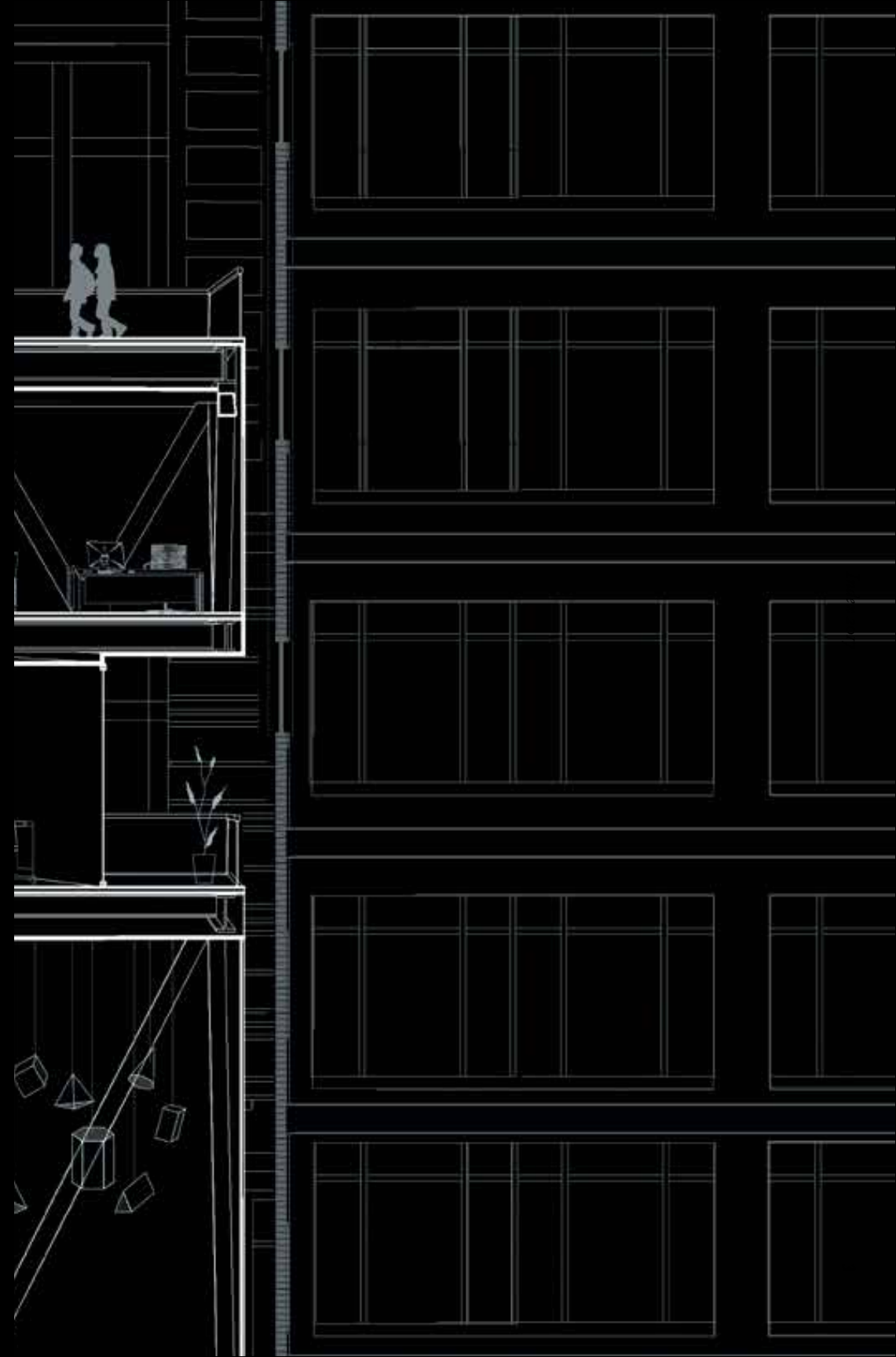


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Design: Omnivore

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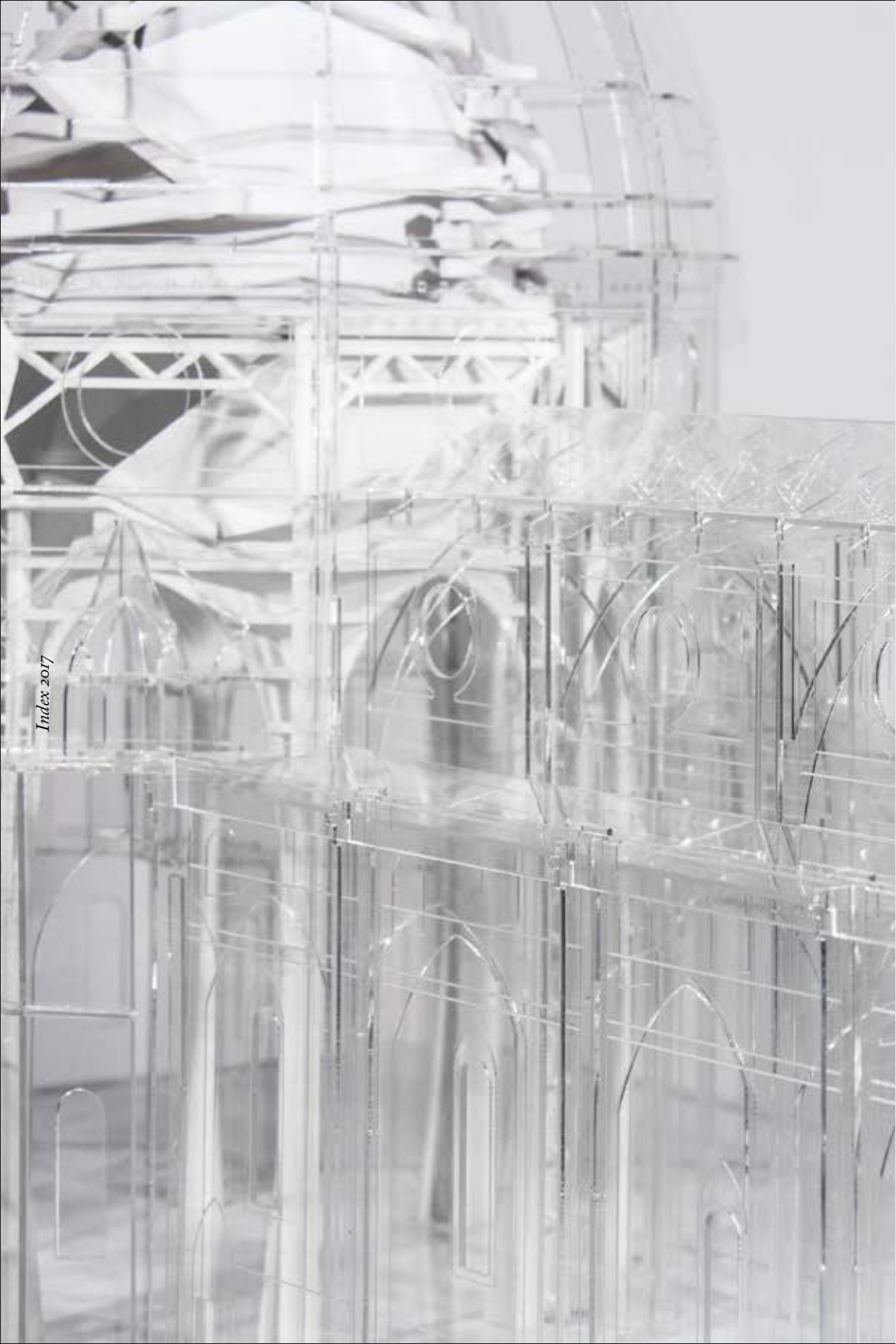
School of Architecture

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USC is fortunate to have the Master of Architecture professional degree program situated within an architecture school that also has superb undergraduate professional and non-professional degree programs.

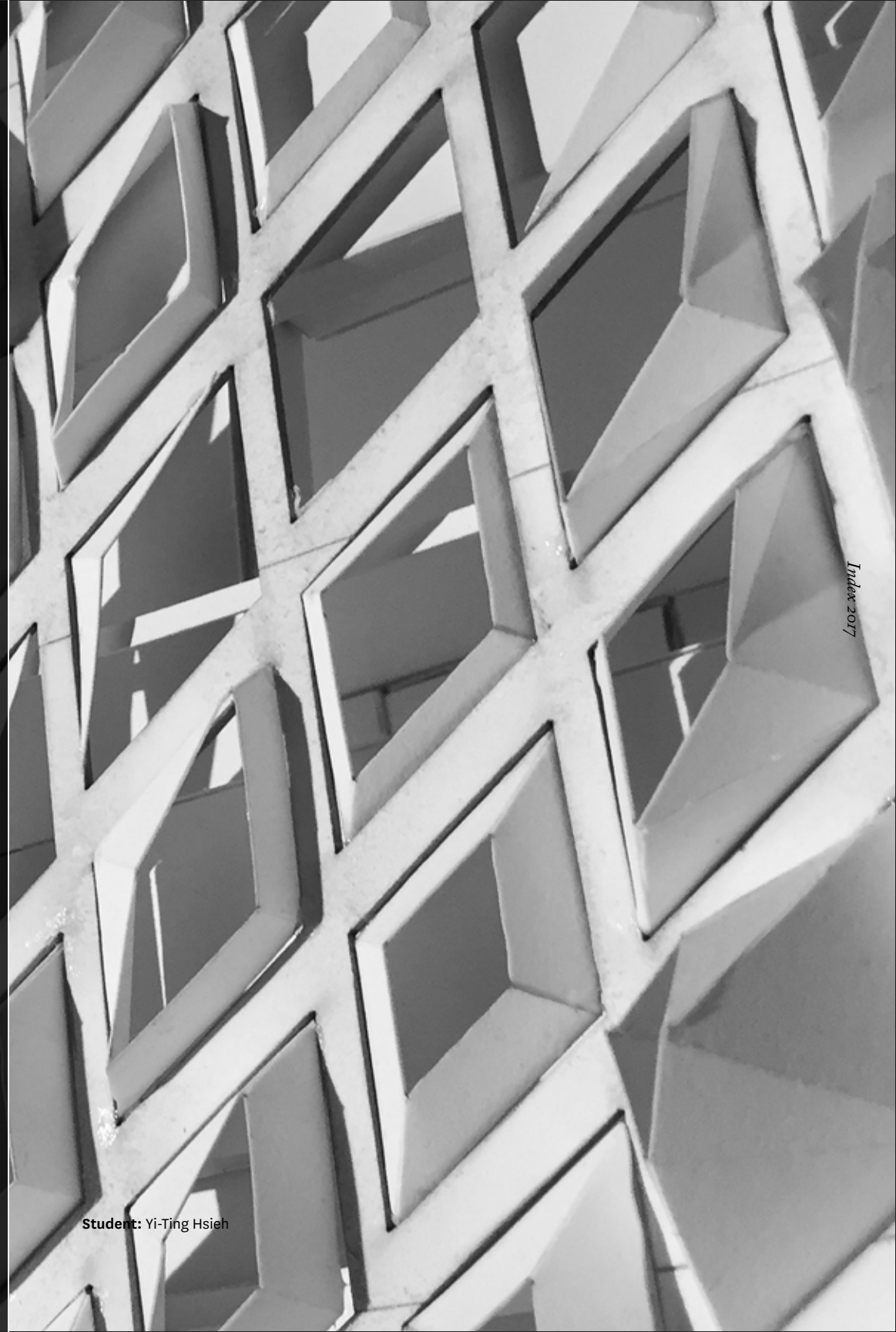
USC has an enduring history as one of the leading research universities in the world. USC and the USC School of Architecture are embedded into the urban fabric of Los Angeles and South Los Angeles—an area of tremendous growth and transformation. The City of Los Angeles, California, the Pacific Rim and Latin America—all within close geographic proximity to the university and the School—are on the frontlines of rampant urbanization, social movements for civil and social rights, and undergoing significant economic change. Navigating the world and the complexities of identity and space requires a capacious intellect and an imaginative mind. The USC School of Architecture has been educating explorers since its founding in 1919. Our educational offerings include architecture, landscape architecture + urbanism, building science and heritage conservation. With over 700 students and 100 faculty members, the School has the reach and scale of few others nationwide.

Student: Yizhi Hu

The pedagogy and curriculum of USC Architecture's graduate degree programs celebrate a pluralistic approach to what architecture means, what architecture's impact can be, and how an individual architect interacts with the context of the global world. Our students are the new explorers—the tradition of exploration that is at the core of the School's genesis. Our graduates are being equipped with competencies that range in scope from technical skills in designing architecture; conceptual precision in articulating ideas and linking 'architecture thinking' to other discourses including the humanities and social sciences; to representational finesse in utilizing analog, digital, and moving image methods to communicate ideas.

It is exciting to share the work of our students and faculty with you.

Milton Curry, *Dean*
Della and Harry MacDonald
Dean's Chair in Architecture



Student: Yi-Ting Hsieh



10 **Student:** Christopher DeLuca

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Introduction

Welcome to the 2017 edition of the Graduate volume of INDEX, the USC School of Architecture's annual publication of selected student work. The present volume demonstrates the breadth of interests in the graduate program and character of our approach to these interests. Work from all three years is represented, showing a progression of sophistication from the first semester work of students who have no prior experience in architecture to the final semester thesis projects that exhibit the difference made by three years at the School of Architecture, as architecture grommets become architecture nerds in a program driven by a contemporary spirit of gamesmanship and play. We think of these three years as a compressed version of twenty years of practical experience, curated through the ordered sequence of courses and the nature of the projects in each (architect years are like dog years). In this six-semester sequence, the first year focuses on disciplinary issues and enculturation into the community of architects; the second year addresses the influence of the public served by architecture and the context where it is embodied—a world of rules and natural laws animating the vocational and professional side of architectural practice; while the third year offers

Student: Chase Ashley

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the student an opportunity to demonstrate their own vision of how architecture should be, given these various factors and their place in history, by reacting to a design precedent chosen—and then exceeded—by the student.

While not scientifically rigorous or statistically significant, this sample does offer a reasonable snapshot of the program, and we invite the viewer to imagine themselves in this continuum. Whether you are a post-professional candidate pursuing determined interests of your own, an advanced standing student who needs to finish off a four-year undergraduate education with a professional degree, or a student new to architecture with a degree in another field, the USC School of Architecture provides the opportunity to join the architecture community and begin your contributions to the ongoing evolution of the field.

For over 100 years the School of Architecture has embodied Los Angeles architecture. Two Pritzker Laureate alumni, faculty who defined the Case Study program, and principals in important firms throughout the country have established a proud legacy that sets the bar high for present and future generations of graduates.

Wesley Jones, *Professor of Practice*
Architecture Discipline Head
Director of Graduate Architecture

Student: Ryan Hanley

ARCH-505B: Elements and Principles

In the first year, the traditional emphasis on ‘project-based’ learning has been replaced by ‘concept-based’ learning, substituting many smaller, ‘branded’ exercises of shorter duration, with very limited but clear pedagogical goals, for the more typical long-term design projects that try to address too many issues. These assignments are presented as questions to be answered by the students through practicing related skills; they distill key concepts for deeper understanding but also sequentially combine to add up to a disciplinary intuition broader than any single project could hope to foster. They are designed to be both challenging and fun—like architecture itself—and to offer the instructors the maximum latitude to use their own experiences to add relevance and elaboration. This is accomplished by ensuring that the briefs for these exercises are clear and complete as possible, which in turn instills confidence that the bases are covered, so the instructors are free to riff in direct reaction to the student performance.

The spring semester studio, ARCH-505B: Elements and Principles, builds upon architectural fundamentals initiated in the fall semester studio by examining topics of greater complexity and depth. Consequently, the pedagogy focuses not only on developing proficiencies in skills and technique, but also on the point of contact between conceptual thinking, perceptual effect, and critical form-making and representation.

The semester is organized around three design research projects that focus on fundamental architectural elements as well as on the relationship between form, phenomenon, and performance. The Façade, the Window, and the Room are used as vehicles to examine topics such as 2- and 3-D spatial organizational principles, various approaches to form generation, and the relationship between digital software and hardware as tools for imagining, modeling, and fabricating form and space.

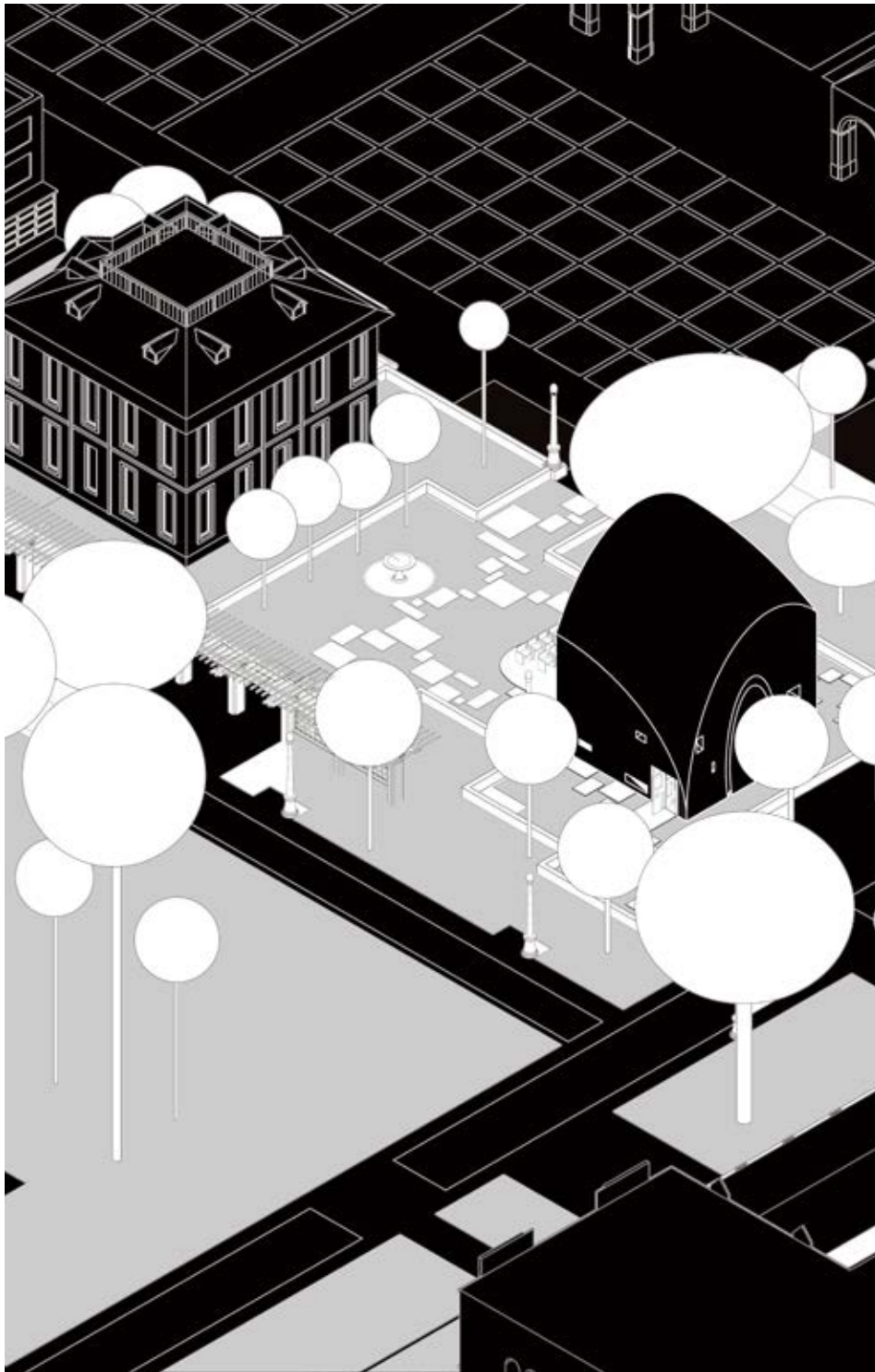
The emphasis is on developing an understanding of architecture as a discipline and critical practice—a spatial medium comprised of fundamental (or enduring) elements, relationships and principles.

The clarity of the overall structure is as important as the quality of the individual exercise. Assembled in this way, the exercises make the pedagogical arc visible to the students as a series of discrete steps. This allows the students to feel they are part of an identifiable program, to know their position at any time in the sequence and understand how each step relates to the previous and next steps. They can ‘put it all together’ in their own minds. Incidentally, this provides a mental map of the discipline itself and encourages them to retain this awareness in their later semesters, so that when they get to their final thesis year,

they are prepared to think at that level about their place in the discipline. In contrast, the traditional project-based pedagogy compresses too many variables and factors into each step/project for this to happen.

This structure of sequential, branded exercise promotes a sense of connection across years, so that succeeding classes can compare their answers to each exercise to those of the preceding years, and traditions can be formed that cement the eventual alumni’s sense of continuity and belonging to the Trojan Family.

Students: Jiming Bai, Roxana Bailey, Khalil Gobir, Ryan Hanley, Yi-Ting Hsieh, Adeline Li, Eunice Roh, Yifan Zhang



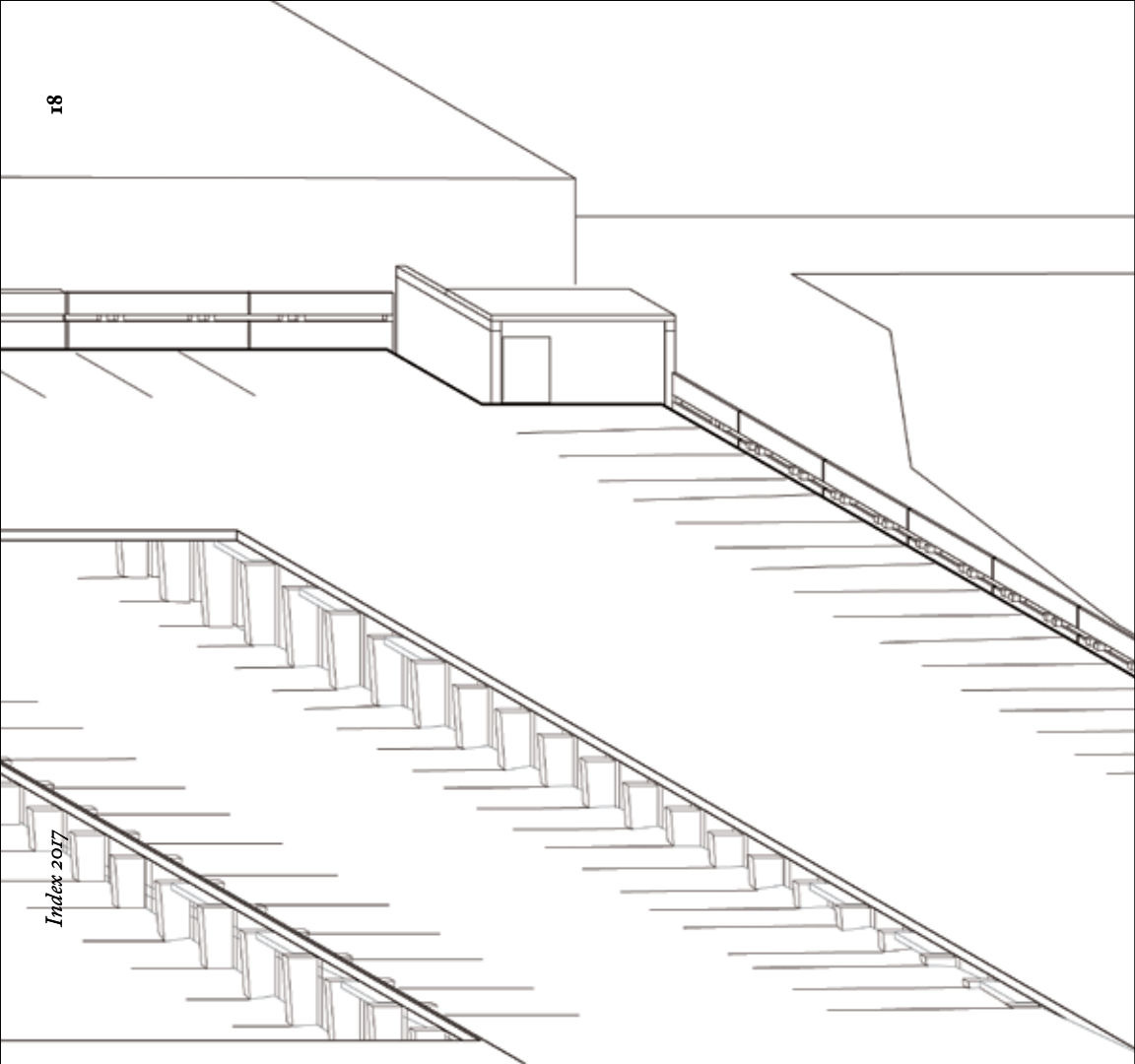
THIS PROJECT focuses on creating contradictory space by using differing language for exterior and interior experience. In this way, the visitors can experience a new world and forget their real world after entering this chapel. Some relationship between interior and exterior still exists so that it will not only have complexity but also consistency.

To achieve this goal, I make full use of Boolean options. Beginning with a cube, inserting an ellipsoid to get the overall mass. Continue inserting ellipsoids to form interior space inside the cube. To enhance the contrast between inside and outside, cubes are used for creating doorways, light wells, and apertures by Boolean difference option to create lineal elements outside but curvature elements inside.

For spatial experience, a series of sequential narrow and wide spaces are produced. People need to go through those spaces, experiencing different space scales before entering the main gathering space. Narrow spaces have higher ceilings, but wide spaces have lower ones, which is also a kind of contradiction.

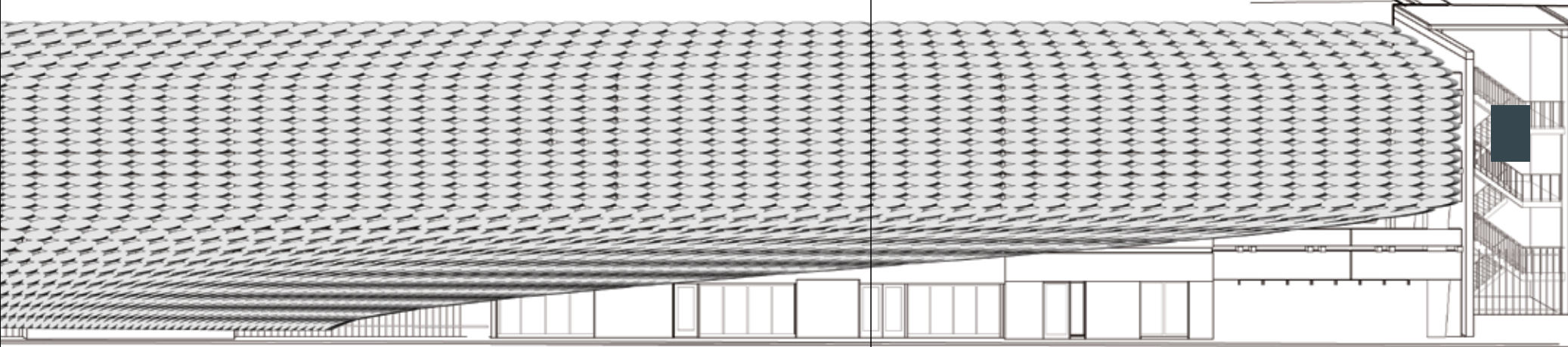
To manipulate the light, light wells on different levels are created according to the sun height and path during the day. In the early morning, the light well in the lower east will be illuminated first. At noon, sunlight will reach the highest one. At the end of the day, sunlight will go through the gap between two reflectors and omit in front of the audience, creating a magnificent atmosphere showing that life is perishing.

Student: Yifan Zhan

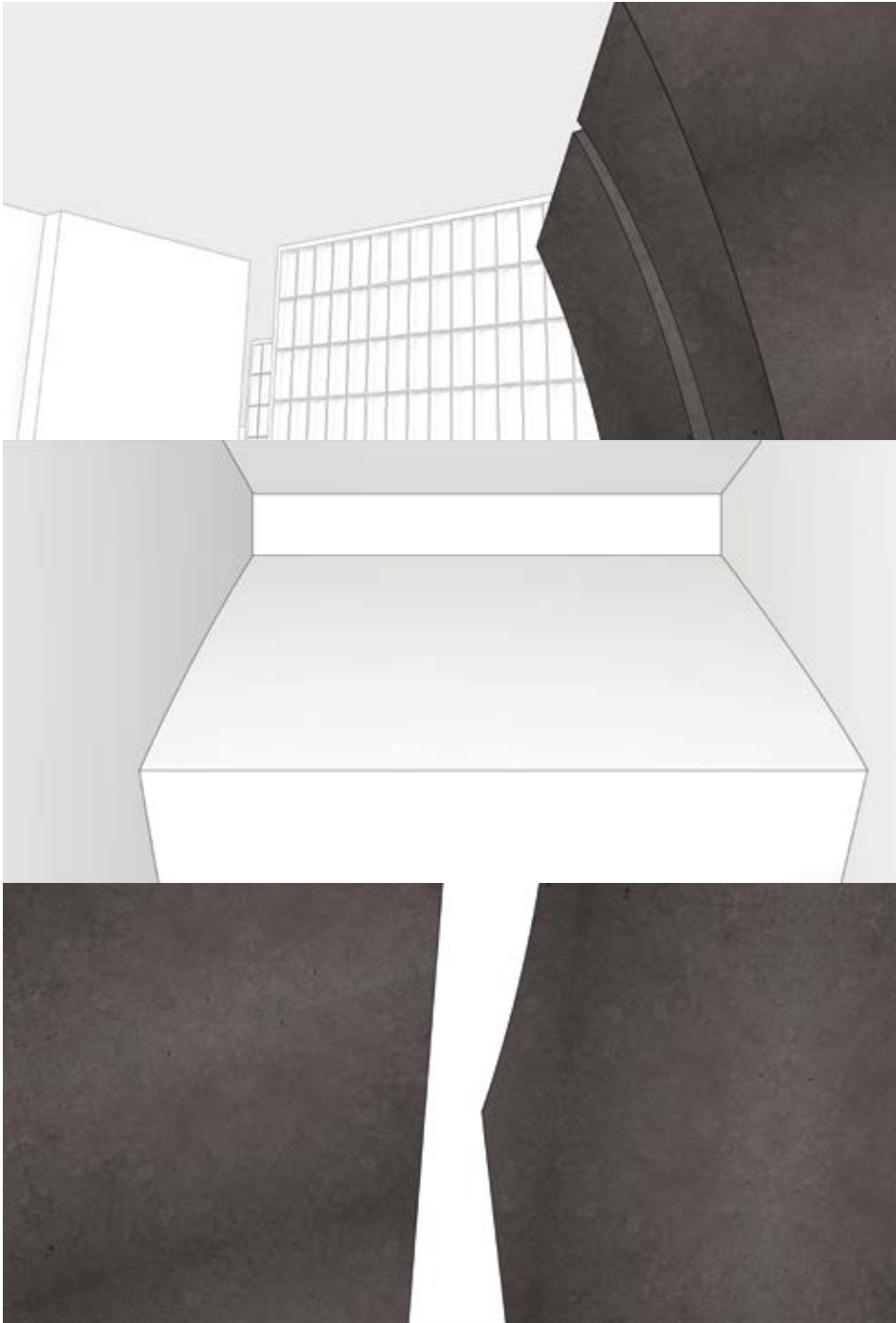


IN MOTION

This parking garage façade screen modulates light inside of parking structure X (PSX) with a moving field. A field of ellipses is tapered across the façade and responds to both the existing retail space on the ground level as well as the boundaries of the west-facing façade. The tapered field of ellipses is extruded at a 30-degree angle to block strong afternoon sun from entering into the garage. Depending on how one passes by the façade screen, the angled extrusion facilitates a transition from either being able to see directly into the garage to no view into the garage, or from having no view into the garage to a direct view.

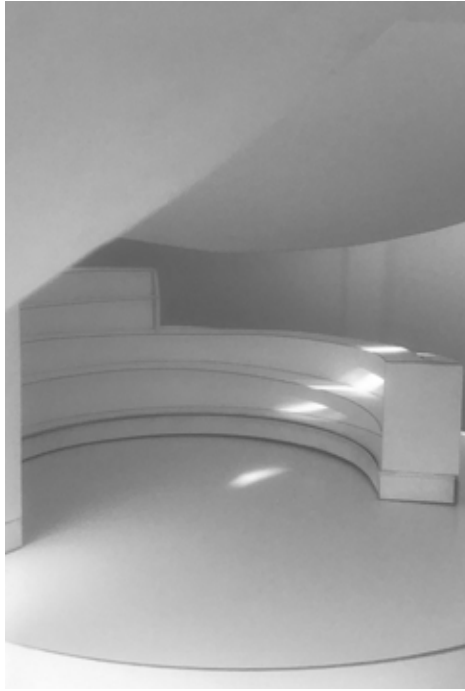


Student: Ryan Hanley



SERVING AS THE JUNCTION of multiple pathways, the pre-transformed site regulates the procession throughout the space with its existing planters, buildings, pavement, and fountain. Through minimal Boolean subtraction operations, the Chapel's form and circulation are created in order to facilitate and enhance the original procession. Simultaneously, the Chapel's siting breaks away from the grid of the campus reinforcing its quality as a figure within its spatial context. The integration of the Chapel coincides with redesigning the site: by removing some of its regulating features and redrawing a portion of the pavement, the site opens up, thus freeing the space through which students journey to their designated lecture halls. The Chapel's simple exterior pushes the boundaries of the original circulation creating new paths, as well as providing an uninterrupted passageway through it and preserving the original junctions at which these paths merge. Additionally, the Chapel extends the circulation below grade, experienced through a series of spaces, such as the curved passage, stair hall, and dark corridor, which finally open up into the main chapel space. Bathed in light rolling down the curves of the interior walls from the high skylight and sidelights, the phenomenological unfolding of space as moments inspires an atmosphere of contemplation, introspection, and reflection.

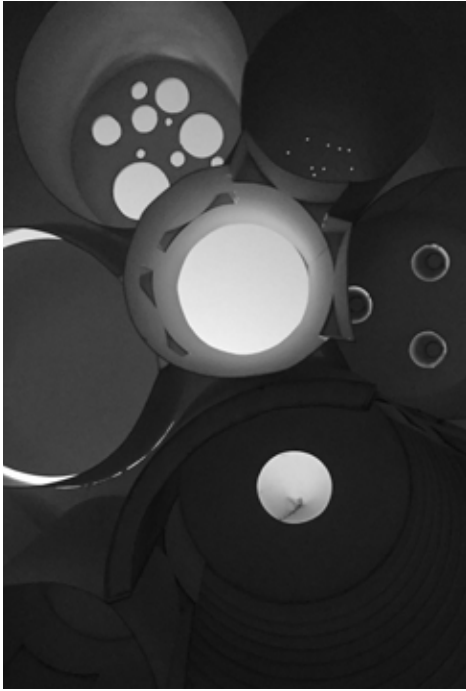
Student: Eunice Roh



ECLIPSE LIBRARY

Imagined to be a room for a book collector, the Eclipse Library utilizes lighting phenomenon to create an ideal reading environment and book storage space. Three circular shapes were merged to create the interior form to correspond with the book storage, study, and entrance spaces. Also corresponding with these spaces are three rounded and tilted skylights that allow light to bounce in from above while also creating even exposure of light and a variety of intensities throughout the day. The curving interior space not only softens light from the skylights but also serves to vary the thickness of the walls within the library. This results in portions of the wall that are very thin and allow translucent light to enter the space, as well as thicker areas that are more reflective. The combination of these elements creates a variety of lighting conditions and an overall atmosphere that is ideal for the program.

Student: Khalil Gobir



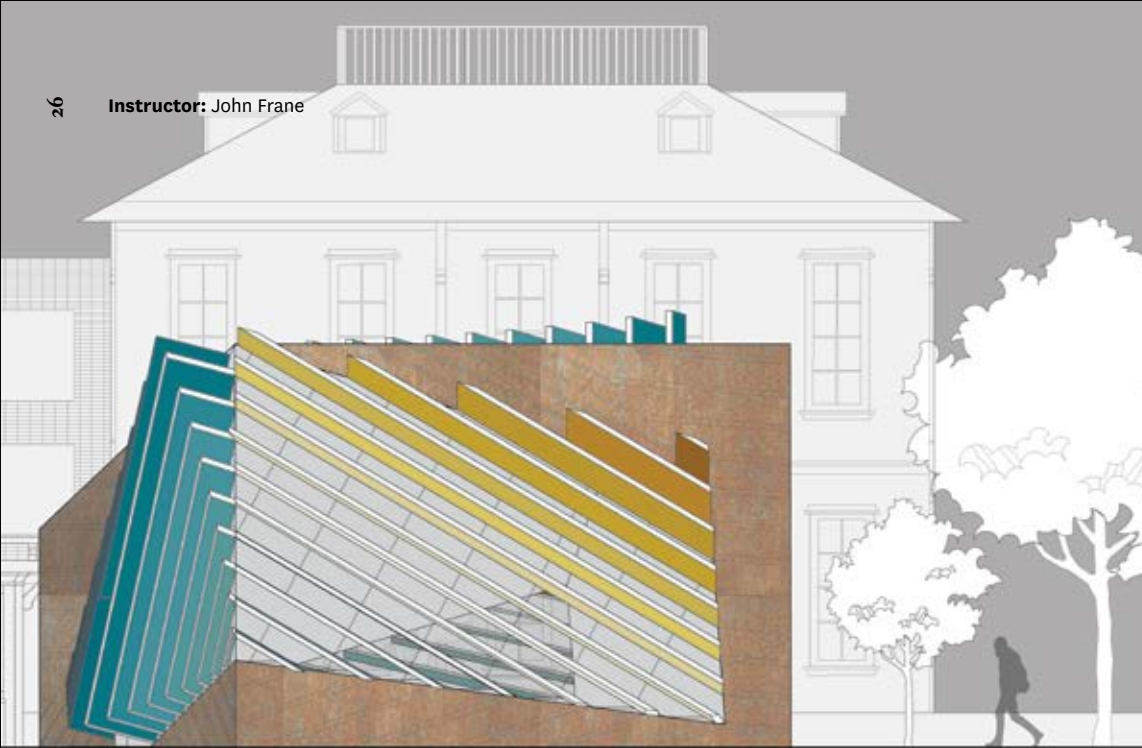
A PRIVATE BUDDHIST LIBRARY

A Buddhist library is more than a library. It is not only a place to read and learn Buddhist doctrine, but also a place to reflect and practice doctrine. In the Buddhist doctrine, in order to become bodhisattvas people must achieve six perfections:

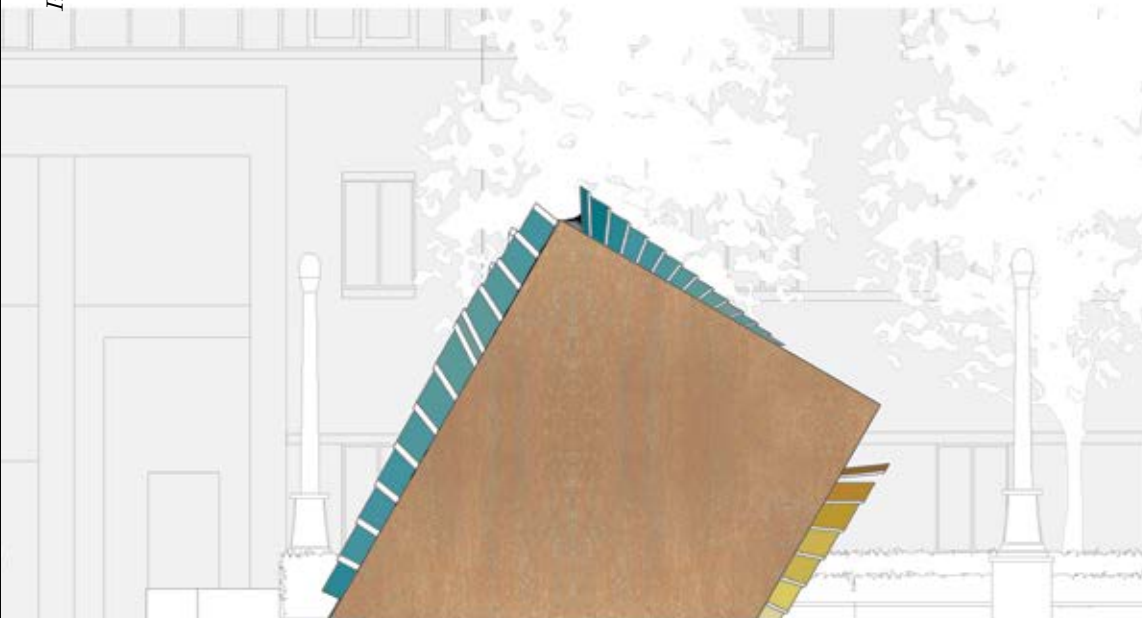
- (1) Dāna pāramitā: the perfection of giving;
- (2) Śīla pāramitā: the perfection of behavior and discipline;
- (3) Ksānti pāramitā : the perfection of forbearance;
- (4) Vīrya pāramitā :the perfection of vigor and diligence;
- (5) Dhyāna pāramitā: the perfection of meditation; and
- (6) Prajñā pāramitā: the perfection of transcendent wisdom.

This small library provides space for practicing the six perfections, and a few lighting strategies will be used to help achieve this purpose.

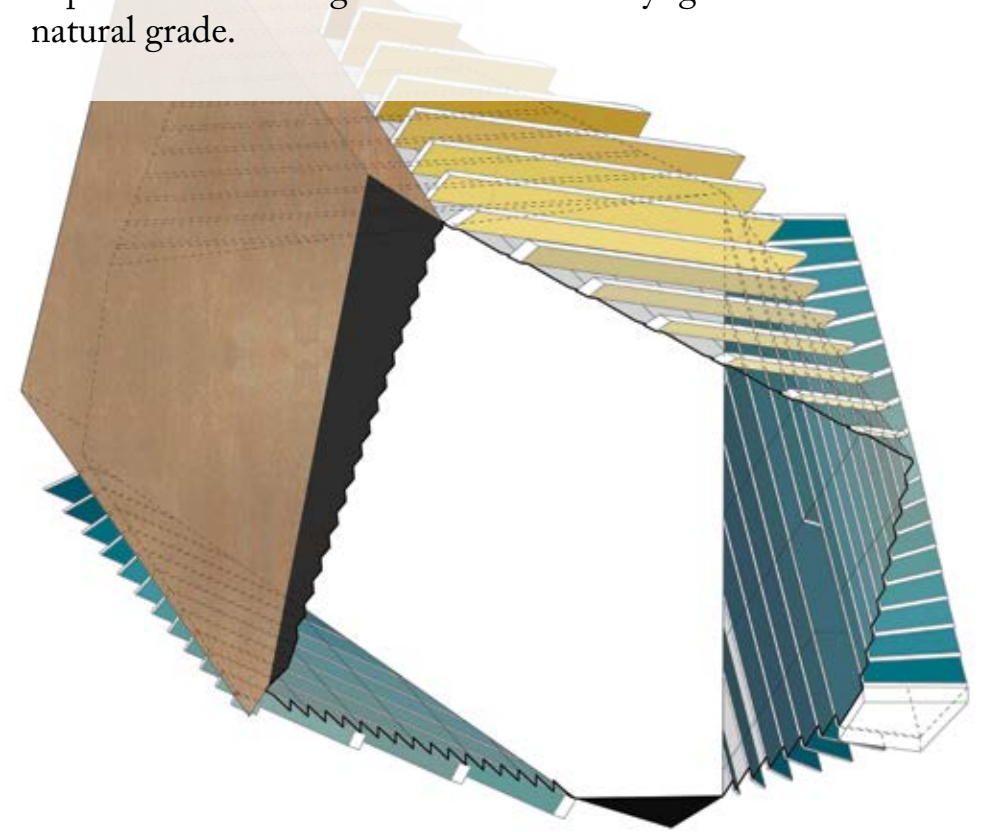
Student: Jiming Bai



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THE DESIGN for this campus assembly space explores variation of cast daylight. The interior void is held loosely within a larger exterior form to produce both thick and thin wall conditions. The white interior contrasts a dark exterior to emphasize the distinction between the two forms. Users descend into an envelope that is visually isolated from the activity of the courtyard, providing a calm haven amidst the daily commotion of campus. The fins moderate daylight through large apertures to produce different lighting effects in the morning and evening. Users experience both soft and hard light, reflected off both cool- and warm-tinted surfaces. An excavated perimeter reveals the depth of the building form and allows daylight to enter below natural grade.



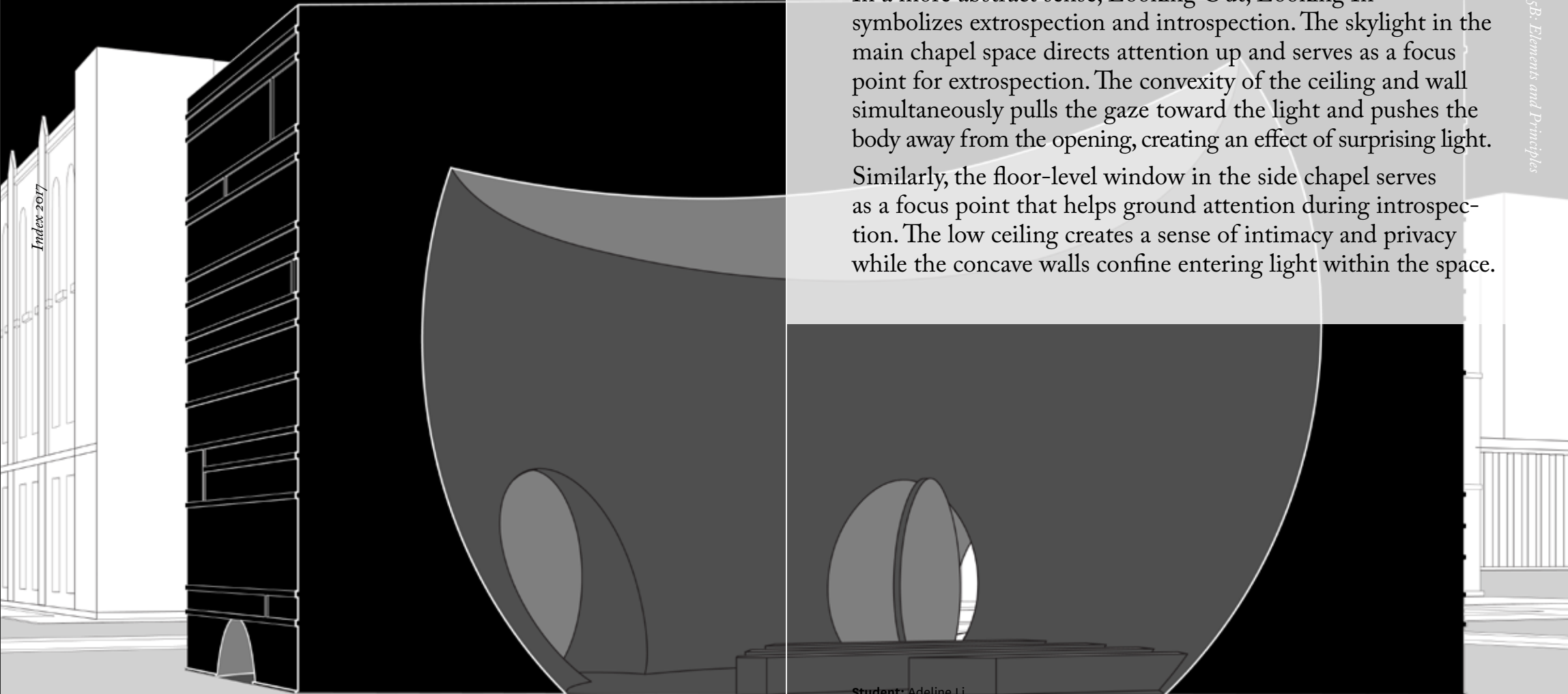
Student: Roxanna Bailey



THE LIVING FAÇADE

Serving as a translator between USC campus life and the PSX parking garage, the screen façade addresses an afternoon glare problem inside the garage. Twenty unique modules are configured according to sun angles and visual lines of interest. As one walks past the façade, a fluid array of shifting geometries is showcased in motion.

Student: Yi-Ting Hsien



LOOKING OUT, LOOKING IN

A non-sectarian chapel project that offers a cool, dark, quiet environment amidst the warm, vibrant, and bustling Los Angeles, *Looking Out, Looking In* physically attempts to employ Venturi's ideas of contradiction between the outside and the inside. The rectilinear exterior of the chapel reflects the orthogonality of the site while the interior lining gradually dissolves symmetry by exploiting the asymmetrical and symmetrical properties of the ovoid.

In a more abstract sense, *Looking Out, Looking In* symbolizes extrospection and introspection. The skylight in the main chapel space directs attention up and serves as a focus point for extrospection. The convexity of the ceiling and wall simultaneously pulls the gaze toward the light and pushes the body away from the opening, creating an effect of surprising light.

Similarly, the floor-level window in the side chapel serves as a focus point that helps ground attention during introspection. The low ceiling creates a sense of intimacy and privacy while the concave walls confine entering light within the space.

Student: Adeline Li

Coordinator: Aaron Neubert

Instructors: Mario Cipresso, Kim Coleman, John Dutton, Lorcan O'Herlihy, Larry Scarpa, Patrick Tighe, Geoffrey von Oeyen

ARCH-605B: Comprehensive Design Studio

In the second year, the emphasis on vocational concerns turns the first year's 'architecture game' into a 'practice game.' The short duration exercises necessarily become longer and more specifically associated with 'projects,' which form the 'map' of the year. While the same pedagogical spirit prevails, with carefully scripted exercises that are challenging and fun and which offer the instructors the maximum latitude to use their own experiences to add relevance and elaboration, the work is cumulative rather than merely sequential. The design projects are 'built up' through the exercises, as steps or layers, leading to comprehensive results that integrate each of the lessons into a recognizable, finished building product.

Vocation is turned into voc(re)ation in the second year. Needless to say, it is a challenge to make the otherwise dry, pragmatic vocational requirements suddenly interesting and engaging. However, just as the history of architecture and the depth

of disciplinary lore provide the first year with a wealth of material to draw on in the creation of exercises—not to mention imposing a responsibility to capture at least a sense of this vastness and its broadest outlines—so the volumes of codes, rules of thumb, common practices, and practice lore provide the second year with a trove of material to be mined in the creation of its exercises (as well as imposing the same attendant responsibility to 'cover the bases'). What is needed to activate this material is an attitude adjustment for both the students and the faculty.

This attitude adjustment—towards the 'nerd' culture mentioned above—will occur through multiple tactics. For example, in contrast to the first-year strategy of highlighting the overall structure to enhance student 'buy-in,' in the second year this must also occur through the design of the individual exercises and their inter-relationship with the whole project. Since the

vocation and profession are not as mysterious as the discipline—opposite, in fact—the place of the 'student performance criteria' (SPC, from NAAB accreditation requirements) is already well understood. Instead, an effort toward 'game-ification' is being made to tease the students into deeper understanding and involvement with those aspects of performance criteria that are otherwise felt to 'get in the way' of design.

In order to give some orientation to this vocational landscape, where these games are played out, the difference between architecture and engineering is emphasized. A 'contest' between the two disciplines is established to heighten the contrast, making the tradeoffs and connections between them more obvious. For example, the spring semester of the second year (the 605b 'Comprehensive Design Studio') is split into pragmatic and expressive halves: the students are asked to design their project twice—once

as an engineering problem, specifically devoid of any architectural expectations but completely devoted to solving practical problems and achieving the greatest efficiency and then again after the mid-review, this time taking architecture's interests into account. The two projects will be presented side by side in the final review, offering the starkest possible contrast between the two value systems and inviting discussion about what is gained or lost by their artificial segregation.

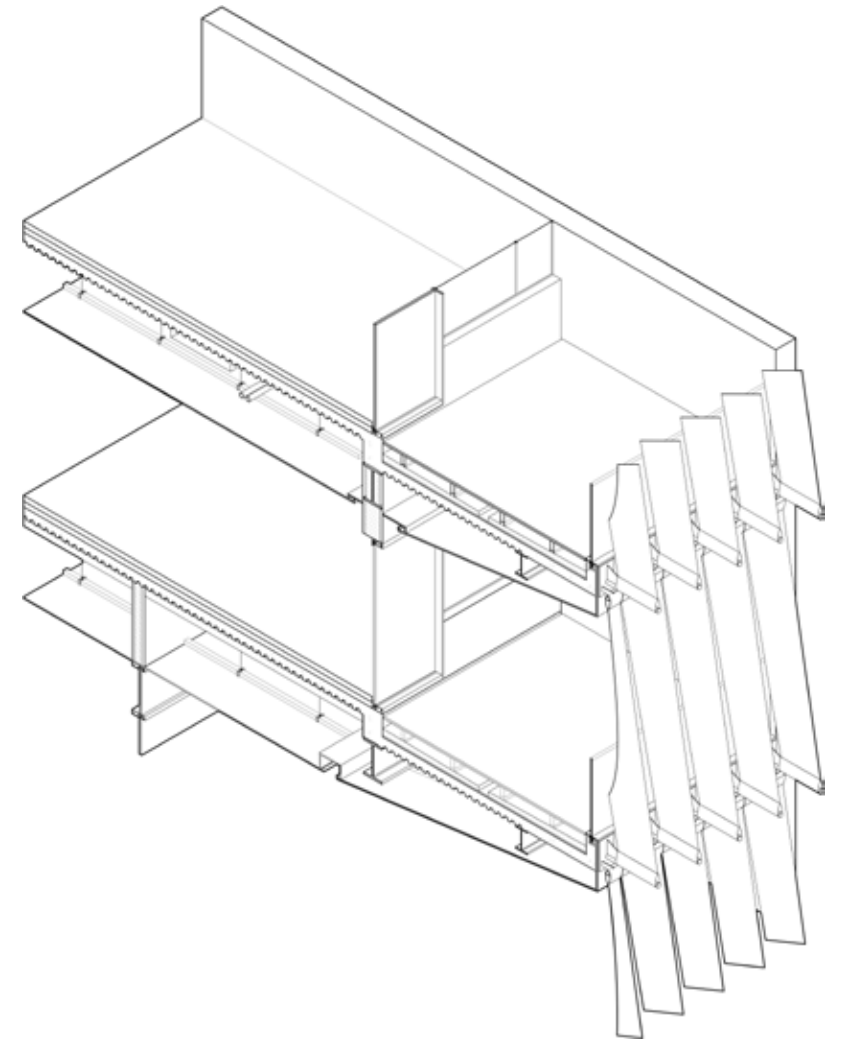
Students are tasked with exhibiting technical ability and awareness in a variety of areas, including structural systems, site design, critical thinking, environmental systems, accessibility, life safety, sustainability, and financial considerations. The comprehensive nature of the studio serves to enhance the development of architectural proposals that are simultaneously provocative, conceptually rich, and highly resolved.

The Comprehensive Design studio presupposes that the understanding of complex building systems and the technical requirements relevant to contemporary architectural practice are an essential part of a rigorous design process.

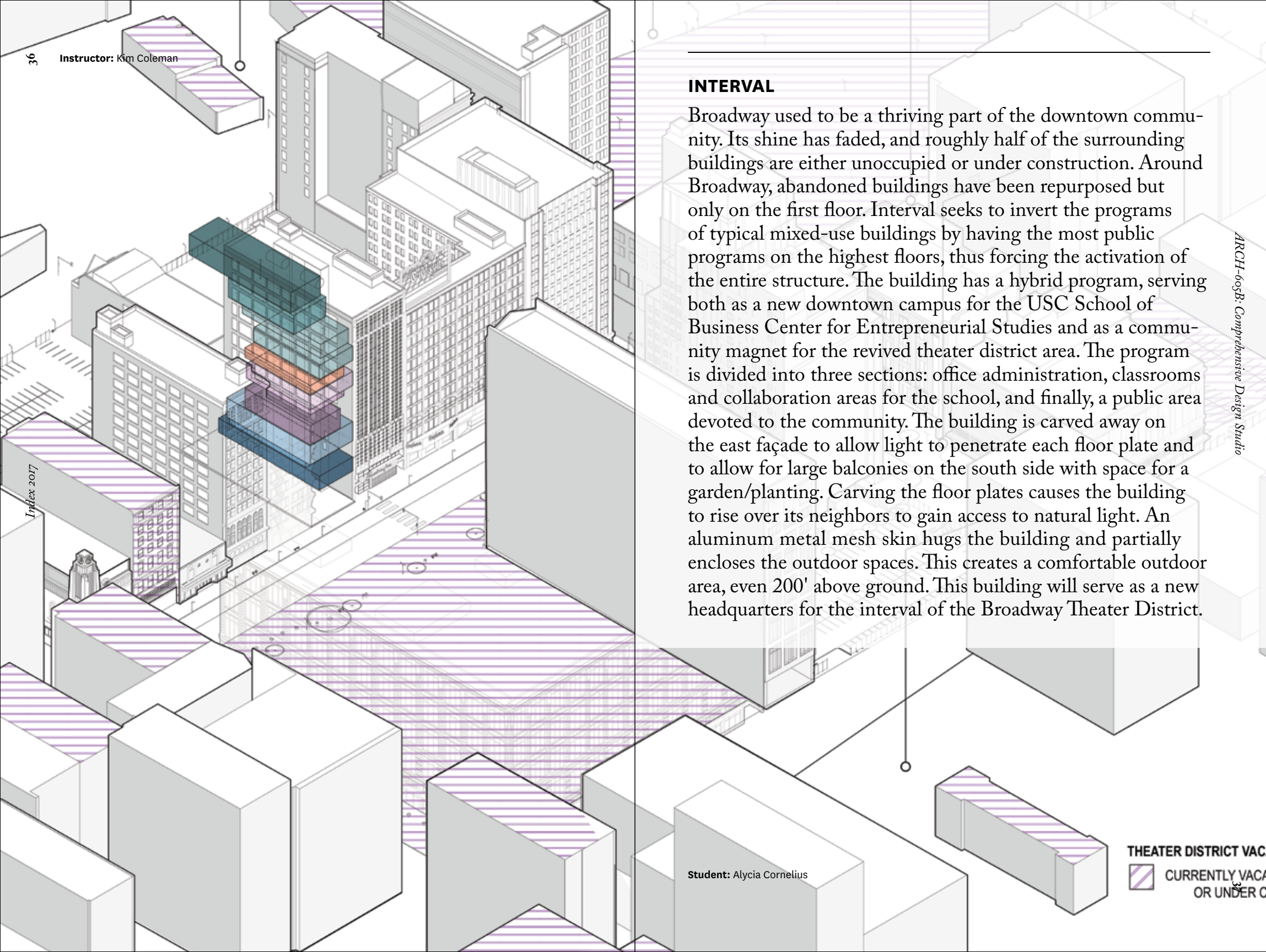
Students: Ashley Chang, Alycia Cornelius, Walker Hart, Kristi Hsiao, Margot Kleinman, Pornpavee Mungrueangsakul, Benjamin Lin, Yuwei Ma, Jack Stewart, Ximing Sun, Samarth Syal, Yun Wang, Thomas Wen, Minfeng Xia, Daoxin Xing



AS THE PROJECT is a vertical campus, we tried to organize the public space and programs vertically. There are three program partitions: public, collaborative, and private. Each partition shares an atrium, and then we strengthen the ties between the atriums and urban context, applying sunlight into the building and creating a view connection.

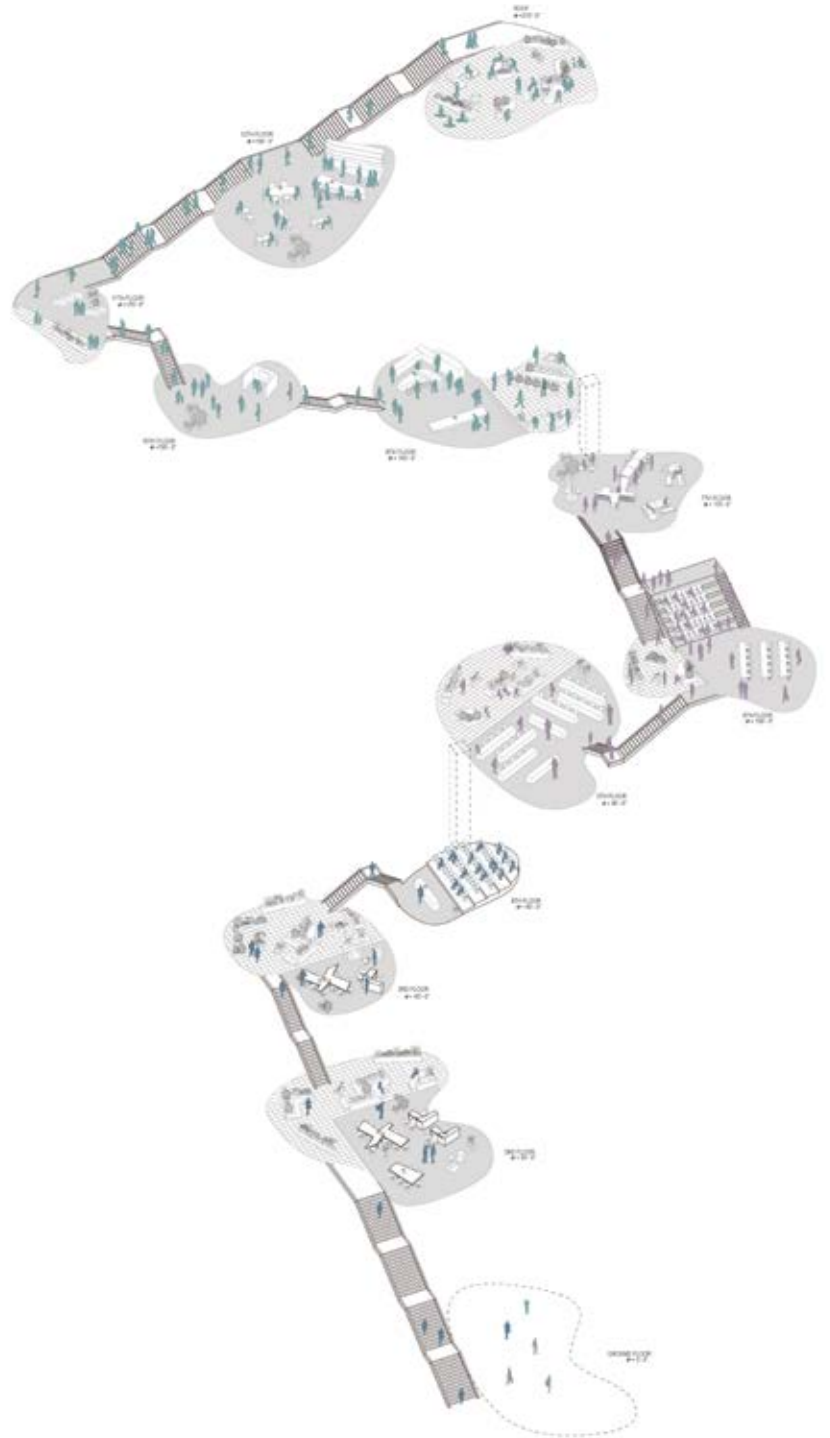
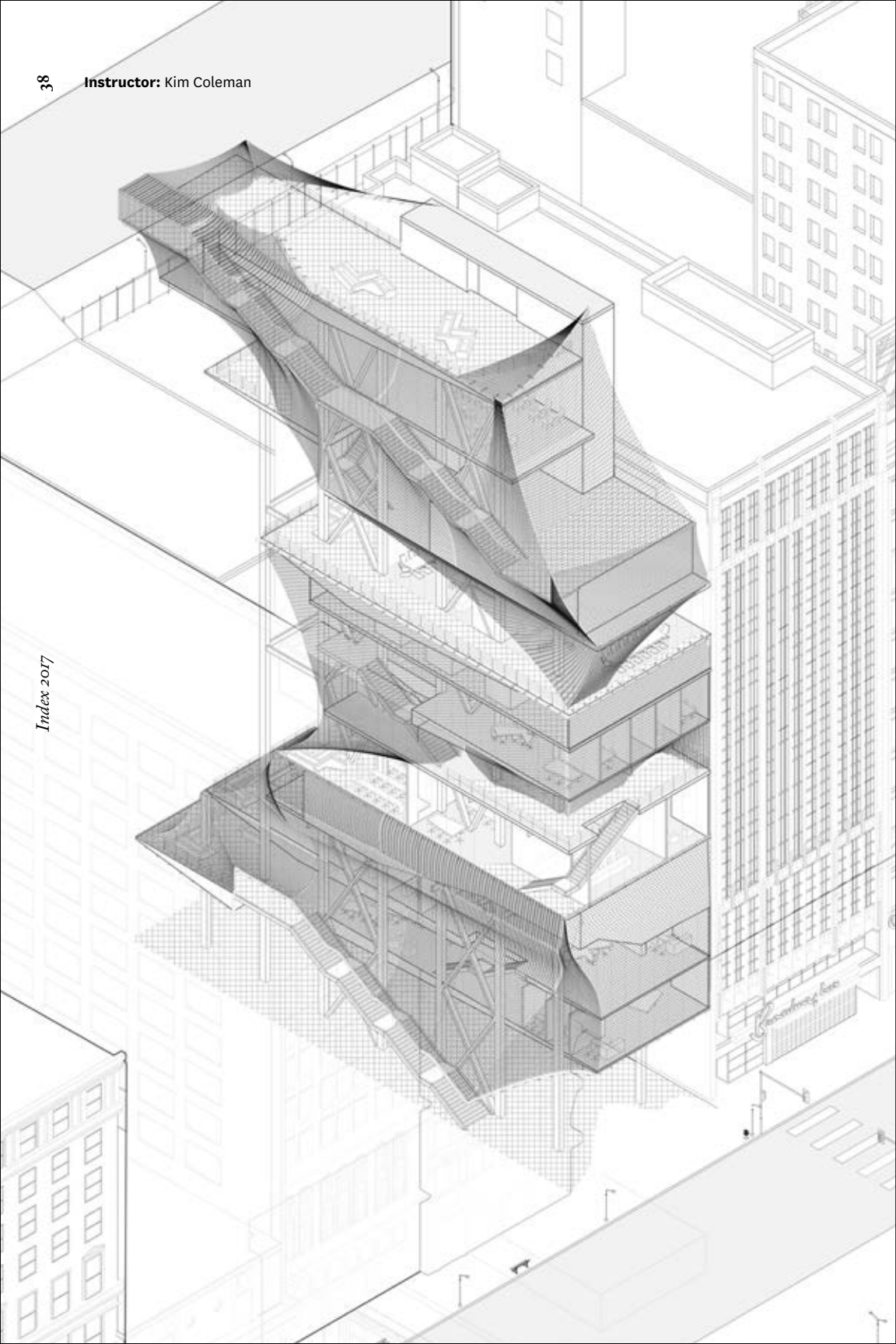


Students: Daoxin Xing, Ximing Sun, Yun Wang

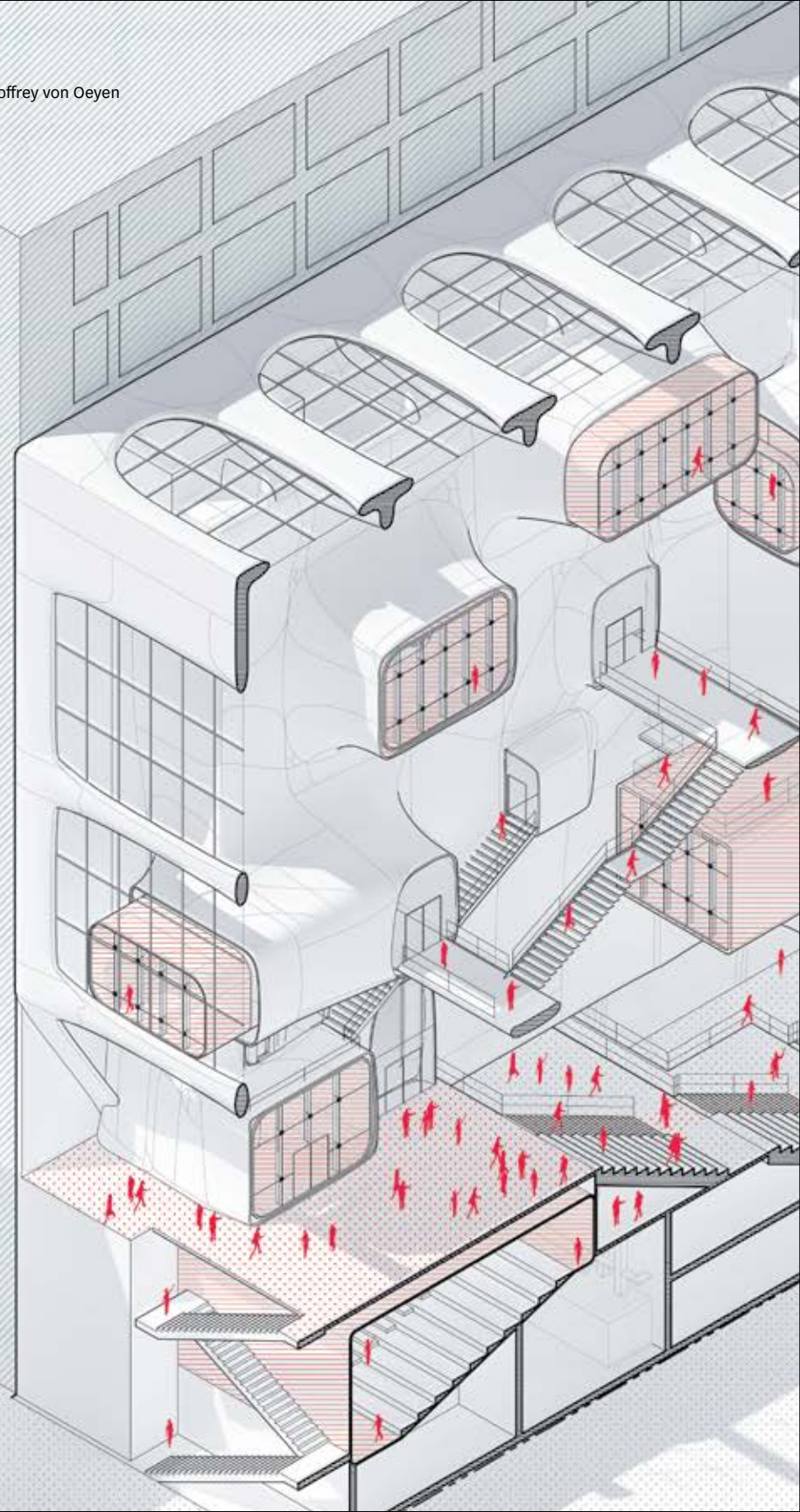


INTERVAL

Broadway used to be a thriving part of the downtown community. Its shine has faded, and roughly half of the surrounding buildings are either unoccupied or under construction. Around Broadway, abandoned buildings have been repurposed but only on the first floor. Interval seeks to invert the programs of typical mixed-use buildings by having the most public programs on the highest floors, thus forcing the activation of the entire structure. The building has a hybrid program, serving both as a new downtown campus for the USC School of Business Center for Entrepreneurial Studies and as a community magnet for the revived theater district area. The program is divided into three sections: office administration, classrooms and collaboration areas for the school, and finally, a public area devoted to the community. The building is carved away on the east façade to allow light to penetrate each floor plate and to allow for large balconies on the south side with space for a garden/planting. Carving the floor plates causes the building to rise over its neighbors to gain access to natural light. An aluminum metal mesh skin hugs the building and partially encloses the outdoor spaces. This creates a comfortable outdoor area, even 200' above ground. This building will serve as a new headquarters for the interval of the Broadway Theater District.



Student: Alycia Cornelius



PLUG 'N' PLAY

Plug 'n' Play is a proposal for a satellite campus for the USC Marshall School of Business's Lloyd Greif Center for Entrepreneurial Studies located in the Broadway Historic Theater District of downtown Los Angeles. Being an infill project, the site faces challenges including constrained accessibility for construction, inadequate day-lighting, narrow floor plates, and rigorous building envelope regulations.

The project seeks to both maximize the lightweight structural benefits of composite materials and harness its expressive formal potentials. Through numerous consultations with ARUP Engineers and USC's very own structures professors, our team devised a rigorous scheme for a typical steel diaphragm structure capable of providing the undisturbed spatial and luminous qualities desired for the central atrium. Having a solid foundation in traditional loading structure allowed us to translate steel members into fiberglass through sculptural, form-finding exercises.

We ultimately arrived at a design solution akin to the structure of a ship: the external, steel diaphragm has undertaken a total conversion into the organic rib-like curvature afforded by the FRP material and extended into the upper building structure to form the structural equivalent of bulkheads. The floor plates and ceilings are attached to the bulkheads before the structural hull is affixed, binding the entire assemblage into a unified structural system. Finally, the prefabricated modules for individual rooms are inserted into the openings in the shell—hence the namesake, Plug 'n' Play.

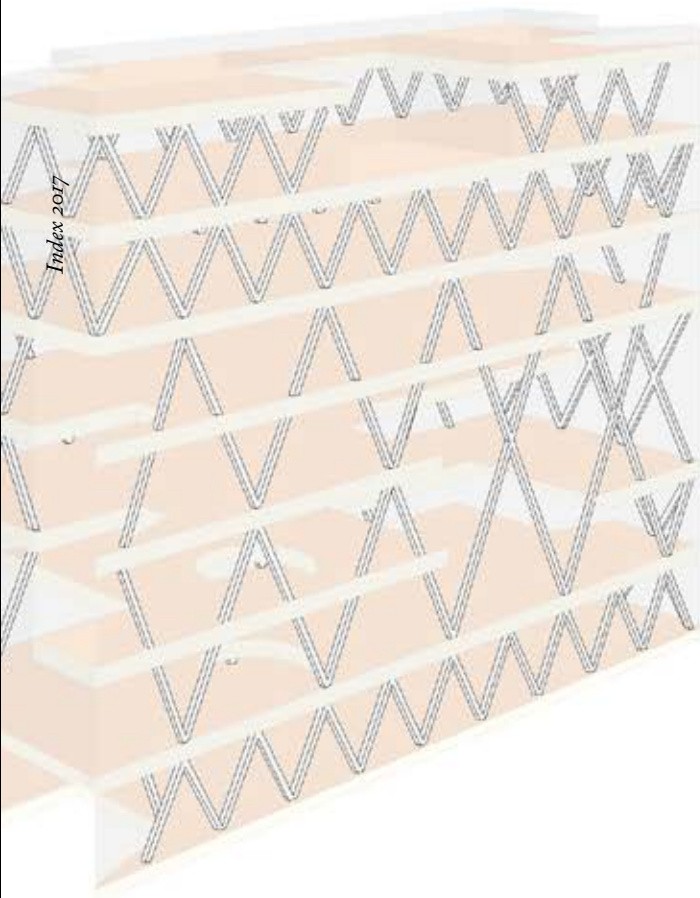
Students: Kristi Hsiao, Samarth Syal, Thomas Wen



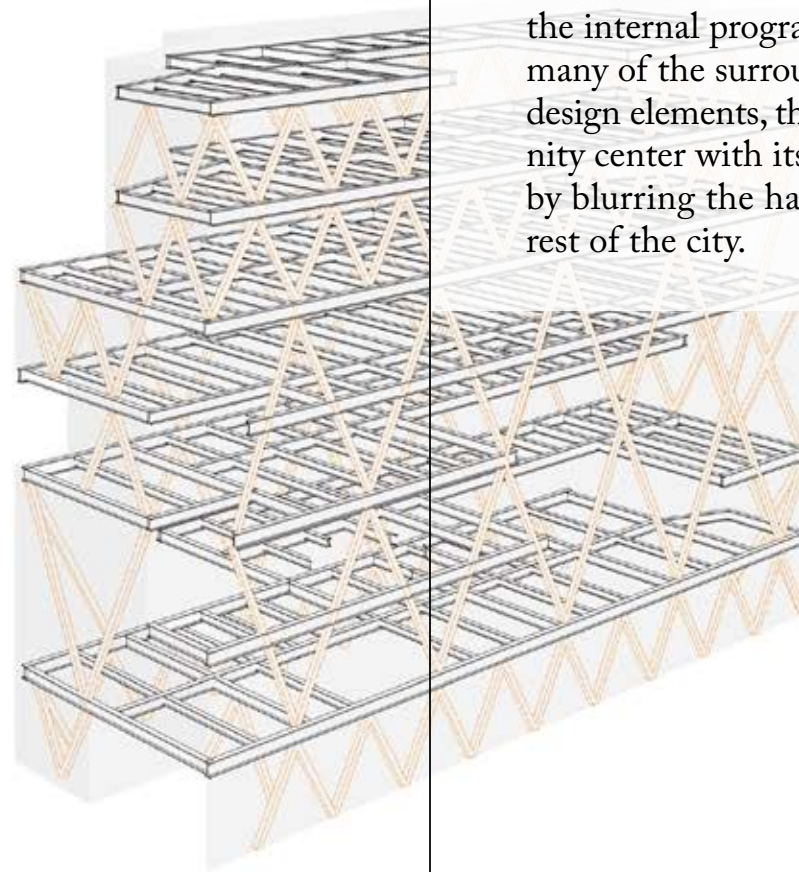
THE SATELLITE CAMPUS for the USC Marshall School of Business is located in an excessively urbanized and hardscaped area in the Theater District of downtown Los Angeles. This led to conducting research on the immense hardscape versus the little softscape in the downtown area. Therefore, the project attempts to craft a biophilic learning and public engaging environment for the satellite campus to offset this inequality. Through cataloguing and analyzing the existing contextual green spaces, we understand how different typologies of softscapes each spatially relate and play a role in the urban fabric. Programmatic spaces of the institution are then explored and spliced with studied 'green' typologies based upon its use, public versus private relationship, as well as typological geometry and thus, generating its spatial logic.



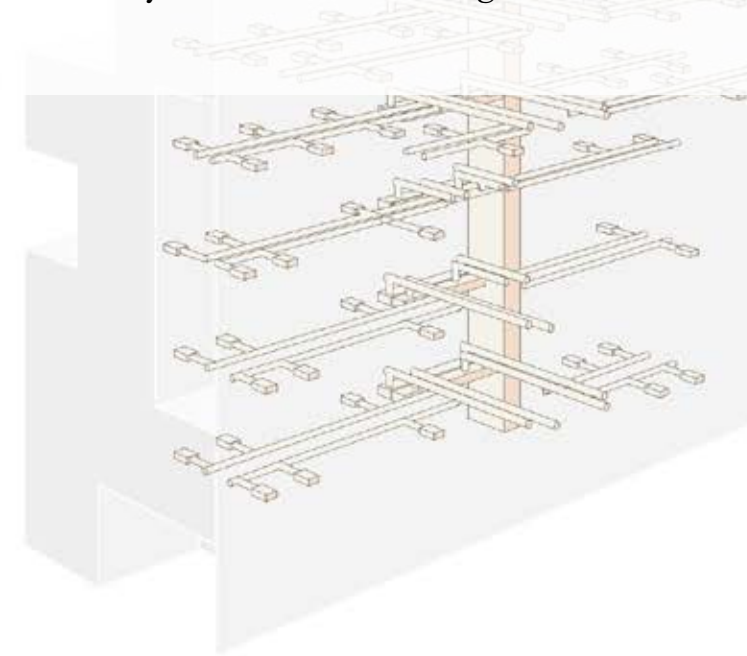
Student: Benjamin Lin



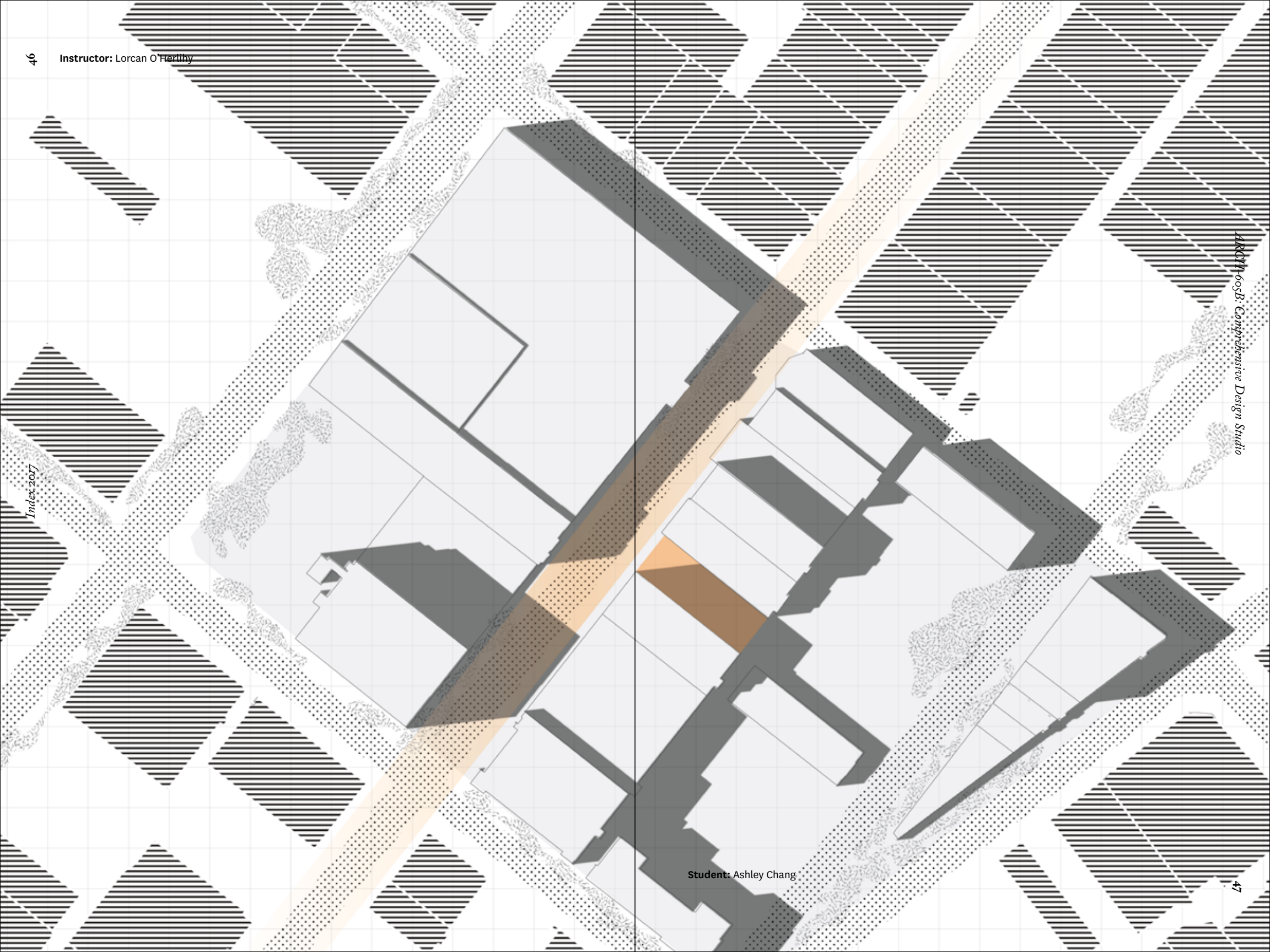
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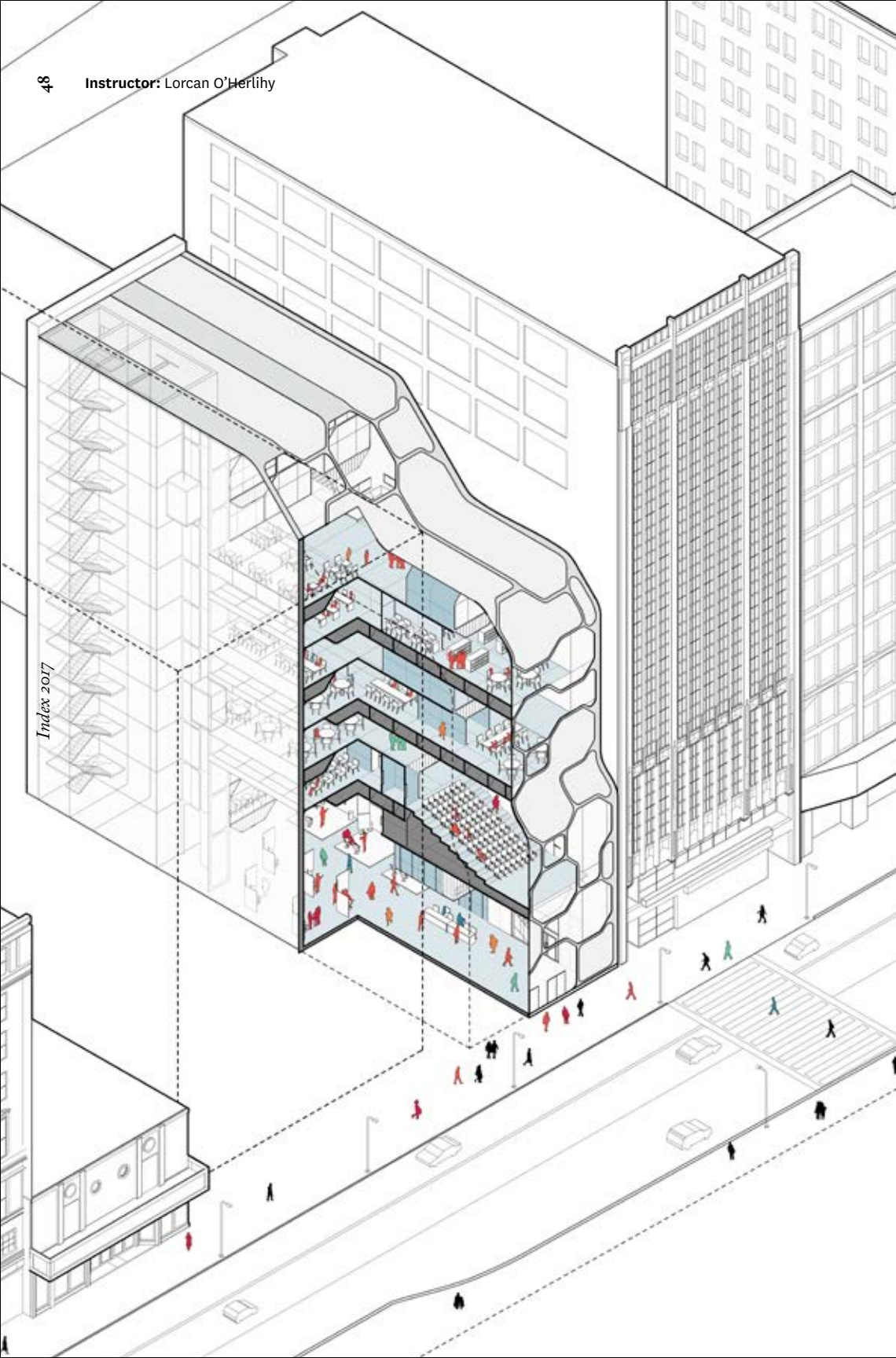


THE LOCATION of the proposed USC Marshall School of Business satellite campus is between two large buildings in the historic Broadway Theater District in downtown Los Angeles. Due to the large scales and cold, hard textures of the contextual buildings, my project explores concepts of voids and materials to bring a porosity and lightness to the area. Large vertical and horizontal spaces open specific programs within the building as well as the exterior edges of the front and rear façades to allow light and accessible outdoor spaces in the school. The perimeter bracing structure is surrounded by a double-skin façade of an insulated glazing system and translucent polycarbonate sheathing on the exterior. This outer skin uses color not only to reflect the vibrancy of Los Angeles but also to communicate the internal programs to those outside of the building, unlike many of the surrounding, repurposed buildings. Through these design elements, the building functions as a school and community center with its collaborative spaces both internally and by blurring the hard boundary between the building and the rest of the city.



Student: Ashley Chang

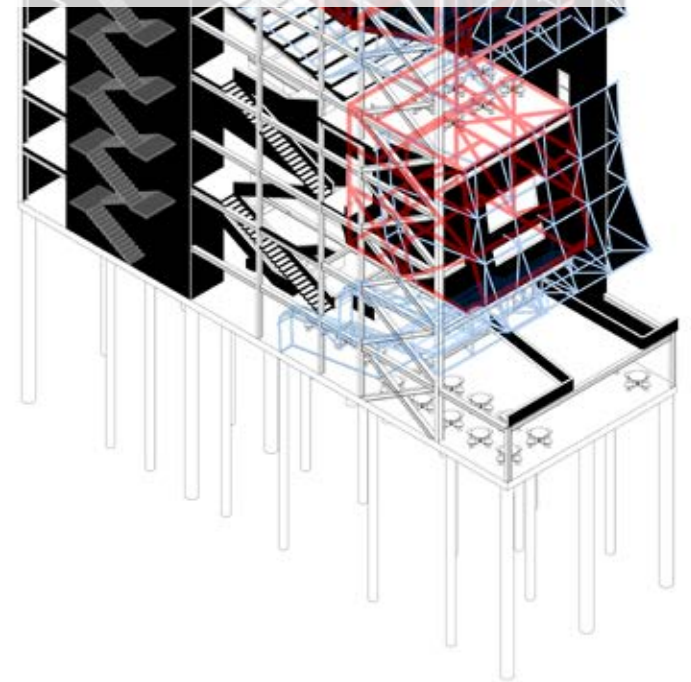
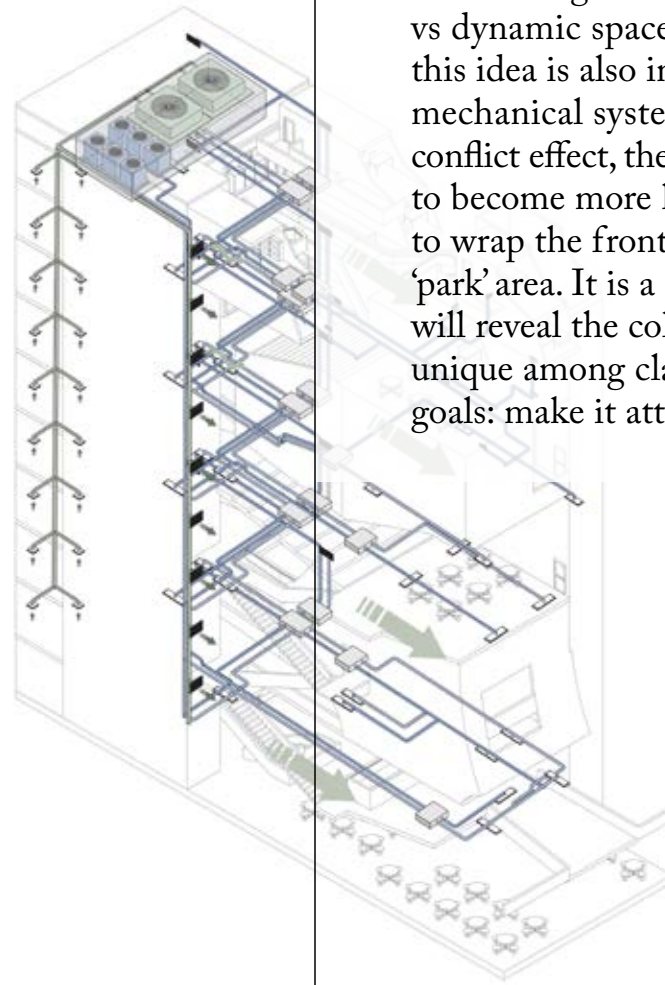
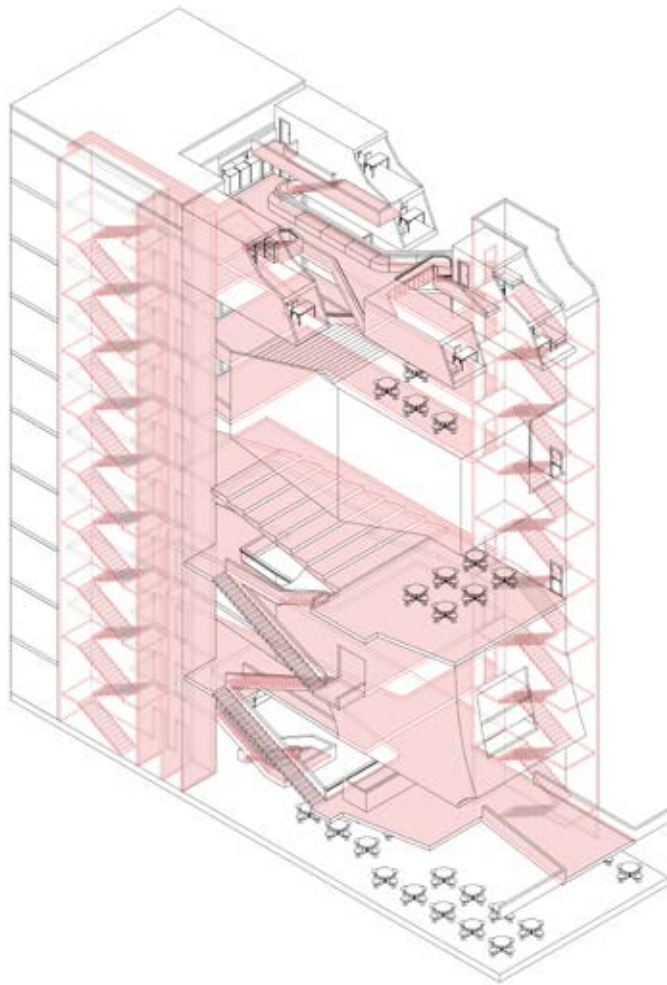




THE INCUBATOR is an architectural proposal for the extension of the University of Southern California Marshall School of Business, located in downtown Los Angeles. On a large scale, this academic building encourages aspiring entrepreneurs to collaborate with faculty and business professionals through a series of spaces that invites students to attend classes with professors at a downtown site, to develop research with business leaders, and to collaborate with each other to initiate start-up businesses. On a smaller scale, the Fiber-Reinforced Polymer (FRP) Composite structure is designed as a modular system in which each unit comes together to create innovative spaces that invite conversation and learning while providing efficient spaces for building systems.

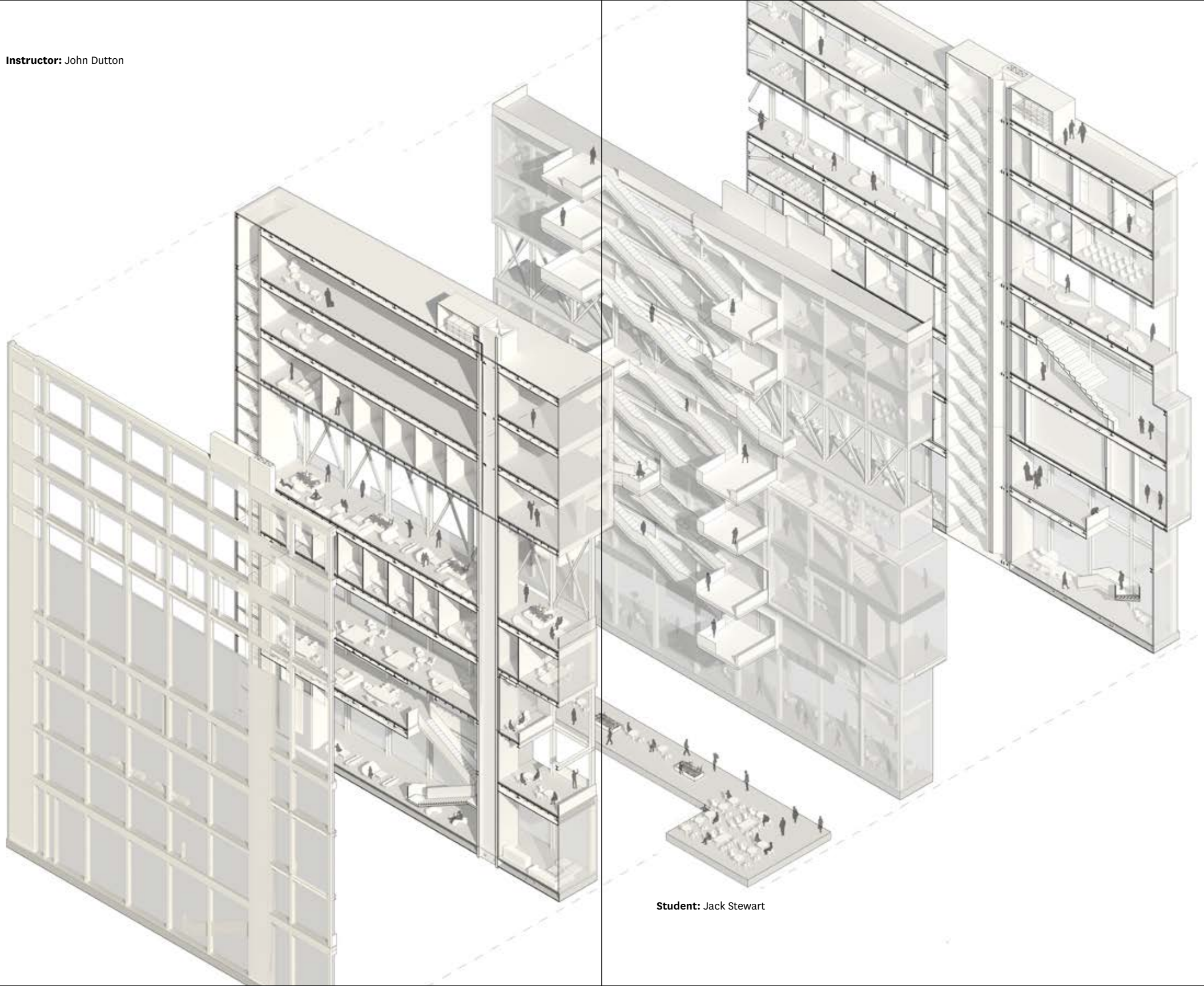
The Incubator allows daylighting and visual access throughout the building to create a light and open environment in which students work. The lightness yet high strength of the composite panel structure allows the architectural design to maximize the usable space and creates a simple and systematic, on-site assembly. As repeatability is crucial to the cost efficiency of using composites in architecture, this design is created from a set of modules with simple molds that can be manufactured, stacked, transported, and assembled easily. Lastly, the composite panels, which include structural foam cores, have intrinsic insulative properties. This modular system comprised of thin, strong, insulated panels is not only a solution for the downtown Los Angeles site, but is highly applicable to buildings of differing sizes, uses, and geographic locations with a wide variety of architectural program requirements.

Students: Margot Kleinman, Pornpavee Mungmeangsakul, Walker Hart



THE PROJECT is located on Broadway, the center of downtown Los Angeles. The rigid but dynamic context inspires us to explore the relationships between public space and private space in urban scale. The streets are well organized into a grid pattern, and some blocks are transformed into parks or open space. These two facts become the starting point of the design and lead to the original concept: developing and combining a 'streets' pattern and a 'parks' pattern. By separating the building into two parts, a strong diagram of rigid space vs dynamic space is clearly presented in the building. And this idea is also introduced to design the structure system, mechanical system, and circulation. In order to reduce the conflict effect, these two parts are merged and interweaved to become more harmonious with each other. ETFE is adopted to wrap the front façade, emphasizing the three objects in the 'park' area. It is a sustainable material, and the transparency will reveal the colors and interior activities. The building is unique among classical buildings on Broadway, achieving our goals: make it attractive and bring energy to downtown L.A.

Students: Yuwei Ma, Minfeng Xia



Student: Jack Stewart



MARSHALL SCHOOL OF BUSINESS DTLA : EXTENSION

Situated in the heart of the Theater District of downtown Los Angeles, this project proposes a solution to bridge the newly inserted business school campus with the existing urban fabric. This is achieved by focusing on the creation of a vertical urban campus, defined by a disintegrated urban border and highlighted public open spaces. Programmatic divisions are created between the two building masses that allow the public and private spaces to coexist without interjection from their counterparts. Verticality is emphasized through a monumental staircase which cuts through the center of the site, separating the building in plan and section. The spaces formed by the stairway are used as opportunities to bridge between program areas. The often-underutilized spaces below a staircase are heightened in purpose, holding the key role of connecting programs and users.

Student: Jack Stewart

By de-emphasizing novelty or originality, the thesis naturally culminates the core sequence of discipline and vocation, reinforcing those lessons and grounding the idea of vision in identifiable tradition, connecting the individual student with the architectural community that established the precedent.

ARCH-793B: Architecture Directed Design Research Studio (Thesis)

In the third year, the student is gradually set loose to pursue their own vision. The third year is organized into a Fall 'topic' semester and Spring 'thesis.' A stricter adherence to the core requirements of the first two years' studios and support courses throws the openness of the third year into greater relief, promoting a distinction between the idea of vision as an entitlement and something that must be earned.

By starting with a precedent in thesis prep, the usual problem of 'choosing' a thesis or dreaming up something that could be a contribution to the field (and the attendant problem of this delaying design until the last possible moment) is avoided. The pressure of 'coming up with something original' outside a context of necessity is conducive to neither decisiveness nor discrimination. By de-emphasizing novelty or originality, the thesis naturally culminates the core sequence of discipline and vocation, reinforcing those lessons

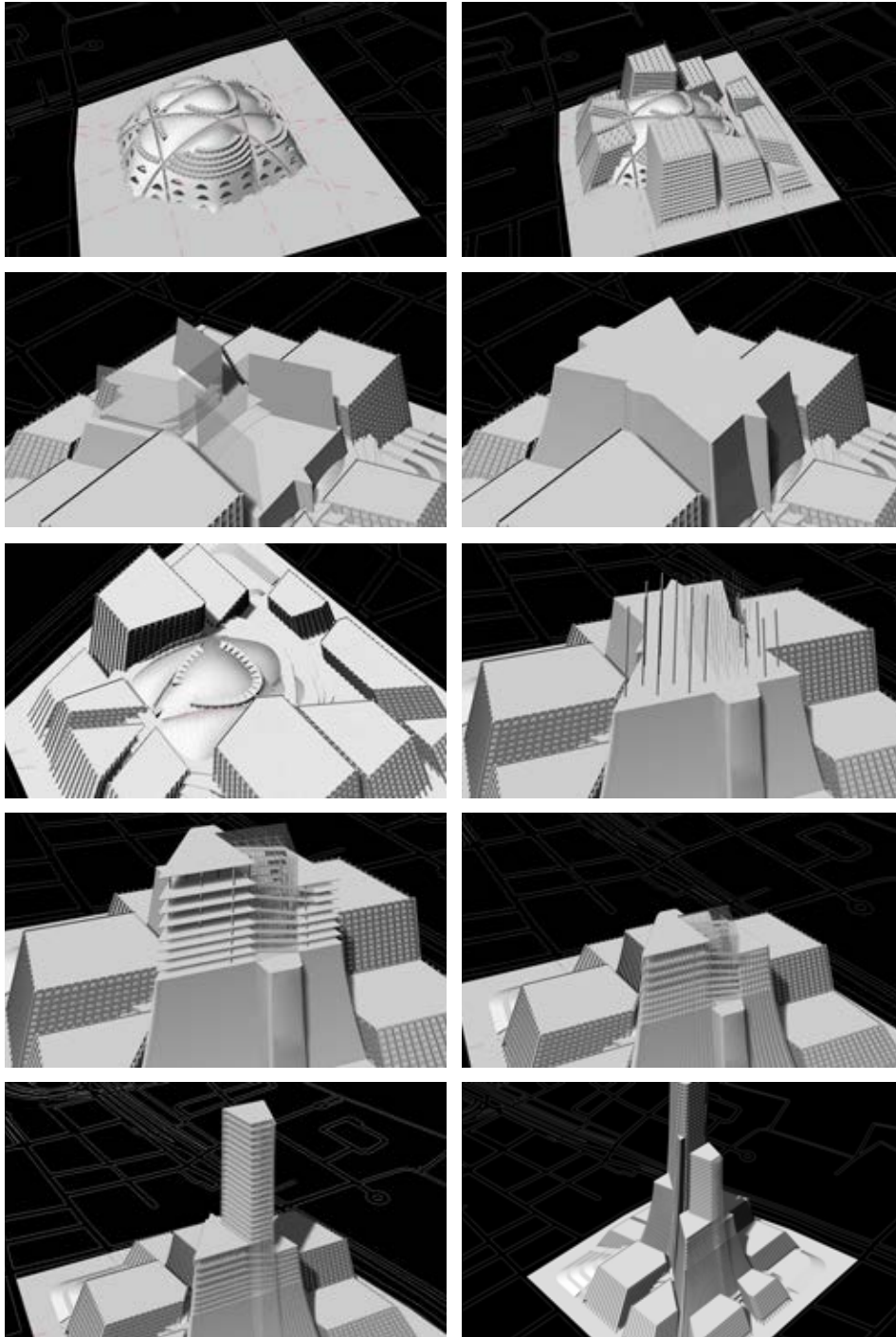
and grounding the idea of vision in identifiable tradition, connecting the individual student with the architectural community that established the precedent. Additionally, this approach leads obliquely to better innovation or at least excellence, because it is a result of necessity rather than rule.

This organization dramatically shifts the axes of judgment away from difference and novelty to excellence and innovation, with the documented precedent offering a proven standard. Since 'there is nothing new under the sun,' and 'everything has already been done,' the exclusive focus on precedents should not be at all limiting. At the final review in the Spring, the documented precedent is presented alongside the thesis project design, encouraging a direct comparison of the two versions by the critics and requiring the student to own the differences.

It is entirely appropriate that the student pick their 'favorite' building as a precedent without excessive concern for its 'suitability.' The precedent's status as 'favorite' should already establish its aptness. During the fall prep semester, the student demonstrates—or discovers—why that precedent is favored. If every building/design is already a thesis about architecture or statement of what architecture is or should be, then examining

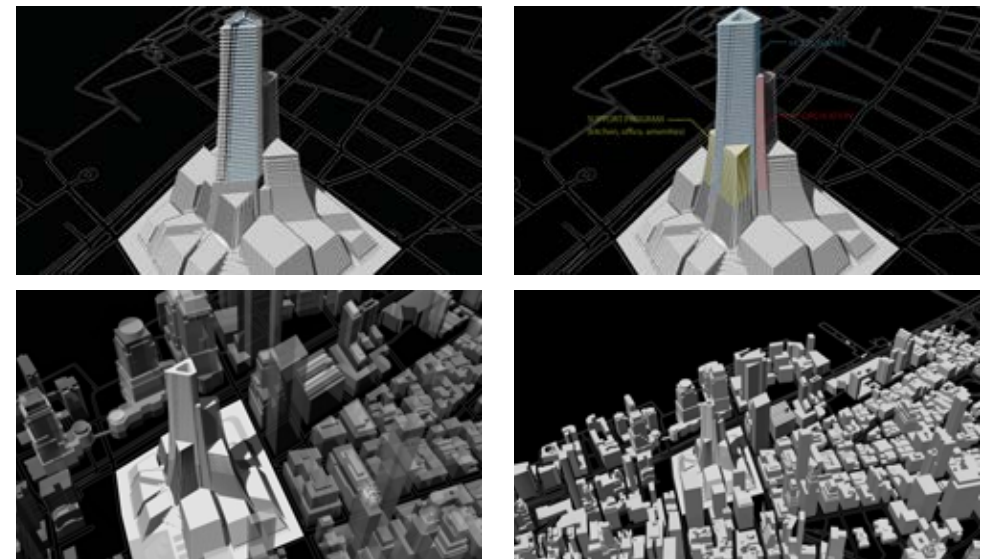
why the student is drawn to that chosen example (obliquely, through documentation and analysis) reveals to the student a lot about their own (previously unexamined) architectural sense and assumptions. This newly revealed understanding then naturally becomes the guide to the design of the student's new and improved version of that favored building during the spring design semester.

Students: Matthew Bianco-Splann, Ashley Chase, Kayla Ching, Christopher De Luca, Tsz Man Vincent Ip, Yang Li, Yizhi Hu, Taylor VanEtten, Peng Xie



HOTEL FANTASTIC

The Hotel Fantastic critiques Antoni Gaudí's famous unbuilt project which periodically captures the discipline of architecture's collective eye, the Hotel Attraction. Grounded in an argument against the heavy-handed imposition of the hulking Catalan behemoth upon Manhattan's fledgling skyline, the Hotel Fantastic is a direct product of the fabric of New York: the street. With its genesis rooted in the grid identity uniquely New York, the Hotel Fantastic fulfills the coveted social niche the Hotel Attraction dreamed of. With its programmatic retinue updated from Gaudí's simpler 1908 program, the Hotel Fantastic becomes the reaction to the question 'what would the nucleus of social activity look like for a city as refined and populous as New York?' Including a full-size stadium, museum, library, concert hall, theater, retail space, public parks, plazas, and a Portman-esque grand hotel, Hotel Fantastic is a carefully curated collage of socially active space, shining brightly alongside the numerous primeval architectural giants the city is known for.



Student: Matthew Bianco-Splann



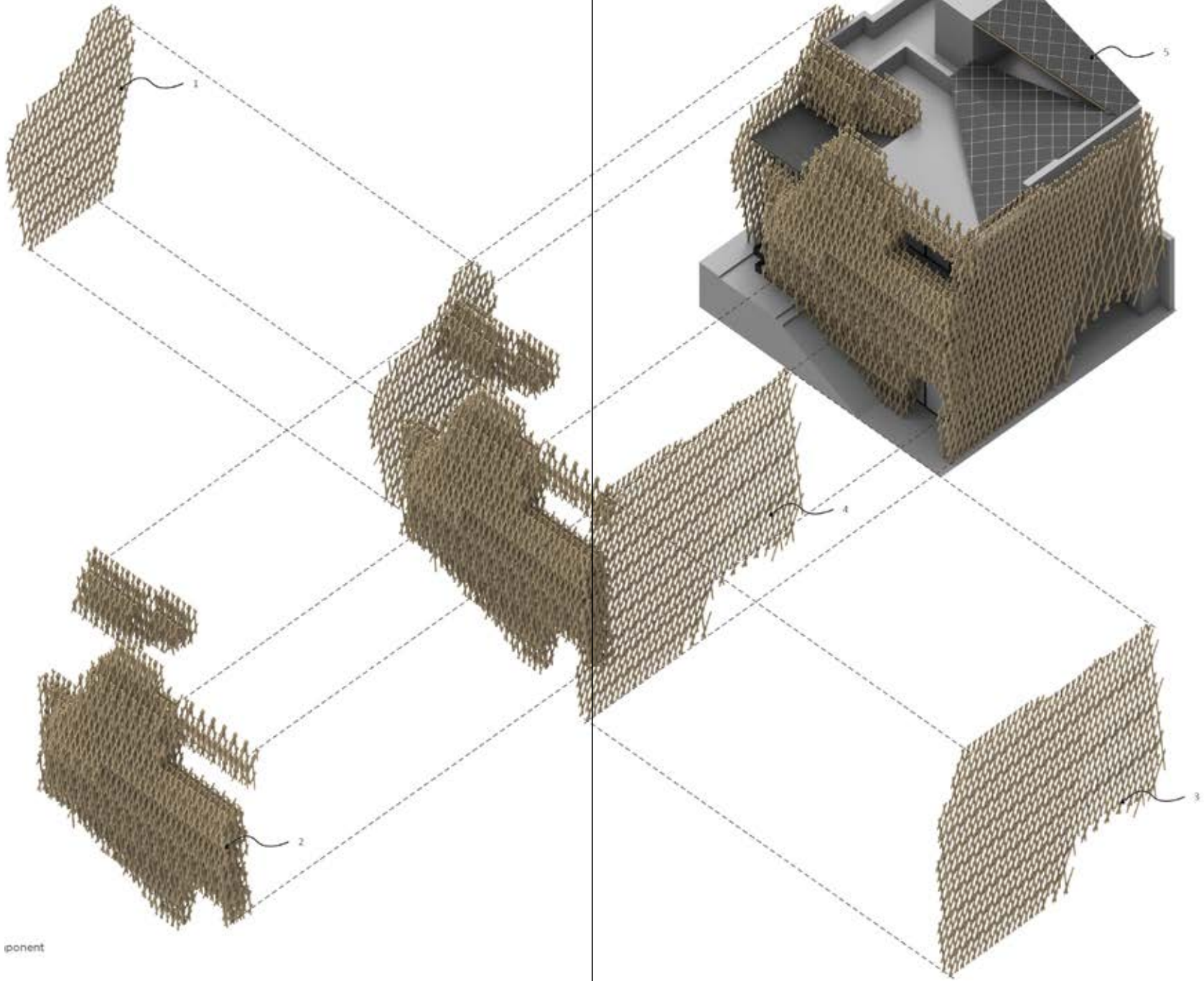
THIS PROJECT presents a design system using discrete parts to develop and construct a timber structure that uses mortise and tenon joints. It explains how, through the uses of point clouds, a wide range of projects can be formed, from monument to pavilion to building. The parts to whole relationship and creating a possibility of an interchangeable architecture—that is the true digital architecture. Through an open-ended design system, discrete parts are being generated and are instantly responsive to a user’s decisions on its attributes; new parts can be created to customize needs such as floors, stairs, façade, windows, etc. This also brings revolutionary changes to the interpretation of architecture, compared with the first digital age that was only able to affect the façade, while leaving structure, core, staircase, etc. untouched.

This concept is a response to ‘mereology,’ a term borrowed by architects describing a part to whole relationship, when architecture becomes more a control of the on/off of its parts, and it is the on/off that controls the image of the whole.

In the project, a design system with conduct with points is used in Rhinoceros and Grasshopper. First, the grid points are generated in GH and baked out, and then with a manual process, they are assigned to a different layer that represents the module and the orientation. Grasshopper will read the points simultaneously as the user is converting them and generate the geometry at the viewport in Rhino. The points will also be further converted depending on the neighboring points in this process.

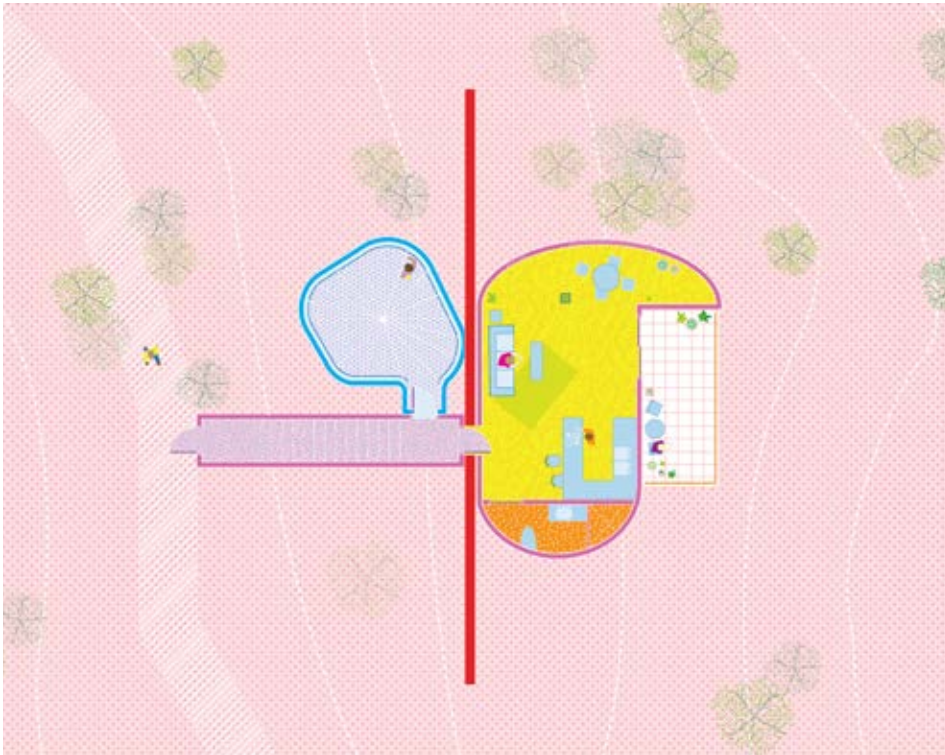
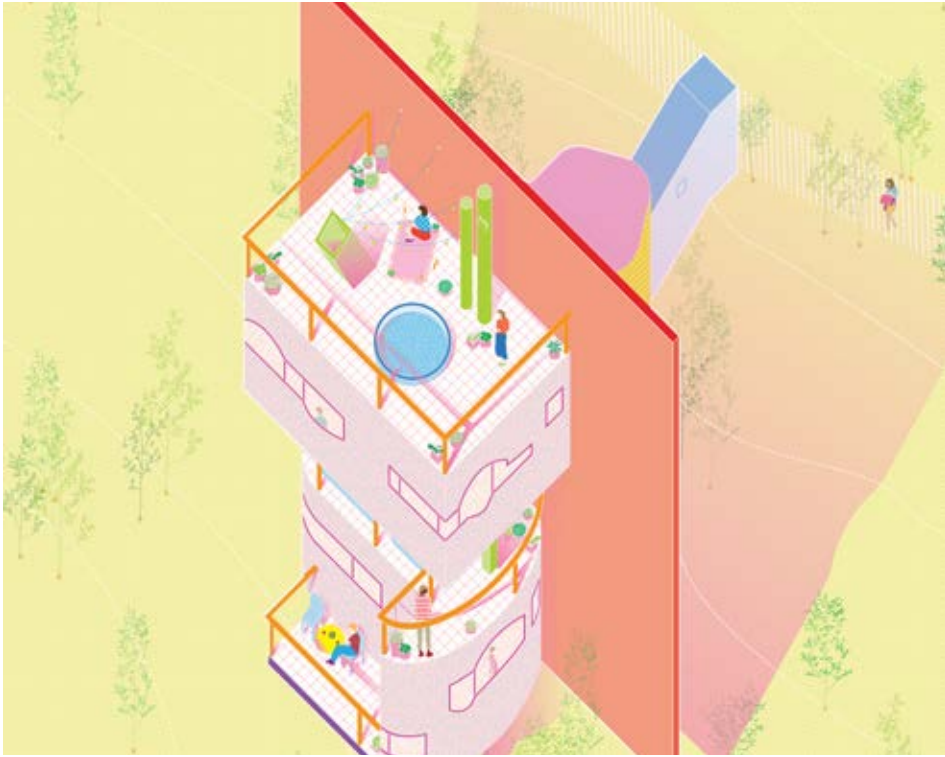


Student: Tsz Man Vincent Ip



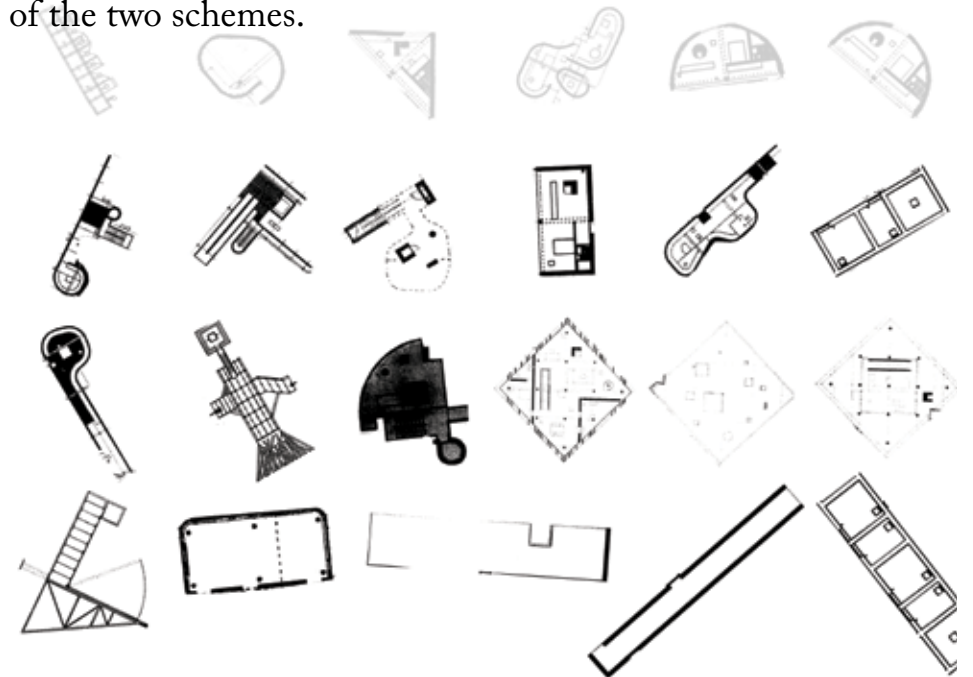
ponent

Student: Tsz Man Vincent Ip



REMIXED WALL HOUSE VOL. 2 Los Angeles references John Hejduk's canonical Wall House 2. The design attempts at retracing Hejduk's influences from the New York Five as well as the unspoken but implied reference to Le Corbusier. All five of these architects and their built projects can be linked to Le Corbusier's five points of architecture. The remixed wall house takes the kit of parts as deemed by Corb to include the maximum amount of points of architecture with the minimum amount of pieces for an artist residence and studio.

The proposed design adjusts itself to accommodate the existing hill of Laurel Canyon. The change in the descent into the house is a major operation and completely changes the resident's vision and perception as the view of the house is completely blocked prior to entering. The colors that were experimented with were generated from the division of Le Corbusier's primary and white palette with John Hejduk's pastel usage. The mixture of the two samples highs and lows of the two schemes.



Student: Kayla Ching



PSFS: CONTINUOUS AMBIGUITY

Traditionally a tower of any sort relies on a large foundation of spaces and structure to fulfill public interaction and structural necessities. However both of these can be rethought and manipulated in such a fashion so that the majority of the suggested foundation of a tower can be removed and given back to the city. This then allows for the reintroduction of public spaces to occupy the returned space.

The relocation and opening of the suggested foundation however comes at great cost. One whose ripple effect begins to engulf the project and takes on a life of its own. By removing a large portion of ground floor connection (building footprint, structure, etc.) the structural strategy quickly begins to rely heavily on columns or pilotis to support the rest of the building from crashing down. These pilotis at the instance they are deployed start to take on a more visual and literal interpretation of the tower's legs simply because they are exposed and therefore embed a sense of hierarchical meaning to their placement, engagement, and overall effect on the rest of the tower. Their shifts and placement begin to speak of movement in the same way that the classical art pose *contrapposto* conveys movement and embodies a sense of time in an otherwise static object.

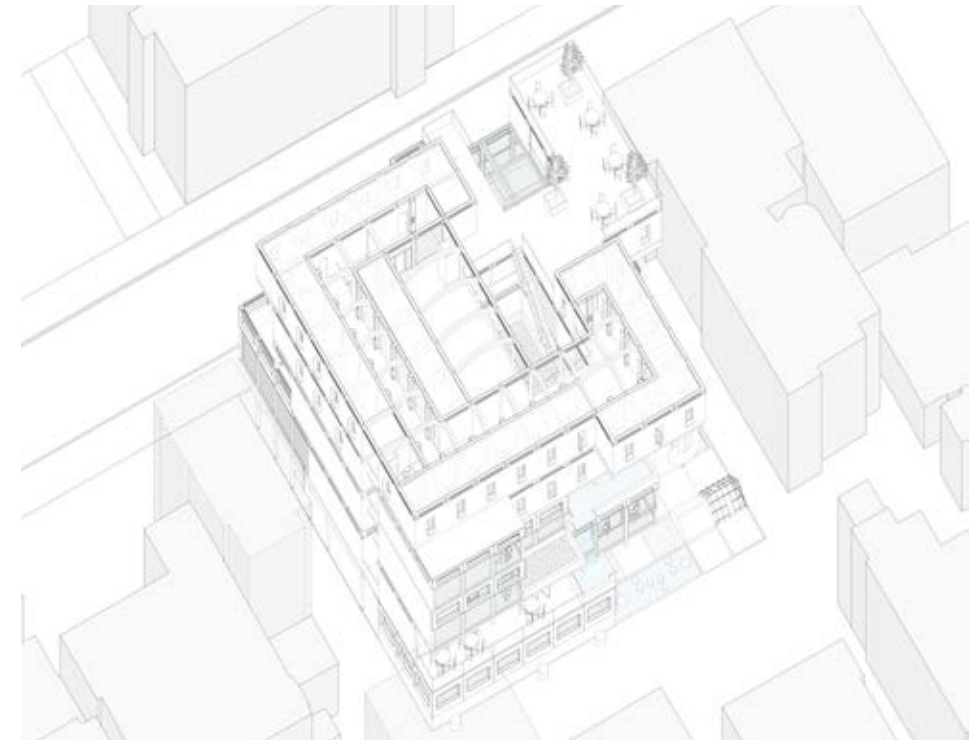
Once the pilotis are shifted they break past the original building façade to create a new space nested with the rest of the building. This new space formed by the structural deformation and manipulation demands to be something different as it is different from the normative field of office space and structural grids. The demand is granted and creates a network between the public spaces all through the building. At their source they act as legs and point to the open atriums that lay above. Once they pull the façade out, the atrium is formed, thereby deforming the normative grid and creating a new, now tertiary structural system which lies only within the nested atriums.

Student: Chase Ashley

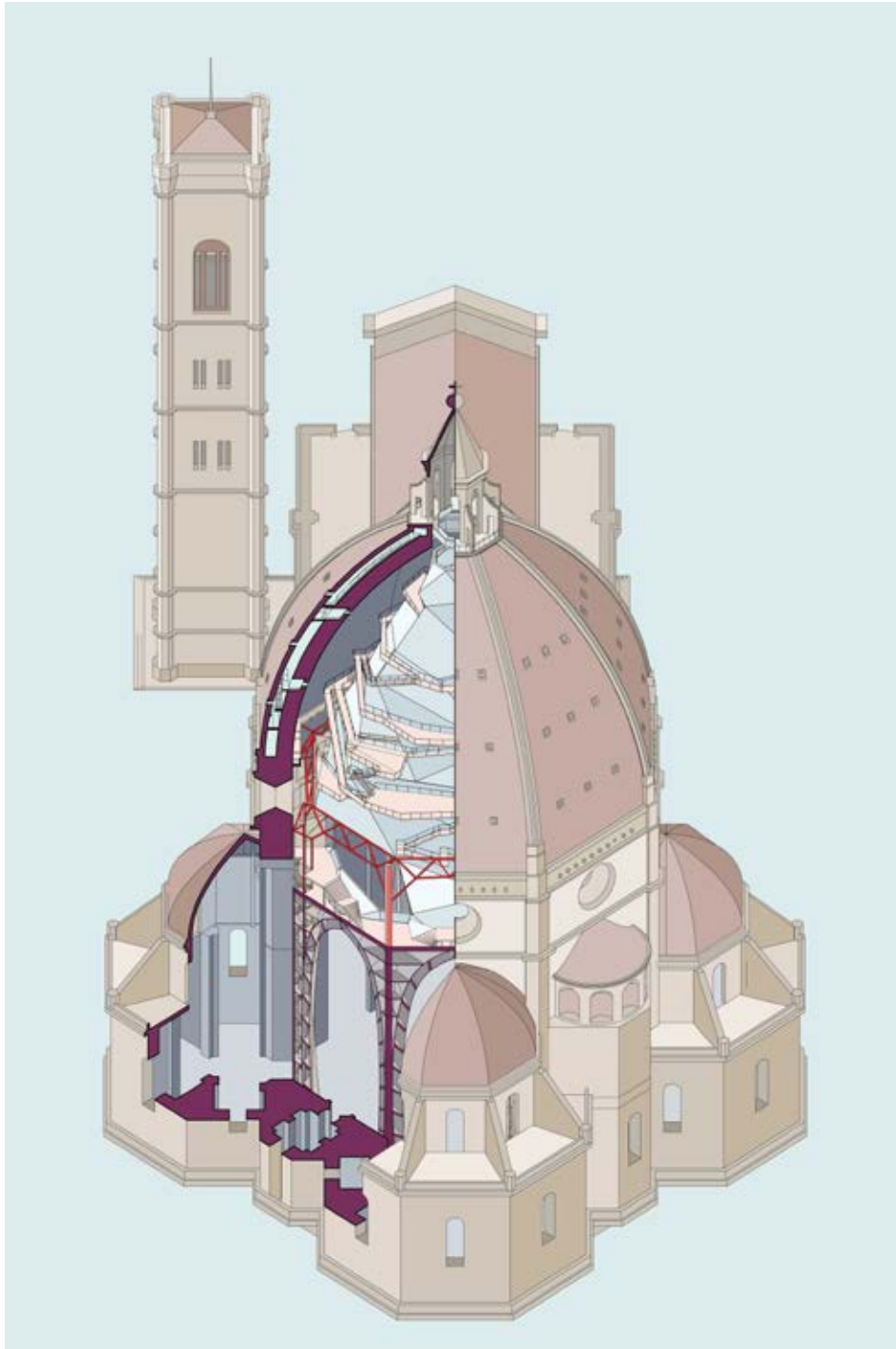


IRREGULARITIES AT PLAY

Rather than being at odds with Aldo Van Eyck's Municipal Orphanage, the project's intention was to augment the orphanage's matrix of parts. Augmentation occurs through irregularities in the column, wall, threshold, and beam. Instead of the matrix being a reflection of the one-size-fits-all foster care system of the '60s, the new irregularities will express the individuality of the building's occupants and the program they inhabit in modern times.



Student: Christopher DeLuca

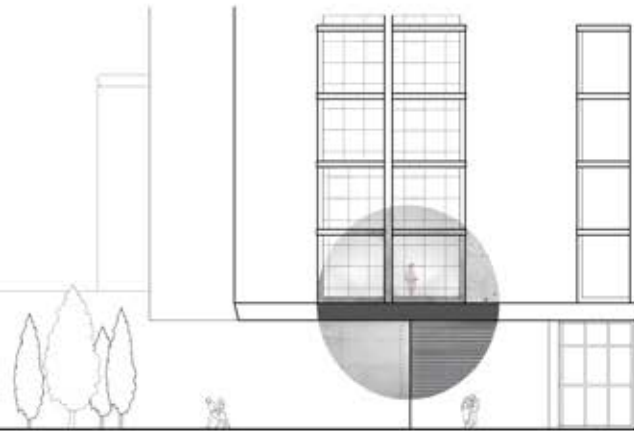
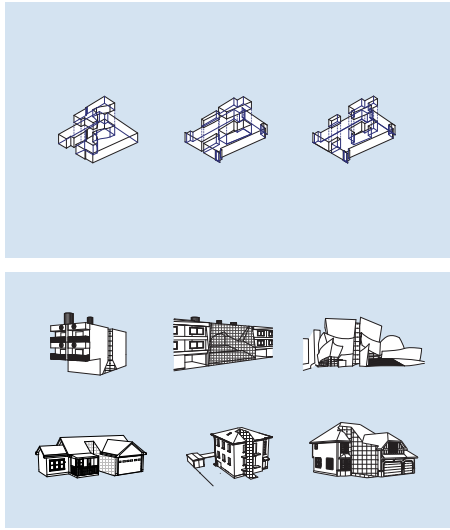


SANTA MARIA DEL FIORE OBSERVATORY

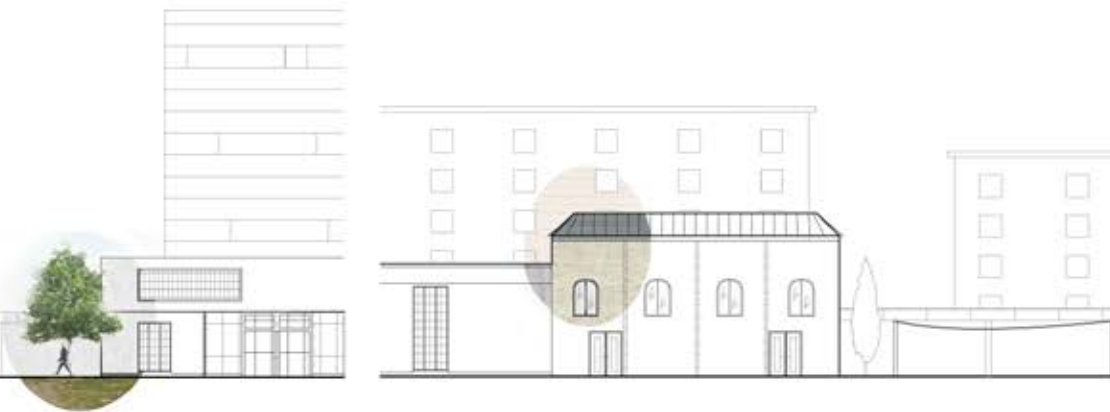
The spirit of the craftsmen in the pilgrimage of construction has not been seen in most contemporary architects. Their own protection and awareness of efficiency are two important reasons for the mediocrity of the Industrial Revolution. The new building structure, which was born shortly after the Great Chicago Fire, was unrestricted as an infinitely high program and utilized limitlessly during the process of the modernist architectural revolution. It spread like cancer, defining the picture of global architecture. Only a small number of architects are obsessed with the exploration of the new structure, but at a relatively small scale, which, in the huge economic system, is extremely insignificant. However, it is only in the special context of the Renaissance that it is possible to give birth to the 'wallfacer architects' as described in the Three-Body Trilogy, with the support of the whole community and the large amount of resources that can be mobilized to give the feasibility of those remarkable edifices. In Medieval Europe, before the formation of architectural disciplines, goldsmiths became the most qualified to play the architect, since the bidding process for a project was a bronze sculpture with an exquisite degree of decoration. It is difficult to imagine how the chosen architects were capable of doing the job in a modern way, but it is how they created historic symbols.

The project 'The Flower' was meant to search the unforeseen projective rule sets behind the existing entities. By studying accumulative dimension, an actualized proposal of the abstract artifact will be revealed. Accumulative dimension refers to two intersecting one-dimensional openings allowing the light of a 2-D region to cross through. For example, by setting two seam-like apertures in front of an image, even people standing behind two walls will still be able to view the entire field of the image by moving along the aperture.

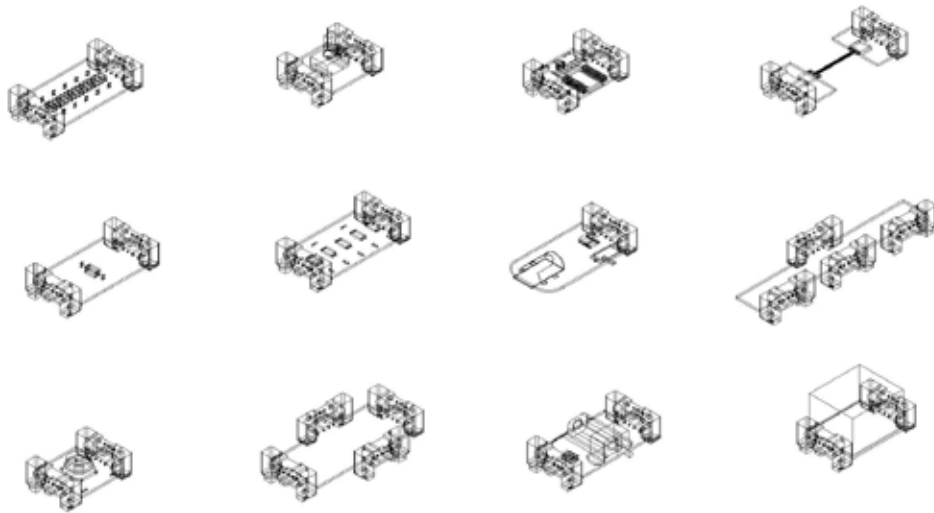
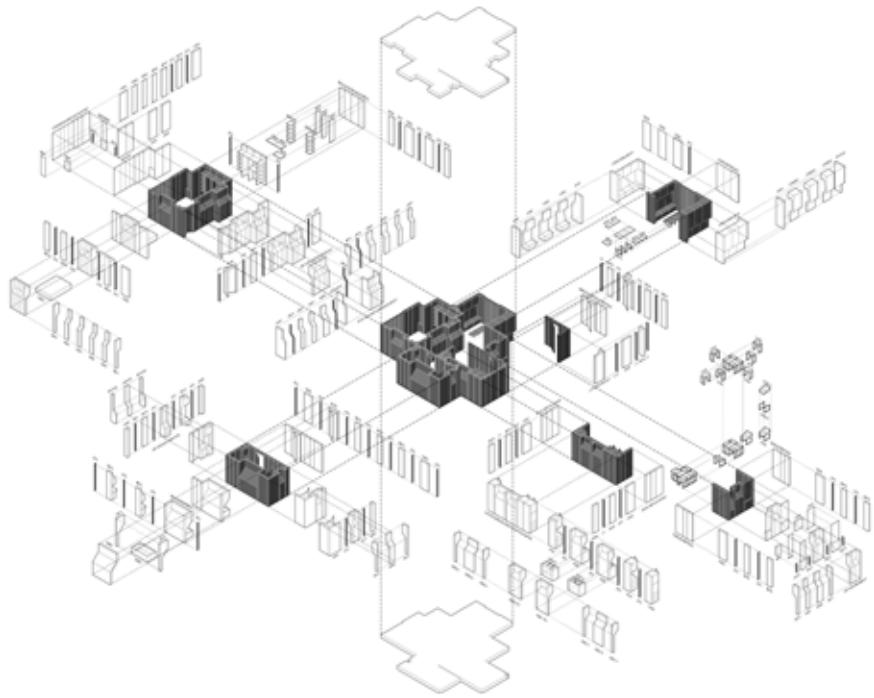
Student: Yizhi Hu



IN A POETIC SENSE, Casa Il Girasole by Luigi Moretti is a replica of the architect's love for Rome—sensuous, mystical and utterly Roman. Built in 1950, the apartment building is a reflection of undefined, but delineated and incomprehensible spatial arrangements that project a new interaction between public and private spaces. It is also noted as the first postmodern piece of architecture in the postmodern epoch. However, its current location in a homogeneous, architecturally rich neighborhood limits its capability of changing social interactions through design. The 'Augmented Girasole' is a project which attempts to redefine the private, public, and pseudo-public spaces defined by Luigi Moretti. This approach seeks a new context with a larger site that breaks the axis of its context; a site that has banal characteristics to be augmented; and a site that has a socially relevant narrative. Located on an old Italgas plant southeast of the Vatican, 'Augmented Girasole' is a prototypical crisis housing plan that includes health, education, and employment offices in conjunction with housing to merge those in crisis into their existing social context more comfortably.



Student: Taylor VanEtten



MASS-CUSTOMIZATION in housing design must be realized in an affordable way, which is a customized combination of standard parts. To realize that, we have to create a logic loop dealing with the relationship between part and whole so as to enable the automation in the design. Learned from the precedents, the standard modules are designed to have the capability to be assembled in different ways. Therefore, the range of the variations will increase exponentially after every iteration. A more straightforward way is to consider this as a language. There is only very limited number of variations at the 'letter' level. However, letters can be assembled in so many different words even with lots of constraints. Moreover, words can combine into sentences which can transfer much larger information. Similarly, every time the parts are assembled into the whole, more information can be loaded and transferred without the one-by-one input from designers.



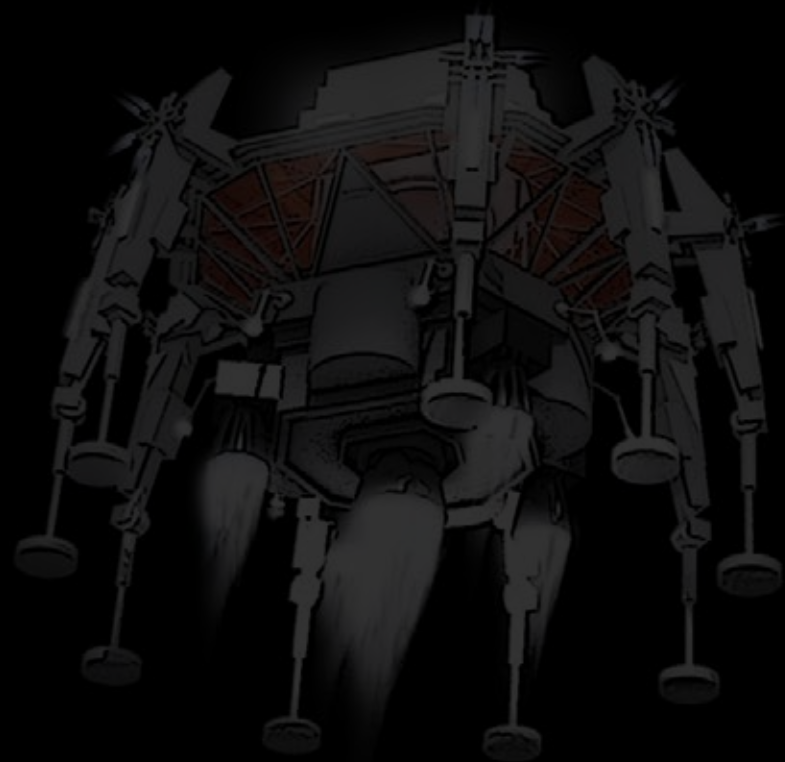
Students: Yang Li, Peng Xie

Seminar in Space Architecture: Outer Space

Index 2017

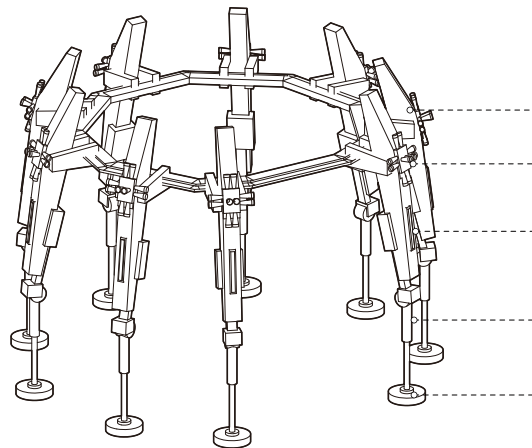
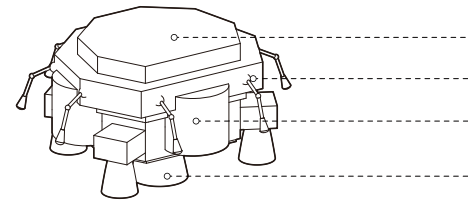
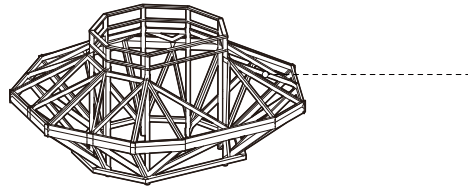
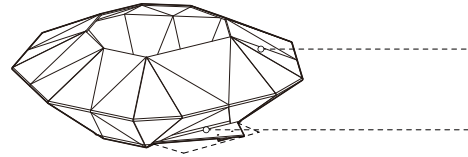
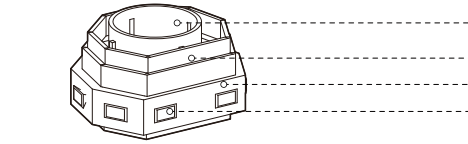
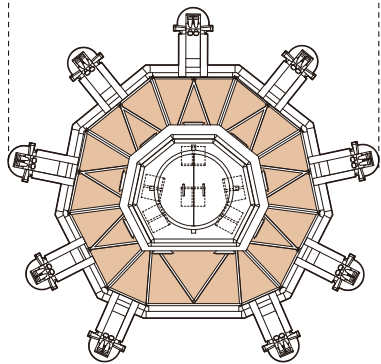
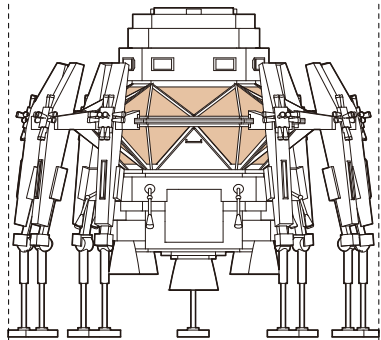
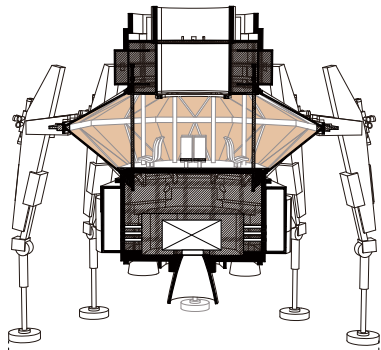
Seminar in Space Architecture: Outer Space. Exploration. Moon. Mars. Students Imagine, Design, Visualize, and Create Concepts for Habitats and Vehicles in truly alien environments. They see and appreciate what is happening in advanced technologies, from gene-editing tools to rocket propulsion and planetary spacesuits. Architects are working with scientists and engineers, assisting in designing space exploration habitats and helping NASA and the space industry to cope with extreme environment design

challenges. This seminar gives the students' worldview a 'spacetech' makeover, looking at all sorts of examples, from structures on planet Earth in extreme environments like the Antarctica and Sahara to those dwellings on the Moon, Mars, and beyond. Through this, they come to appreciate the vehicles and systems that help people cope and do productive science, erect structures, and work in the final frontier. Outer Space, Moon, Mars, here we come... will a sunflower bloom on Mars?



This seminar gives the students' worldview a 'spacetech' makeover, looking at all sorts of examples, from structures on planet Earth in extreme environments like the Antarctica and Sahara to those dwellings on the Moon, Mars, and beyond.

Students: Xiaonan Sherman Huo, Jin Hong Kim, Jasper Leong, Brian Rohrluck, Chun Lung Jaden Sun, Jonah Schatz, Minfeng Xia

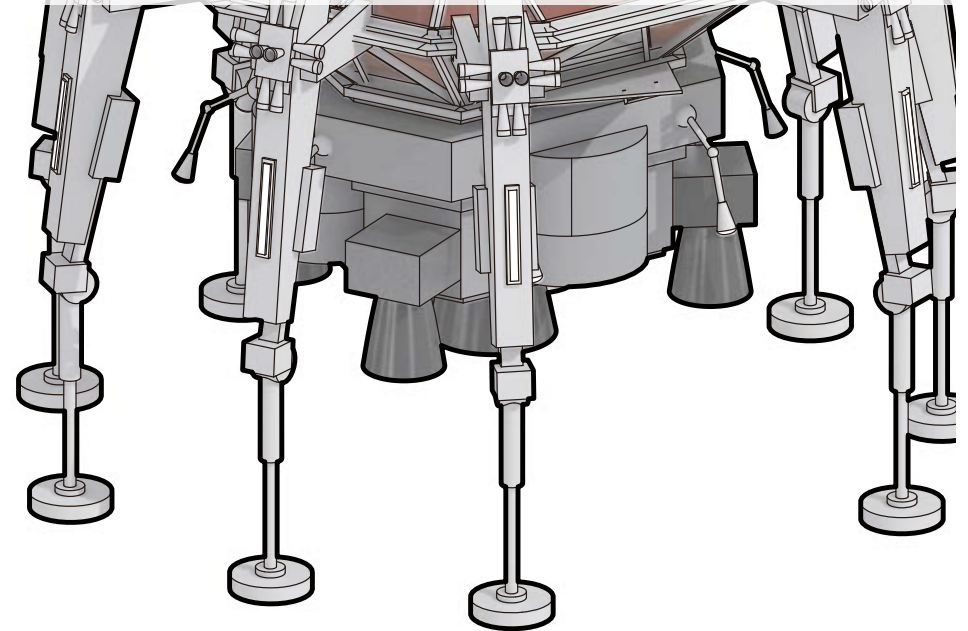


2020 MOON LANDING TOUR

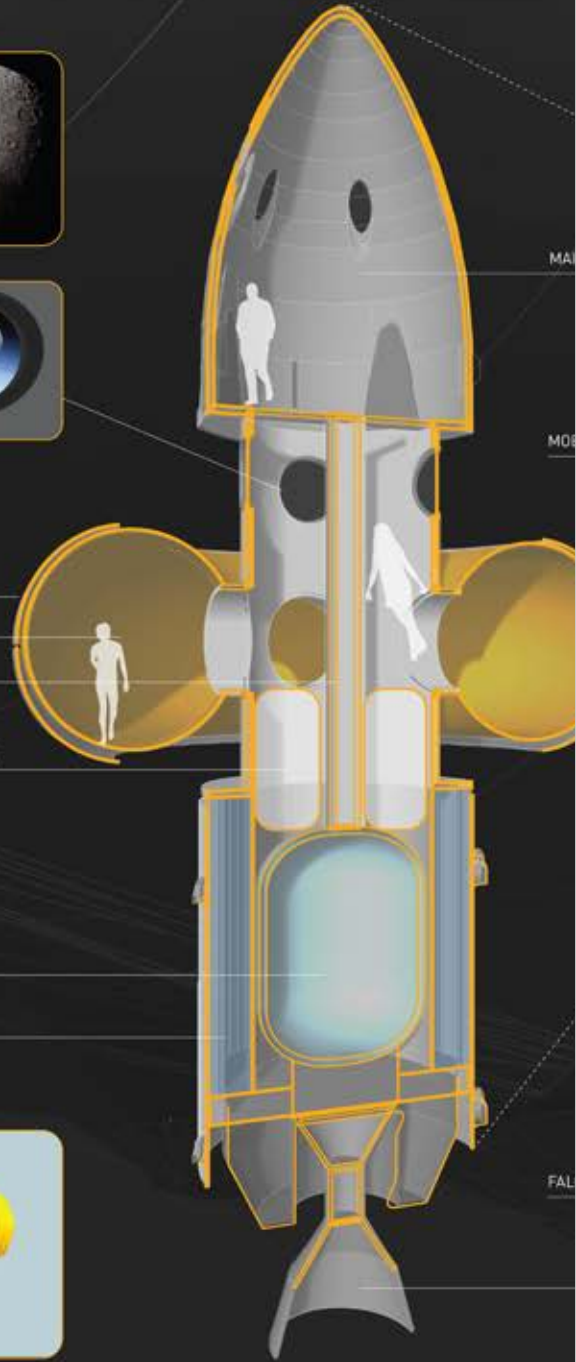
When the Apollo lunar modules reached the 30-meter point (about 100 feet), the dust was like a fog, making it difficult to see the landing site. Similarly, there were some rocks and dust kicked by the rocket engine on the sky-crane lowering the Curiosity lander onto the Martian surface.

The Curiosity Mars Rover landed with a damaged wind sensor. Engineers suspect surface debris thrown up during Curiosity's rocket-powered landing may have struck sensor circuits and broken the wiring.

The lunar south pole is of special interest to scientists because of the postulated occurrence of water ice in permanently shadowed areas around it. The south pole is of greater interest, because the area remains in shadow. The lunar south pole craters are unique in the sunlight.



Student: Xiaonan Sherman Huo, Chun Lung Jaden Sun, Minfeng Xia



SOLAR PANELS
INFLATABLE SPACE
CENTRAL CORE

STORM SHELTER + RESOURCES

FUEL TANK
WATER PROTECTIVE BARRIER



MODULE LANDING

LAND
MODULES LAND INDIVIDUALLY

MOBIUS II

MOBIUS II explores the near future of Lunar Tourism as a commercial enterprise. The five-phased plan begins with a swing-by mission to the moon and ends with a strategy for human development on the lunar surface. This project explores Phase 1—a mission to the apogee which permits 12 passengers several days to experience space and spy the moon up close. The Module is built as an attachment for Falcon Heavy, the newest of SpaceX technology in reusable rocketry. It detaches after launch and exposes expandable, tensile structure, adding square footage to allow users room to move more comfortably. This phase sets the stage for the establishment of a base at the Lagrangian point (where the orbit is the slowest) as a gateway to landing on the moon. The rocket could be used for further phases which would dock at the station and orbit the moon, providing a more enriched experience for tourists.

MAIN MODULE

MOBIUS II

SECTION

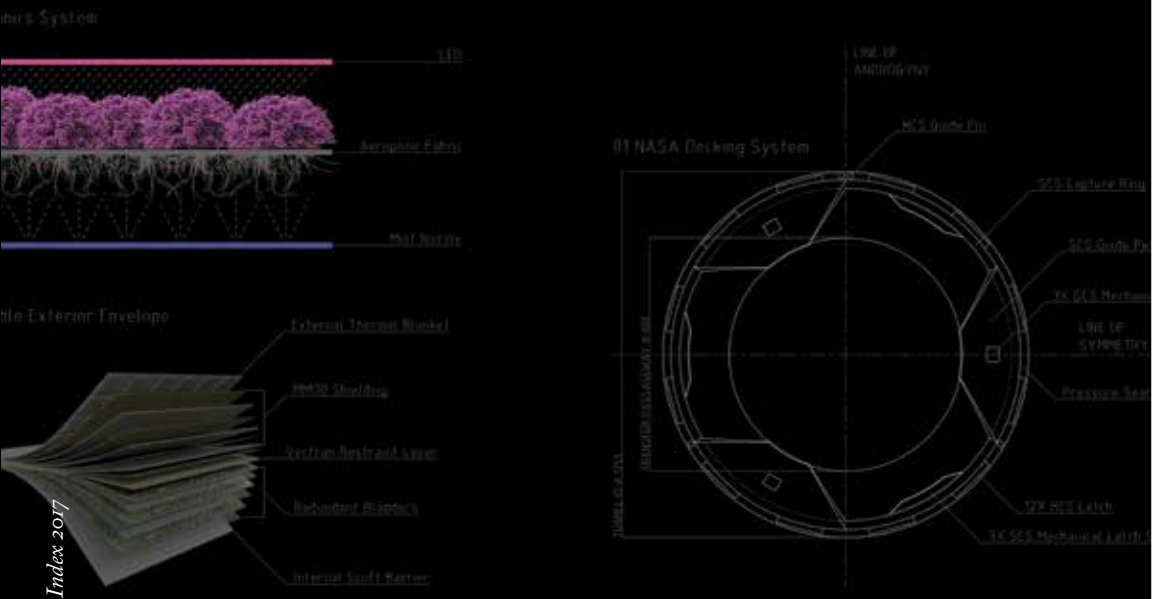


CUT PLAN

FALCON HEAVY (SPACE X)

ENGINE

Students: Brian Rohrluck, Jonah Schatz

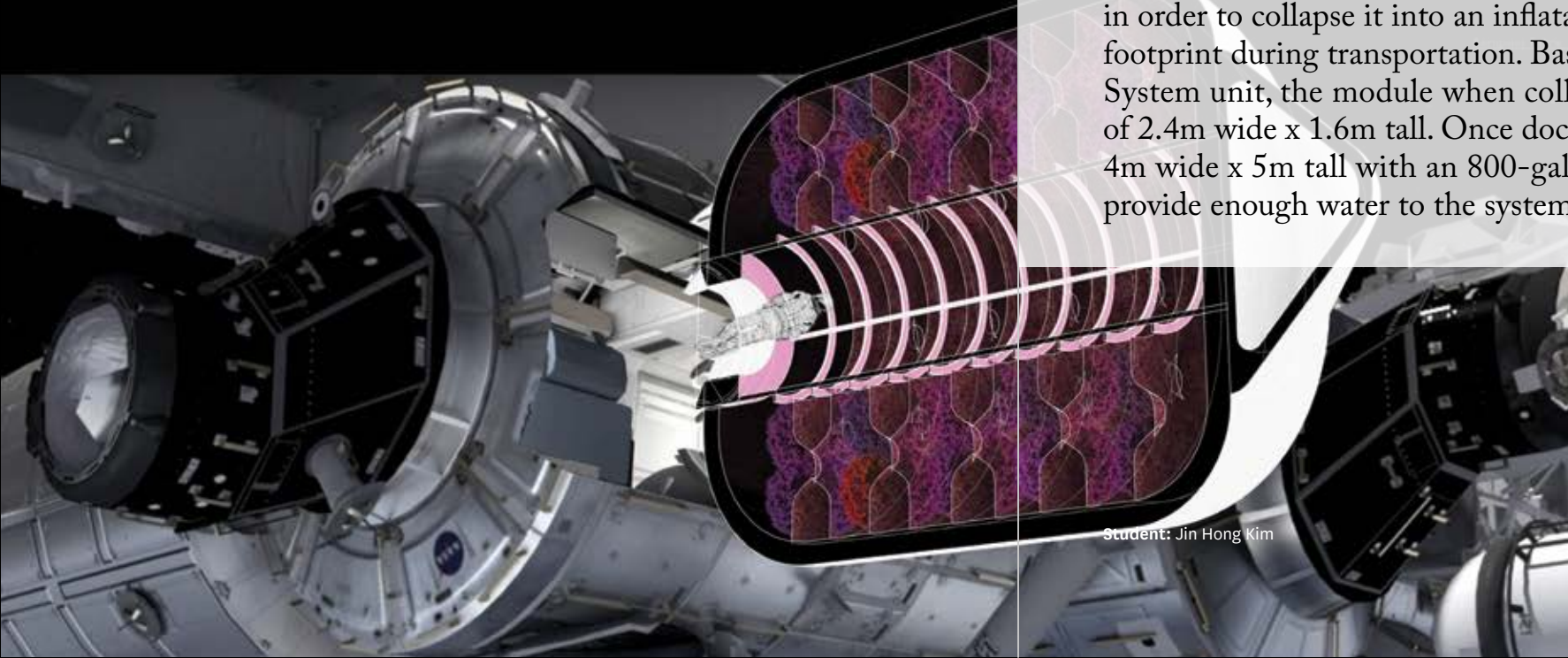


BLOOM

As humans move into space, agriculture will become a key topic of exploration. However, farming in outer space poses numerous challenges in contrast to farming on Earth where resources are more plentiful. In order for plants to photosynthesize and grow they need light, air, water, and a growth medium at the bare minimum. Recent advancements in technology have allowed for more time and energy-efficient means of farming.

A farming technique used by AeroFarms makes use of an aeroponics system where plant roots are suspended in mid-air, held in place by a nutrient-rich fabric. Specialised LEDs emit optimal wavelengths of light specific to the plant that is growing. The greatest achievement of the aeroponic farming system is that it uses less than 10% of the water required for traditional farming through high-pressured misting of the roots at regular intervals. All of this means that plants can grow anywhere, stacked vertically and saving space, energy, and resources.

BLOOM introduces a transportation system that takes advantage of flexible aeroponics fabric, misting hose, and LEDs, in order to collapse it into an inflatable envelope for a reduced footprint during transportation. Based on the NASA Docking System unit, the module when collapsed has a footprint of 2.4m wide x 1.6m tall. Once docked and inflated, it becomes 4m wide x 5m tall with an 800-gallon water tank that will provide enough water to the system for at least one year.



Student: Jin Hong Kim



LARGANGIAN POINT 1 SPACE STATION

The focus of the seminar was on the viability as well as sustainability of lunar tourism as commercial enterprise.

This project focused on the creation of specific infrastructure to sustain lunar tourism—a cislunar orbital fuel depot that doubles up as a transit station and cislunar hotel orbiting lunar Lagrangian point 1. A modular approach was taken with each component sent on low-energy orbital transfers and assembled robotically to save on cost and manpower.

The station serves as both a transit point between the Earth and the Moon, as well as its own tourist attraction—selling the experience of living in cislunar orbit to the tourists. Such energy infrastructure is required for sustaining the relatively larger amounts of lunar transfers given the increased popularity of lunar tourism—as well as saving energy costs due to the unique position of the space station at the Lagrangian point.

