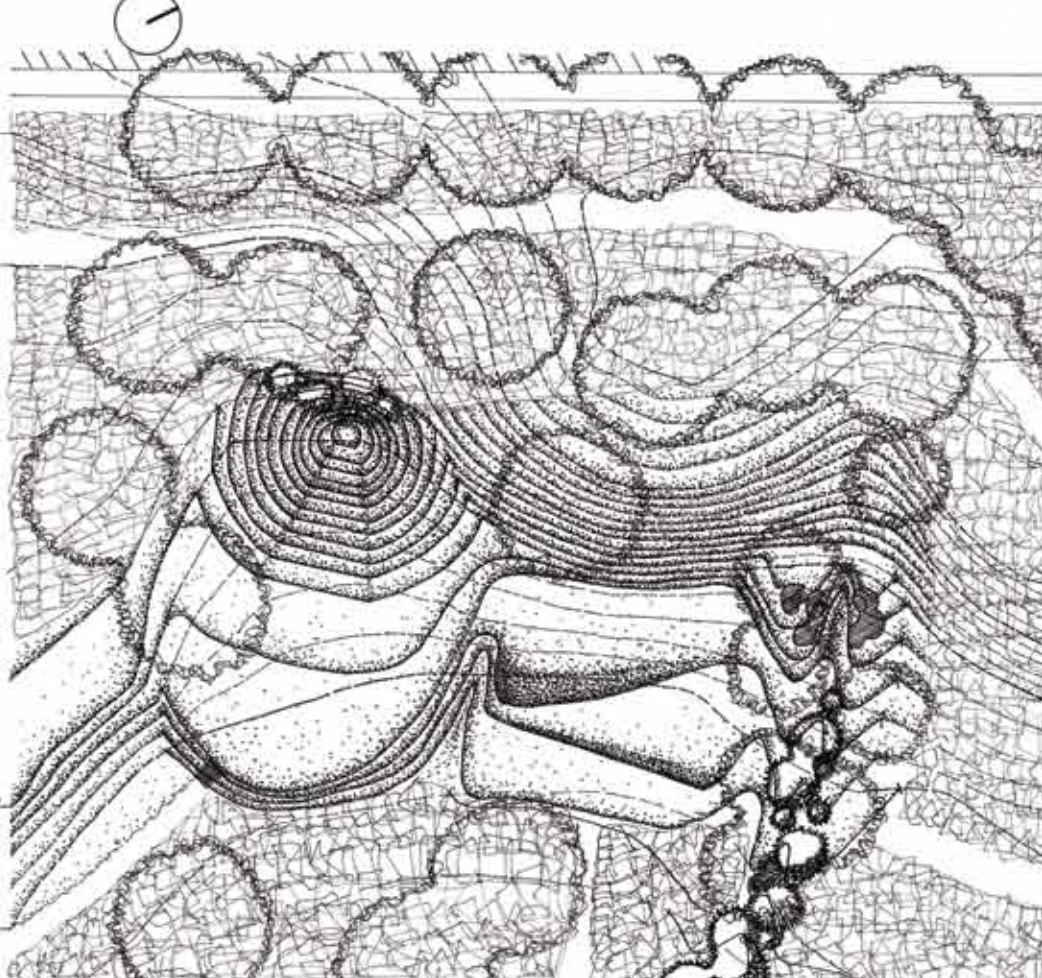
Emeritus Professor of Architecture

GULLY DETAIL PLAN
1/8" SCALE

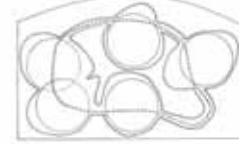
- RICHLOE DACTYLOIDES
- RUTELON GRACILIS
- MUHLENBERGIA AIGENS
- FESTUCA CALIFORNICA
- CALAMAGROSTIS NUTKANENSIS
- BACCHARIS SALICIFOLIA
- TREES ARE PLATANUS RACEMOSA



MOUND, LINK, AND
GULLY DETAIL PLAN
1" = 30'



CONCEPT DIAGRAM



LIGHTING DIAGRAM



LANDSCAPE ARCHITECTURE IN PLACE: RE-IMAGINING MACARTHUR PARK

Arch 541AL, Instructor: Rachel Berney

This initial M. L. Arch. studio focused on introducing concepts of urbanity and the city fabric in relationship to landscape architectural design, including especially the street, plaza, and park, as well as urban natural and cultural factors affecting design. In this studio, we examined place repair in critical response to nature and culture within Los Angeles.

What is the role of the urban park in the 21st century? What is its meaning? Usefulness? Longevity? Care and maintenance? How can we, as designers, contemplate and design for multiple and competing uses in the Los Angeles urban park system? In other cities, such as Barcelona and Bogotá, park design and use is vibrant and inventive. What models will work for Southern California?

This studio emphasized methods and techniques for understanding the following:

Site analysis: What elements are examined in a site analysis; how to complete a site analysis and use the generated "picture" of the site to inform later phases of design.

Site planning and design: How to transform analysis findings into a synthesized response to the site.

The multi-step process of the three-dimensional design of landscape architectural space: How to understand the design process; the stages within the design process; how to develop design responses to a specific problem and program.

Visual graphic representation of design ideas: How to understand the difference between "drawing" for analysis versus for representation; methods and techniques of representation; how to choose how to best represent the work.

Clear verbal presentation of the work: How to most effectively present the work to different audiences.

THIS PAGE: LILY KERRIGAN



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THE INEVITABILITY OF FLEXIBILITY

Arch 541BL. Instructor: Gerdo Aquino

Contemporary cities throughout the United States are exploring their built environment in search of ways to address issues of population growth, environmental pollution, transit, open space, cultural identity and ecological sustainability. With an estimated 100,000 people moving into the L.A. Metro Area every year for the next 30 years, the impact is serious enough for this exploration to transform underutilized sites such as post-industrial lands, excessive Right-of-Way easements, parking lots, alleyways and median strips into viable places for people and nature. This collection of sites can act as a landscape infrastructure that operates as a multi-functional conduit for human activity and a mechanism for supporting natural phenomena.

Positioned within these new voids exists another layer of urban fabric, the central public square. Historically, the public square been associated with the city center and predominantly surrounded by civic buildings. The complex mix of land uses, demographics, population, social systems and cultural systems ultimately define the public square's identity. While the size, programming, functionality, ecology and aesthetic varies from city to city, the public square consistently aims to provide people with access to an open space that is flexible and functional.

This studio examined Pershing Square, downtown Los Angeles' own public square, and attempted to ascertain the viability, or inevitability, of a redesign to accommodate the city's rapidly-changing downtown. New residents and civic projects, alternative modes of transit and a renewed interest in environmental sustainability are in play for downtown Los Angeles, yet the central public square remains almost ephemeral. What is the role of a central square in downtown Los Angeles today? Does it reflect the needs of a contemporary society? Is it flexible?

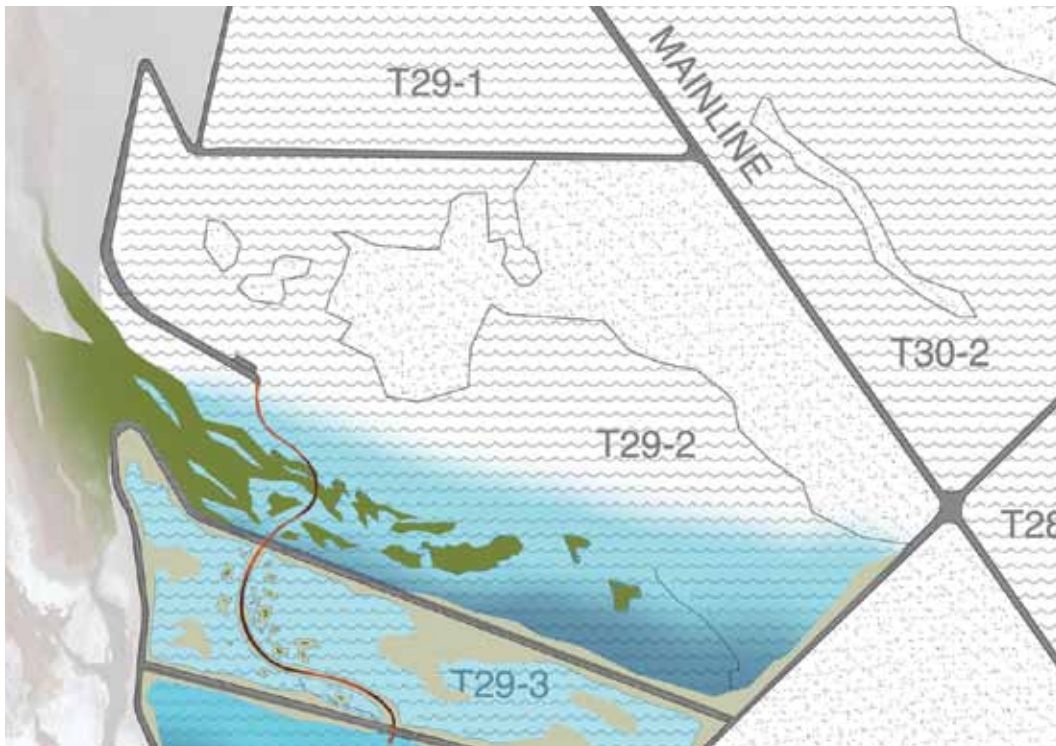
Through extensive urban research and an examination of the site's varied cultural and ecological histories, students gained deeper insight into the physical connections that can inform the design process. A process of mapping, documentation and synthesis formed the initial foundation for exploration, followed by a detailed design plan and supporting forms of representation. Integrating urban ecological strategies such as water harvesting, use of native plants and wildlife habitat creation, regenerative technologies and air quality strategies were encouraged.

THIS PAGE: JANET YANG





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OWENS DRYLAKEBED: DESIGNING A HUMAN / LANDSCAPE INFRASTRUCTURE DIALOGUE

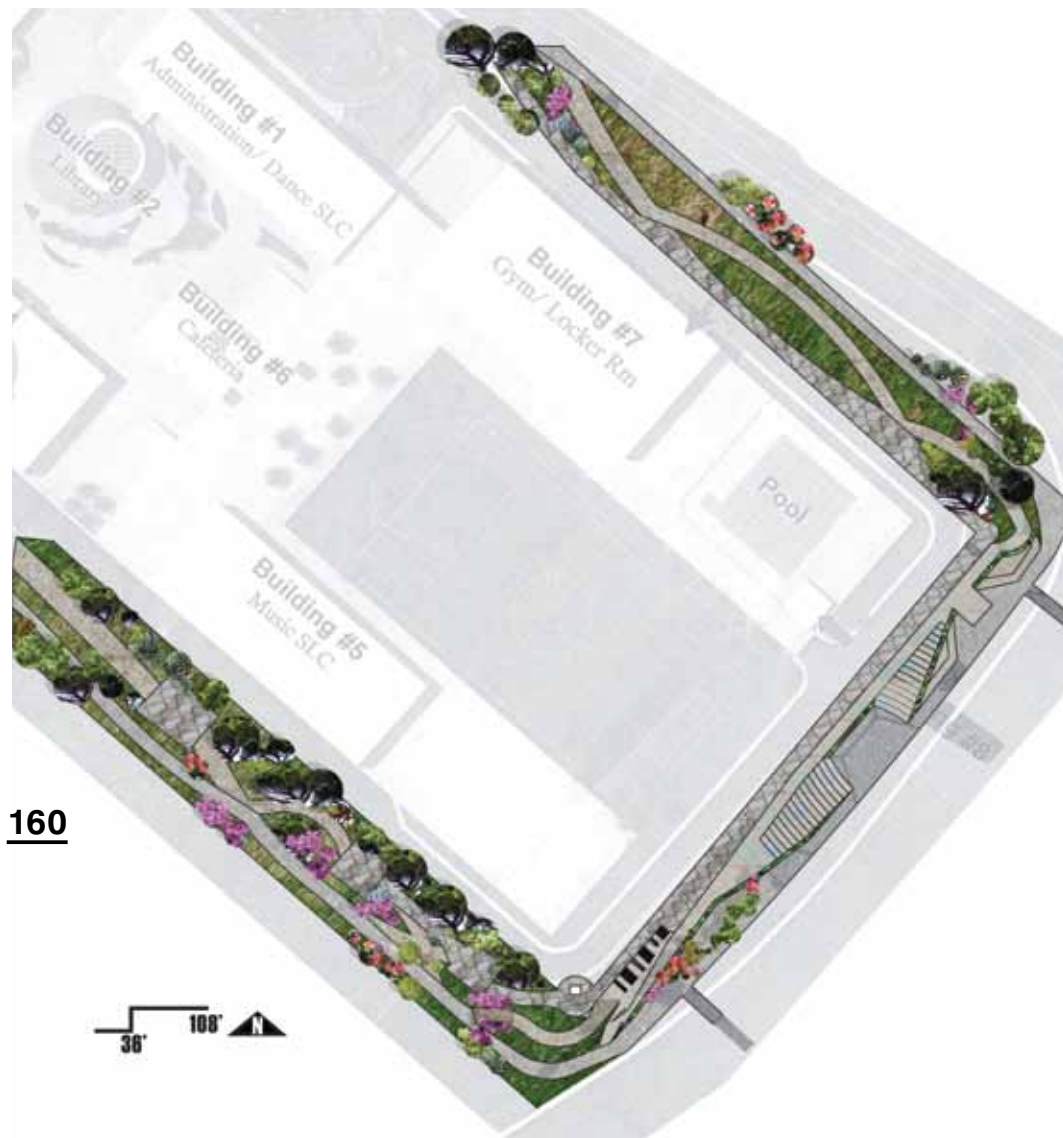
Arch 542AL. Instructor: Alexander Robinson

Owens dry lakebed is located in the Owens Valley, 200 miles north of Los Angeles. The valley's water, fed by the eastern Sierra Mountains and captured through a series of aqueduct projects built by the Los Angeles Department of Water and Power provide about half of Los Angeles's water. The diversion of this water has had a profound and complicated impact on the Valley including the environmental impacts of emptying the alkali Owens Lake.

The exposure of large swaths loose alkali soil on the dry lake bed to strong winds released dust that ranked Owens Lake as the number one single source of PM10 particulate matter emitter in the country – with measured conditions over 80 times acceptable values. A long legal battle with the DWP eventually resulted in forcing the DWP to implement a series of dust control technologies. After implementing over 40 sq. miles of lake with dust mitigation technologies at a cost over one billion dollars the DWP is attempting to manage their resources more effectively, while still meeting the dual requirements of dust control and "public trust" values. Within this context the studio strategically proposed simple modifications to dust control measures that better suited multiple values than the previous operationally-focused solutions.

The studio emphasized understanding the 100 square mile lake from the limited perspective of users and finding efficiencies in the perspectival experiences that could be paired with water efficient systems. The final products of the studio were presented to the DWP who have subsequently credited the work with fundamentally altering their current approach to the lake, including, notably the hiring of a project landscape architect to coordinate new operations. The studio was sponsored by the Great Basin Air Pollution Control District.

THIS PAGE: CHRIS ARNTZ



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ESSENTIAL LANDSCAPES

Arch 542BL. Instructors: Instructors: Douglas Campbell, Regula Campbell

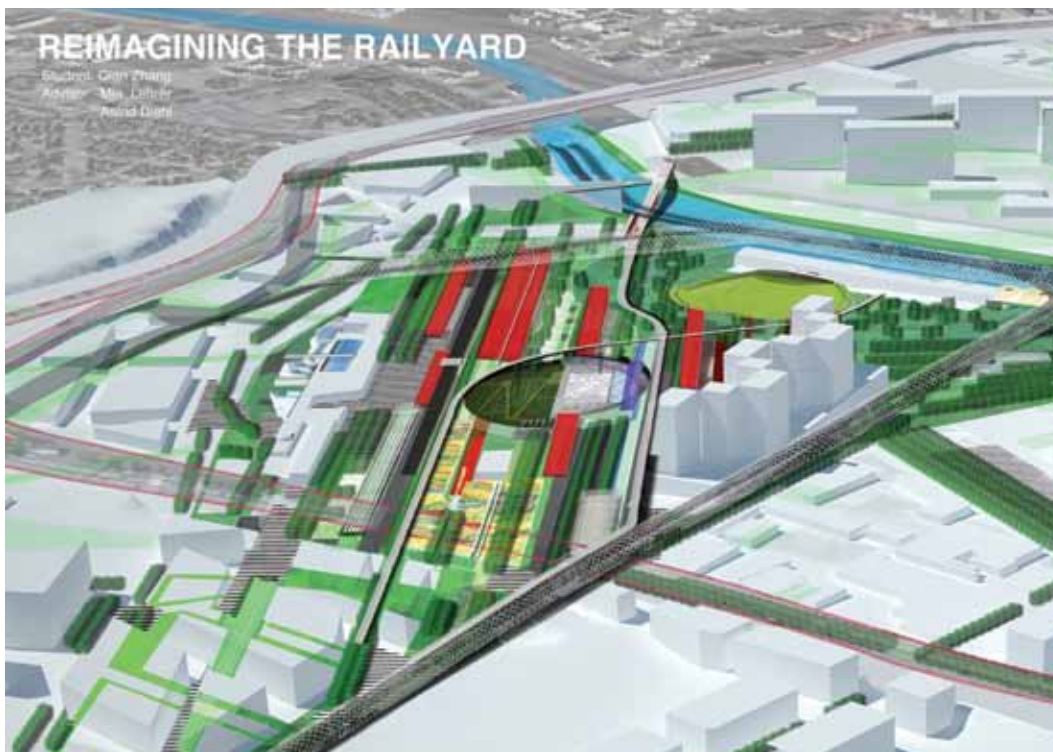
This studio focused on the design of significant shared places. Our laboratory was greater Los Angeles. We explored the re-creation of neglected places and the healing of broken places - transformative work.

We first addressed the re-design of a public elementary school campus near USC. This project involved reconfiguring the campus to incorporate the sustainable design goals initiated under the umbrella of the California State Architect and expanded upon by numerous statewide, local, institutional, and community groups. The project began with careful site analysis and documentation as well as programmatic definition developed from site visits and interaction with the school community. From this material, students created campus master plans that identified building sites and reconfigured existing open spaces into a re-envisioned campus. Students responded to the basic requirements of program accommodation, circulation, grading, safety and security, and maintenance. Simultaneously, designs were asked to embody a new teaching paradigm centered on the creation of distinctive school settings for immersive, experiential learning and socialization. The master plan design considered both landscape and architecture as it explored the formation of complementary outdoor and indoor educational environments. This exercise presented no shortage of BIG issues related to common goals of lifting up children, building community and expressing environmental and social ethics through physical design.

Our final project aimed to transform the disconnected and neglected Fort Moore Memorial in downtown Los Angeles into a coherent landscape expressive of shared values and meanings, simultaneously recognizing its historic significance and creating a setting for vibrant city life.

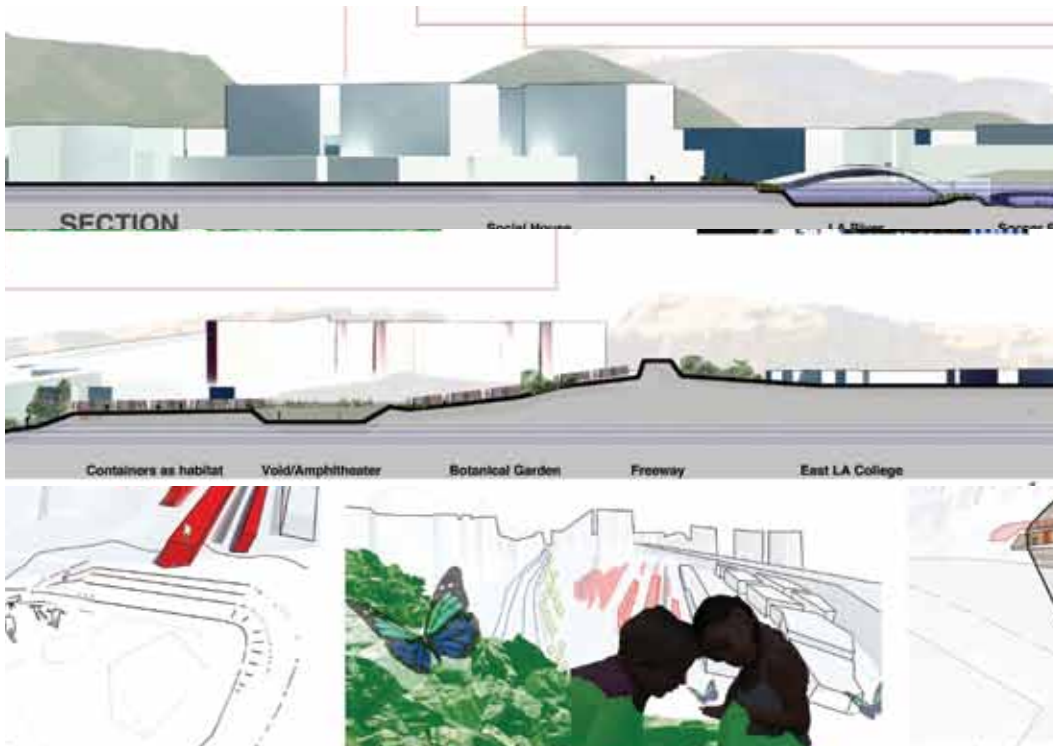
Both exercises emphasized vision and potential for successful realization —projects were 'reality based'— complete with all levels of programmatic, regulatory, environmental, contextual, and budgetary challenges through the development of detailed designs.

THIS PAGE: ADRIAN SUZUKI



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MISSION YARD: RECALIBRATE INFRASTRUCTURES



Arch 642L. Instructor: Mia Lehrer

Reimagining a 125-acre intermodal facility to create opportunities for meaningful interactions between people and nature in the heart of the city.

The majority of the world population (75%) will be living in cities as of 2050. Southern California is a megalopolis of 40,130 square miles and 28 million people from Ventura County to San Diego County, one blanket of development. Urban growth presents challenges and opportunities; we must explore ways to address issues of population growth and environmental pollution while providing housing, jobs and parks. Recalibrating infrastructure, while considering density and the revitalization of large urban areas, is a way of addressing urban decay.

The Los Angeles River runs for 52 miles, draining a watershed shared by millions of people but invisible for the past 80 years since the U.S. Army Corps of Engineers buried the river under three million barrels of concrete. Today multiple agencies at the federal, state, county and city levels are working to make the river visible again and to capture its social, economic and environmental potential. Still today, most of the River remains isolated and inaccessible.

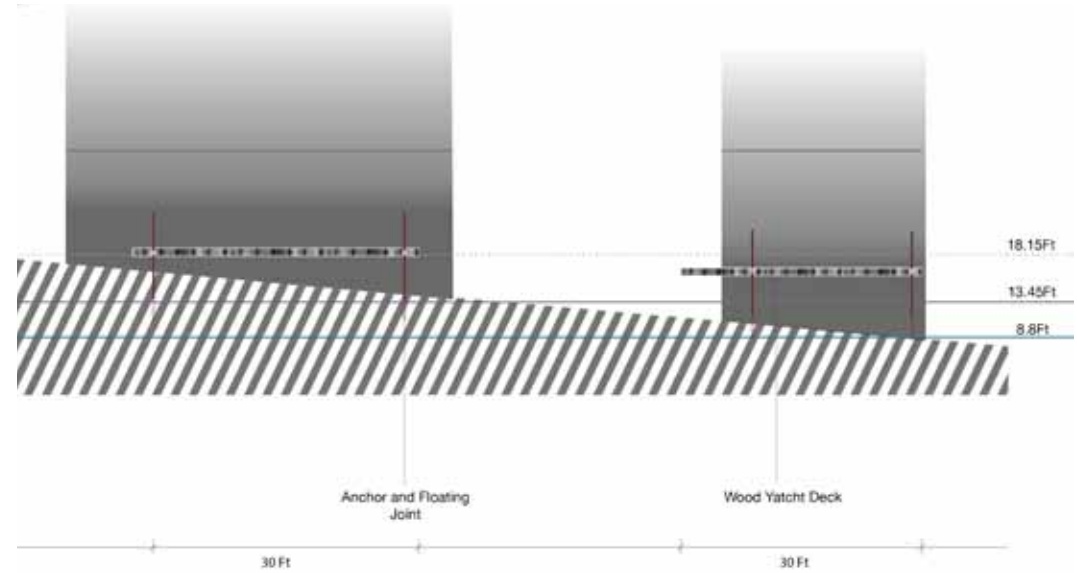
Among the most intractable areas is the Union Pacific Railroad Mission Yard or the LATC [Los Angeles Transfer Container Facility]: a 125-acre intermodal facility where containers are stacked between flat cars and 18-wheelers located on the east bank of the Los Angeles River. The Mission Yard is heavily connected to goods transfer hubs across the country from the Port of Los Angeles yet disassociated from its immediate neighbors, the USC Medical Center and Brewery Arts Districts among other destinations.

The studio proposed to re-envision the Mission Yard into an integrated asset for the city as well as a catalytic project for the area. Specific attention was placed on connectivity of and to the site and the re-calibration of the passenger and freight rail lines to foster public access and promote mobility by way of walking and biking. Environmental sustainability was paramount in addressing the river, the circulation system, the redevelopment areas and the associated public spaces.

THIS PAGE: QIAN ZHANG



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MLA DIRECTED DESIGN RESEARCH



Arch 698AL. Instructors: Robert Harris, Ying-Yu Hung

Directed Design Research is the title given to the independent design exploration that is the final studio-based requirement for the MLA degree. Students are required to identify and explore transcendent issues and principles through the discipline of landscape architecture design. Within an overall consideration of urban life, four sets of investigations are fully supported by the faculty and other resources of the University and the region.

The opportunities to create more supportive urban places: habitat; the public realm; open space and the streets; historic places and districts; places of commerce and exchange; amenity and meaning.

Understanding the integral importance of ecology and technology: natural systems and infrastructure; processes and materials for landscape remediation and construction.

Attention to design methodologies and processes: theories and practices of designing; collaborative approaches to project investigation, development and implementation; methods and techniques of simulation and visual communication.

Attention to issues of theory, history, and criticism: methods of historical inquiry, theories of interpretation and criticism; and socio-cultural implications of process and form.

THIS PAGE: XU BOHUA

PH.D. IN ARCHITECTURE

al laboratory for the study of place, in an extra-ordinary natural landscape, at the center of an unparalleled multi-cultural region, within the context of a great urban university. Los Angeles opens the extremes and the in-betweens of urban conditions and of landscape architecture possibilities. Thus, the study of landscape architecture at USC has a particular focus on urban place making in relation to three principles:

First, our emphasis is on truly advanced study based on the knowledge and skills to engage complex issues and to undertake ambitious explorations. Graduates are prepared for leadership opportunities in professional practice as well as in higher education. Students entering the program with undergraduate education in non-design disciplines should be prepared not only to develop professional knowledge and skills, but to enjoy and extend such knowledge across disciplines and cultures. Students entering with pre-professional or professional degrees in landscape architecture or architecture should be prepared to enter into extraordinary new trajectories of landscape architecture research and practice.

Second, our emphasis is on urban landscapes, and on the responsibility of design professions to create the qualities and meanings of our urban futures. Landscape planning and design must attend to places and projects at every scale from the garden to the region. Critical contributions must be made to the reclamation of degraded natural systems and places and significant progress must be made towards assuring a next generation of design professionals who know how to design projects that are themselves evocative, and that repair and enhance their contexts... nothing less than this will address the opportunities and challenges of our cities.

Third, we believe that place making is fundamentally a collaborative responsibility that requires leadership from professionals across the entire domain of planning and design. Thus we have created seamless relationships between programs, students, and faculty engaged in architecture, landscape architecture, preservation, building science and planning studies. In this regard, we emphasize intense, highly identifiable core studies in related disciplines whose boundaries are permeable and overlapping.

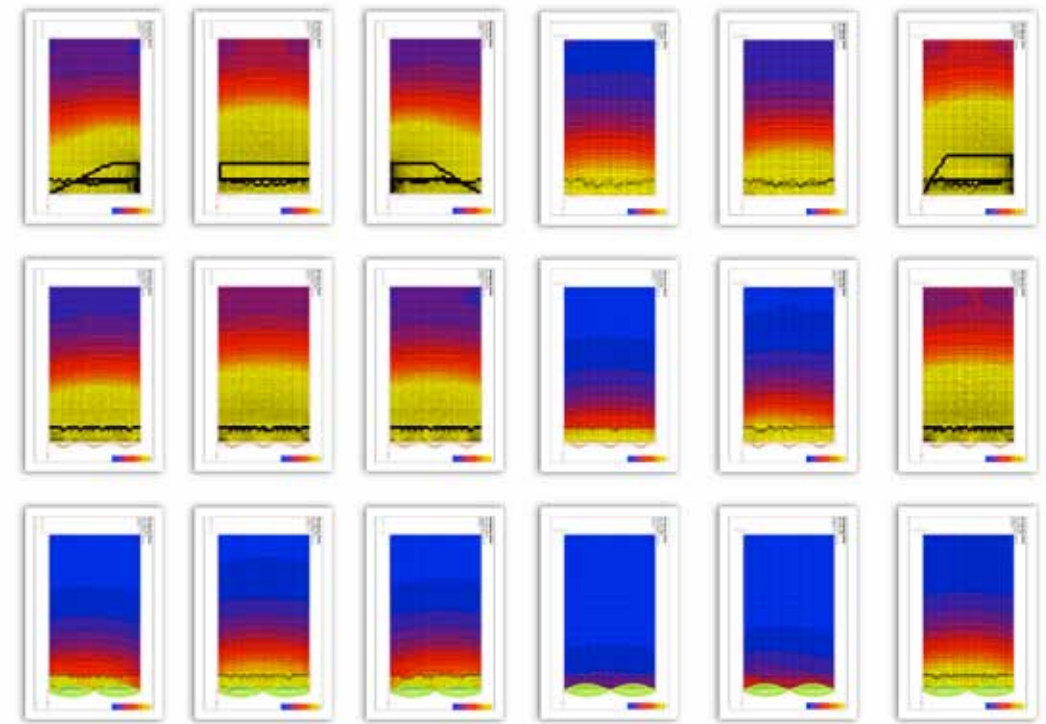
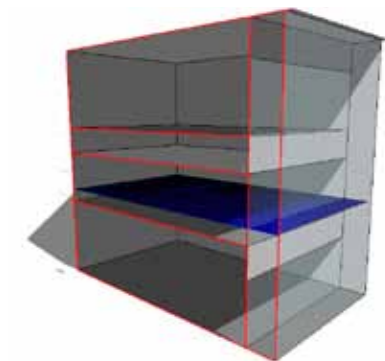
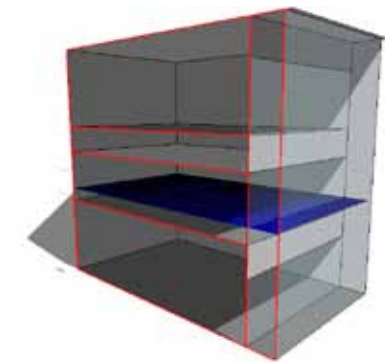
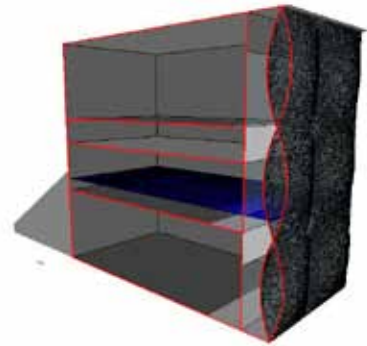
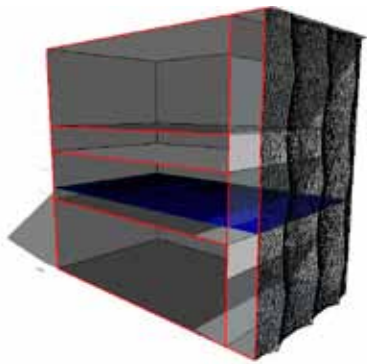
DESIGN RESEARCH AND THESIS OPTION

All MLA students are enabled through an independent design research study or thesis to advance new issues and ideas as well as to demonstrate proficiency in the field of landscape architecture. Students select a committee of three advisors including faculty members and other distinguished professionals. These studies occur during the final two semesters of each curriculum.

ACCREDITATION

The Master of Landscape Architecture degree program includes three curricula. Curriculum +3 for students with no prior design education and Curriculum +2 for students admitted with advanced standing have "Candidacy Status" in the process of accreditation by the Landscape Architecture Accreditation Board. Curriculum +1.5 for students with advanced placement is a post-professional study and is not subject to accreditation. Information about landscape architecture education.

First, our emphasis is on truly advanced study based on the knowledge and skills to engage complex issues and to undertake ambitious explorations. Graduates are prepared for leadership opportunities in professional practice as well as in higher education. Students entering the program with undergraduate education in non-design disciplines should be prepared not only to develop professional knowledge and skills, but to enjoy and extend such knowledge across disciplines and cultures. Students entering with pre-professional or professional degrees in landscape architecture or architecture should be prepared to enter into extraordinary new trajectories of landscape architecture research and practice.



STUDIES OF MEMBRANE FAÇADE GEOMETRIES' IMPACT ON ILLUMINANCE INTENSITY PATTERNS

PH.D. Student: Simon K. Chu

Improving the indoor environment of built spaces while simultaneously reducing energy consumption and operating costs has been a continual quest for architects and engineers; this effort, which originated with passive strategies, has in recent decades evolved into an intelligent façade concept. Modern glazed building envelopes first implemented simple and proven passive controls such as shutters, blinds and natural ventilation to provide adjustments to variant climate conditions. However, these early control strategies did not provide adequate versatility to address occupant comfort, especially in large buildings. As a result, innovative glazing systems have been the focus of many designers and researchers, and ultimately spawned the emergence and increasing significance of the façade engineer as a building systems specialist. The high-performance façade is a continually evolving building system that is central to the architectural aesthetic of a structure. It mediates between outdoor and interior spaces; it is a thin and fragile sheath between comfort and harsh environments, with infinite opportunities for systems integrations with advancing mechanical and energy technologies.

In recent history, double-skin facades (DSF) have been implemented to harness benefits of increased energy efficiency, acoustic isolation and access to natural ventilation. The continued innovation and application of these systems presents a need for revised structural standards that account for the fluid-structure interactions of wind with the multiple layers of the wall. Standards for the structural design of double-skin facades systems to resist wind load do not account for the geometric orientation of ventilation orifices with respect to the prevailing wind. This research focuses on the structural response of multi-story double-skin facades by evaluating the wind pressure distribution across the exterior and interior layers for prototypical configurations derived from recent case studies in the United States. The results will be compared against one another, as well as against a base case sealed façade. Multiphysics software is used to model the fluid-structure interaction, which combines the effects of structural deformation with fluid flow across select test samples.



FAÇADE RETROFIT: A SUSTAINABLE STRATEGY FOR TALL CURTAIN WALL BUILDINGS

PH.D. Student: Mic Patterson

The greening of the existing building stock represents a far greater opportunity than the creation of new green buildings. This dissertation examines a specific niche of the existing building stock with unique attributes and considerations.

There is a looming need for building façade retrofits in tall curtain wall buildings that presents equal parts opportunity and threat. The opportunity is in significantly improving the energy efficiency and habitability of the existing building stock. Important national and global energy efficiency and carbon reduction goals cannot be achieved without addressing this problem. The threat is that retrofits will be done inappropriately, utilizing environmentally damaging practices in their implementation, failing to achieve suitable performance levels on completion, and potentially causing more harm than good from a sustainability perspective. Current façade retrofit practices are fundamentally unsustainable, requiring significant change in materials and methods to accommodate the growing need.

This work is anticipated to contribute to the development of a sustainable façade retrofit strategy; it will address issues of sustainability while accommodating advanced design and technology solutions. The resulting process will seek to reuse as much existing material as possible, especially glass, limit new material requirements, and concentrate fabrication work at the immediate jobsite.

OTHER CONTRIBUTIONS:

- The identification and classification of existing façade retrofit strategies, and a comparative analysis between them.
- A sustainability assessment of the materials and methods characteristic of façade retrofits.
- A critical analysis of the use of clear glass in the building façade.
- Guidelines for the sustainable use of glass in the building façade.
- Guidelines for the façade design of new buildings to facilitate later retrofit opportunities.

RETROFIT OF THE JAVITS CONVENTION CENTER CURRENTLY UNDERWAY IN NEW YORK CITY



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FRANK LLOYD WRIGHT'S TEXTILE BLOCK SYSTEM: THE INSPIRATION FOR A SUSTAINABLE FUTURE

PH.D. Student: Edward D. Losch

When Frank Lloyd Wright devised his “textile block” system, he envisioned it as a mono-material—one material that would have integrity, serve as both the inner and outer finished surfaces of a wall, support floor or roof loads, provide light, insulate, and protect from the weather. To be successful, it would have to be inexpensive yet aesthetically pleasing, locally-produced from local materials, and assembled without special skills or equipment. As he wrote in his autobiography, concrete block was “the cheapest (and ugliest) thing in the building world...Why not see what could be done with that gutter-rat?”

In the early 1920's, Wright designed a series of homes that incorporated this reinforced precast concrete load-bearing modular block system. The first of these were built in the dry, wooded hills around Los Angeles—areas that were prone to wildfires. The University owns one of these homes – the Samuel and Harriet Freeman House.

The wall system consisted of a dry-cast double precast concrete block wall with an air gap between the outer and inner wythes. The outer wythe was optionally stamped with a decorative pattern. The 16 in. square site-cast blocks were stacked and reinforced horizontally and vertically with a “fabric” or mesh of grouted reinforcing bars, 16 in. on center.

Although the existing homes have exhibited serious problems over time, a case can be made for resurrecting the system using new technology. For my dissertation, design possibilities will be explored, tested and evaluated based on Wright's organic principles and today's emphasis on sustainability.

FREEMAN HOUSE LIVING ROOM OVERLOOKING DOWNTOWN
HOLLYWOOD

