
EMILY
JOYCE
HUANG PORTFOLIO
2021–PRESENT



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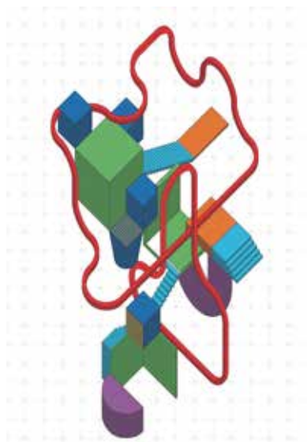




SENSORIAL DENSITY

UNDERGRADUATE B.ARCH DEGREE THESIS

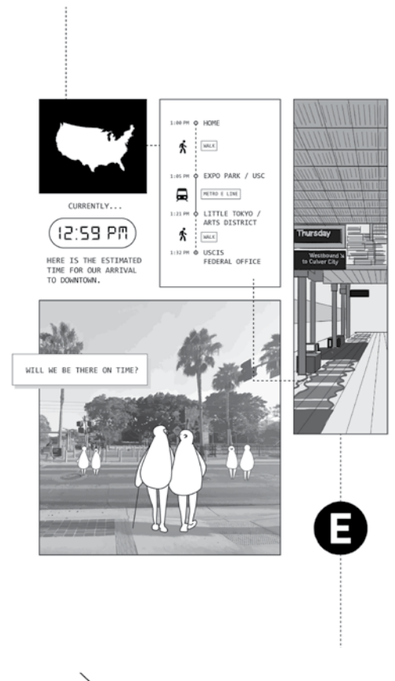
USC SCHOOL OF ARCHITECTURE - PROFESSOR JIMENEZ LAI

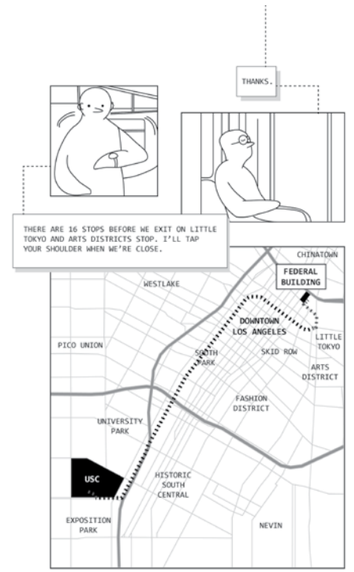
Spatial elements and environments that stimulate sensations beyond sight, fostering deeper connections between individuals and their built surroundings.

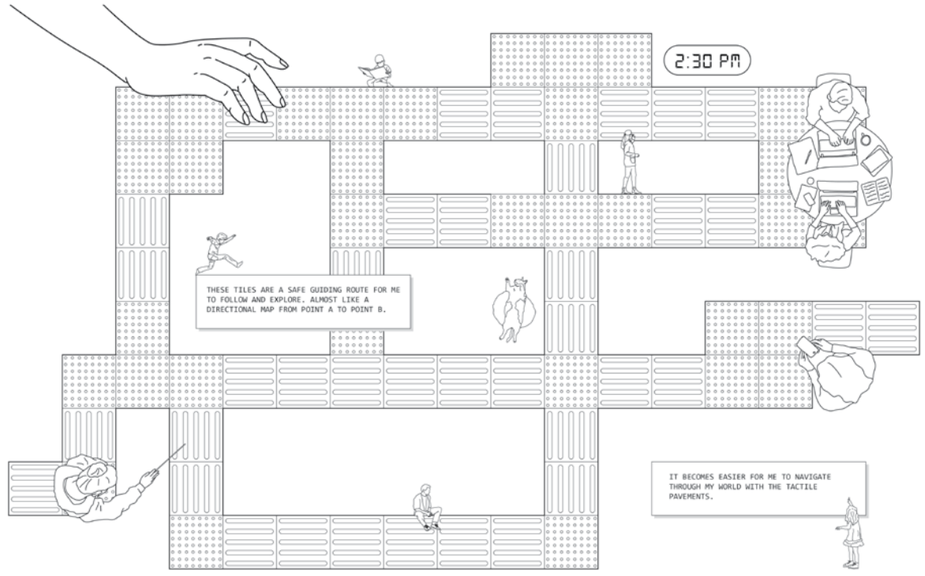
To study sensorial density in architecture is to understand ocularcentrism and its ranging impact on the five senses when designing space. The five-part project targets the sub-genres of sensory design, where accessible design, universal design, and sensory overload become the main topics in challenging the notion of limiting creativity. Documenting sensory receptions reveals the nature of sensorial density, allowing for a more integrated architectural experience. Activities like dining in family restaurants and attending perfume workshops illustrate how designed experiences heighten sensory engagement.

The research includes a reevaluation of the 1950s “House of the Future” by Alison and Peter Smithson, envisioning new interactions and engagements with space. Overlaying various sensory elements and reinterpreting the original design demonstrates how sensory misreadings inspire innovative spatial configurations. Both material and immaterial aspects in sensorial density invite a multi-dimensional engagement with space. Orientation itself becomes a sensory experience, leading to new interpretations of self-perception and spatial understanding. This work opens a conversation on prioritizing sensory experiences over visual aesthetics in architectural design, considering the impact of emerging technologies on enhancing sensory experiences.

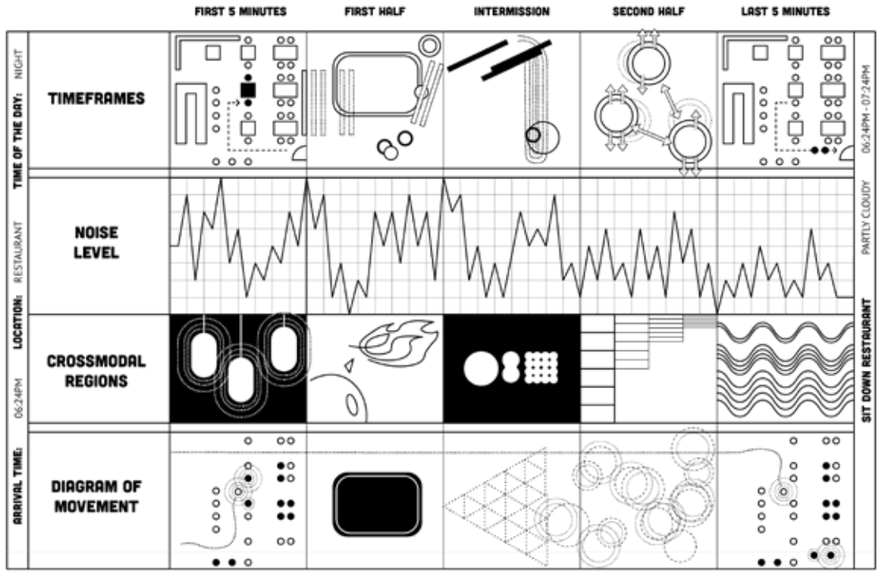
RHINO / ILLUSTRATOR / PHOTOSHOP / PROCREATE / D5 RENDER







1. PART 1 - ON MY WAY!: A story of two characters with various levels of seeing or hearing and their journey of struggles and reminiscences through public transportation, tactile studies, and their spatial understandings. Journey through public transportation and the importance of tactile design.
Full story available on: https://issuu.com/emiryh/docs/502_on_my_way_comics_official



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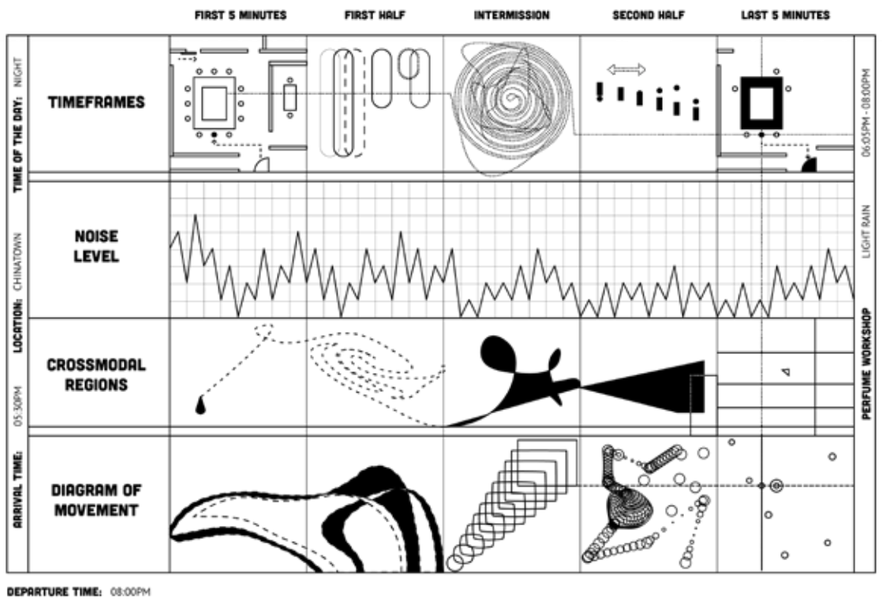

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1. PART 2.1 - CROSSMODAL CATALOGUES: Personal experiences at a restaurant through screenwriting- like time frame diagrams. Time frame catalogue diagram of a dinner experience.
2. PART 2.2 - Time frame catalogue diagram of an experience at a perfume making workshop.
3. PART 3 - 90 ROOMS, 90 EXPERIENCES: The 10 by 10 feet cubes contain various interior and exterior experiences of daily lives.



1



2



3

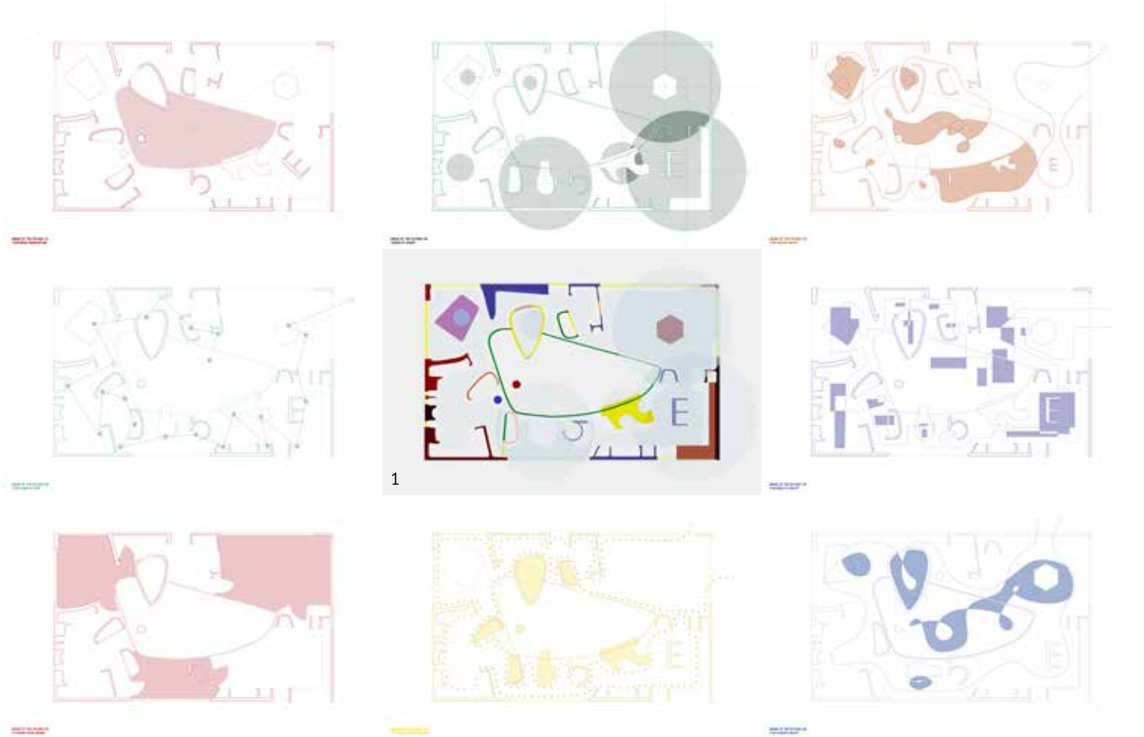
1. Diagram close-up detail.
2. Individual room details.

3. PART 4 - ROTATIONAL CHAOS: A rotational illustration of what occurs when sensory overload takes upon the familiarity of one's surroundings. A plan and an elevation twists into an axonometric view of a study form, which the ordinary understandable space doubles as a wall or floor, opening various scales of interaction within one space. Illustration of a collage between an axon, a plan, and an elevation. The collected views can be individually identified with its scale with every 90 degrees of rotation.

sen·so·ri·al den·si·ty

/senˈsôrēəl /ˈdensədē/

noun



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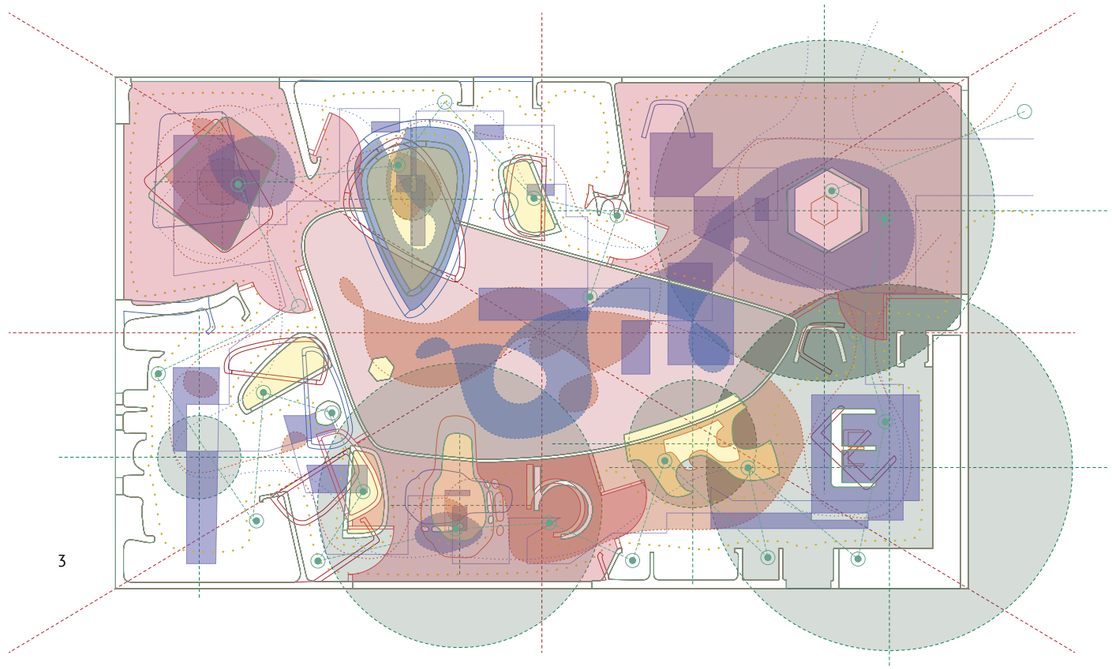


3



4

1 Reintepretation of the House of the Future diagrammatic plan for modern adaptability.

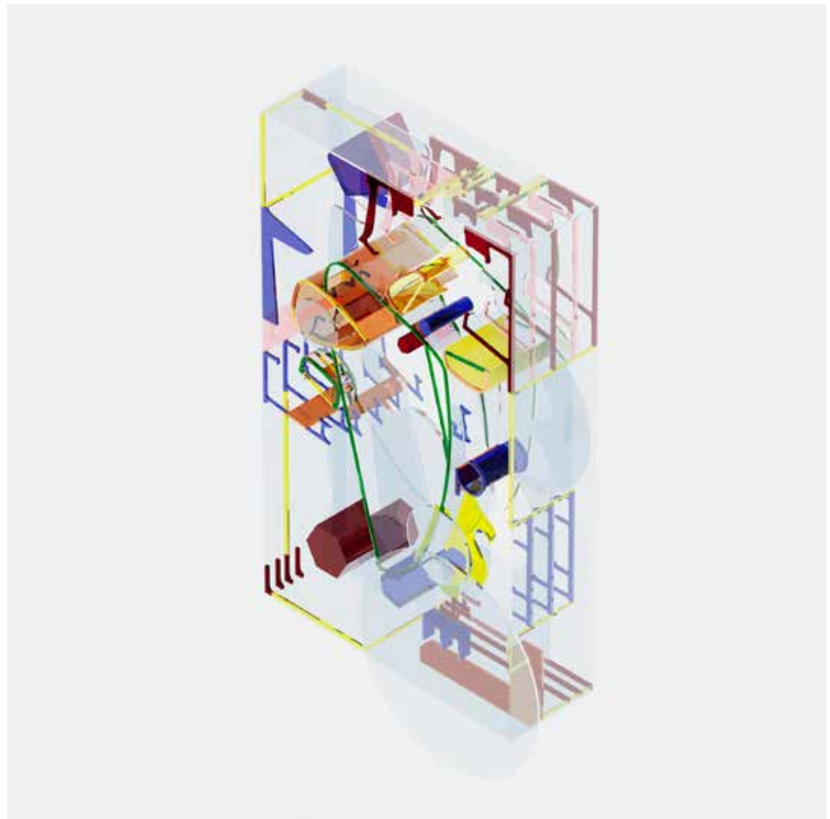
2 PART 5 - HOUSE OF THE FUTURE: A reinterpretation of the House of the Future performs new levels of sensorial understanding within all people. Plans and elevations become interchangeable and enhanced for synergistic movements, merging historical influences with contemporary innovation, and inviting exploration and interaction at every turn. Collaboration between eight “Houses” of re-reading the diagrammatic plan as new layers of information.

3 House of the Future - Curated Chaos: Eight new “Houses” of reinterpreted routes of movements. Is it still a plan or are there new possibilities?

4 Physical model “top” view, a view that corresponds to the original plan drawing.



1



2

1 Physical model detail. Model assembled by laser-cut acrylic pieces. 30” x 50”. 2024.

2 Axonometric render of reinterpreted model.

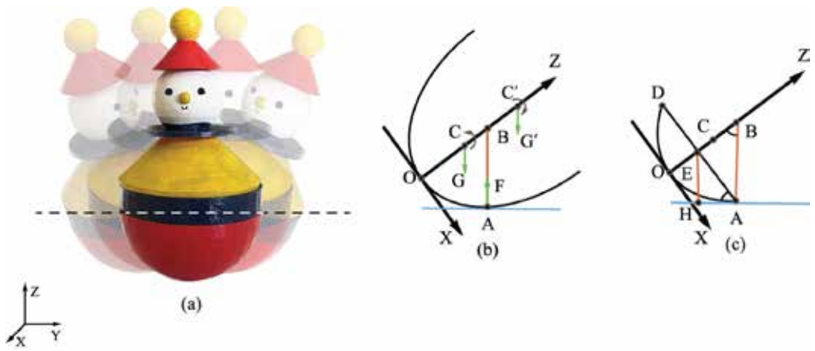
DESIGNING MULTIMEDIA EXPERIENCES

SELECTED WORK IN 2D & 3D DESIGN PROGRAMS

USC JIMMY IOVINE AND ANDRE YOUNG ACADEMY

My minor in Designing Multimedia Experiences crosses multiple programs in 2D and 3D design, along with experimenting in motion graphics and fashion explorations. Building my interest in multimedia design, the courses in HTML/CSS coding, Adobe Premiere Pro, Adobe After Effects, Clo 3D, Marvelous Designer, and Unity are some of the examples where interactive media incorporates the design for humans across environment building, fashion design, filmmaking, extended reality design, game design, etc. My time at the Iovine and Young Academy enriches the roles of being a graphic designer, an architect, and a multidisplinary artist.

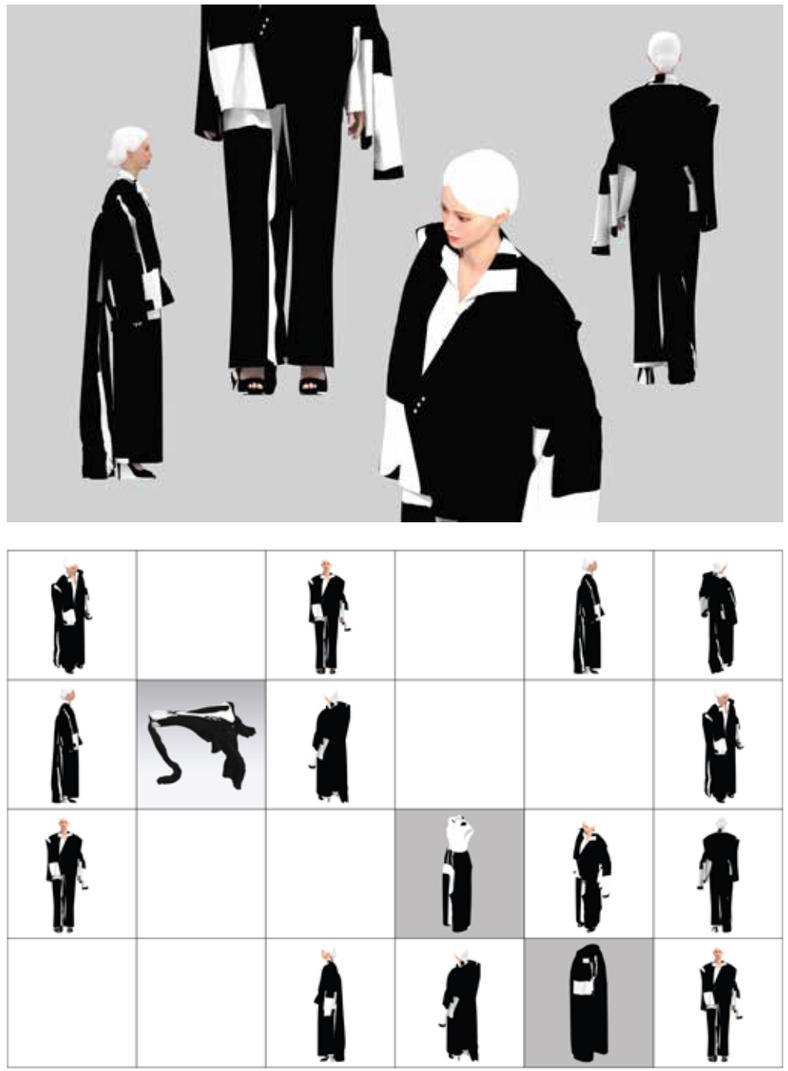
ILLUSTRATOR / PHOTOSHOP / CLO 3D / MARVELOUS DESIGNER / UNITY / LENS STUDIO / RHINO / FIGMA / PREMIER PRO / AFTER EFFECTS / VISUAL STUDIO CODE / 3D PRINTING / INDESIGN





1

1. Product Design - a timer device proposal to introduce Pomodoro-style timer with Arduino coding in the toy design style of a roly poly.



2

2. Deconstruction in Fashion - an exploration of fashion design through Marvelous Designer; inspired by Maison Margiela.



1



1. Experiential Marketing - Developed with Marvelous Designer and animated through Blender, the strategy to promote the next .SWOOSH product series engages 3D billboards to locally design and matches promotional colors based on its targetted cities.



2

2. Unity game design - screenshot of a playthrough in Escher and Monument Valley inspired game environment; modeled in Rhino.

THE CANOPY

OAKWOOD COMMUNITY CENTER COMPREHENSIVE STUDY

USC SCHOOL OF ARCHITECTURE - PROFESSOR ERIC NULMAN

The structure of the project explores three different floor levels of experience when walking through the site. All timber structure is planned to be exposed in some way to allow the natural material to be seen. The aesthetic intentions of the structure relate to the various roof openings of the building, where the canopy area expands across to connect the two separated buildings - the pools on the northern end and the community space on the southern end.

Looking into the specifications of the span for the Olympic pool building, the structure consists of the primary structure of 12 bays with an overall length of 182 feet and a width of 81 feet and 4 inches. Using glue-laminated timber portal frames allows the timber to be more exposed inside, creating a simple aesthetic across the interior of the user space. Cross-laminated timber (CLT) is then used for the lateral system to secure the frames together. The more regulated and rectangular programs next to the pool with the gym and changing rooms would follow a standard CLT column and beam grid combination following the 30-foot grid guide from the initial design process. The same would be applied to the one-story community space on the opposite side of the canopy for an overall coordinated aesthetic.

RHINO / ILLUSTRATOR / PHOTOSHOP / D5 RENDER



2



3

1



1. Longitudinal section perspective.
2. Construction physical model detail.
3. Public olympic pool interior view.

1/16" = 1' - 0"



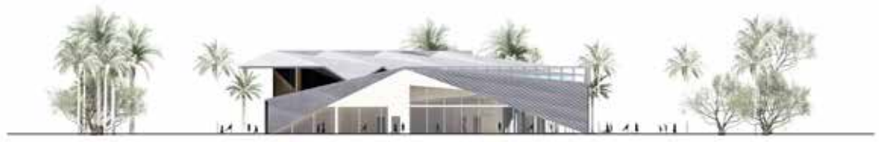
1



2



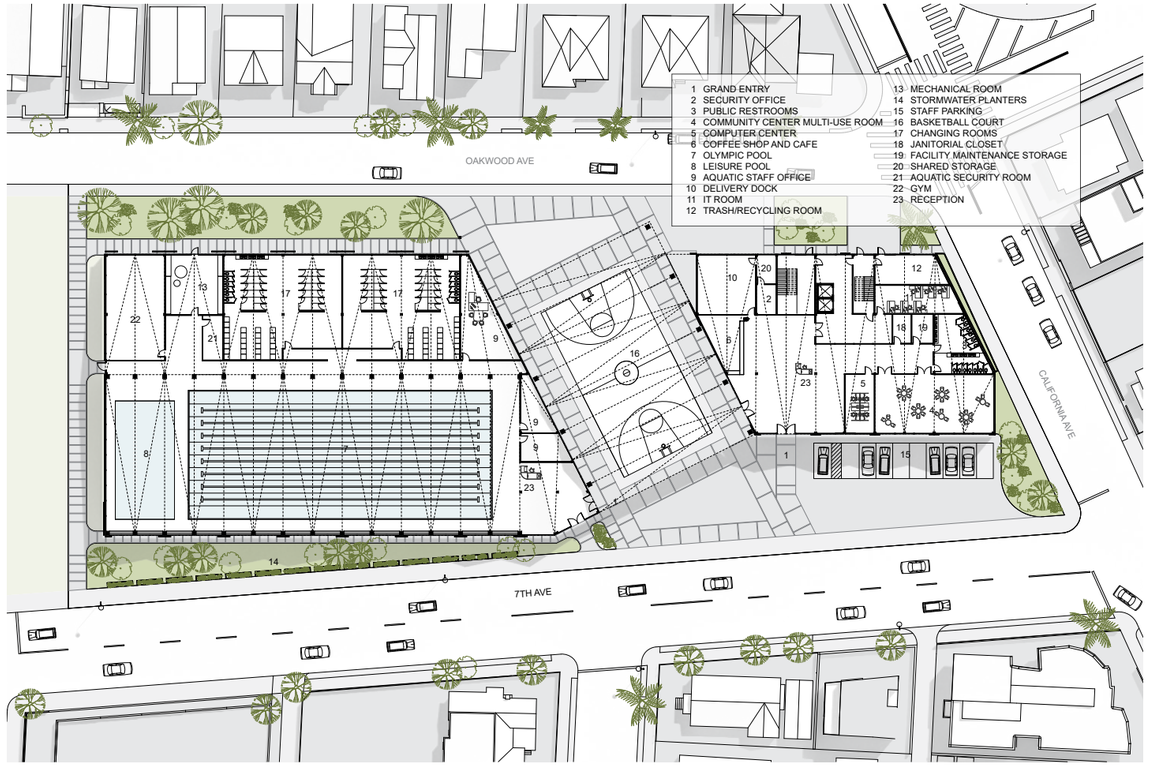
3



4

1. West elevation.
2. South elevation.
3. East elevation.
4. North elevation.

1/16” = 1’ - 0”



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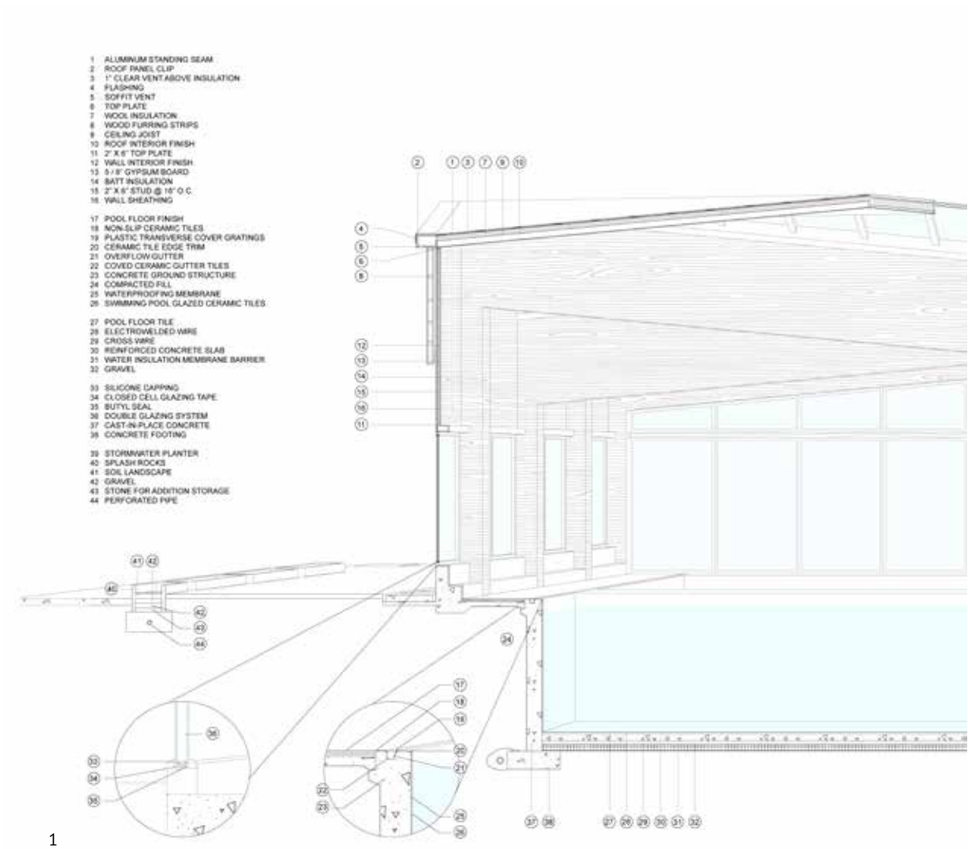
6

5. Ground floor plan.
6. Southwest axonometric view.

1/8” = 1’ - 0”
1/32” = 1’ - 0”



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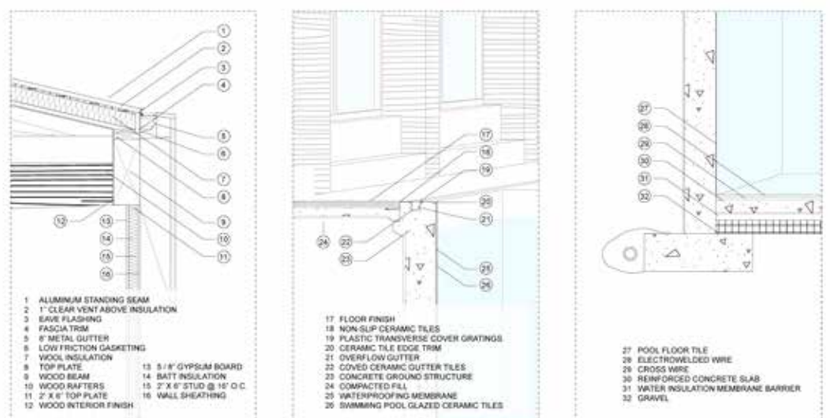


2



3

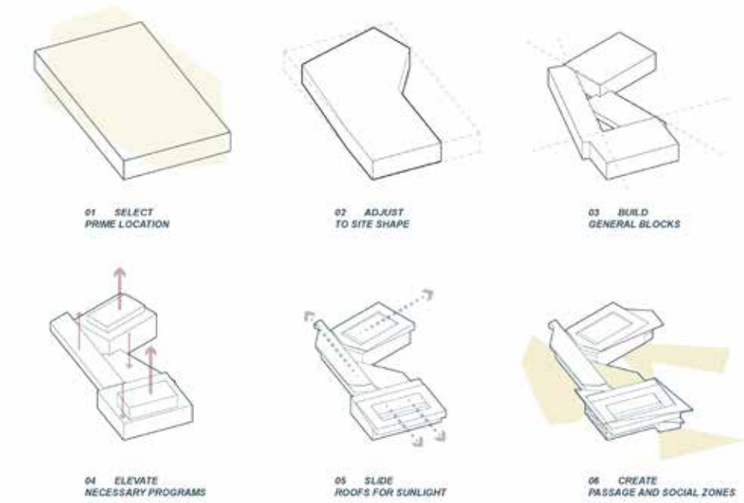


4

1. Transverse zoom-in section. 1/2" = 1' - 0"
2. Zoom-in section details. 1" = 1' - 0"
3. Canopy exterior view.
4. Main entry into community cafe interior view.



1



THE CROSSOVER

LOS ANGELES PARALYMPICS CULTURAL CENTER

USC SCHOOL OF ARCHITECTURE - PROFESSOR SCOTT URIU

Designing for a potential location to place a cultural center and basketball courts in the upcoming Paralympics hosted in Los Angeles, The Crossover involves a focus on balancing the continuation of ground floor commercial interaction from the main USC Village into the Great Lawn. By reconnecting the two courts, one on ground-level and one semi-underground, there is acommvunity space and an underground office space developed with the “gap” in the center of the project that allows nearby visitors to seek interest in not only the new community space, but the now more welcoming USC Village buildings that had been disconnected from the public due to security. Movement of solid and void are shown through the use of glass with the steel and wood structure to ensure sunlight and circulation throughout the various levels. Two separate courts are joined by a skybridge-inspired upper floor viewing space and an underground office area.

RHINO / ILLUSTRATOR / PHOTOSHOP / ENSCAPE

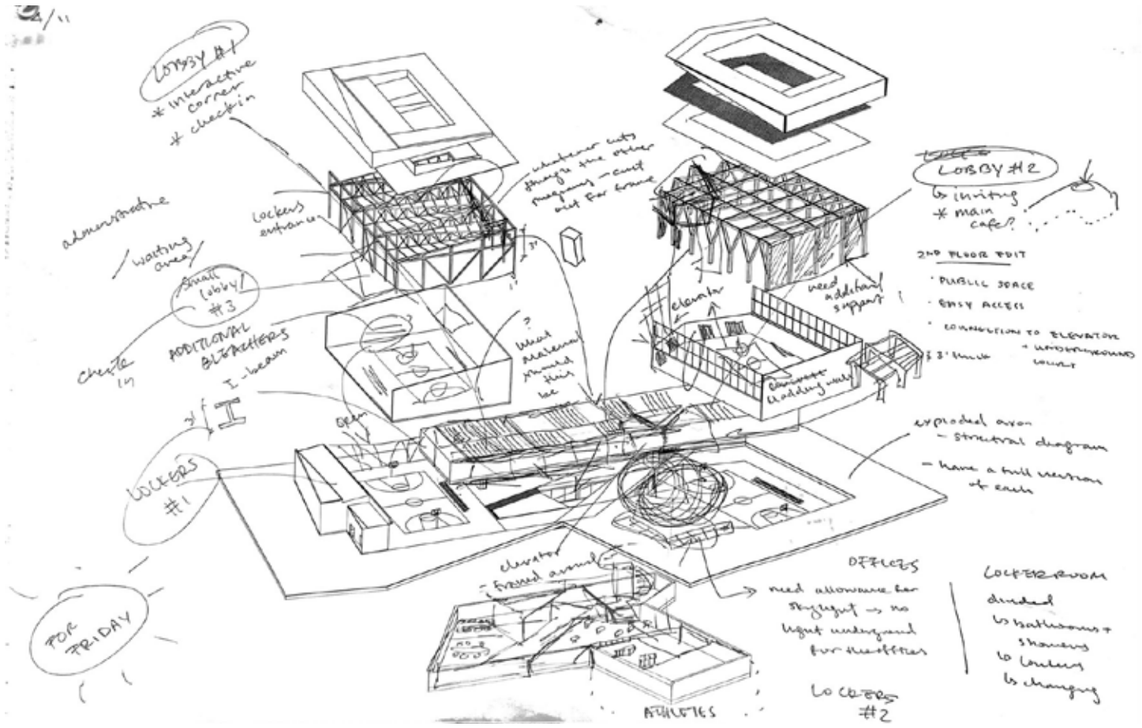


2

1. Concept collage diagram.

2. Northwest axonometric view. 1/32” = 1’ - 0”

1

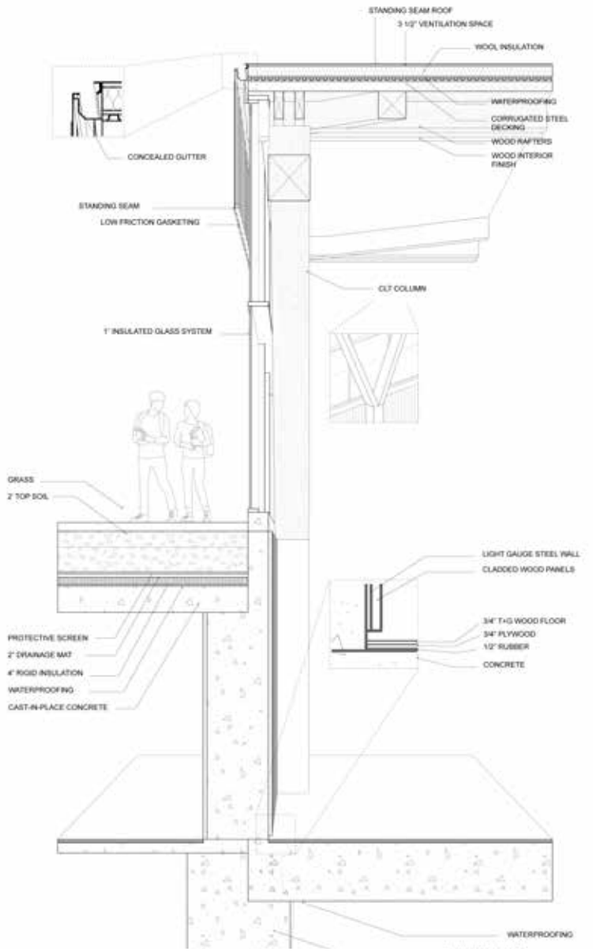


2



1. Progress planning sketch.

2. Physical model top view.



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4

1. Court construction detail.
2. Physical model west elevation view.
3. North basketball court render view.
4. South basketball court render view.

The levels of transparency becomes essential when looking at places for shade, viewability, and semi-publicity through the various programs. Such design involves the consistent looping of the users' experience, yet still distinguishable among nearby buildings with its neutral and raw use of exposed materials that grasp the attention of walking by visitors on a viewable scale.

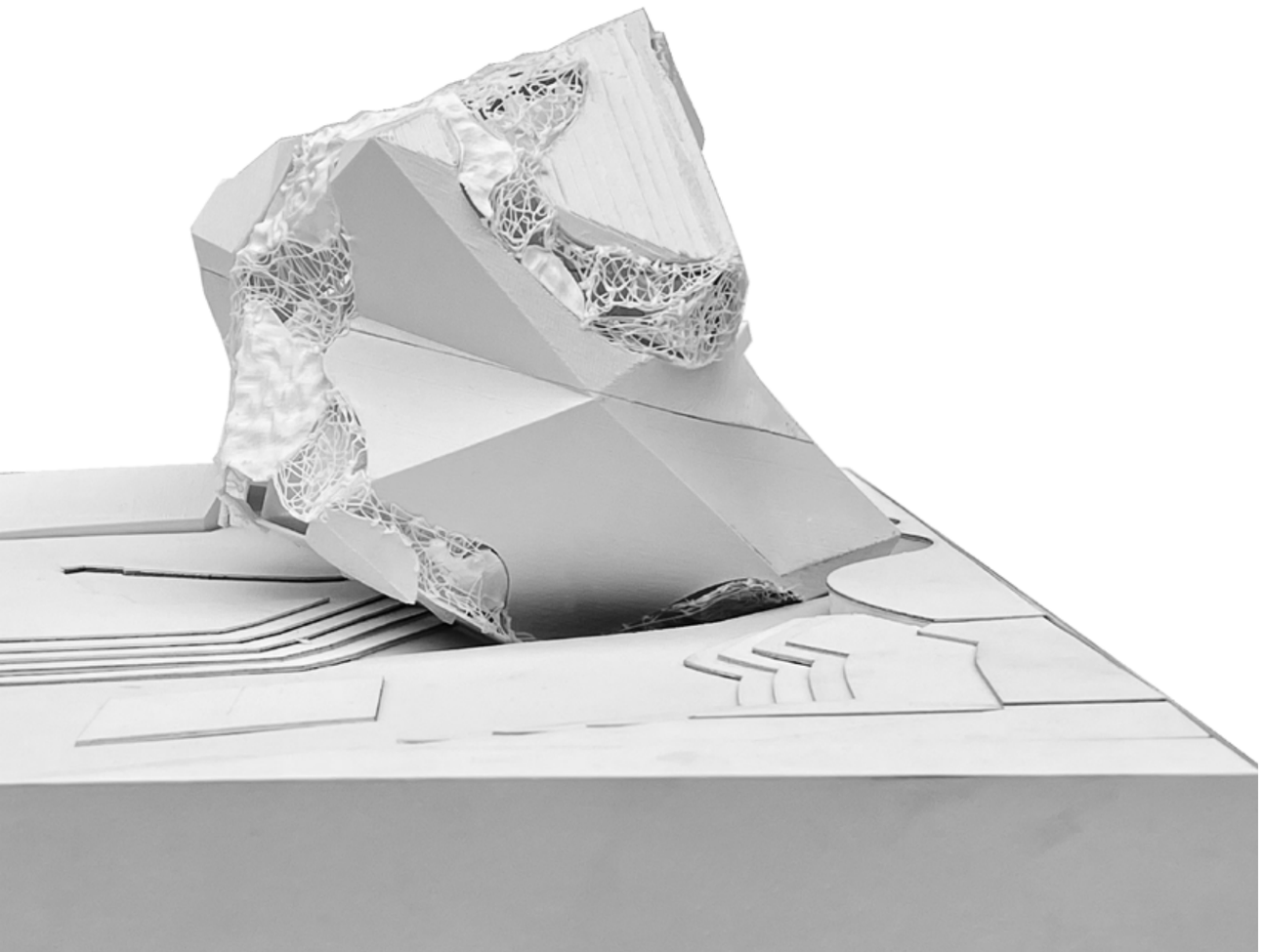


1

2

1. Northwest axonometric view.

2. Progress planning sketch.



A CHANCE FOR BALANCE

AI STUDY AND SIDEFX HOUDINI PRACTICE

USC SCHOOL OF ARCHITECTURE - PROFESSOR JIA ZHOU ZHU

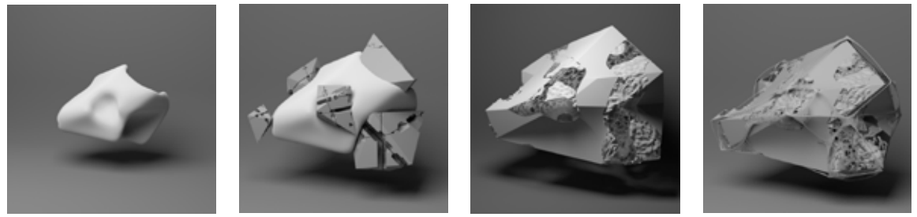
Using AI as a co-pilot to develop personal designs, this concept project joins applied machine learning device, Midjourney, and advanced programs like SideFX Houdini and Autodesk Maya to create a system of massing types that ultimately combine into an architectural structure. While Midjourney generated a series of figures based on typed prompts, it is up to the designer to decide which image is chosen for the next phase of design. This beginning process influences the creation of a conceptual model that currently consists 4 categories: the Bone (structure), the Flesh (object and space), the Tissue (poche), and the Skin (cladding). Houdini, similar to Grasshopper, is a program that designs through creating networks of nodes, which allows for playful placements when morphing the elements together. Ultimately combining the 4 categories of materials together produces a final building: a museum that withholds public and private space for various amenities.

RHINO / SIDEFX HOUDINI / ILLUSTRATOR / PHOTOSHOP / MIDJOURNEY

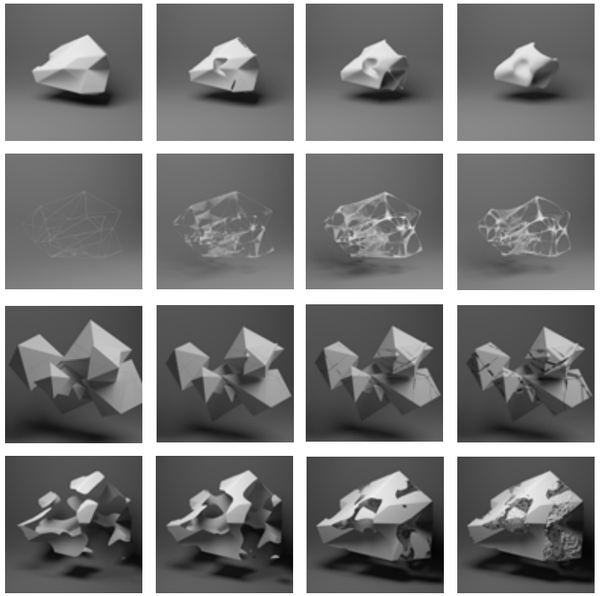
TISSUE FLESH SKIN BONE



AI-generated images through Midjourney using text prompts to produce final concepts.



Final progress of building development through Houdini generated animation scenes.



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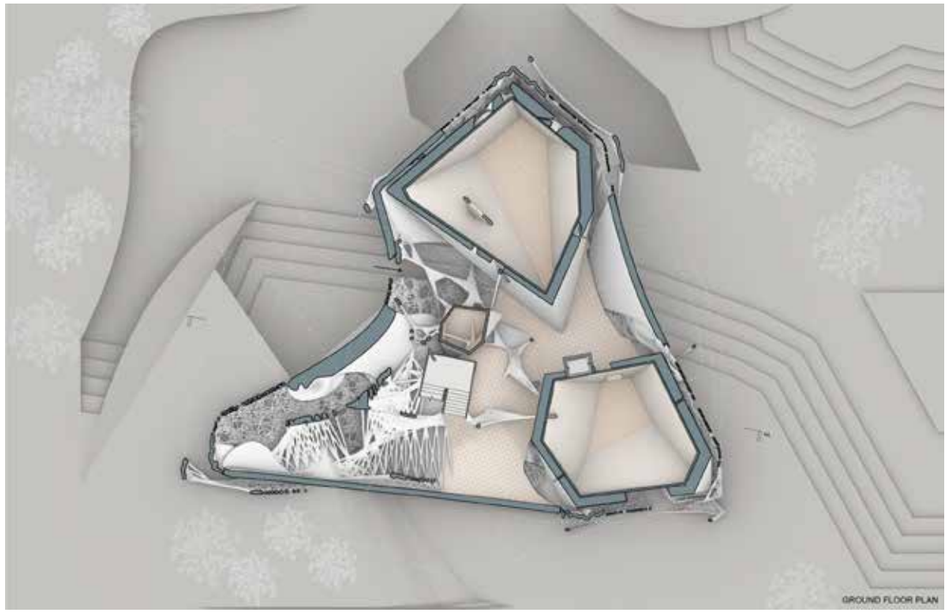
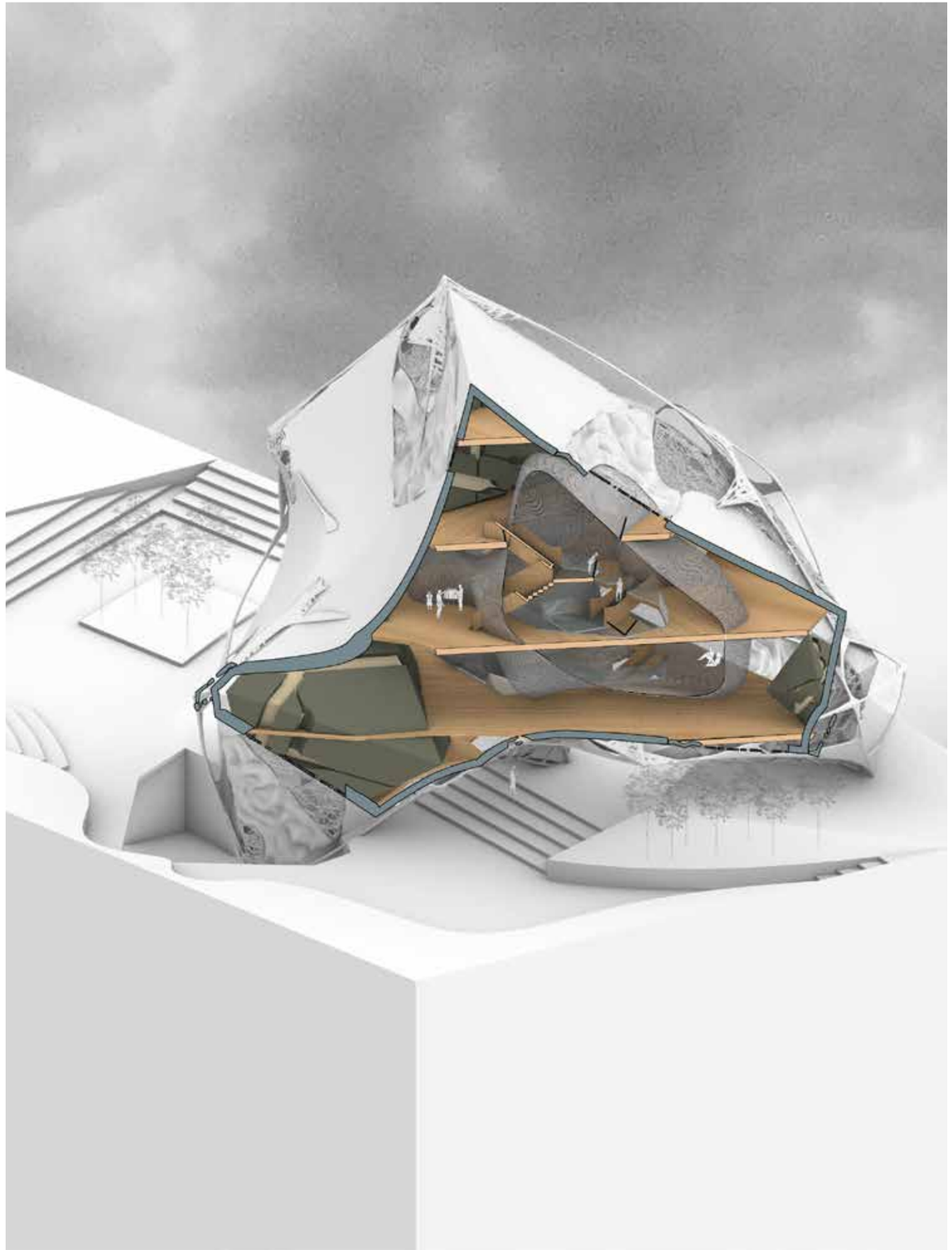
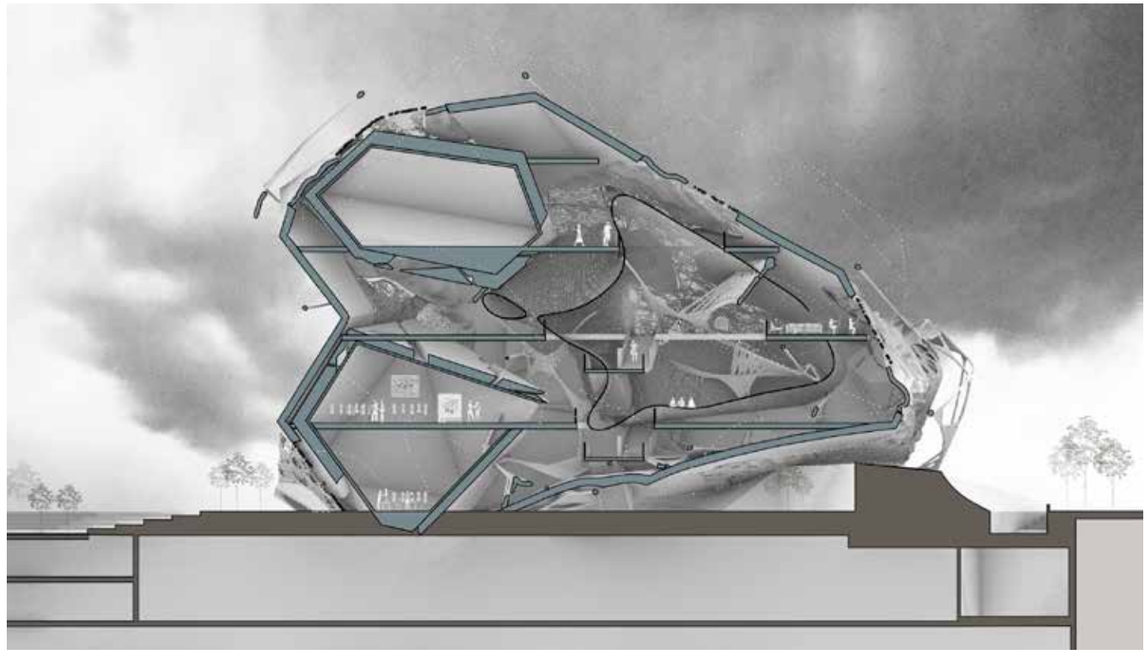


2

1. Progress frame renderings.
2. Ground floor plan.



3. Axonometric section.



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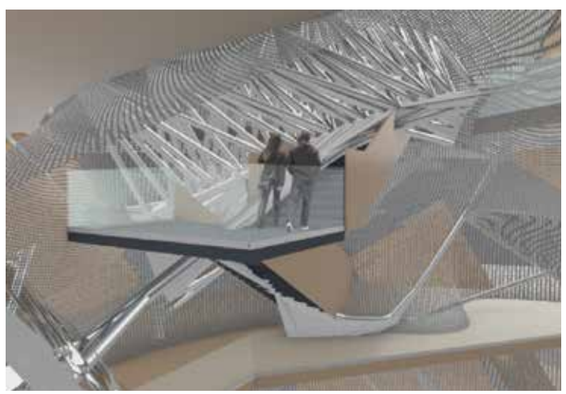

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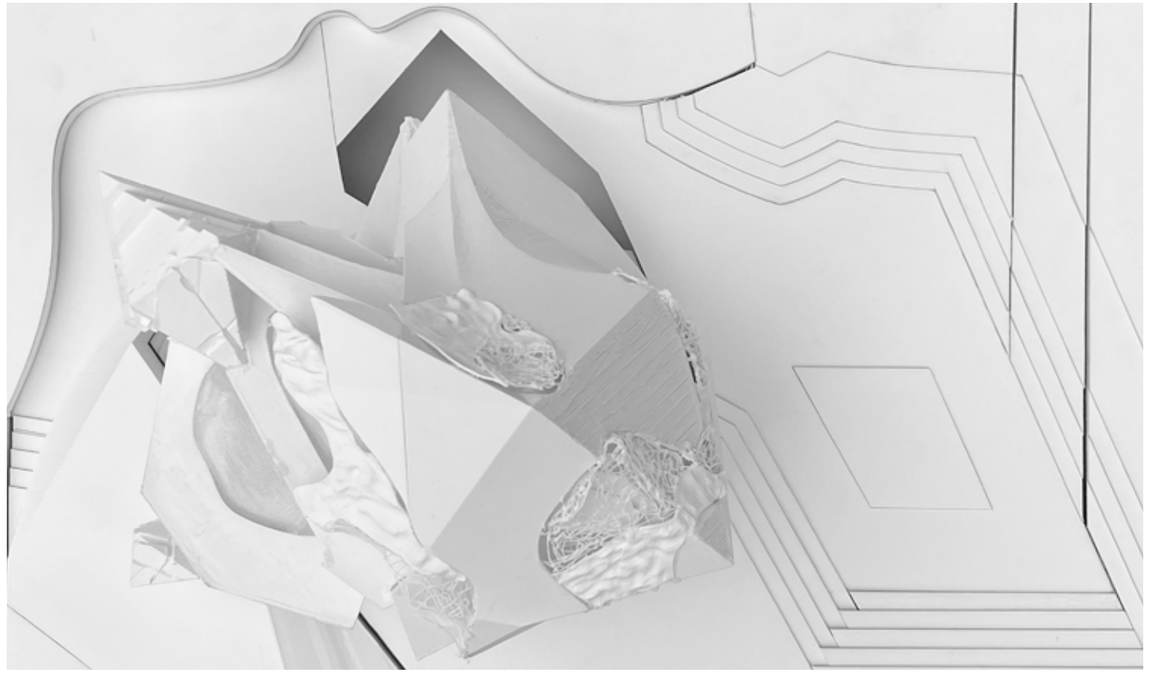


5

1. North elevation section.
2. Interior view.

3. Physical model detail.
4. Physical model detail.
5. Physical model top view.

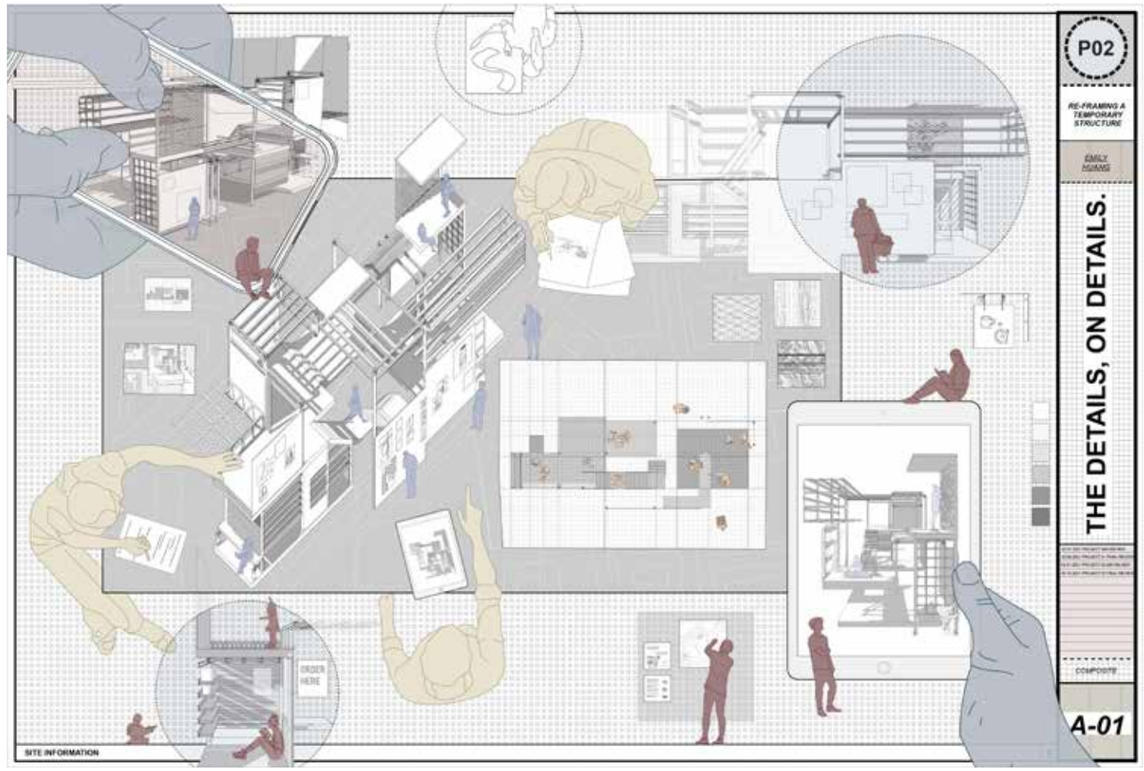
COMMUNITY DAY

TEMPORAL MIXED-USE EXHIBITION & MATERIAL STUDY

USC SCHOOL OF ARCHITECTURE - PROFESSOR ROB BERRY

Different scales of figures and drawings perform the main idea of human interaction in this structure, where the continued idea of pin-up boards are secured across, best for local artists to showcase their artworks. Metal joints are joined by various sizes of metal beams and columns, creating a uniform outlook for the two-story structure. Joined by three specfic locally found materials which are redesigned, texture are added with the additions of metal mesh, painted metal panels, and wood panels. The metal and wood panels create privacy to the programs, such as the reading room and the smaller galleries in the upstairs level.

RHINO / ILLUSTRATOR



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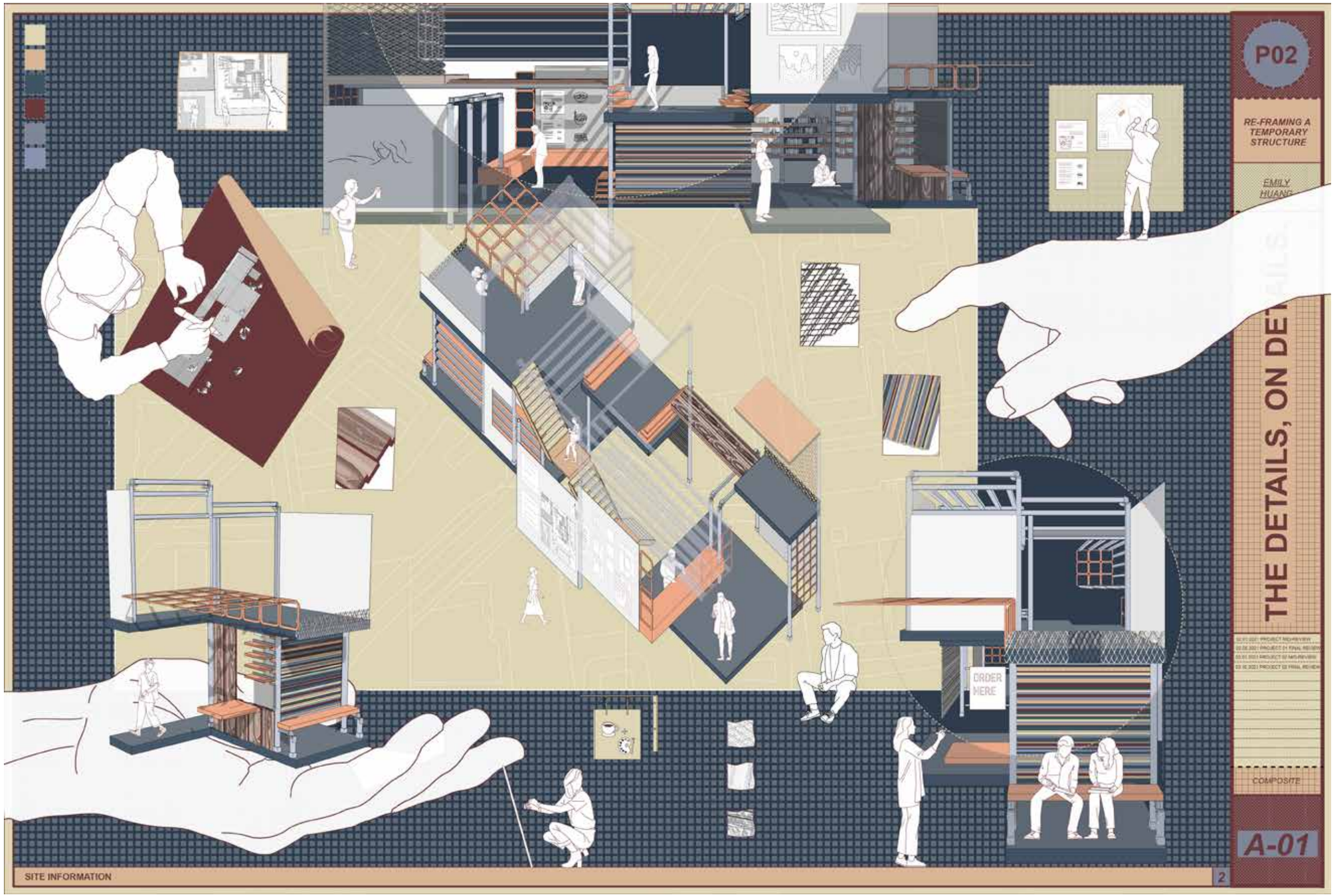
1. Interactions between figures and project in various scales.



1

1. Interactions between figures and project in various scales.

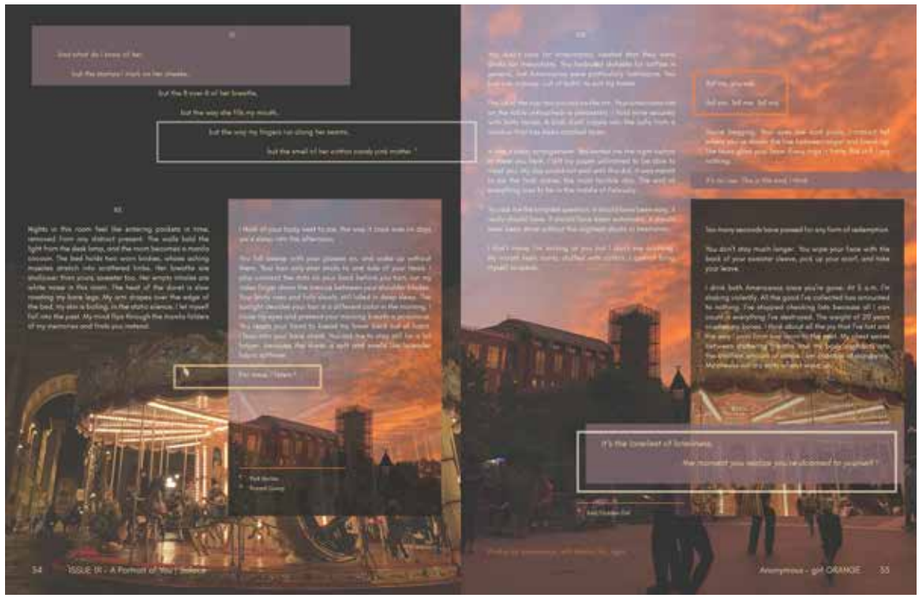
PIER TO:

DIGITAL & PHYSICAL MAZAGINE EDITORIAL WORK

PROFESSIONAL WORK

I represented executive decisions for magazine layouts with the Graphics team using strong knowledge in InDesign and cultivated an expanding connection from digital website development to the team's 80-page physical magazine release. Collaborating with editors from Los Angeles and New York City during the pandemic, a close-knitted relationship was built as we met up weekly to curate collective essays, artworks, and photographs to successfully promote the feelings of the community. Pier to: is a multimedia cultural collective that explores the human story through the lens of curiosity, reflection, and growth. We believe quality storytelling allows us to find our individual truths in the experiences of others.

ILLUSTRATOR / INDESIGN / PHOTOSHOP



1



2





3



1. Acknowledging a similar mood shared between the submitted photographs and essays, the simple shapes share divisions to show emphasis on the personal monologue that expressed the central message.

2. Personalized logo designed in Illustrator from inspiration of the submitted artwork.
3. Layout designed to match the submitted collage artwork to properly showcase the art style and medium.

FREELANCE ILLUSTRATIONS

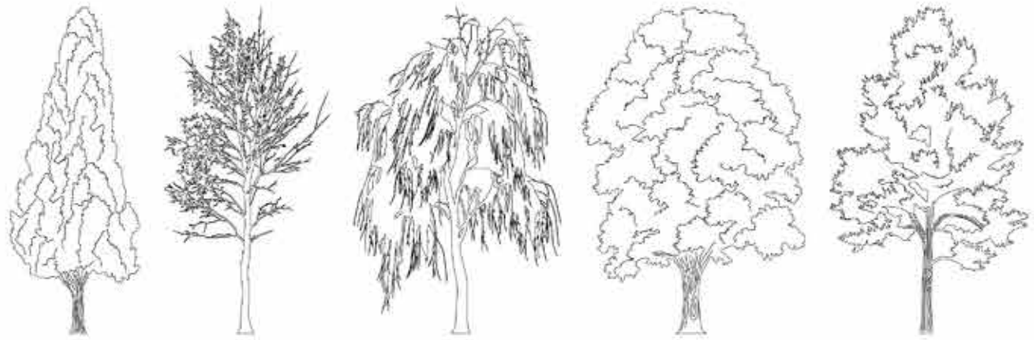
DIGITAL ILLUSTRATIONS + MARKETING AT POST DIGITAL ARCHITECTURE

PROFESSIONAL WORK

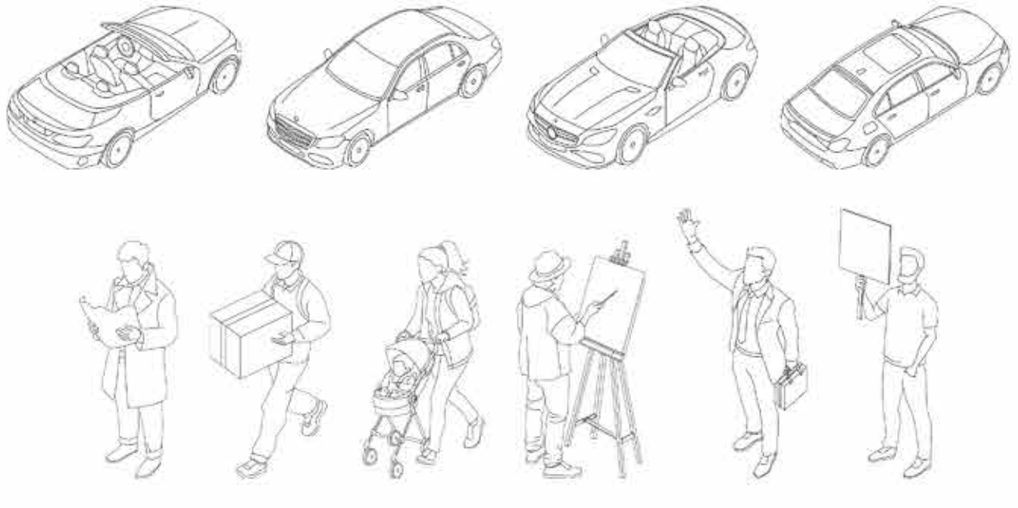
As a freelance illustrator, I create digital architectural assets like CAD sets, isometric drawings, and detailed vector illustrations that merge technical precision with creative design. My work focuses on producing scalable, high-quality visuals for digital and print projects, adding value to presentations and multimedia designs. With expertise in Adobe Creative Suite and AutoCAD, I excel at translating complex architectural ideas into compelling, functional visuals. These skills position me as a future designer, ready to deliver innovative solutions tailored to diverse design needs.

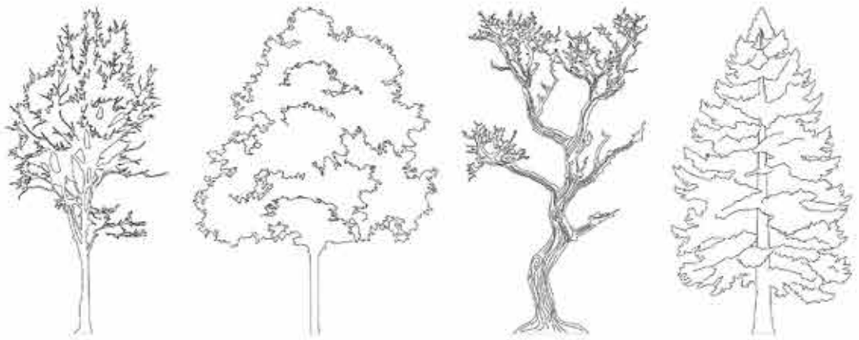
AUTOCAD / ILLUSTRATOR













INTERNSHIP WORK

EXPLORATION IN JUSTICE AND CIVIC SECTOR AT DLR GROUP

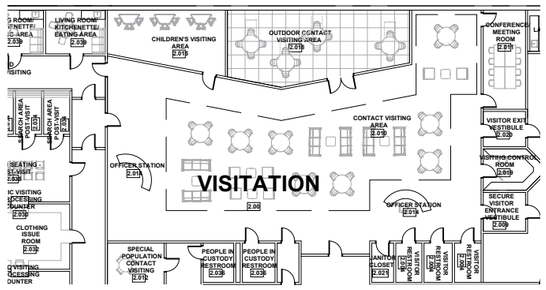
PROFESSIONAL WORK

Through my Summer Internship at DLR Group, I strengthened my knowledge with architecture through using 2D programs (Illustrator, Photoshop, InDesign, AutoCAD), along with making diagrams and reports for assigned projects. With additional 3D designing programs (Rhino, SketchUp), I was able to model and convert the existing CAD drawings into scaled Rhino model files. My summer was further enriched with sketching, 3D printing, and the further exploration into understanding how a firm designs for the humans. By following the Justice and Civic team closely with an on-going competition project, my participation greatly increased the knowledge of the various design stages in a design project, and how various team positions contributed their own voices into the consistent meetings with not only the client but also among themselves as well.

RHINO / SKETCHUP / AUTOCAD / ILLUSTRATOR / 3D PRINTER / REVIT / EXCEL



1



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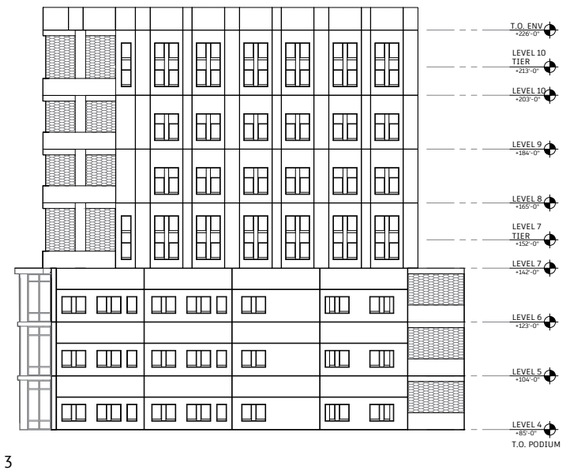

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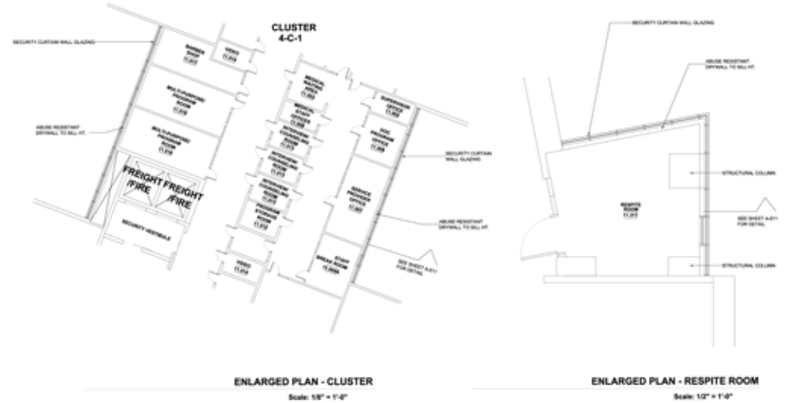

4

7.000	Health Services	# of Spaces	Space Standard	Total Net Area
	Physical Therapy			
7.045	Physical Therapy Room	1	600	600
7.046	Workstation Area	1	48	48
7.047	Officer Station	1	48	48
7.048	People in Custody Restroom	1	60	60
7.049	Physical Therapy Storage Room	1	100	100
	Health Administration			
7.050	Clinic Administrator Office	1	80	80
7.051	Chief Physician's Office	1	80	80
7.052	Nursing Director's Office	1	80	80
7.053	AA Office	1	80	80
7.054	Administration Workstations (Unassigned) Area	6	48	288
7.055	Charting Room	1	288	288
7.056	Clerical Staff Workstation Area	4	48	192
7.057	IT Support Office	1	150	150
7.058	IT Equipment and Work Room	1	100	100
7.059	Staff Conference Room	1	528	528
7.060	Mini Conference Room	2	102	204
7.061	Medical Records	1	100	100
7.062	Workroom Area	1	100	100
7.063	Staff Break Room	1	150	150
7.064	Lactation Room	1	80	80
7.065	Staff Restroom	1	60	60
	Behavioral Health			
7.066	Staff Restroom	2	60	120
7.067	Senior Psychiatrist Office	1	80	80
7.068	Social Work Office	1	192	192
7.069	Creative Art Therapist Office	1	192	192
7.070	Court Liasons Office	1	192	192
7.071	Psych Providers Office	1	192	192
7.072	MH Clinicians Office	1	192	192
7.073	GP Clinical Supervisor Office	1	80	80
7.074	MH/SW Admin and Caseworkers Office	2	96	192
7.075	Unit Chief Office	1	80	80
7.076	Administration Staff Area	1	48	48
7.077	Social Work Supervisor Office	1	80	80
7.078	Janitor Closet	1	40	40
	Substance Use			
7.079	Administrator/Director Office	1	80	80
7.080	OTP Director Office	1	80	80
7.081	General Workstations Area	6	48	288
			Sub-Total NSF:	13,768
			Departmental Efficiency Factor: 80%	11,014
			Sub-Total DGSF:	24,782

ARCHITECTURAL										
Wall Construction	In-Wall	Wall Finish	Floor	Base	Ceiling	Ceiling Height	Door	Lite	Frame	Hrdwre	Glazing
SC			RBR	IC	SS	10' - 0"	DHM-SW	HL	DHM	SL-M	SECG
SC			FLI-CONC	IC	SS	9' - 0"	DHM-SW	F	DHM	SL-M	
GWB		PNT	RT	RBR	SS	9' - 0"	CHM-SW	VP	CHM	COMM	
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	-	-	-	-	
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	HL	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	-	-	-	-	
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	P	CHM	COMM	
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	HL	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	HL	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	HL	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	-	-	-	-	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	HL	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	F	CHM	COMM	
GWB-T		PNT	IS	RBR	ACT	9' - 0"	WD	F	CHM	COMM	
GWB-T		IS; WR	IS; WR	IC	GWB	9' - 0"	WD	F	CHM	COMM	
GWB-T		IS; WR	IS; WR	IC	GWB	9' - 0"	WD	F	CHM	COMM	
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	-	-	-	-	
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB-T		IS; WR	RT	RBR	GWB	9' - 0"	WD	F	CHM	COMM	
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	WD	VP	CHM-SDL	COMM	SG
GWB		PNT	CPT	RBR	ACT	9' - 0"	-	-	-	-	

FIXED EQUIPMENT (per each space)									
ASE	Cabinet	Bench	Hook	Grab Bar	Mirror	Clock (Digital)	Modesty Panel	Monitor	Locker Department 12"x12"x12"
		-	-	-	-	1	-	-	-
		-	-	-	-	-	-	-	-
		-	1	2	1	-	-	-	-
	2 (Storage)	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	1 (Total)	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
2		-	-	-	-	2	-	-	-
1 (Total)		-	-	-	-	-	-	-	-
	1 (4-Drawer); 1 (Storage)	-	-	-	-	1	-	-	-
	1 (Storage)	-	-	-	-	-	-	-	-
1	1 (Storage)	-	-	-	-	1	-	-	20
		-	-	-	-	-	-	-	-
		-	1	2	1	-	-	-	-
		-	1 (Total)	2	1	-	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
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		-	-	-	-	-	-	-	-
		-	1	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-

5



6



7

1. Progress planning sketch.
2. Plan detail redesign.
3. Elevation detail.
4. Enlarged plans for specific programs.
5. Construction and finishes excel organization.
6. Physical model elevation view.
7. Physical model elevation view.

INTERNSHIP WORK

HOSPITALITY, COMMERICAL, MODULAR HOUSING AT STEINBERG HART

PROFESSIONAL WORK

Two summer internships and working part-time during my academic studies, my projects with Steinberg Hart furthered my design contributions into the real world as I collaborated with college campus expansions, website layout designs, and designing window and entourage details for exisiting projects. I strengthened my knowledge with architecture through using 2D programs (Illustrator, Photoshop, InDesign, AutoCAD), along with making diagrams and reports for assigned projects. With additional 3D designing programs (Rhino, SketchUp), I was able to model and convert the existing CAD drawings into scaled Rhino model files.

RHINO / AUTOCAD / ILLUSTRATOR / REVIT / PHOTOSHOP

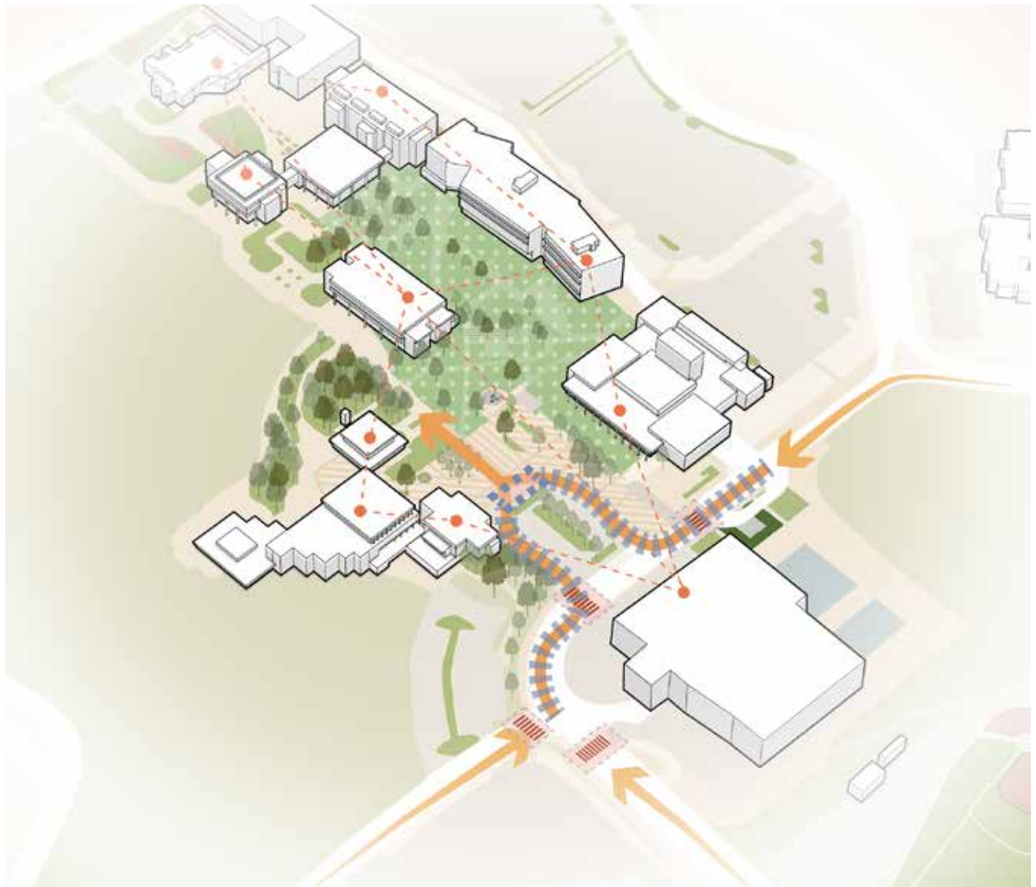


1



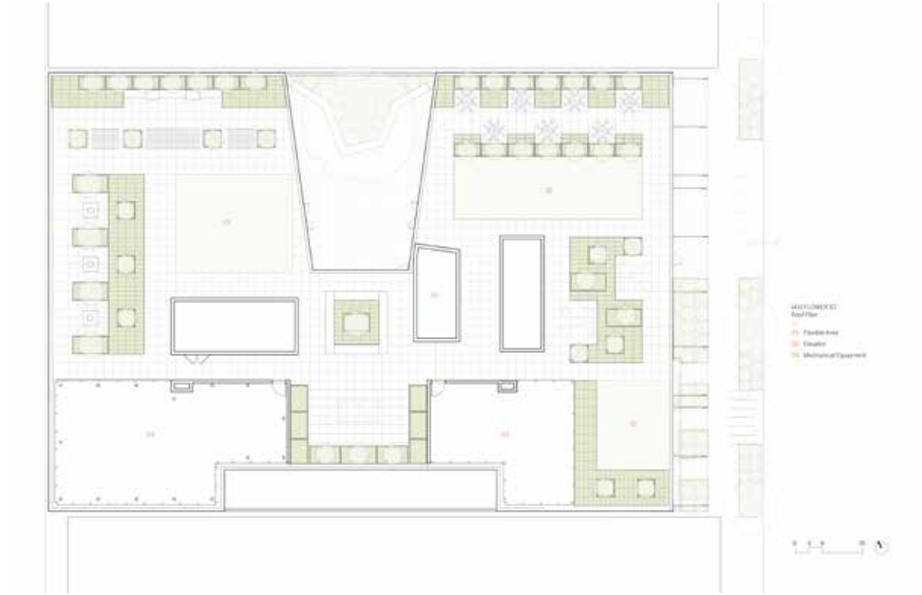


2



3

1. Program recalculation and urban planning for a renovating commercial project.
2. Facade studies and redesign for a renovating commerical project in Los Angeles. Landscape and additional figures were added to show interaction around the project.
3. Axonometric analysis for updated college entrances across campus buildings.

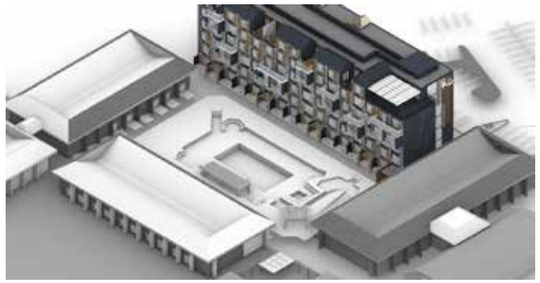


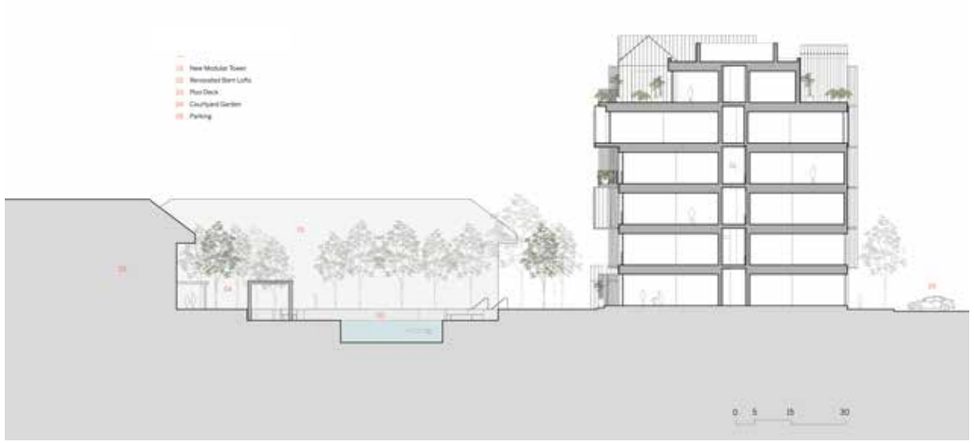
1



2

With a completed Rhino model for a hotel project, I converted the existing CAD drawing of the new pool into the 3D Rhino file. The completion of the center space between all of the buildings now share further understanding of how the community space is shared between the new hotel and its neighboring buildings.





3

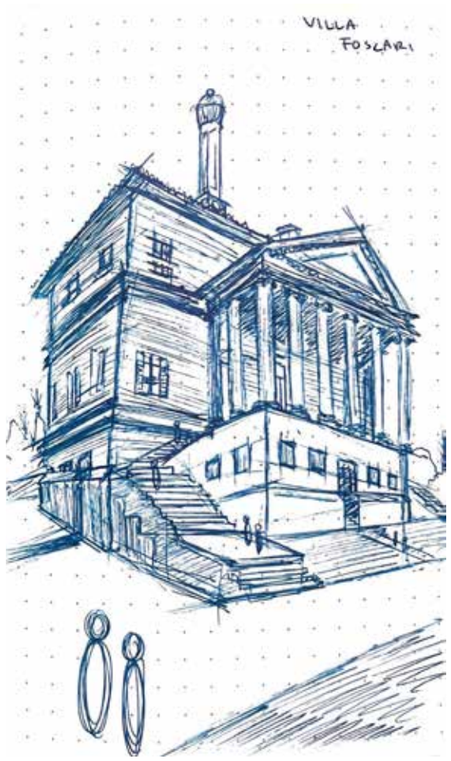


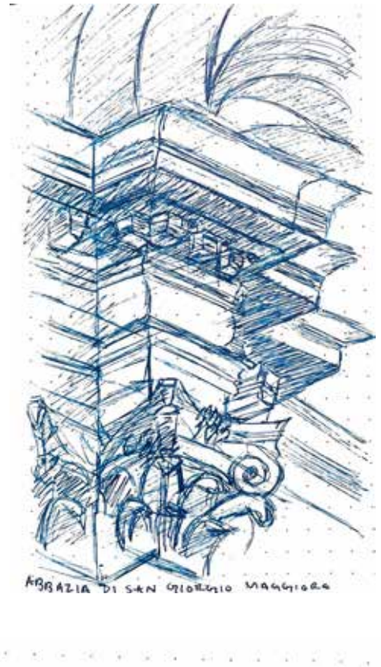
4

1. Revised plan from old CAD drawings for updated firm website.
2. Revised section elevation from old CAD drawings for updated firm website.

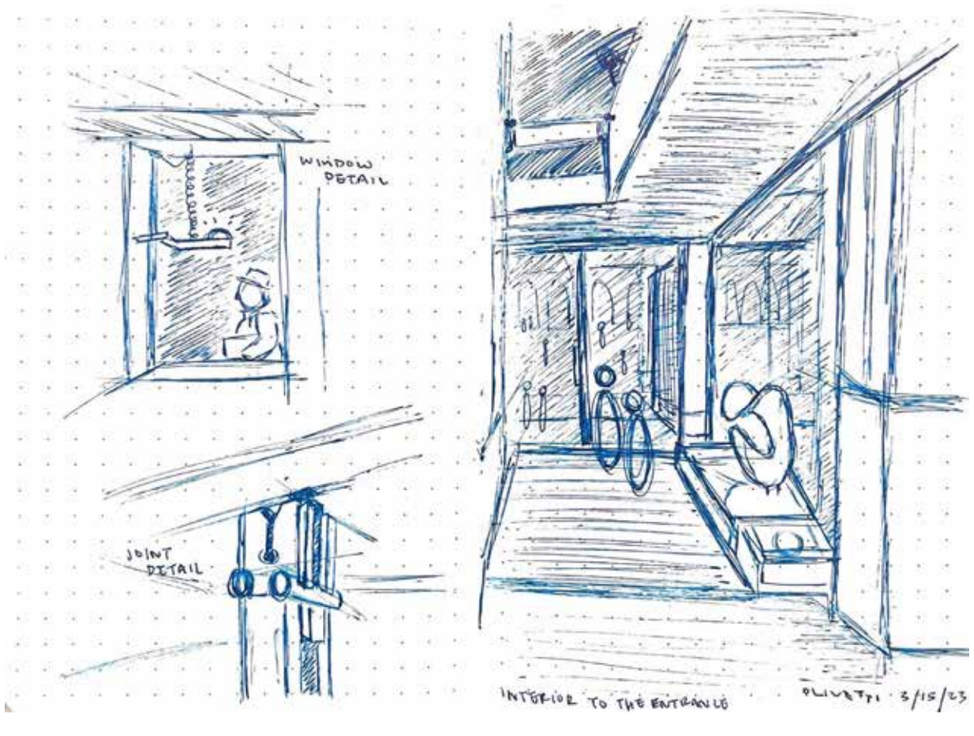
3. 2D CAD drawing to 3D modeling for a new pool addition.
4. Modular room designs for a new hotel project.











HAND SKETCHES

ITALY STUDY ABROAD SKETCHBOOK SHOWCASE

PERSONAL WORK

Sketches gathered from my Spring semester study abroad in Italy across 4 main cities: Rome, Florence, Venice, and Milan. The sketches explore various architectural elements in elevation views, corner studies, and exterior/interior perspective explorations.

PEN SKETCH

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