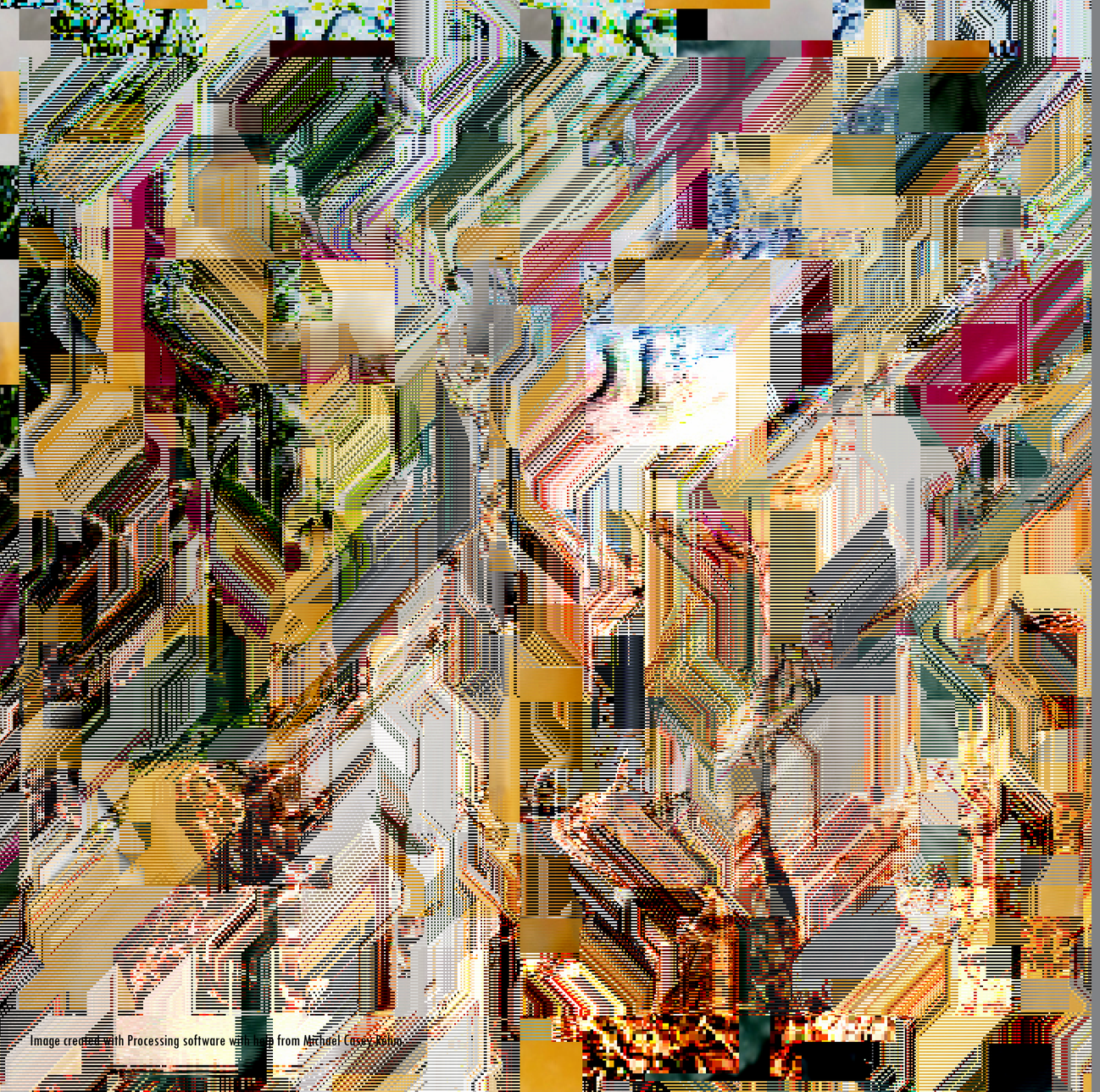
Portfolio

SWETHA BHARGAVI ARUNKUMAR

2012-2019 Work Samples



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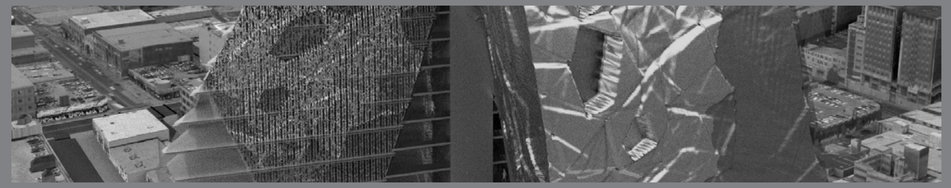
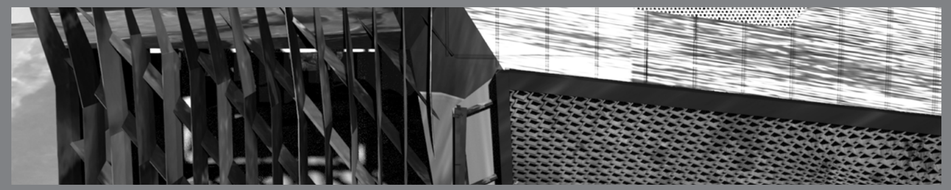
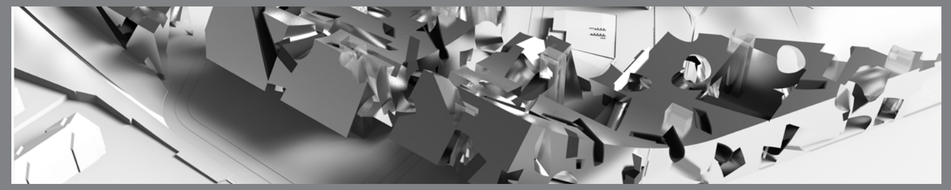
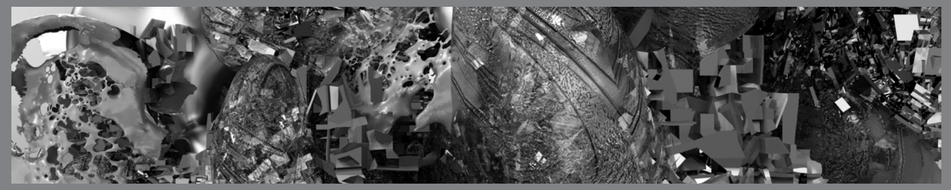
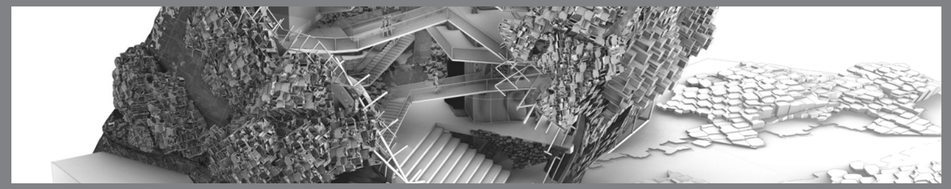
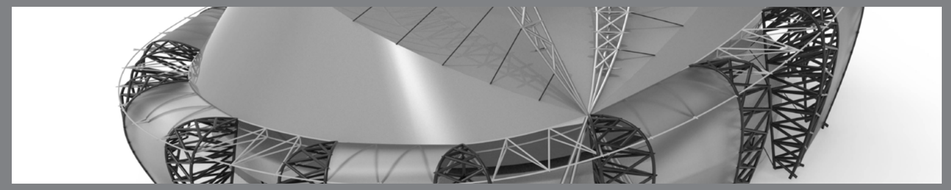


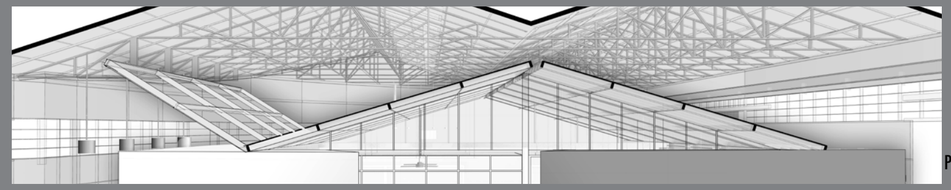


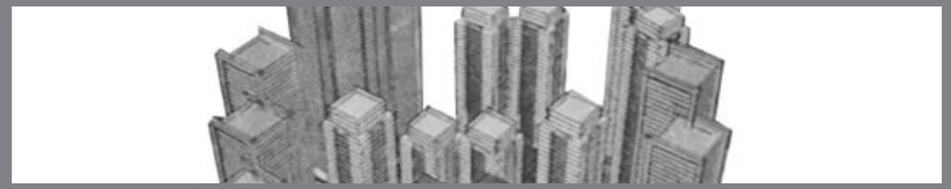












MIXED READINGS WITHIN THE PICTURESQUE

Design Studio -
Southern California Institute of Architecture (GRAD)

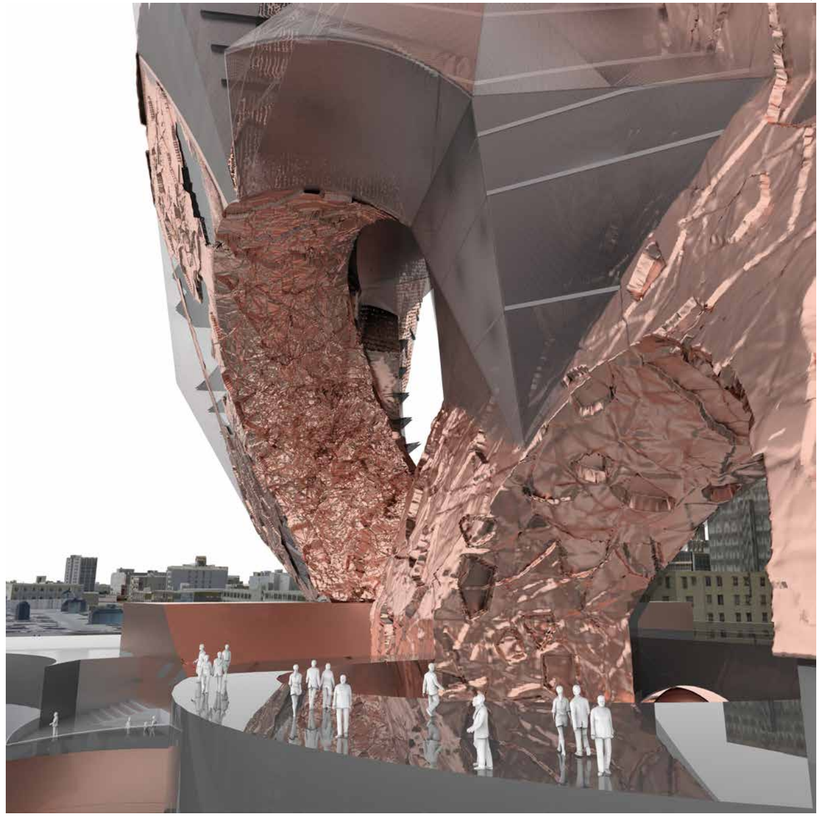
PROJECT : Design of a Mixed-use development

Group Project (Team of 2)

INSTRUCTOR : Kristy Balliet

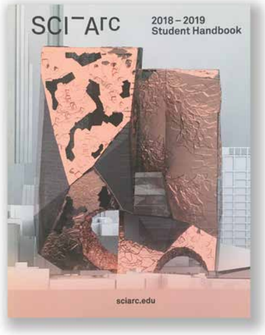
PROPOSED SITE : Southern California Flower Market, Los Angeles

PROJECT BRIEF :
Situated between a mid-rise and tower massing, the existing Flower market is intended to be redeveloped as a mixed use building, thus including a residential, office and a retail component in order to redefine its identity within the emerging urban cityscape. The projects will aim to blur the physical and/or implied line between expansive collective space, intimate units and nature and challenge the clarity of these borders to design the spaces of the everyday that are punctuated by curated atmospheres that reinvent, and possibly distribute, the qualities market hall.

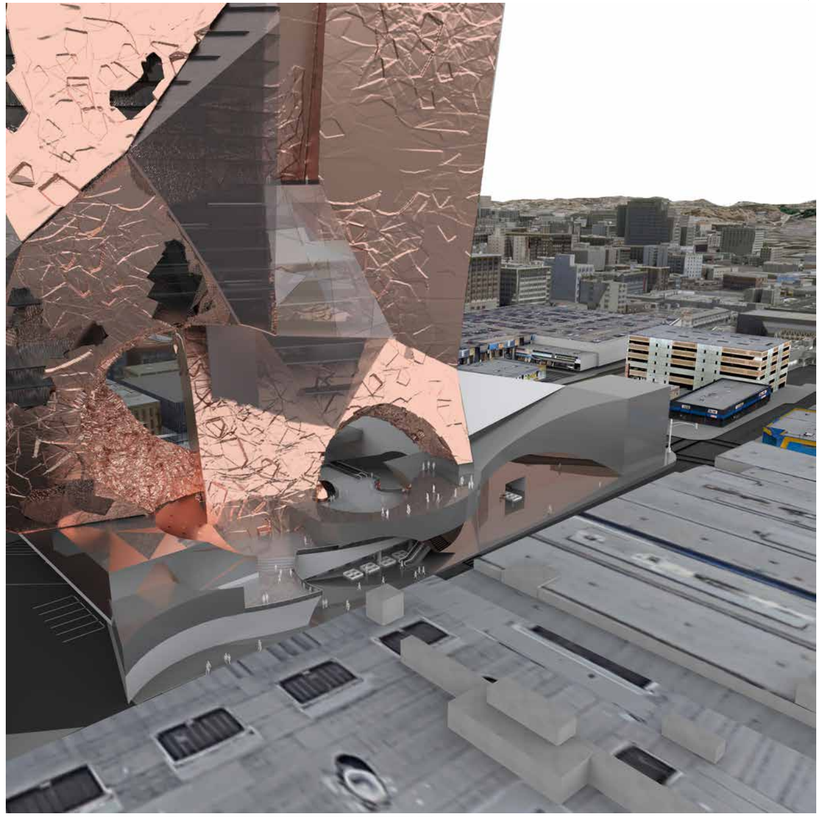


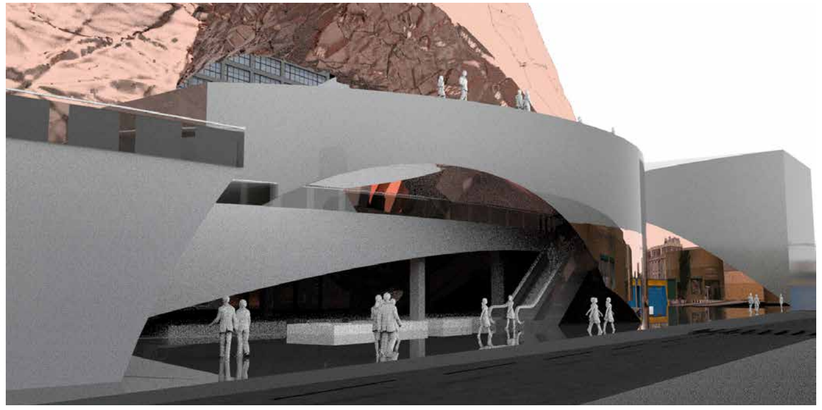
Our project is interested in the investigation of a multiplicity of use within mixed readings, and incorporating the picturesque within the reading of a space, an image and a natural element.

The building massing incorporates three elements - two kinked towers, a skirt and a jewel

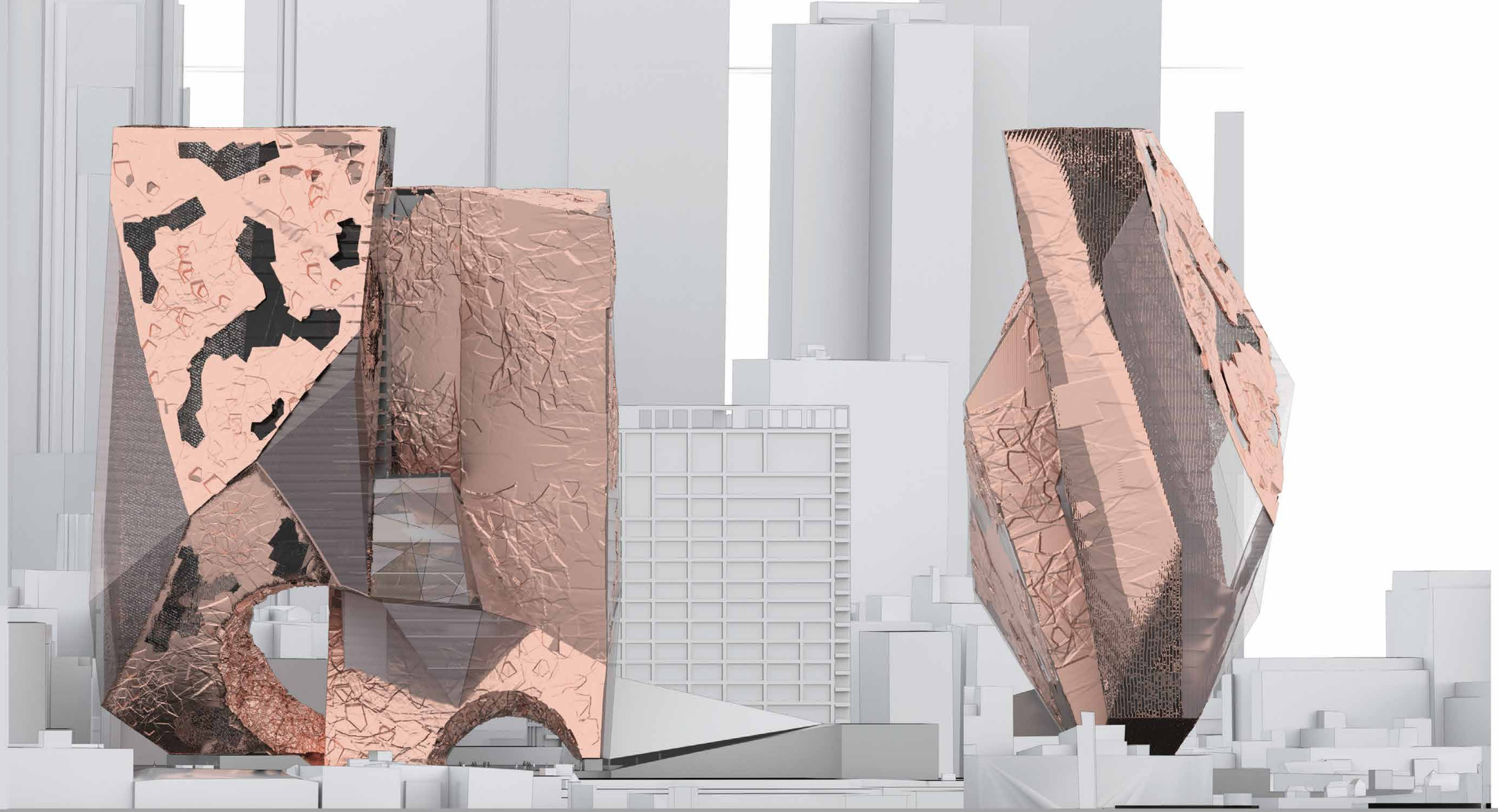


The project was featured on the **Cover Page** of the **SCI-Arc Student Handbook 2018-2019**

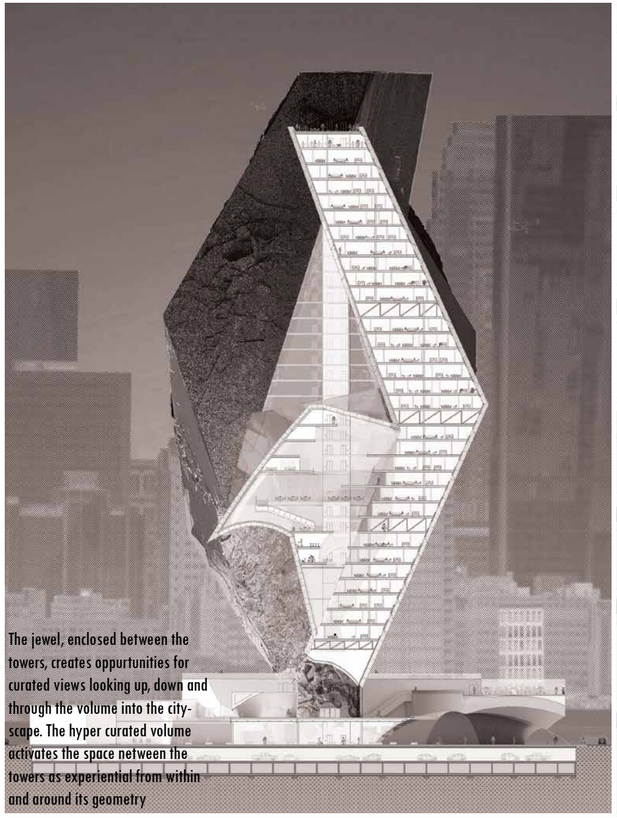




The two residential towers define the building within the city skyline with their distinct geometry and shape-shifting perspectives. The natural growth on the towers disrupt the crisp edges of the skyline. Material densities in the external facade of the towers allow simultaneous readings of the tower silhouette.
The texture reimagines the idea of a natural landscape within the urban context, reanimating the nostalgia of a natural aesthetic

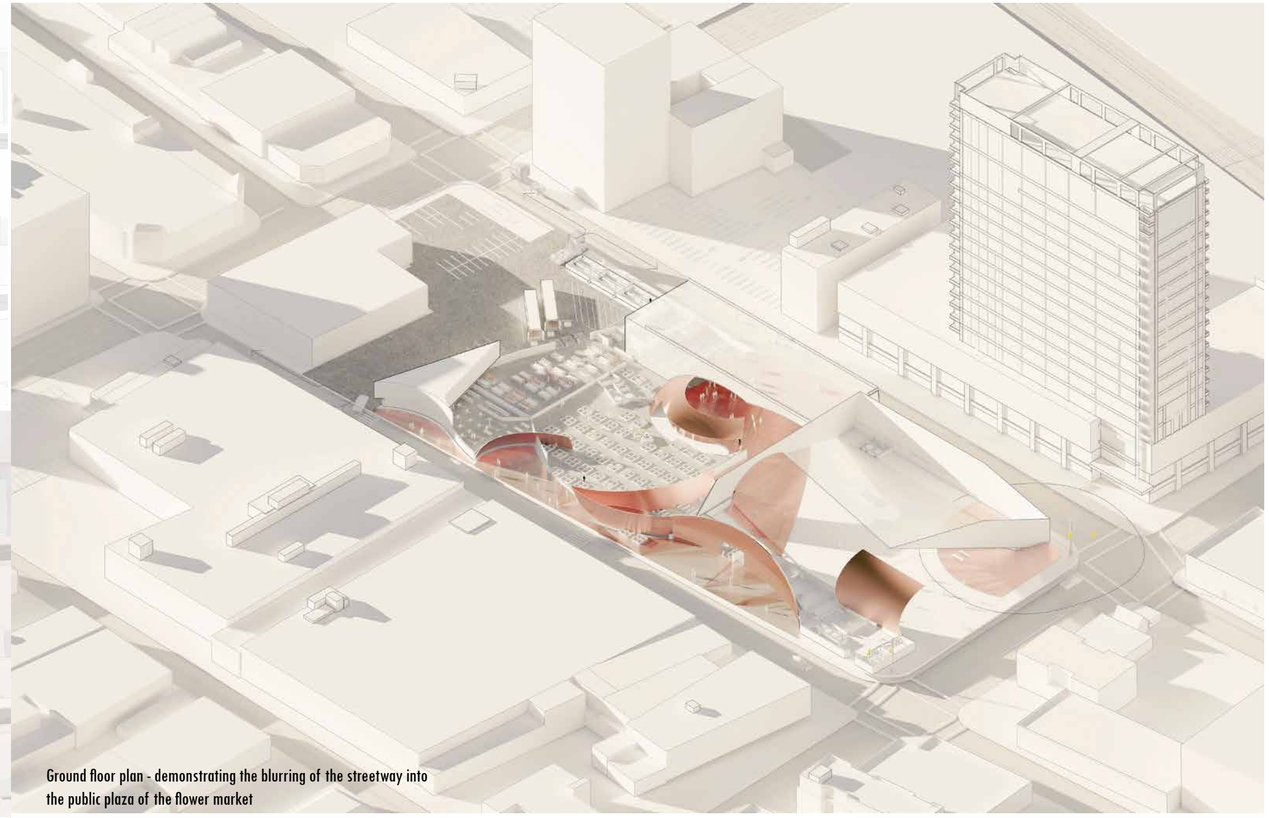


The solidity of the profiles of the towers decays/ blurs as it meets the skirt and creates volumes with varying surface qualities : embossed into the surface at certain parts and dominating the surface at others

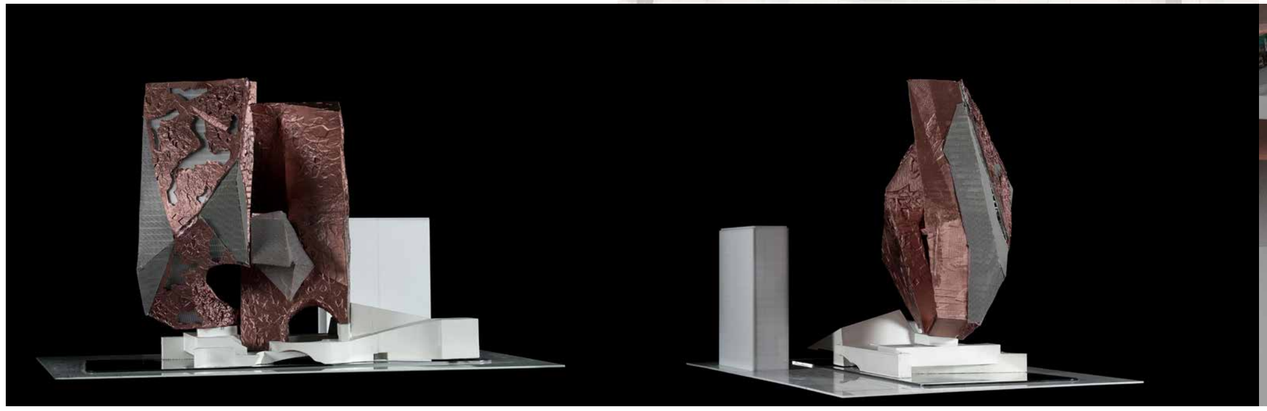


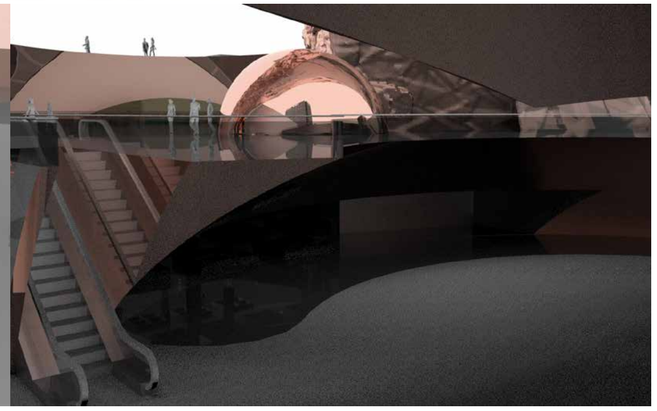
The jewel, enclosed between the towers, creates oppurtunities for curated views looking up, down and through the volume into the city-scape. The hyper curated volume activates the space netween the towers as experiential from within and around its geometry

Residential level plan - showing residential units arranged around three service cores and an event hub in between



Ground floor plan - demonstrating the blurring of the streetway into the public plaza of the flower market





SEMBLANCES

Design Studio -
Southern California Institute of Architecture (GRAD)

PROJECT : Design of a District Library

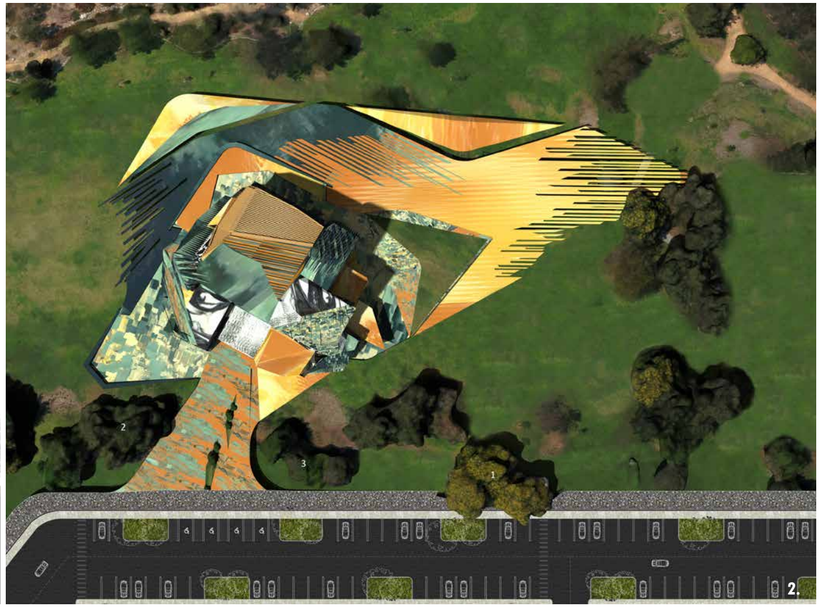
Group Project (Team of 2)

INSTRUCTOR : Florencia Pita

PROPOSED SITE : Duarte, CA

PROJECT BRIEF :
The studio deals with the idea of semblance; semblance between the Fictional and the Real.
A library is designed in a digitally captured fabric/ fragment of Duarte. The process of photogrammetry, image capture, depth mapping and digital recreation of a composition of soaps formed the crux of the studio.
With an attempt to capture the physical attributes of the soap and project it onto its digital image, the goal was to manipulate the digital image through a controlled workflow imparting to it, its original characteristics and also reimagine wand recreate new traits of its own. The resulting textures were then to be transformed into tectonic elements incorporating the qualities of transparency, depth and detail on the envelope of the building.

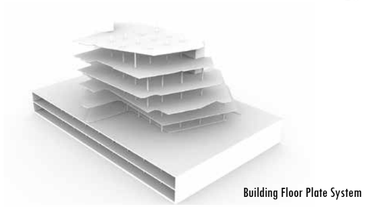
1. Elevation (North-West facing)
2. Roof Plan depicting landscaping scheme
3. Longitudnal Section through the automated book core



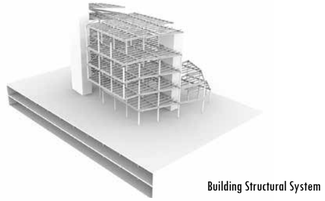
The array of textures projected on to the digital image is a semi-controlled amalgamation of the original textures of the soap and the scripted, manipulated versions of them. The textures of the composition of soaps, (natural and scripted) are translated into tectonic elements. The structure is a steel frame system with a 6" thick concrete on metal deck floor, 3" composite decking, with a steel framing for a rainscreen system.

A spherical space is achieved, enabling the creation of a focal point - an automated book retrieval system as its core, flanked by an open-planned system of seminal spaces that can adapt to the changing nature of the library as a typology.

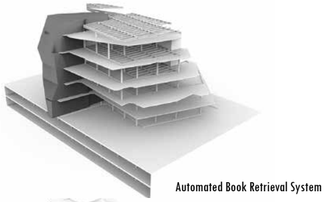
Ordering systems in the structure of the library



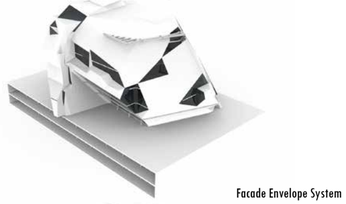
Building Floor Plate System



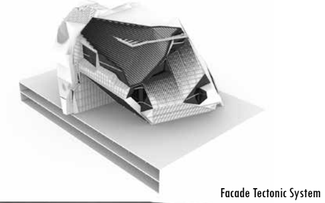
Building Structural System



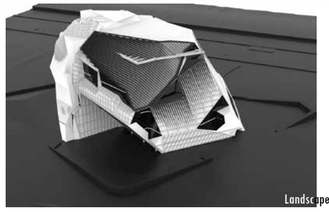
Automated Book Retrieval System



Facade Envelope System



Facade Tectonic System

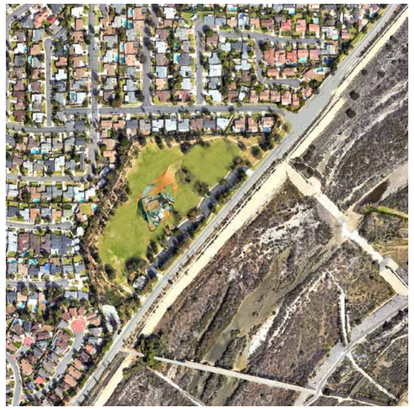


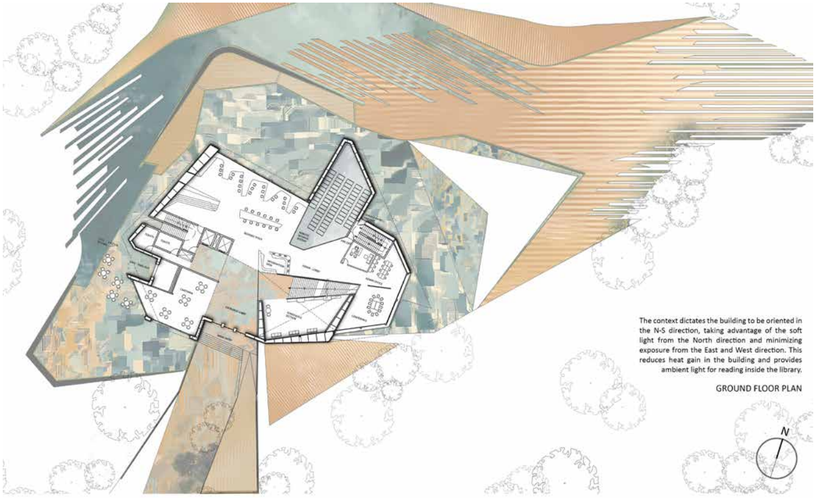
Landscape system

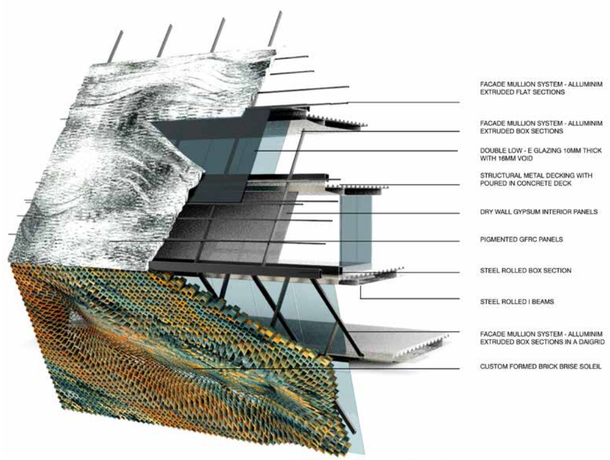
The landscape around the building is so designed so as to create pause points and direction, and direct visitors towards the library. It envelopes the mass of the library at the lower floor, creating a community-centric space. The auditorium is positioned on the topmost level so as to create large-span free-flowing spaces underneath.

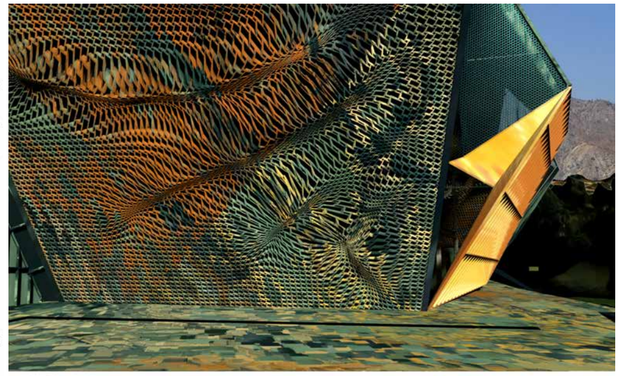
The delineation of the built mass allows it to respond to the St. Gabriele mountain range, and this establishes the vibrant mass into the precinct.

Access to site and site context









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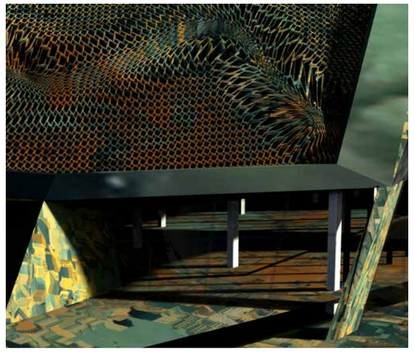
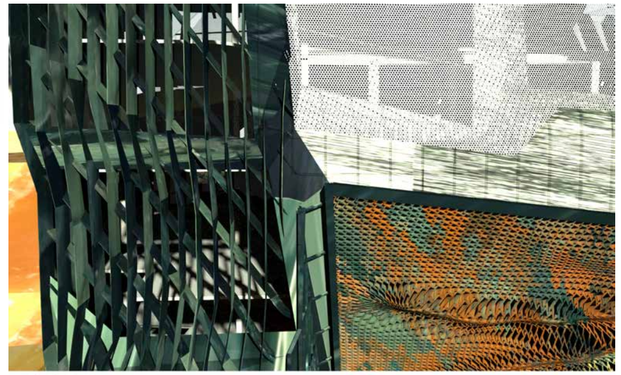
Swetha Arunkumar | Divyansh Agarwal

FACADE DETAIL 2



Facade chunk showing tectonic elements



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FACADE DETAIL 1

Exterior views : Facade textures translated to tectonic systems

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FACADE DETAIL 7

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FACADE DETAIL 5

FRAGMENTED CONGRUITY IN THE OFFICE PROTOTYPE

Design Studio -
Southern California Institute of Architecture (GRAD)

PROJECT : Design of a 'new workspace'

Group Project (Team of 3)

INSTRUCTOR : Eric Owen Moss

PROPOSED SITE : Culver City, Los Angeles

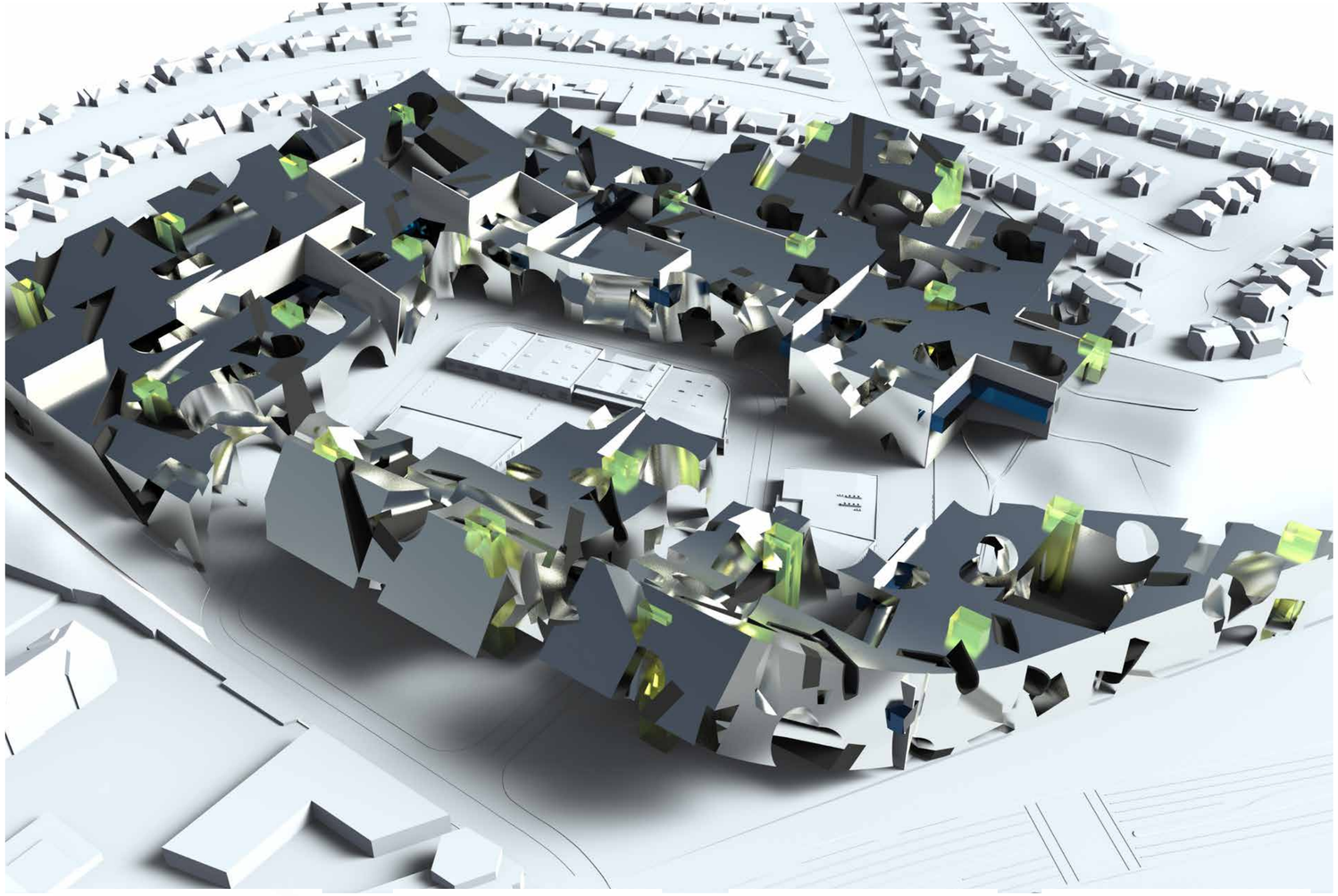
PROJECT BRIEF :

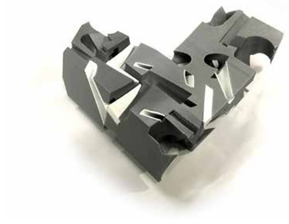
Silicon Beach is a euphemism for an area that includes portions of Venice, Santa Monica, Marina del Rey, and West Los Angeles. And the area is on the way to becoming a local surrogate for Silicon Valley, that sequestered zone south of San Francisco which remains the heart of the world's digital development zone. With cities around the country and around the world clamoring for a share of that once exclusive Silicon Valley concentration of digital industry companies and their cohorts, Los Angeles has taken its place in that assembly line to digital affluence.

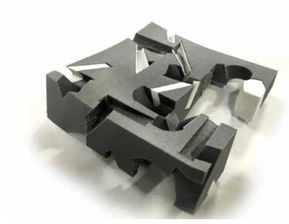
The Los Angeles interest in this digital urban partnership has nothing to do with any conceptual evaluation of the pluses and minuses of digital content or the role of same in the social, political, and educational worlds that surround us today. Rather these inter-related digital industries provide high paying jobs, increase the tax base, and generally support a progressive political agenda. How these growing companies fit, or could fit, or should fit in an evolving Los Angeles planning conception is little regarded. That's a mistake. In addition these companies offer employees a working environment often labeled as "the new work place". That merits of the new work environment, much lauded, little debated, and too quickly accepted as an interior planning 'fact' should be scrutinized.

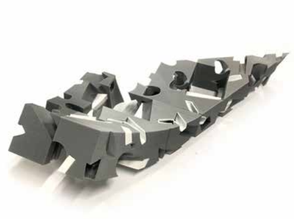
The project program anticipates 1,100,000 square feet of office space, 50,000 square feet of retail space, and parking for 2,500 automobiles.

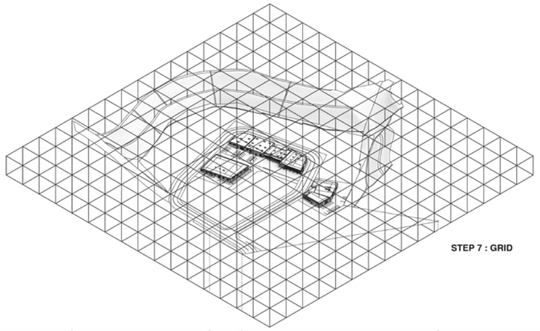
The building site is not contiguous. Rather it's divided into three zones that surround an existing ring road — Arizona Circle. Direct auto access to the site is off Centinela, to Arizona, to Arizona Circle.

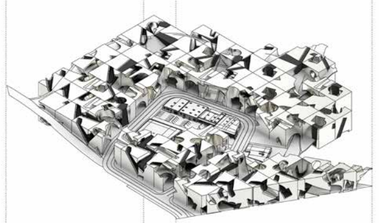


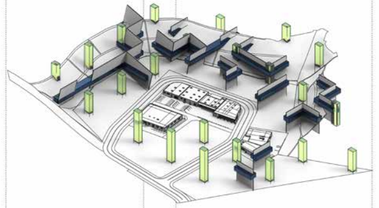


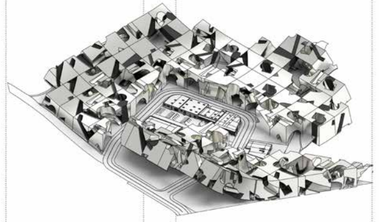


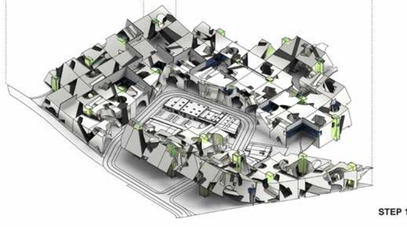


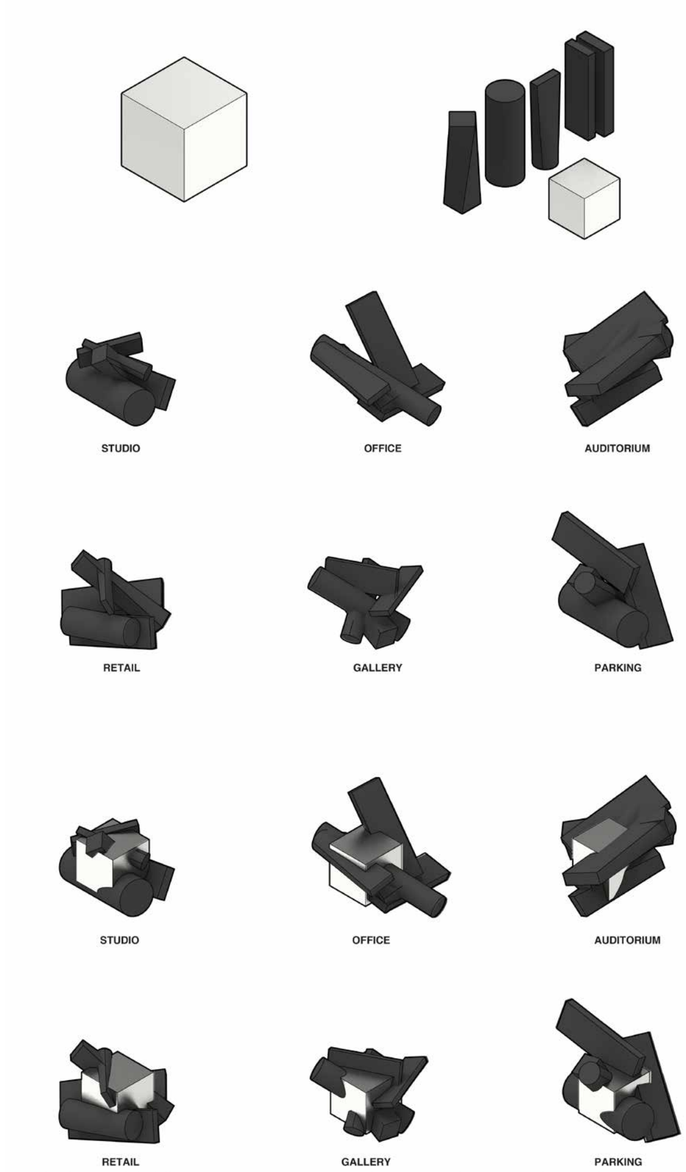


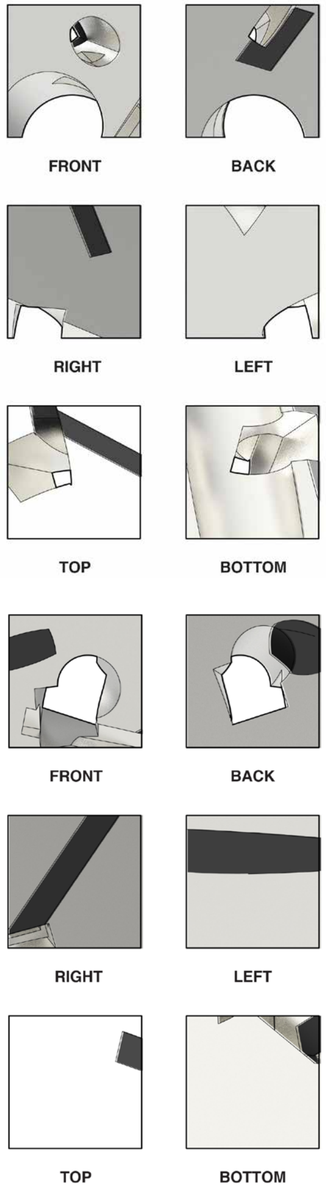




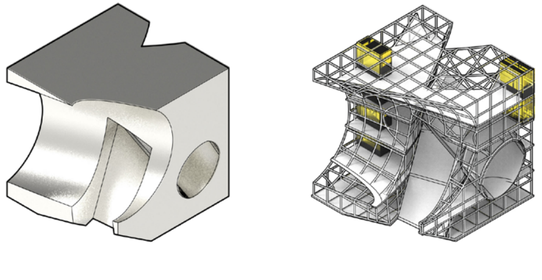


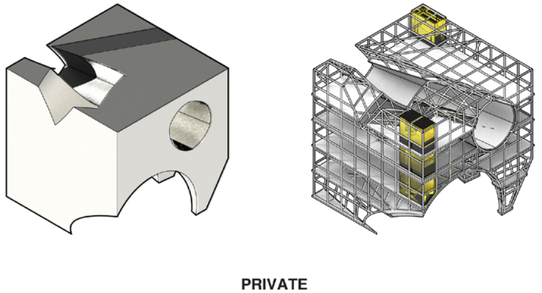


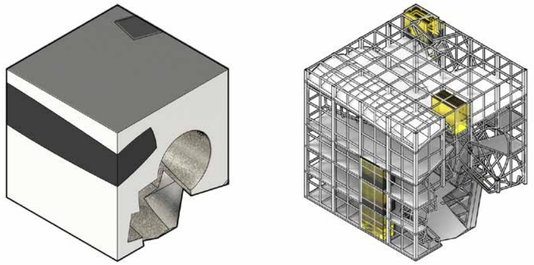


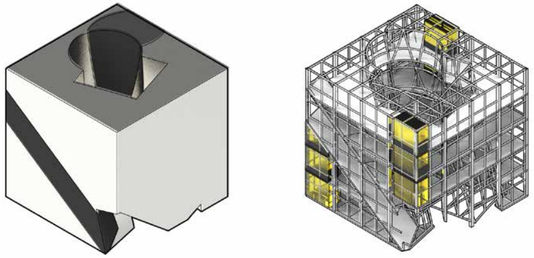


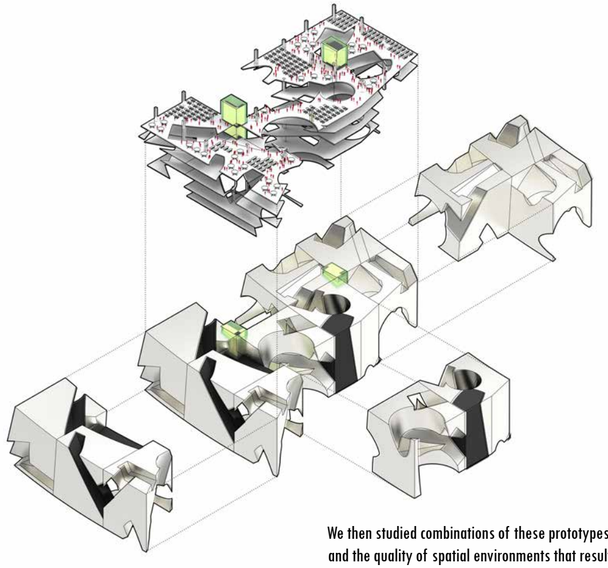
Using the elevation of the hill as our primary unit, we constructed program-specific prototypes that were then placed within a modular grid on the site and then bent to follow the curvature of the hill, aiming to create fluid and flexible spaces.



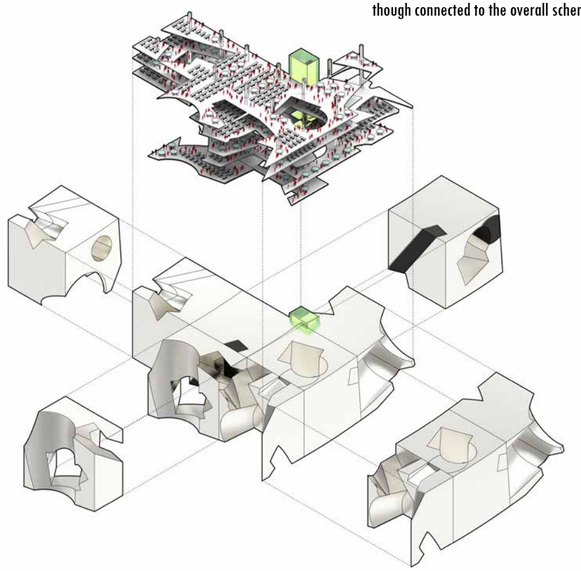


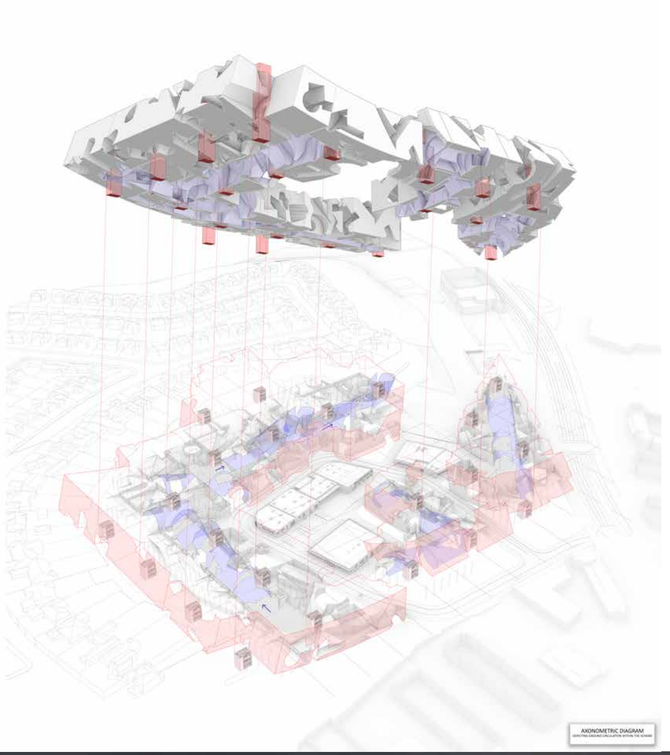


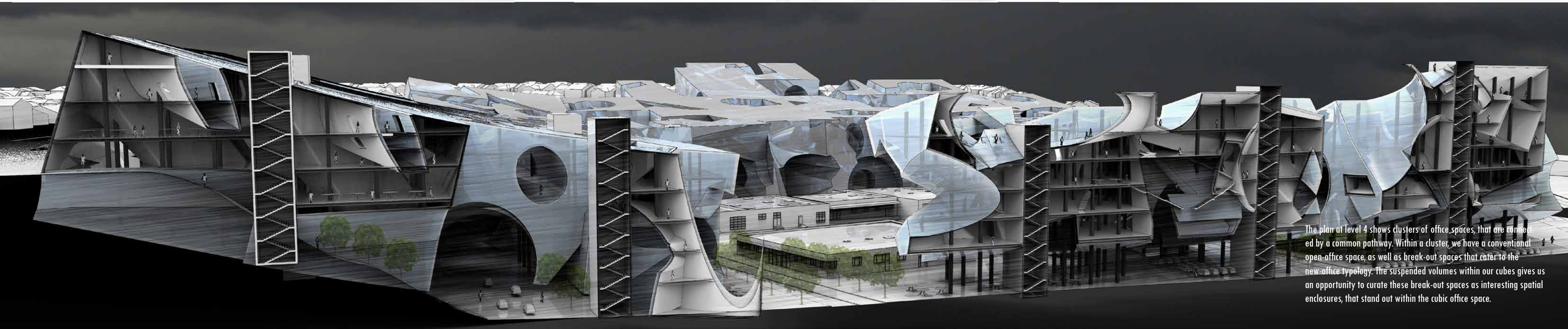




We then studied combinations of these prototypes, and the quality of spatial environments that result from the orientation of the combinations. Each combination is designed to work as a self-sustained unit, though connected to the overall scheme.







The plan at level 4 shows clusters of office spaces, that are connected by a common pathway. Within a cluster, we have a conventional open-office space, as well as break-out spaces that cater to the new-office typology. The suspended volumes within our cubes gives us an opportunity to curate these break-out spaces as interesting spatial enclosures, that stand out within the cubic office space.

FRANKENSTEIN

A NEW COHERENCY COMPOSED OF MULTI-LAYERED REALITIES

Design Studio (Ongoing) -
Southern California Institute of Architecture (GRAD)

PROJECT : Redesign of the Beinecke Rare Book and Manuscript Library at Yale University

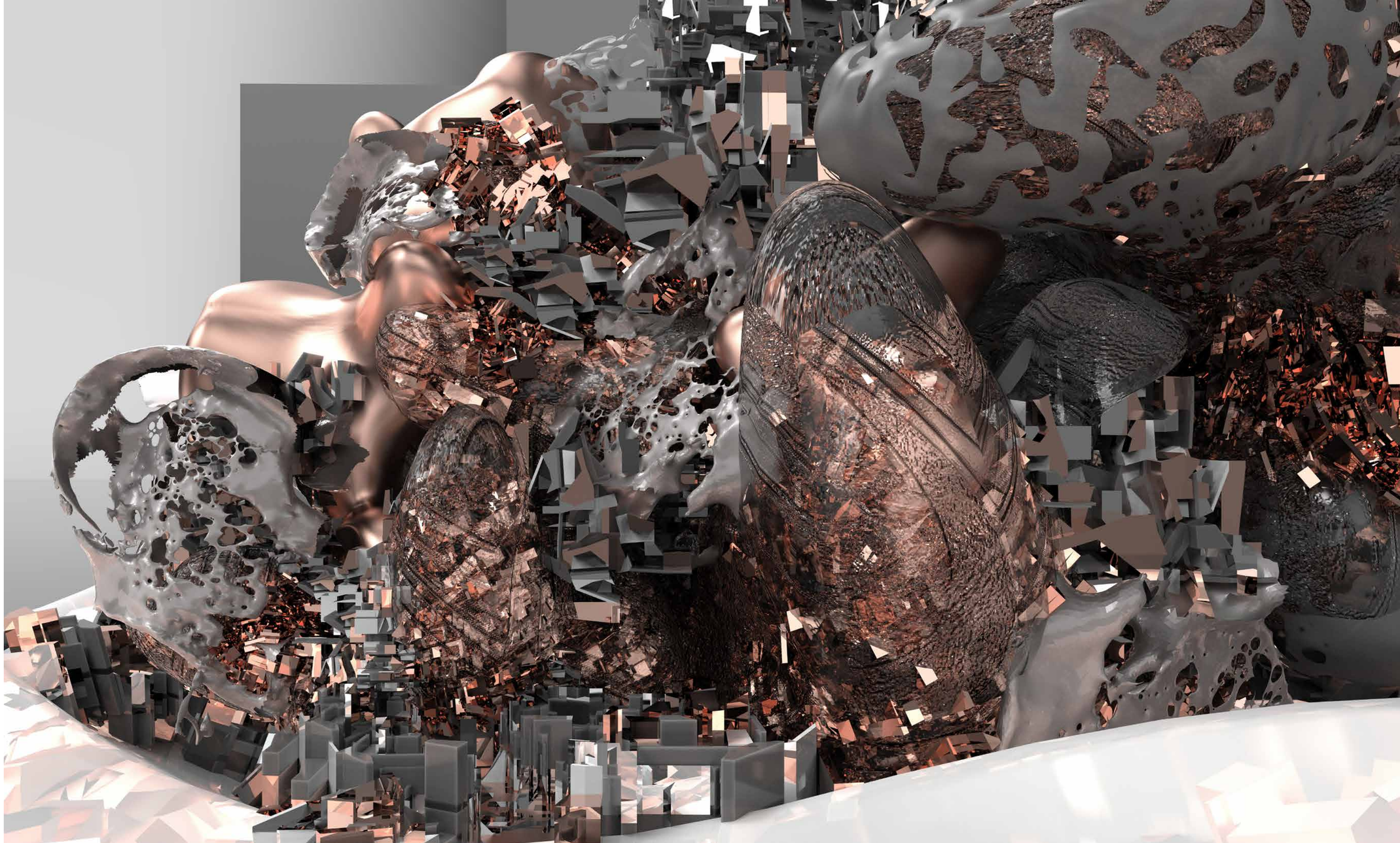
Individually done

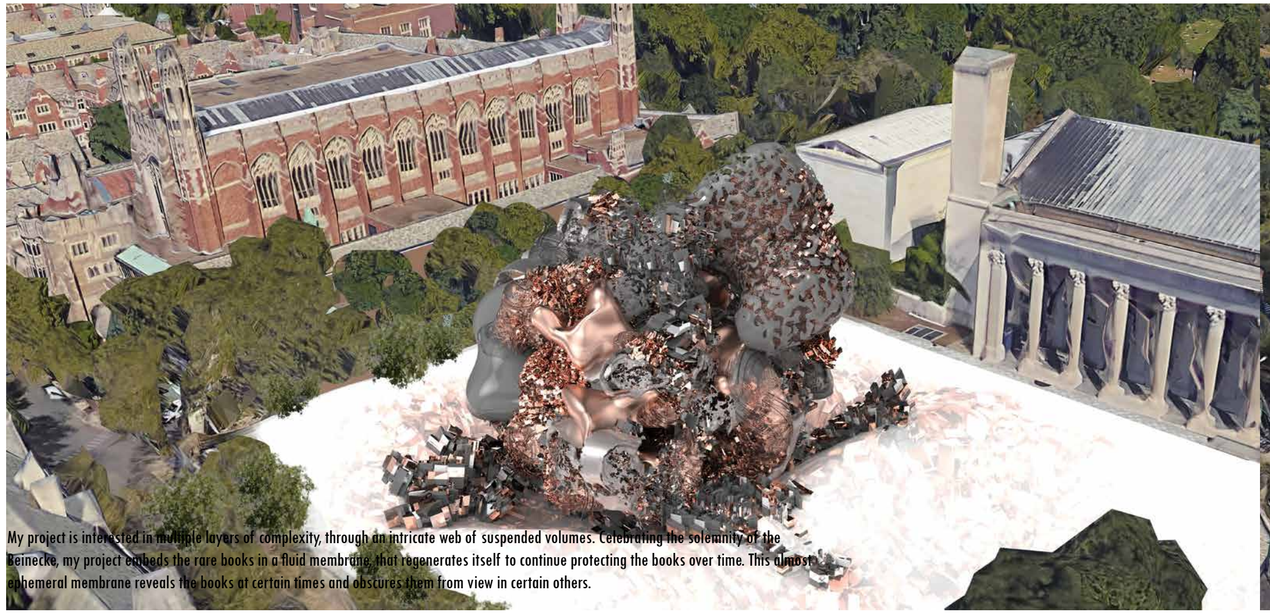
INSTRUCTOR : Hernan Diaz Alonso (Director, SCI-Arc)

PROPOSED SITE : Beinecke Rare Book and Manuscript Library at Yale University

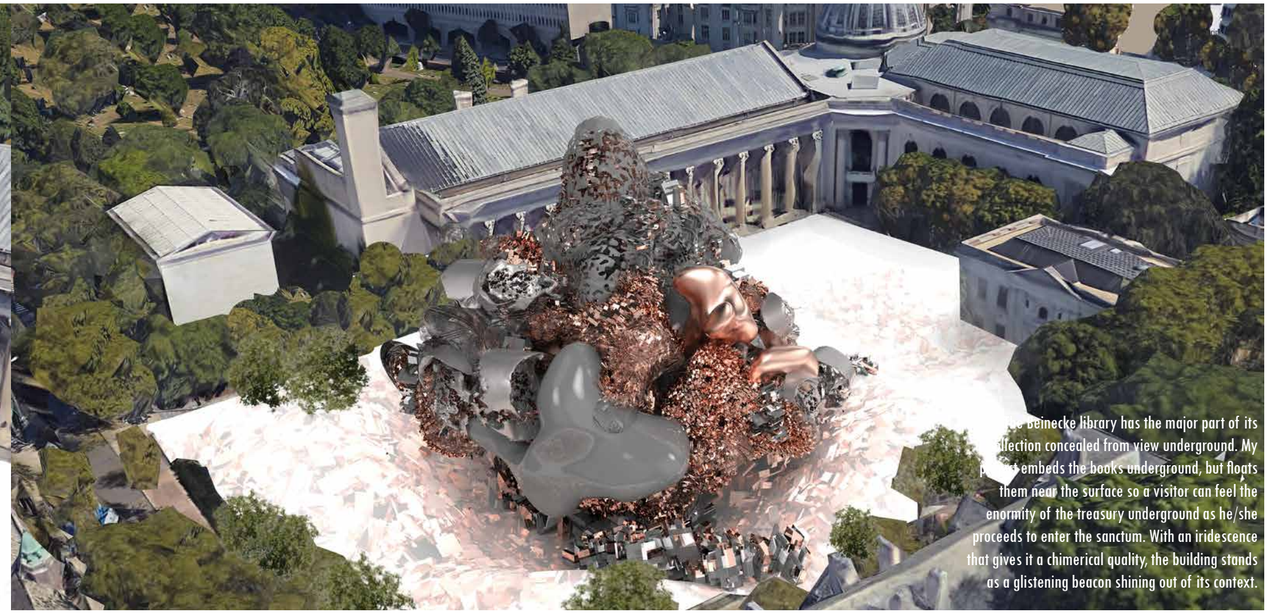
PROJECT BRIEF :
The studio proposes to produce an act of architecture; a project that has the capacity to resonate with the deepest essence of architecture but at the same time challenges it with an almost unrecognizable new behavior. The project is to replace the Beinecke Rare Book & Manuscript Library at Yale University, one of the true innovative masterpieces of American architecture, with exactly the same program, square footage and location.

The studio reviewed the canons of excellence as plans, sections, volumes, postures, geometries and re-adapt them to the methodologies of contemporary culture and society. It also investigated new paths of technology and contemporary thinking and how it can redefine the essential values of architecture.





My project is interested in multiple layers of complexity, through an intricate web of suspended volumes. Celebrating the solemnity of the Beinecke, my project embeds the rare books in a fluid membrane, that regenerates itself to continue protecting the books over time. This almost ephemeral membrane reveals the books at certain times and obscures them from view in certain others.



...e beinecke library has the major part of its ...llection concealed from view underground. My ... embeds the books underground, but floats them near the surface so a visitor can feel the enormity of the treasury underground as he/she proceeds to enter the sanctum. With an iridescence that gives it a chimerical quality, the building stands as a glistening beacon shining out of its context.

DESIGN DEVELOPMENT - MATERIALS AND SYSTEMS INTEGRATION

Design Development Studio -
Southern California Institute of Architecture (GRAD)

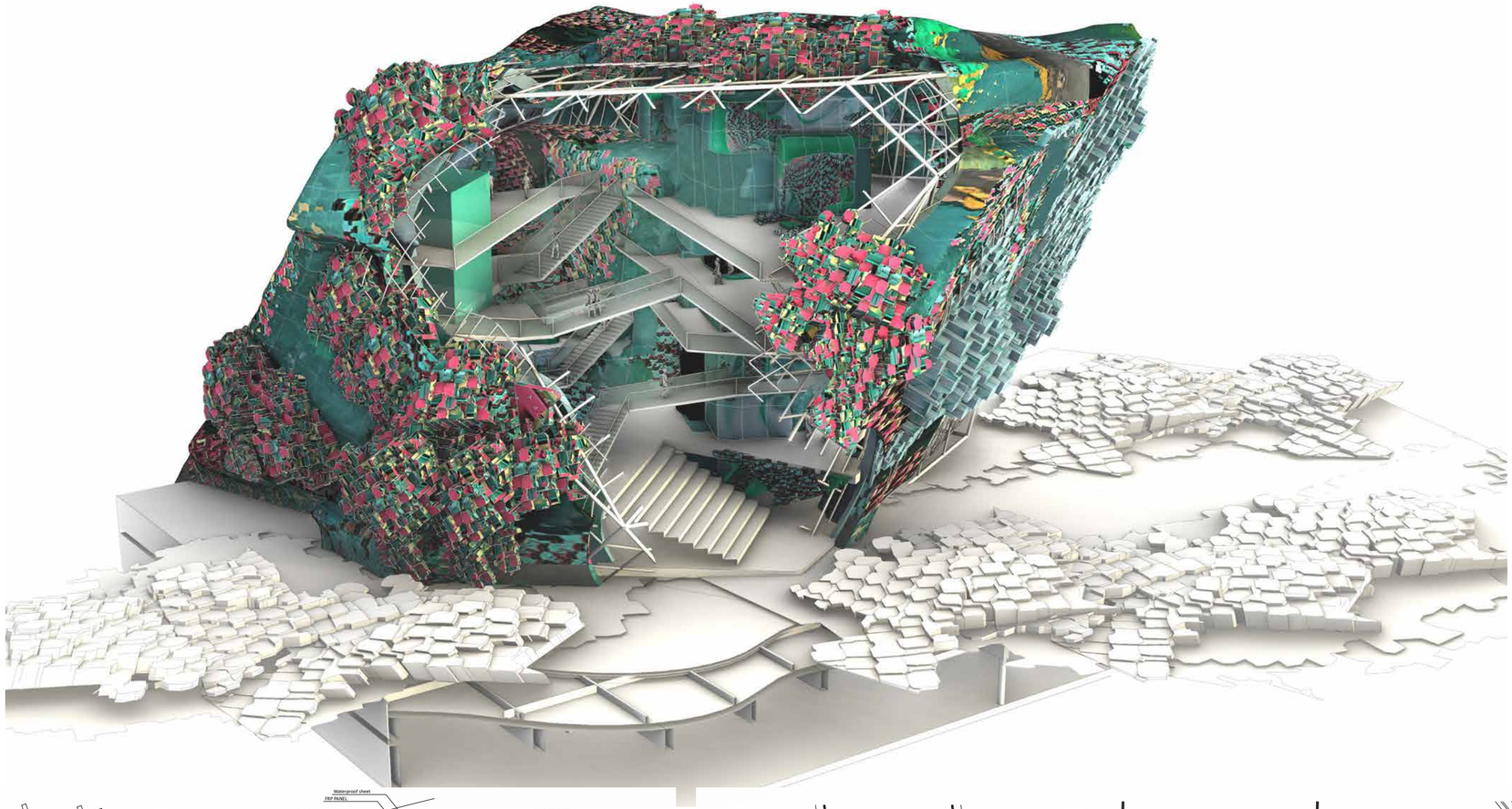
PROJECT : Developing a pre-designed library by incorporating relevant building systems and integrating tectonic assemblies.

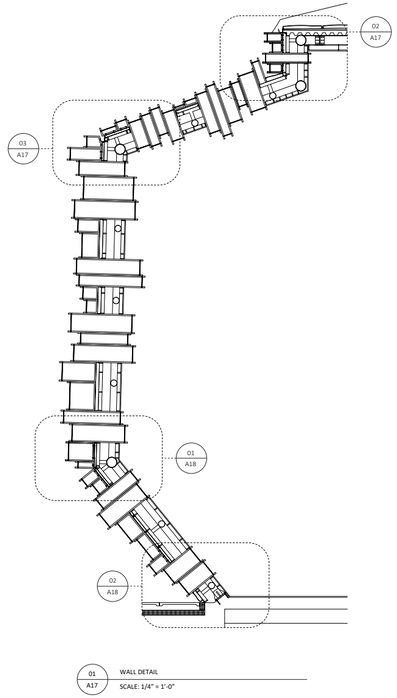
Group Project (Team of 5)

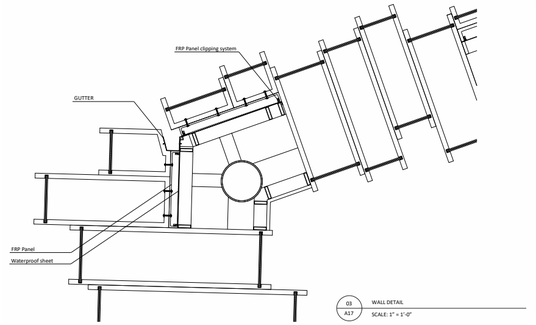
INSTRUCTOR : Herwig Baumgartner, Brian Zamora
CONSULTANTS : Jamey Lyzun, Matthew Melnyk

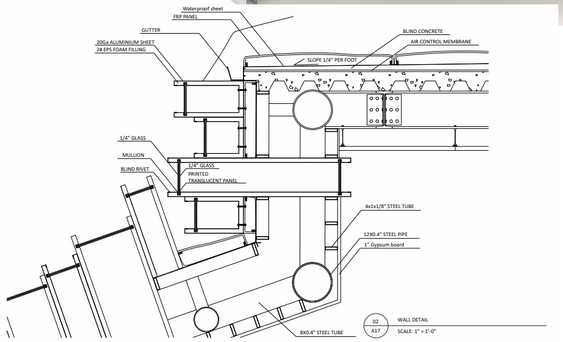
PROJECT BRIEF :

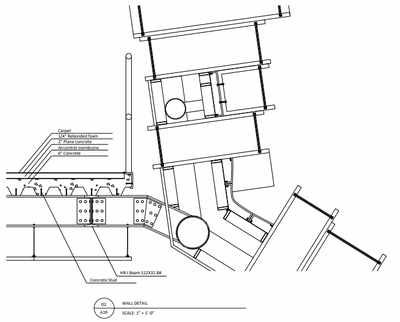
This course investigates issues related to the implementation of design: technology, the use of materials, systems integration, and the archetypal analytical strategies of force, order and character. The course includes a review of basic and advanced construction methods, analysis of building codes, the design of structural and mechanical systems, Environmental systems, Buildings service systems, the development of building materials and the integration of building components and systems. The intent of this course is to develop a cohesive understanding of how architects communicate complex building systems for the built environment and to demonstrate the ability to document a comprehensive architectural project and Stewardship of the Environment.

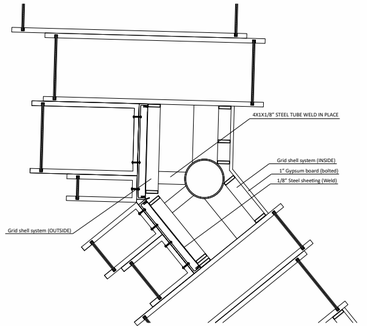


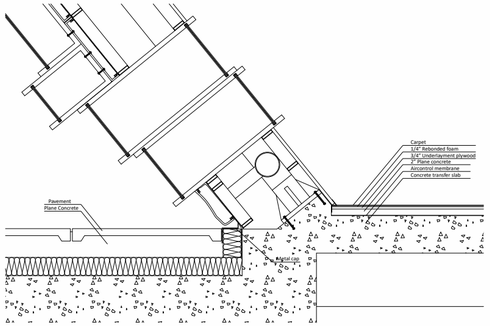


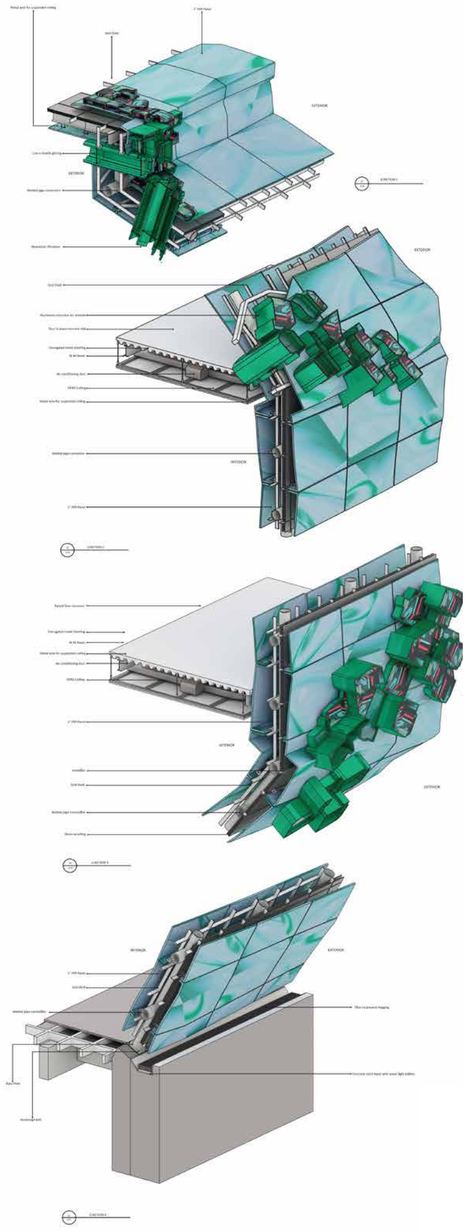


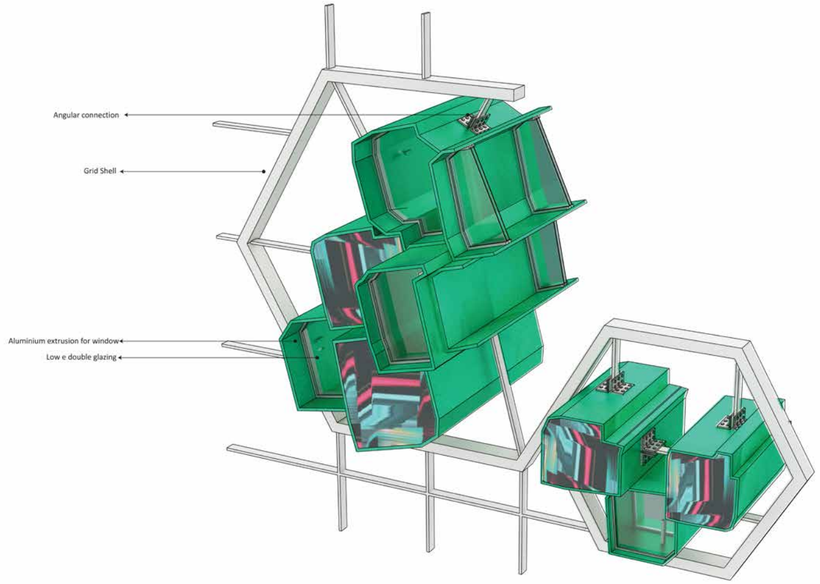


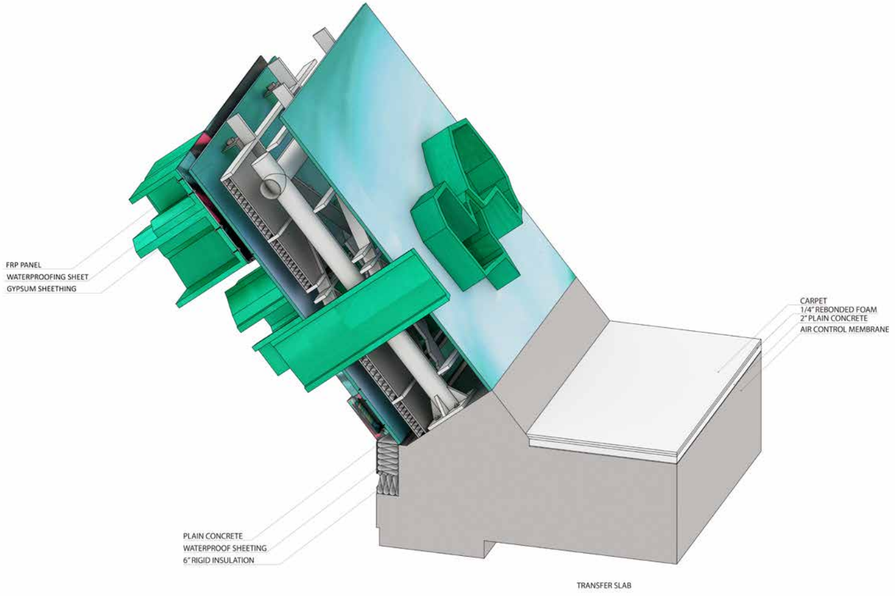


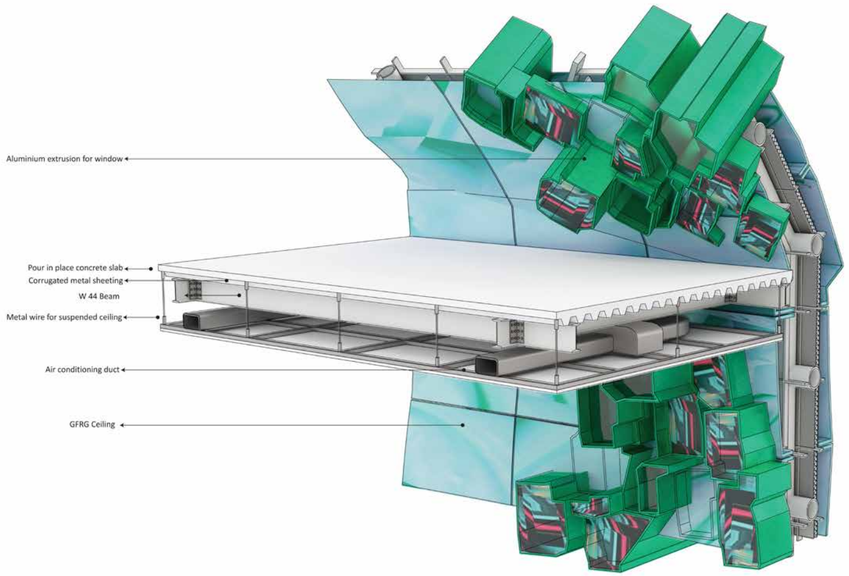


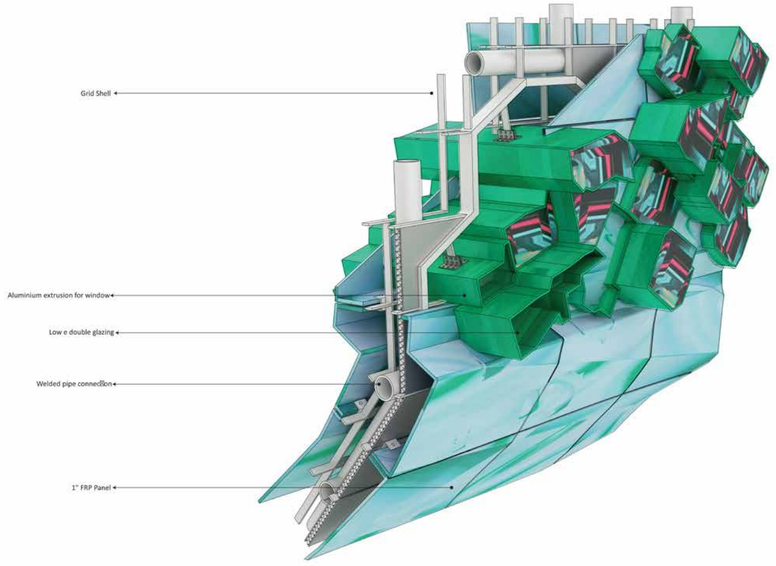





Angular connection
Grid Shell
Aluminium extrusion for window
Low e double glazing


FRP PANEL
WATERPROOFING SHEET
GYPSUM SHEETHING
CARPET
1/4" REBONDED FOAM
2" PLAIN CONCRETE
AIR CONTROL MEMBRANE
PLAIN CONCRETE
WATERPROOF SHEETING
6" RIGID INSULATION
TRANSFER SLAB


Aluminium extrusion for window
Pour in place concrete slab
Corrugated metal sheeting
W 44 Beam
Metal wire for suspended ceiling
Air conditioning duct
GFRG Ceiling


Grid Shell
Aluminium extrusion for window
Low e double glazing
Welded pipe connedBon
1" FRP Panel

ADVANCED MATERIALS AND TECTONICS

Southern California Institute of Architecture (GRAD)

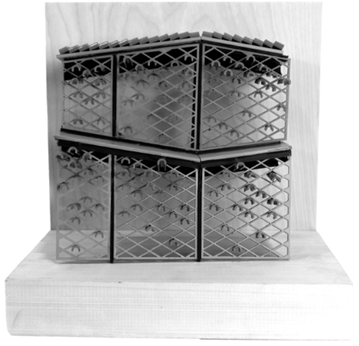
PROJECT : Analysis of a precedent and redevelopment of the envelope system to suit the climate of Los Angeles, CA

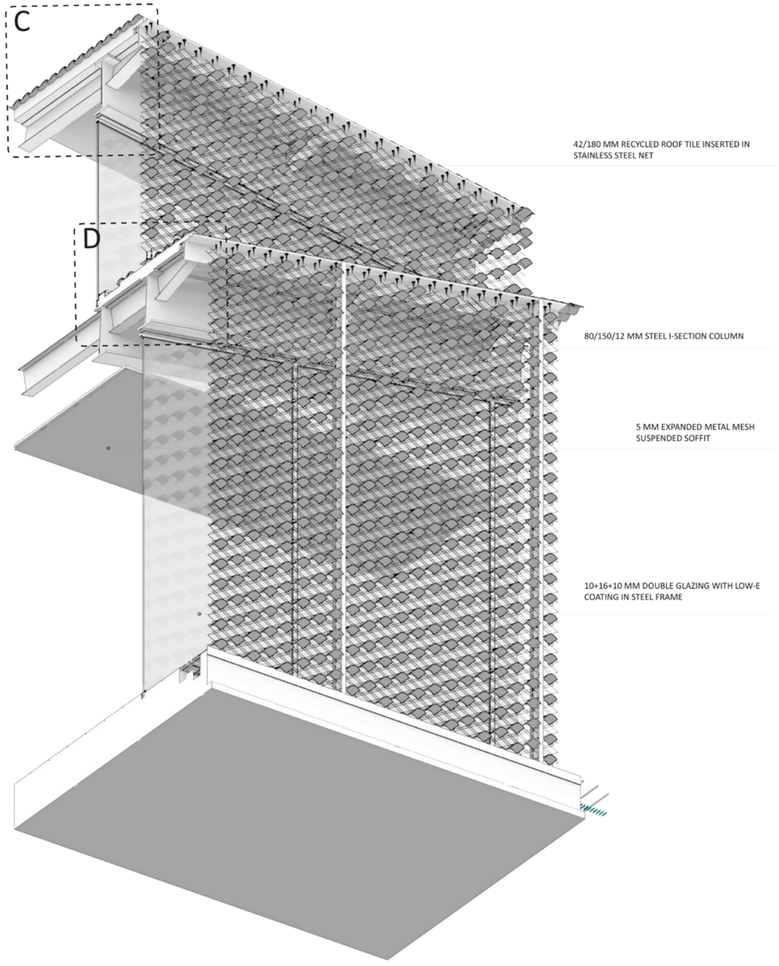
Group Project (Team of 4)

INSTRUCTOR : Maxi Spina

PROJECT BRIEF :
Beginning with analysis of a precedent in terms of structural and tectonic systems, the course culminated in modification of the selected tectonic system, so as to adapt to the climate and contect of Los Angeles. The intention of such a re-origination of the tectonic reality of the precedent is to study a novel set of formal, geometrical and technological associations. They demonstrate hpw the focused redevelopment of structure, envelope, interior and systems, together with an understanding of the constructive processes from which a building arises. They are meant to be systematically approached so as to re-inform the tectonic origins of the work without diminishing its performance.

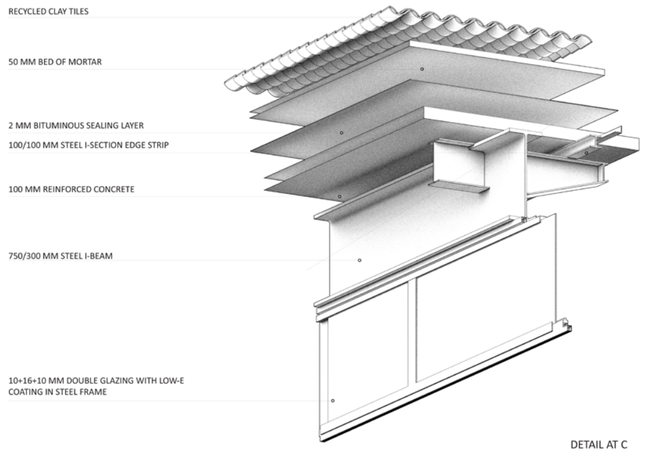
The case study selected was the China Academy of Art- Folk Art Museum by Kengo Kuma Architects



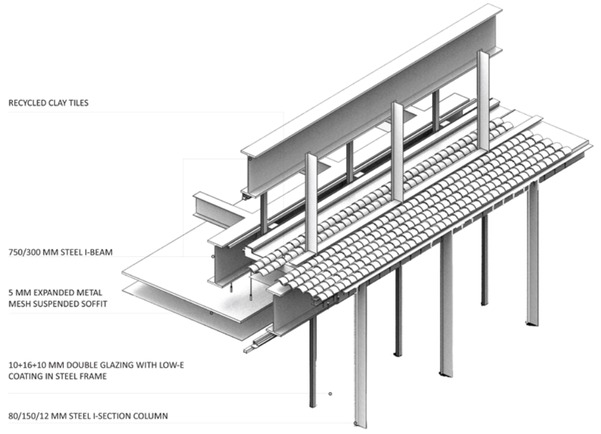


Contrasting the general notion of a box-like museum interior, the Folk Museum of Art attempts to induce a fluidic character within the volume, by subtly altering floor levels, occasionally punctured by semi-external spaces in between the scheme. The facade of the museum sports an interesting application of the traditional clay tile. Rather than the conventional method of settling tiles in concrete, they are suspended in a network of stainless steel cables. this teel wire matrix is installed in a double matrix grid, with the black tiles screwed under the steel cable junctions.

TECTONICS AND ASSEMBLY - 2

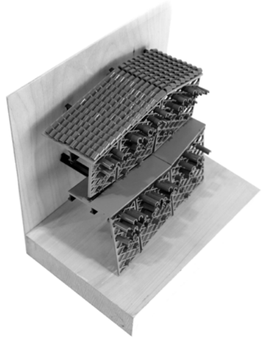


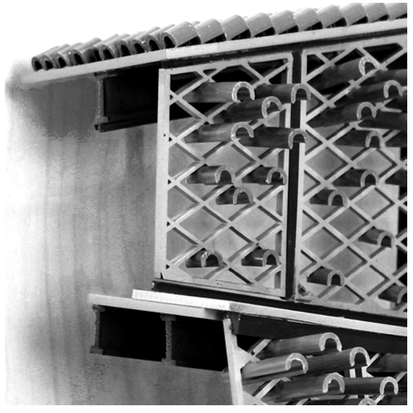
DETAIL AT C

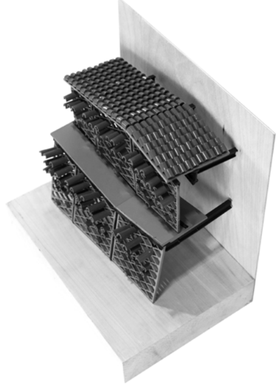


DETAIL AT D

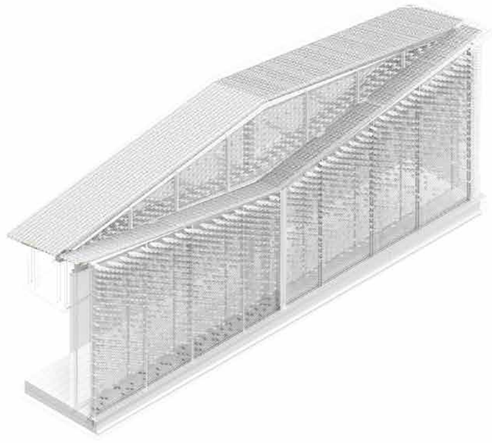
With no particular dictating geometry in the arrangement of tiles on the walls, the tiles themselves differ subtly in their geometries. Tiles on the roof are laid close together, in an over and under fashion. Thus, these subtle irregularities in the black tiles on the roof and walls gives the museum a monolithic view and exhibits homogeneity with the slopes of the hill. Though not immediately apparent to the eye, the arrangement and fragmentation of the suspended tiles in the steel cable network can be thought of as imitating the sales of a fish; thus when the eye movies, it appears dense and dark at certain times and infinitesimally thin and inconspicuous at others.



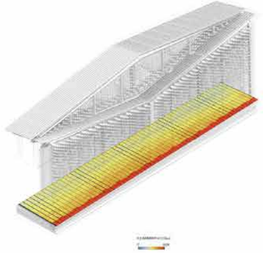




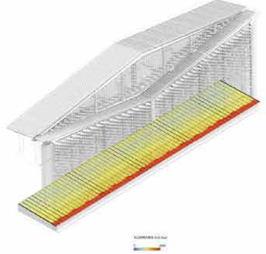
REVISED VERSIONS-1



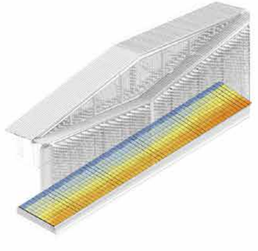
Option 3: Various length clay tile system controlling sunlight



Summer soltice illuminance

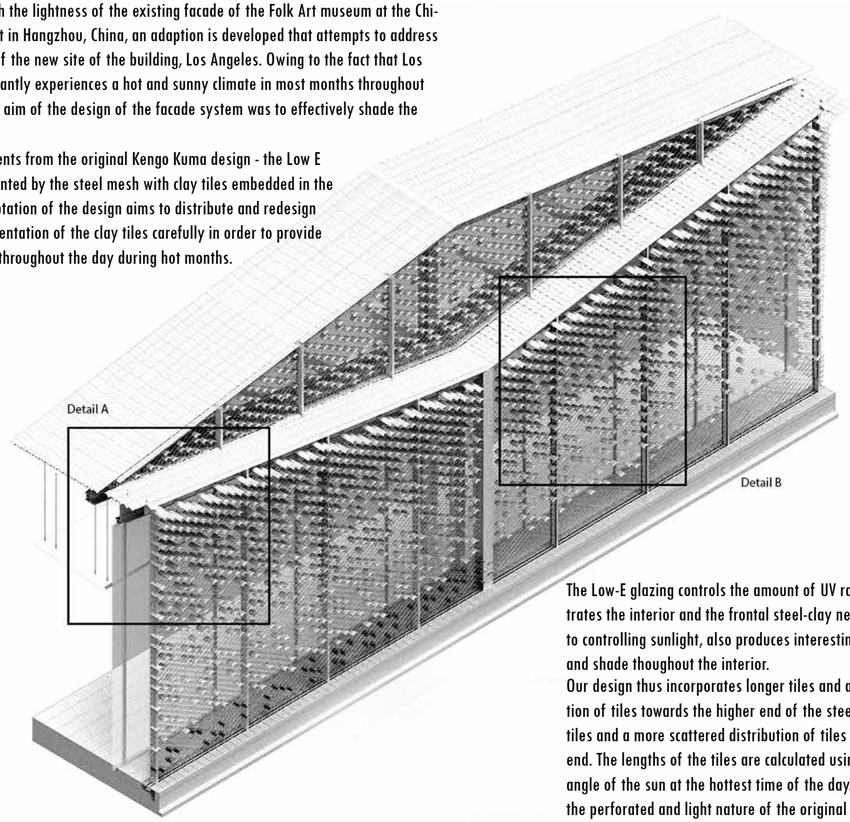


Winter soltice illuminance



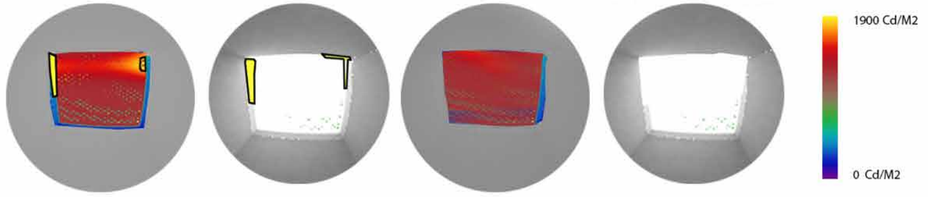
In congruence with the lightness of the existing facade of the Folk Art museum at the China Academy of Art in Hangzhou, China, an adaption is developed that attempts to address the local climate of the new site of the building, Los Angeles. Owing to the fact that Los Angeles predominantly experiences a hot and sunny climate in most months throughout the year, the main aim of the design of the facade system was to effectively shade the interior closely

Maintaining elements from the original Kengo Kuma design - the Low E double glazing fronted by the steel mesh with clay tiles embedded in the network, our adaptation of the design aims to distribute and redesign the length and orientation of the clay tiles carefully in order to provide effective shading throughout the day during hot months.



The Low-E glazing controls the amount of UV radiation that penetrates the interior and the frontal steel-clay network, in addition to controlling sunlight, also produces interesting patterns of light and shade thoughout the interior.

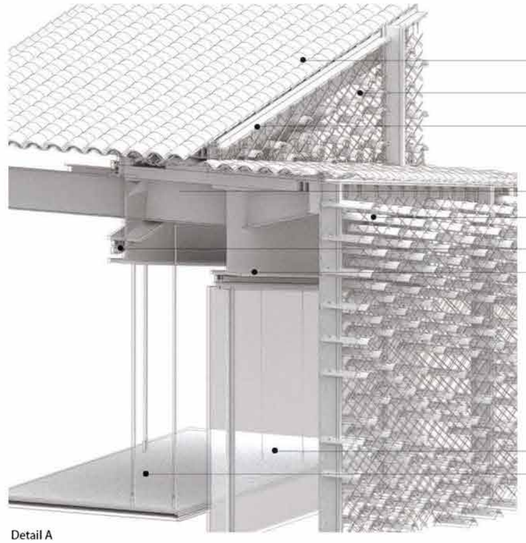
Our design thus incorporates longer tiles and a denser distribution of tiles towards the higher end of the steel mesh and shorter tiles and a more scattered distribution of tiles towards the lower end. The lengths of the tiles are calculated using the altitude angle of the sun at the hottest time of the day. Thus, maintaining the perforated and light nature of the original facade, our adaptation aims to more precisely calibrate the screen density and tile lengths, responding to the local climate of Los Angeles.



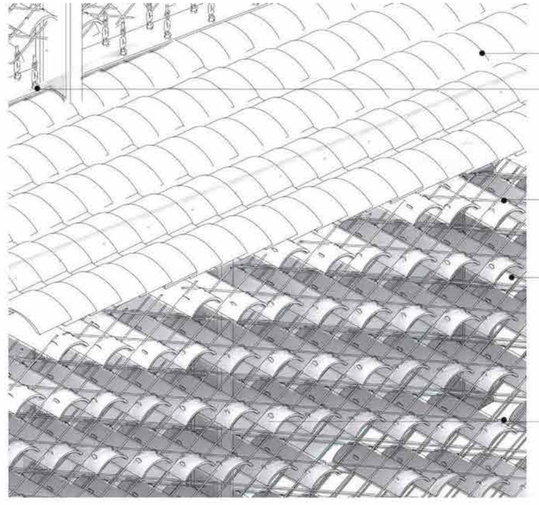
Glare range diagrams in summer soltice (12:00 6/22)

Glare range diagrams in winter soltice (12:00 6/22)

REVISED VERSIONS-2



Detail A



Detail B

BIG SHED SOLUTION

Advanced Structures class -
Southern California Institute of Architecture (GRAD)

PROJECT : Design of a Football stadium

Individual Project

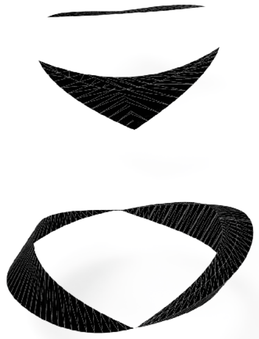
INSTRUCTOR : Greg Otto

PROJECT BRIEF :
Using two precedent projects, the project intends to develop a design concept for a long-span structure that creates an enclosure for a structure-free interior space to house a football venue.

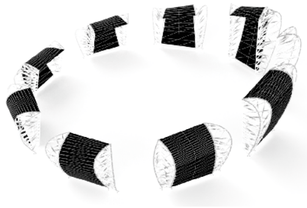
CONCEPT :
Formulated with an initial idea of a robust periphery and a soft but striking roof membrane, the concept for the design of the stadium is primarily interlocking curvilinear surfaces that are placed in harmony with each other.
Following the 'chip-like' form, the light roof structure complements the rough and robust supporting structure, that still shares a visual harmony with the roof owing to its inclined curvilinear form.

Supported on 17 trussed steel columns, a ringed space truss forms the primary structure of the stadium. To span the roof, a fabric membrane is anchored from both the ringed truss and two massive arches that are anchored to the ground. This membrane, though held in place by tensioned cables from the arch, will need secondary structural members throughout its cross section. These structural members can be 3d trusses spanning from the nodes of the ringed truss system (not depicted in the diagrams). The membrane roof covers the seating on the longitudnal ends of the stadium. In order to roof the transverse ends also, a secondary fabric membrane spans these areas, and is anchored by the primary fabric membrane.

The peripheral structure is designed such that it exposes the raw structure and thus gives a degree of rigidity and stability to the base, and is contrasted by the soft and flowing fabric that roofs the span of the stadium. The robust nature of the peripheral base structure is enhanced by membranes that span alternate sections of the peripheral structure, thus revealing the interior concrete structure at some instances but shielding it at others.

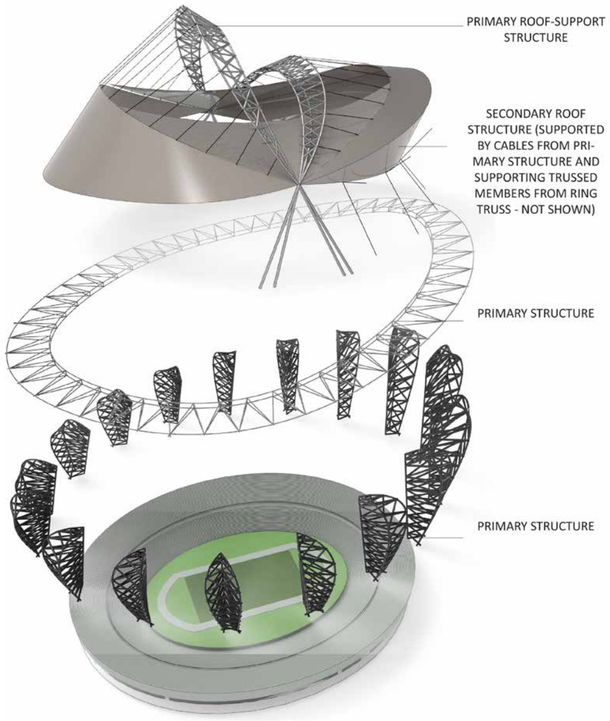


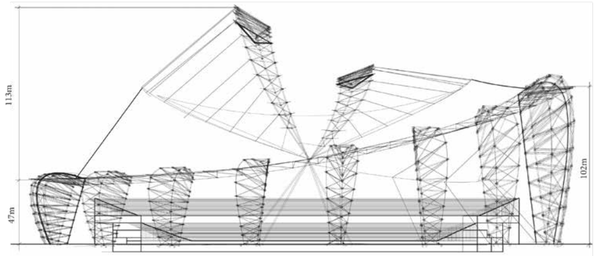
SOFT SPANNING MEMBRANE - Contrasts the rigid base and spans the interior of the stadium



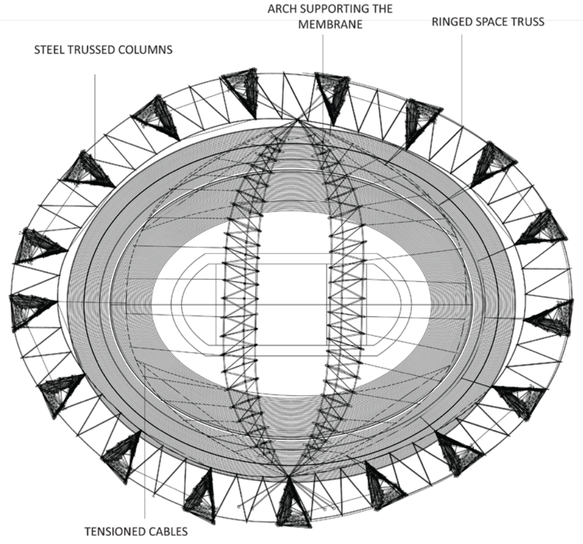
ROBUST BASE RING - Sets the starkness of the stadium from the ground

The membrane that stretches between the trussed columns at the base can be used as a projection screen (like the Allianz stadium) and the roof fabric that is suspended in the downward direction from the ringed truss can house a scoreboard. Due to the asymmetrical form of the stadium, there is a directionality within the longitudnal section of the interior and thus directs spectators' eyes towards either longitudnal end of the span.The curvilinear roof casts interesting shadows on the central space and provides shading to the seats at all times.





ROOF PLAN OF STADIUM



A BUILDING WITHIN A BOX

PRESENTATION DRAWINGS OF MLA OFFICE

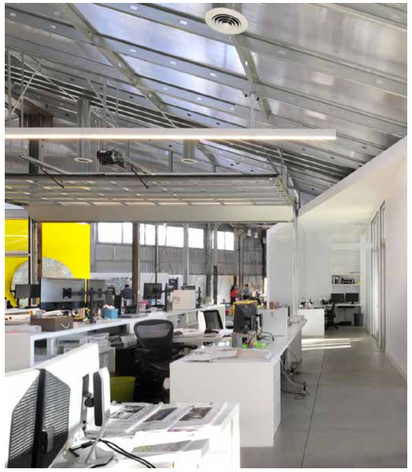
Internship (Summer of 2018) -
Lehrer Architects

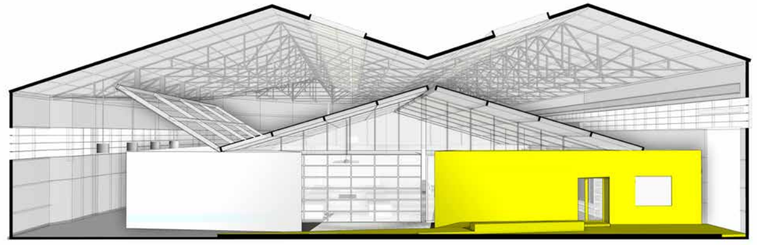
PROJECT : Presentation drawings for MLA office project, Mission St, Arts District, LA

SUPERVISOR : Nerin Kadribegovic

PROJECT :
Lehrer Architects' adaptive reuse of an old warehouse into the studio for MLA's office is a building within a box : a gleaming beacon within a worn out warehouse.

MY ROLE :
To prepare rhino model, CAD elevations and sections, exploded axonometric drawing as part of the presentation drawings as well as curate the storyboard for presentation to the AIA Awards 2018 under the Adaptive Reuse category





EXISTING FACTORY SKIN
24 8' X 8' skylights newly opened, unconditioned space

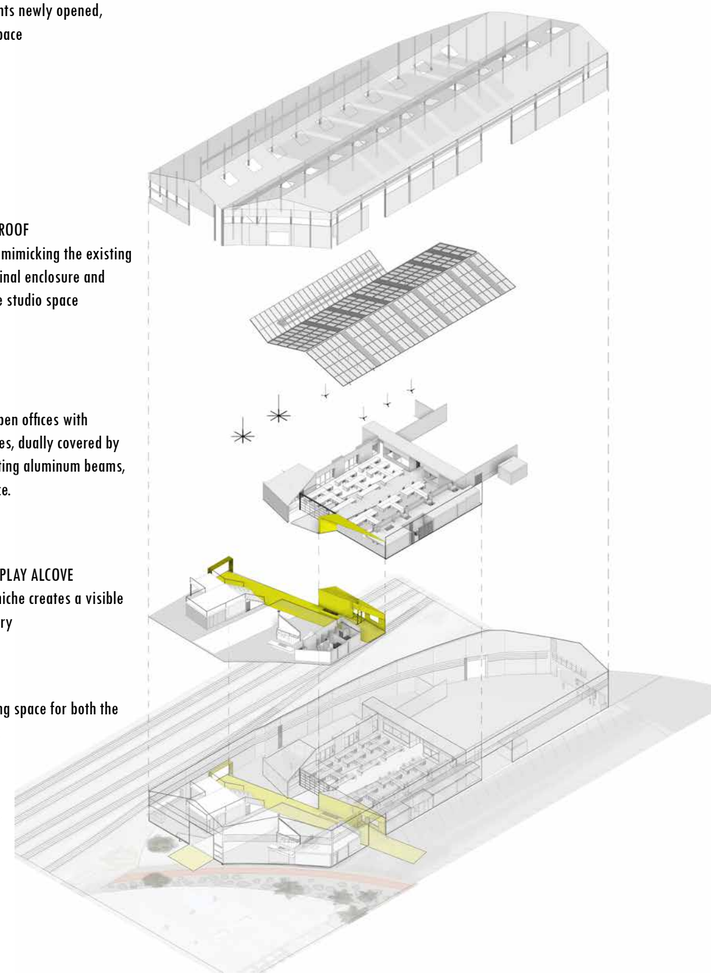
CLEAR POLYGAL ROOF
An illusory roof, mimicking the existing folds of the original enclosure and conditions of the studio space

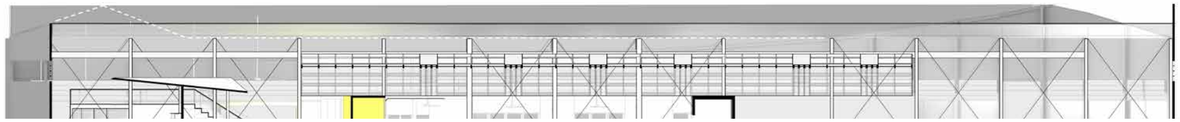
STUDIO SPACE
Brightly skylit open offices with strong visual lines, dually covered by polygal and floating aluminum beams, conditioned space.

SEE/ BE SEEN DISPLAY ALCOVE
Vividly painted niche creates a visible beacon upon entry

PLAZA
A public gathering space for both the office and public

GARDEN
Former Rail spur



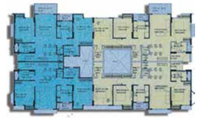


LODHA KOLSHET, THANE

Internship work (June to December, 2015),
Architect Hafeez Contractor, Mumbai

PROJECT : Mid-rise luxury apartments

DESIGN BRIEF :
The design brief was to prepare a luxury housing community which discourages vehicular traffic within ground level to the maximum. The goal was to create a humanized scale, with residential blocks limited to 8 floors and a pedestrian friendly environment within the scheme.



MY ROLE : To prepare plan and sections of the green area between Blocks I and J, showing interaction of private and public zones on the ground floor. To prepare 3 options of 2.5 BHK - 3 BHK configurations and 2 options of 2 BHK configurations for

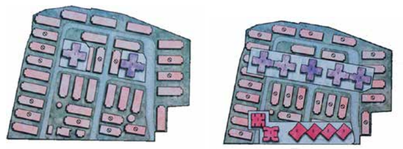
MY ROLE : To develop various exterior facades for the residential blocks, experimenting with color, material and projections / recessions on the facade for the client to choose from.

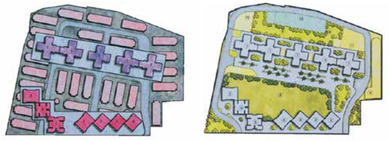
MY ROLE : To prepare sketchup model of the clubhouse and develop facade and roofing elements to conform with the scheme and the client's requirements.

BDD CHAWLS, MUMBAI

Competition entry, Internship work
(June to December, 2015),
Architect Hafeez Contractor, Mumbai

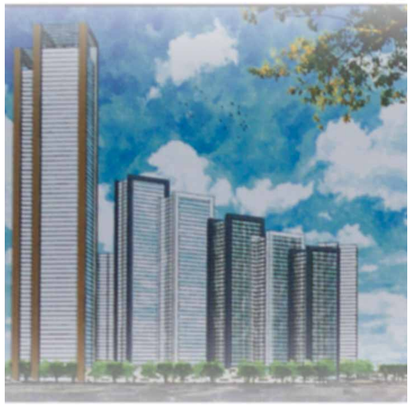
PROJECT : Rehabilitation of chawl (below poverty line) housing and proposal for sale-able apartments on site for MHADA (Maharashtra Housing and Area Development Authority), Govt. of Maharashtra, India

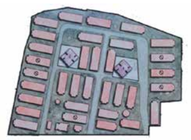


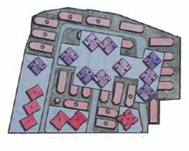


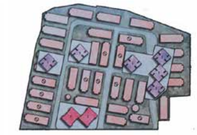
DESIGN BRIEF :
The proposal was to contain Rehabilitation units for the chawl (very low income) dwellers and sale plots including a variety of housing classes - EWS (Economically weaker section), LIG (Low income group), MIG (Middle income group) and HIG (High income group). In the first option of the proposal on NM Joshi Marg, development was to occur in 3 phases, every new phase planning to house the dwellers of the chawl buildings to be demolished in the subsequent phase. In total there were 1360 rehab units, 1600 LIG units, 480 MIG units and 240

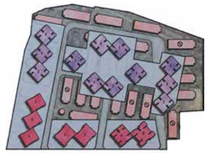
MY ROLE : Conceptual stage of arriving at the of rehab unit plans, making a Sketchup model of the proposal (option 1), drafting and rendering the Masterplan on CAD and Photoshop respectively and making phasing drawings.











The second option at NM Joshi Marg had an organizing element to efficiently direct traffic flow within the scheme and also plazas that could serve as hubs for social interaction. There are 12 rehab buildings, totally housing 2880 chawl dwellers, 960 LIG units, 600 MIG units and 480 HIG units

MY ROLE : Conceptual stage of arriving at the of rehab unit plans, making a Sketchup model of the proposal (option 2), drafting and rendering the Masterplan on CAD and Photoshop respectively and making phasing drawings.