PHENOMENOLOGY: EXPERIENCE THROUGH ARCHITECTURE

A Thesis

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By

JOHN ADAM FREYTAG

Miami University

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Advisor_____
(Diane Fellows)

Reader_____
(John Reynolds)

Phenomenology: Experience Through Architecture

"Architecture at large has become an art of the printed image fixed by the hurried eye of the camera. The gaze itself tends to flatten into a picture and lose its plasticity; instead of the experiencing our being in the world, we behold it from outside as spectators of images projected on the surface of the retina." [1]

-Juhani Pallasmaa

I still smell the vegetable soup cooking on the burner. The stove left the kitchen steamy and warm. I can still hear the sound of the rotary dial phone mounted on the wall. Grandpa can be seen sitting in his gray rocker, tucked away, next to the entryway. The rough orange shag carpet is marked with trails, so we could always see where Grandma had been vacuuming that day preparing for our visit. I see the vents on the floor, with the little clear covers over them directing air into the living room. The air is warm on my face, as I lay playing with my toys. I still can feel the worn down fabric on the recliner; the result of grandpa's sitting, where he rested his legs for hours. The dark hallway leads back to the family room where the vintage wooden box, television sat; the hallway continues to the bedrooms and bathroom. The late afternoon sun sets and its descent into the entryway casts

long, warm shadows onto the living room floor telling us it was time to leave.

From my recollection I was physically too young to truly remember much of anything from my Grandparents house. I can't recall where the bathroom was located without really thinking about the space, yet I can recall the house from my sensory recollections. Often times the strongest memory of space is odor.[2] When I smell a type of broth-based soup I am brought back to that shag carpet and laying on Grandma and Grandpa's floor. Memory drawn from each sense is enough to recall the house, see both my Grandparents, and relive the experience.

How, then, can the senses or sensory perceptions, define architecture and space without relying on vision alone? How can architecture create an atmosphere and an experience that people can relate to? Does this atmosphere and experience need to be enjoyed or appreciated by all? These questions concerning sense perception and architecture are explored by considering the philosophy of Phenomenology.

This paper investigates how a philosophy of Phenomenology can be translated into the architectural environment. I discuss the writings of Maurice Merleau-Ponty and his definition for Phenomenology, and

how it is applied in the work of Alvar Aalto, Louis Kahn, Peter Zumthor, as well as the writings of Juhani Pallasmaa. Through an analysis of case studies such as Aalto's "Villa Mairea", and Frank Lloyd Wright's "Falling Water" this paper investigates how the senses or phenomenological experiences can define space and architecture.

Phenomenology in architecture is the creation of experience and of atmosphere not only through visual cues but through all of the senses. Phenomenology is a cumulative design of space through the use of sensory perceptions: materials, sounds, light, shadow, temperature and smell. This method of design translates human experiences that can be moved into the built environment. Architect Peter Zumthor in his lecture on *Atmospheres*, says that the experience of architecture can often times be perceived through emotional sensibility in a fraction of a second with your initial experience. Atmosphere can be judged based upon how you perceive the space. How are you affected?

Architects are credited as master builders. This is analogous to a composer writing a symphony or any piece of music. Music is moving, it has the power to appeal to the senses and evoke memories that engage a person. The architect is also like a director, carefully orchestrating a show and how everything is perceived and presented. Architects have the power to entice and appeal to the many sensory

perceptions people experience. Juhani Pallasmaa discusses the relationship of architecture and Pallasmaa notes: "The authenticity of architectural experience is grounded in the tectonic language of building and the poetic of the act of construction materials appealing to the senses."[3] Architecture is the built environment serving human activity and interaction. Architecture creates a relationship between the sensory perceptions and the building itself. A building is an unfolding emotional journey through the spaces that lead one into different interactions based on quality of light or darkness, material composition, sound, smell, touch, and building context. Phenomenology in architecture can be accomplished through the use of light, site context, materiality, and acoustics.

Philosopher Merleau-Ponty in his book *Phenomenology of Perception* describes phenomenology as "a philosophy that puts essences back into existence". [4] Merleau-Ponty focuses his attention to the body and perceptual experiences. In this paper, Phenomenology will be the study of experiences, how we experience and react to spatiality. This not only includes our sensory experiences like tasting, hearing, touching and vision but also our thoughts, emotions and involuntary responses.

In a world of client driven design, the profession of architecture has lost touch with the overall experience of space. Poetics of

materiality in the work of architects Alvar Aalto, Louis Kahn, and Peter Zumthor are characteristics to admire. "We see the depth, speed, softness and hardness of objects"[5] , as described by Merleau-Ponty. They display a sensory experience of architecture.

Merleau-Ponty argues that we do not take up space; we *inhabit* it. Accordingly, we must refrain from saying that our body is in space, or in time. Our body inhabits space and time. [6] Poet Noel Arnaud states: "I am the space, where I am" I live the space, and my body inhabits it.[7] We are in constant interaction with our environment and space. Merleau-Ponty refers to this concept as *bodily space* and through this interaction with space and the world around us we come to understand our environment. Analogous to this phenomenon would be to turn the lights out and enter a pitch-black room. With no sense of sight we have to use our hands, possibly our ears, to engage the space and begin to comprehend how big it is, how small it is, and how the space is filled. The mind's knowledge of the environment thus comes from our physical engagement within the world. Merleau-Ponty writes, "Visible and mobile my body is a thing among things... things are an annex or prolongation of itself."[8] So how can Merleau-Ponty's attention to phenomena and embodiment be translated into expressive architectural ideas? I believe through the use of light, site context, materiality and acoustics.

Light

"All materials in nature, the mountains and the streams and the air and we, are made of Light which has been spent, and this crumpled mass called material casts a shadow, and the shadow belongs to Light."[9]

-Louis Kahn

Light is the source of everything and without it, nothing would be. Light brings architecture to life. Through which it introduces the inhabitant to a space and to the surrounding environment. Light invites the inhabitant to move and engage in exploring the building. Light not only a transforms a building's interior quality. It also creates and sculpts exterior spaces much like at Kahn's Salk Institute.

Louis Kahn was one of the foremost ambassadors for light in architecture. Light is the maker of a material and in light those materials react and show their identity. The illumination of material brings forth its ability to be perceived by the user. Light and material work in harmony with one another as Kahn believed that materials' purpose was to cast shadow. Without light the movement between shadow and no shadow would not exist. For light to be successful there needs to be glimpses of light in all spaces. A building's plan

should read like a harmonious play of light. Even dark spaces need to have a small amount of light from a mysterious opening for us to perceive the quality of a room's darkness.[10]



Fig. 1

Salk Institute

A skylight introduced in a space such as by architect Alvar Aalto in his Viipuri Library brings light into a space that needs to cater to the privacy of the readers within. Yet, the skylights also give a glimpse of the outdoors. Aalto connects the inhabitants to their surroundings and gives the library room a feeling of connection with the person inhabiting it to the exterior environment, the site.

Site

Dwelling for shelter is one of man's earliest notions of existence in this world. We build shelter to escape the elements and create human environments. The earliest pieces of architecture were directly influenced by site context. Questions pertaining to context include geographic location, climate, ecology of the site, and local materials. Architecture is immersed into its surrounding context from the way it touched the ground and to how it responded to its surroundings. Much of Aalto's work follows the same principles by responding to the natural landscape and creating a sense of place.

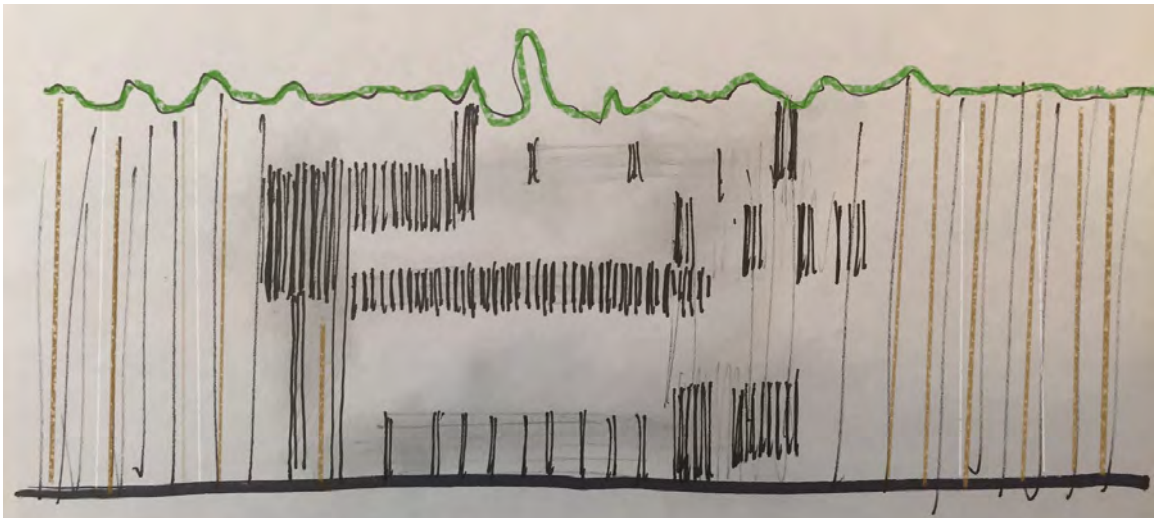

Fig 2

Author's own image diagramming the vertical relationship between the façade of Alvar Aalto's Villa Mairea and the surrounding trees.

If any of his projects were to be relocated they simply would not work. They wouldn't work due to the way his projects' natural lighting

is designed to fit a site condition, and the way a building engages the ground, as well as the boundaries created between inside in and out of the building. Even the materiality of his projects fit within its existing context. Architect Peter Zumthor explains the excitement between creating a sense of place within a building and its site, "One can be inside or outside. Brilliant! - this: thresholds, crossings, the tiny loop-hole door, the almost imperceptible transition between the inside and the outside, an incredible sense of place."[11] To create a sense of place between the body and a piece of architecture the architect must physically engage oneself with the site and discover the methods to communicate one's designs visually and spatially. That process requires exploration of the natural qualities of the site through the senses, much like Peter Zumthor's Thermal Vals their engagement with the natural landscape and materiality.

Materiality

> *"Mountain, stone, water – building in the stone, building with the stone, into the mountain, building out of the mountain, being inside the mountain – how can the implications and the sensuality of the association of these words be interpreted, architecturally?"*
>
> -Peter Zumthor

Architecture has the pleasure of dealing with material and the nature of those materials. Zumthor states a material and its uses are endless. You can cut a stone, drill the stone and grind the stone. [12] Zumthor also suggests the greatest secret of architecture is that it is a collection of materials and products and combines them to create something new, through that you get a space that can be touched and the materiality of it seen or smelled. This begins to describe the body of architecture, much like our own bodies, as our bodies can be felt and scratched. Architecture, similar to our bodies is a collection of interworking pieces that make up a whole. Juhani Pallasmaa describes in *The Shape of Touch* "The skin reads the texture, weight, density, and temperature of matter."[13] Pallasmaa describes the door handle being the handshake of the building[14]. The texture of materials offers an invitation for the hand to touch and to feel whether something is heavy or light, rough or smooth, and hot or cold.



Fig 3

Door handle at Villa Mairea

This relates to the work of Aalto, and his emphasis on the scale of the human hand, and the use of the sense of touch in creating and designing space. Viipuri features specifically designed handrails that are carved to the exact specifications of the human hand. Aalto's attention was often drawn to door handles, as a detail linked with the idea of the complete work of art and relating the building back to us as the primary user. Louis Kahn was also respectful to the use of his materials. In *Between Silence and Light*, Kahn states: "It is important that you honor the material you use." Kahn would ask himself, "What does the brick want to be", "what does the building want to be".

Within materiality one also discovers the experience of smell. The smell of something new, such as fresh sawn wood or a fresh coat of paint is an experience people can relate to. Experiencing a new building can bring a flurry of scents, some good, some not so good. Much like the satisfaction of smelling a new car or a newly constructed building can bring a scent of pleasure. Through these experiences one begins to understand the resources and effort that goes into any piece of architecture. New buildings and old buildings alike display an experience of scent. Older buildings have a distinct aged smell, that shows the building or the space is of some significant age and you can begin to associate these scents with previous times you have smelled something similar, or when you walk into the home of a friend there is a particular aroma that reminds you of your friend. Even after a long period of time away from my childhood home I can go back and experience, the aroma, and instantly become aware I am home. I don't notice the scent while I'm there because I have become used to it, only when I am away for a period of time, and then return, do I recognize the scent.

Acoustics

Pallasmaa explains that we can perceive space through our hearing. He writes: "Sight makes us solitary, whereas hearing creates

a sense of connection and solidarity."[15] Every building we enter has different visual and acoustic characteristics. Pallasma in Questions of Perception echoes Louis Kahn's belief that light exists and what doesn't exist is silence. Kahn says, silence is "the unmeasurable, the desire to be, the desire to express, the source of new need", and light is "the measurable, the giver of all presence, by will, by law, the measure of things already made"[16]. Similarly Pallasmaa suggests, "silences all external noise, it focuses attention on one's very existence."[17]

Inhabiting a space with noise allows you to understand your surroundings. Whether the space is empty and you are beginning to understand that space, or you are self-aware you are surrounded by other people in this experience. Acoustics can even begin to define circulation within a space. If you are sitting in an airport, waiting for a flight, with your head down in a magazine, you hear the sounds of people walking and rushing by in front of you defining a path of circulation. Sound travels in waves and these waves define a movement through a space. Merelau-Ponty describes movement as the bodily experience through which "The spatiality of the body is brought into being"[18]

Analysis of Case Studies

I analyzed Frank Lloyd Wright's "Falling Water" and Alvar Aalto's Villa Mairea". In these projects each architect creates a sensory experience of architecture through the use of light, materiality, site context and acoustics. Each project takes an incredible amount of inspiration from nature and they create spiritual harmony with site. Wright's falling water is located deep in an area of Pennsylvania north of the Ohiopyle State park. Wright stated "could draw inspiration from nature herself"[19], indeed his efforts are successful here. The house is playfully intertwined with site as the existing boulders provide structural foundation for house and the river runs closely beneath the cantilevered balconies. Aalto employs a similar strategy at Villa Mairea. The columns for the exterior canopies are taken directly from the wooded area surrounding the house, and mimic the surrounding forest. The building is filled with metaphors for nature and is bound by countless natural motifs and repetitive elements, such as the verticality of the wood columns, use of materials and suggestive of the site surrounding the house. Visitors enter into both houses through cave like entrances that bring you down to a small human-like scale; upon entering you are then greeted by an bright open horizontal windows that bring your attention to what is outside and the

surrounding site context. The vast amount of natural daylight invites the visitors from the dark cave-like spaces to enjoy and admire nature.

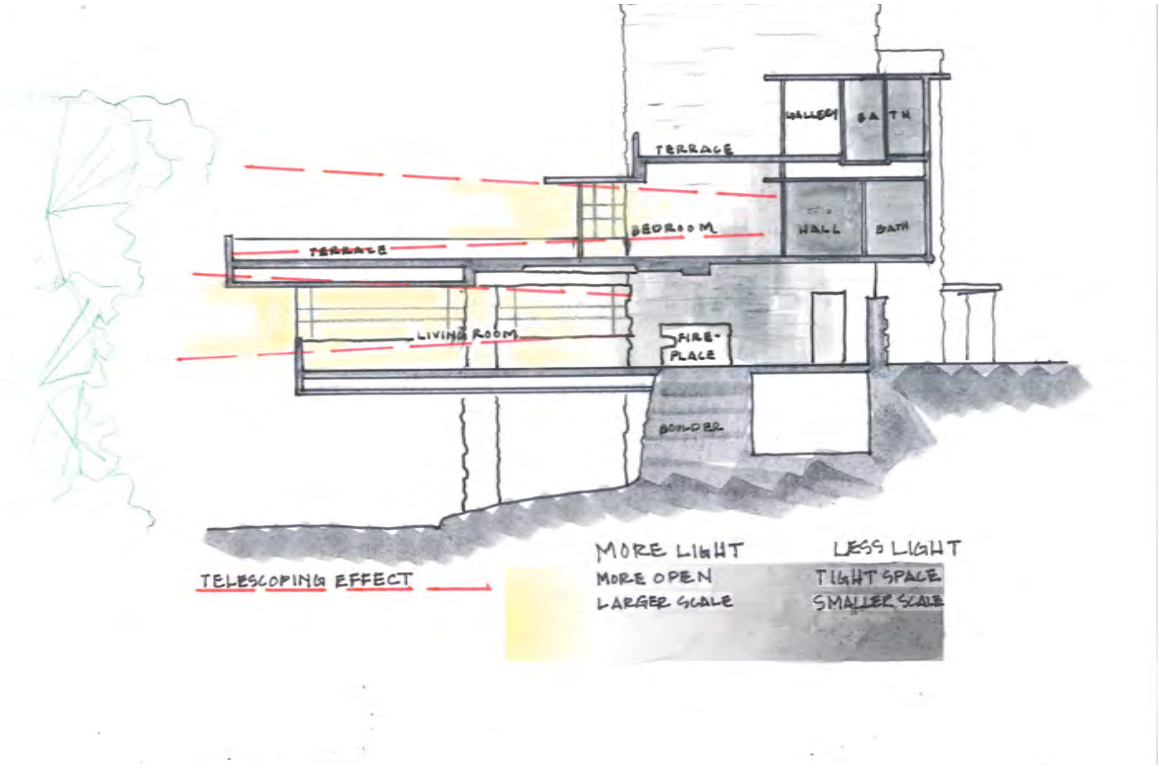

Fig. 4

Author's own image showing building section of Falling Water

Falling Water's cave like interior spaces gave me the feeling of being at my grandparents' house as a child. The heavy dark corridors lead guest to move quickly through the halls and into more openly lit

spaces by natural daylight. The tight hall ways and low ceilings of Wright's "Falling Water" only make sound inside the house appear more muffled and you begin to truly experience how small some of the interior spaces can be. Aalto uses a similar tactic at Villa Mairea. The textured wood of the walls and the materiality of the spaces muffle interior sound as well and all that can be heard is the sound of the surrounding site. At Falling Water the only sound that can be heard is the calming waterfall that runs through the site. The Villa Mairea uses intricate surfaces and details to invite the hand to touch and explore the many nooks of the house. Falling Water physically brings the site into the house on numerous occasions that invite visitors to interact with unharmed pieces of the site. The natural materials of both projects were harvested locally and only make the bond between site and house stronger. Both projects rely on an emphasis between house and user. The interaction with each project strengthens the human relationship with nature at each site and creates a relationship between the sensory perceptions and the building itself.

Conclusions

Architects have the power to entice and appeal to the many sensory perceptions people experience. "The authenticity of architectural experience is grounded in the tectonic language of

building and the poetic of the act of construction materials appealing to the senses."[20] Architecture is the built environment serving human activity and interaction. Architecture creates a relationship between the sensory perceptions and the building itself. A building is an unfolding emotional journey through the spaces that lead one into different interactions based on quality of light or darkness, material composition, sound, smell, touch, and building context. Phenomenology in architecture can be accomplished through the use of light, site context, materiality, acoustics, and scale. Hopefully leading to better design.

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[1] Steven Holl, Juhani Pallasmaa, and Alberto Perez-Gomez. *Questions*

[2] Holl, *Questions of Perception,* 26-37

[3] Holl, *Questions of Perception,* 26-37

[4] Maurice Merleau-Ponty. *Phenomenology of Perception* (New York Humanities Press 1962)

[5] Maurice Merleau-Ponty. *Sense and Non-Sense*. (Northwestern University Press, 1991) 15

[6] Merleau-Ponty, *Phenomenology of Perception*, 139

[7] Jérôme Bachelard, *Architectural Foundations of Phenomenology. Governance Reform in Africa: International and Domestic Pressures and Counter-pressures*. (Routledge, 2014)

[8] Maurice Merleau-Ponty. *Eye and Mind in The Primacy of Perception*. (Evanston, IL: Northwestern University Press, 1964.)

[9] John Lobell. *Between Silence and Light* (Shambhala Publications, Inc. 1979), 5

[10] Urs Buttiker *Light and Space: Louis I. Kahn.* (Watson-Guptill Publications 1994), 24

[11] Peter Zumthor, Atmospheres (Birkhauser Publishers for Architects. 2006), 45-46

[12] Zumthor, Atmospheres 24

[13] Holl, *Questions of Perception,* 29-37

[14] Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses,* (Wiley, 1996), 62

[15] Holl, *Questions of Perception,* 29-37

[16] Lobell, *Between Silence and Light* 20,63

[17] Holl, *Questions of Perception,* 29-37

[18] Merleau-Ponty. *Phenomenology of Perception*, 117

[19] Frank Lloyd Wright, The Nature House (Horizon Press, 1954), 22

[20] Holl, *Questions of Perception,* 29-37

Image Citations

Figure 1

Carlon, Nicolò. *Sulk Institute.* SOME/THINGS Magazine, 2015. www.someslashthings.com

Figure 2

Author's own diagram

Figure 3

Holma, Maija. *Villa Mairea*. Alvar Aalto Museum, Jyväskylä, Finland

Figure 4

Author’s own diagram

ADDENDUM

John Adam Freytag

Special thanks goes out to my committee who gave me their support during this entire thesis process.

CONCLUSIONS AND REFLECTIONS

Ultimately my thesis agenda did not change throughout the process. The thesis statement adapted to **"Phenomenology can enhance the cumulative design of space through our sensory perceptions, including attention to materiality, sound, light, shadow, temperature and smell. This method of design has the potential to transcend human experience and elevate the experience of daily life through phenomena that emerge from specific places, programs and forms."**
However despite a slight change in my question and the thesis statement my approach did not change.

I believe the biggest thing I learned, from this whole process, was another way of designing and thinking about space. Architecture is for people and there are things that make us inherently human. When we design in a phenomenological discourse that takes into account our senses, emotions, and involuntary responses the architecture has a much deeper meaning and becomes more authentic. I learned a much more meaningful way of designing and directly relating architecture to its site and its situation. My committee guided me into areas I was normally very uncomfortable trying to design from but in the end it helped me out immensely. I used an extensive amount of mediums, such as video and watercolors, trying to expand my repertoire to make this thesis as strong as it could be. I learned a great deal about architecture and myself and to my committee, Diane and John. It was a pleasure and I'm a better designer having been under your tutelage. Thank you.

Ultimately I will now be finding a job and going into the work force with a stronger knowledge of architecture and how to design that takes into account that we are human and we can design beyond visual cues.

PROCESS

EXISTING PROJECT SITE

DETROIT, MI





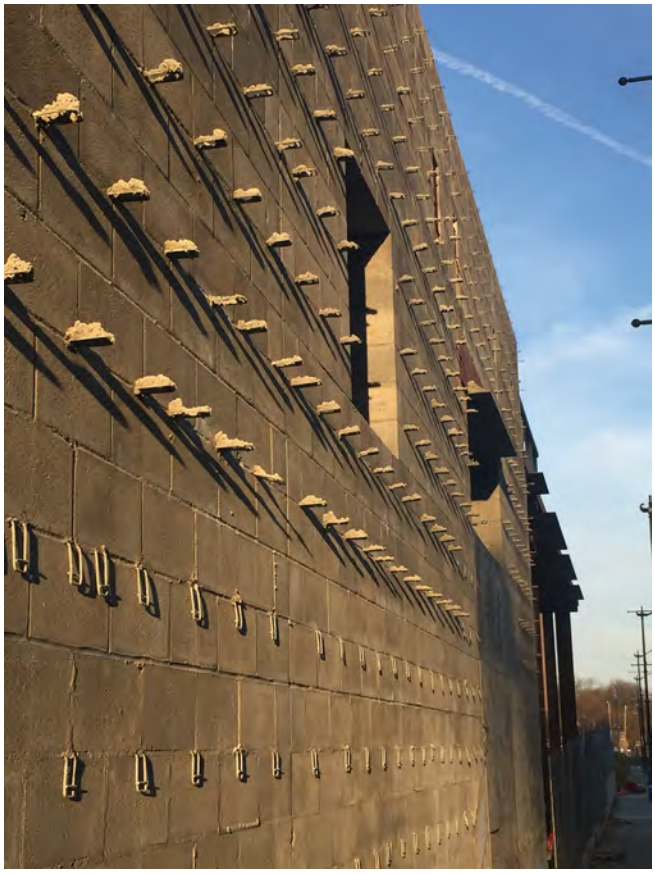








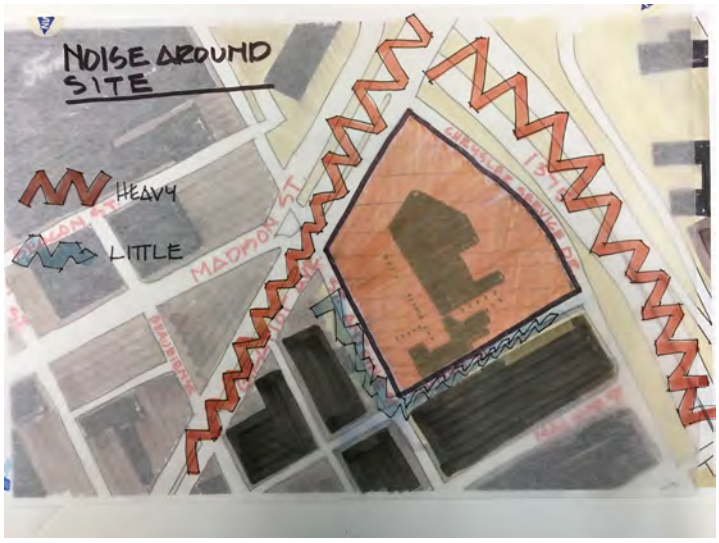




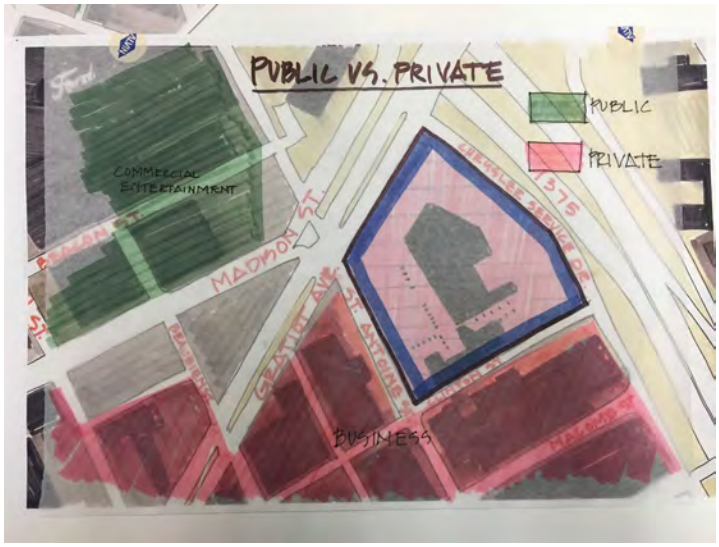


SITE ANALYSIS

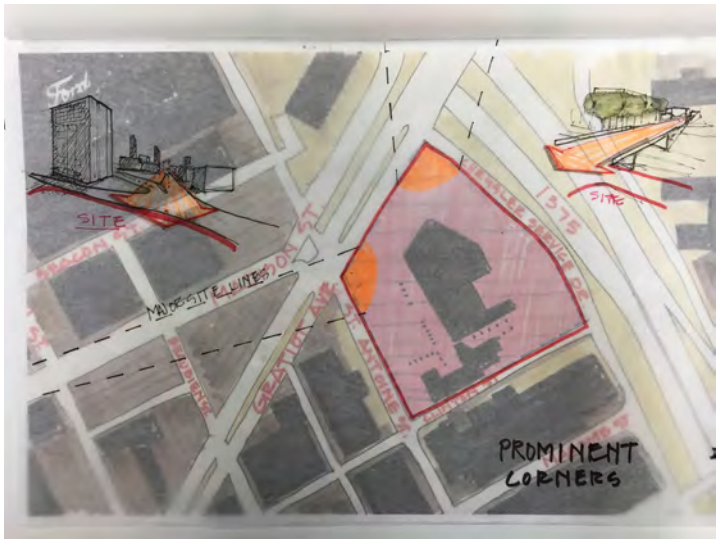


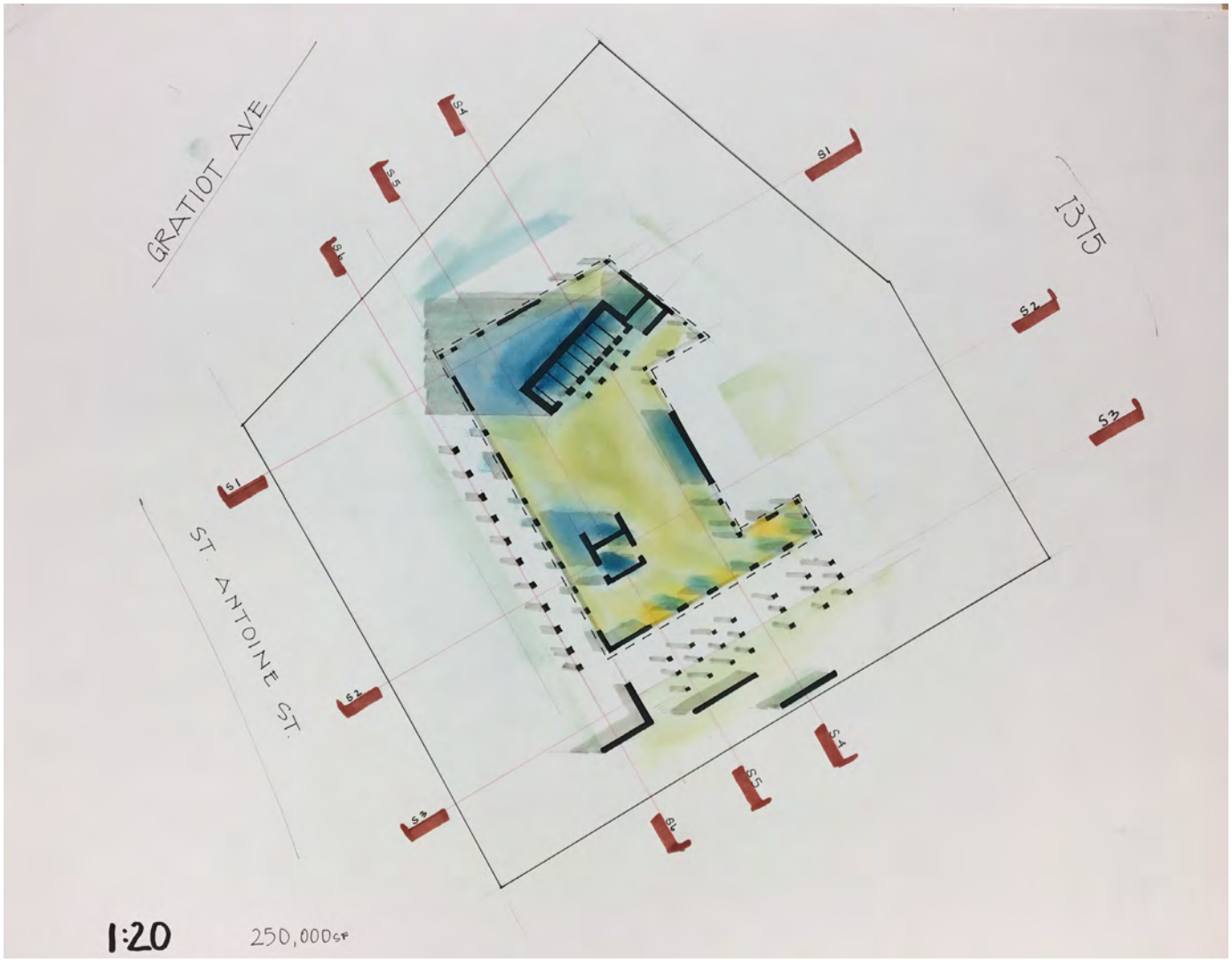








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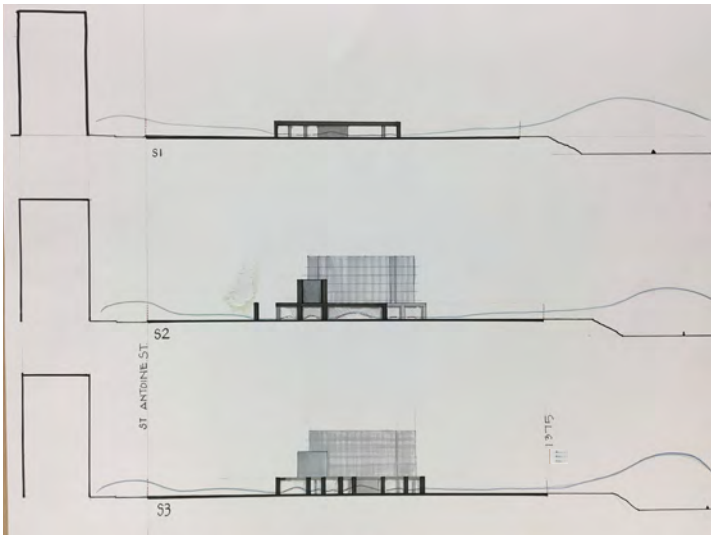
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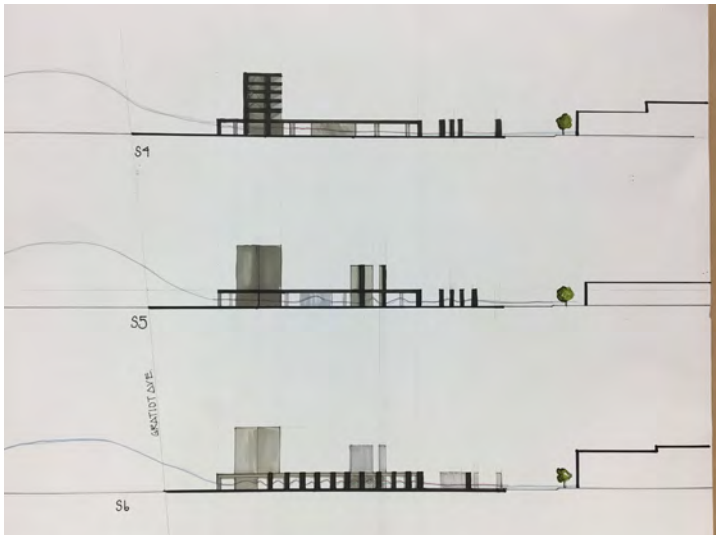
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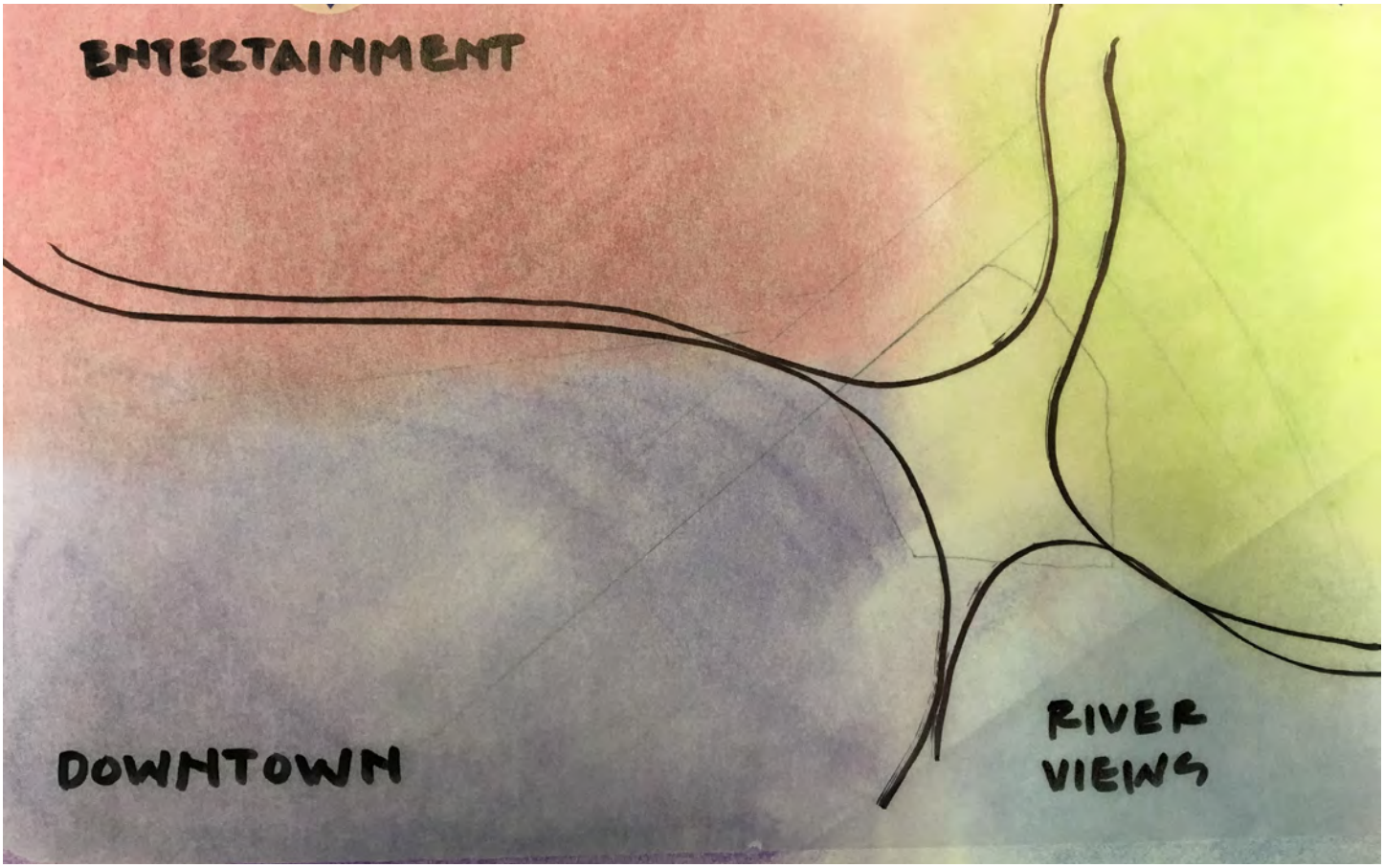
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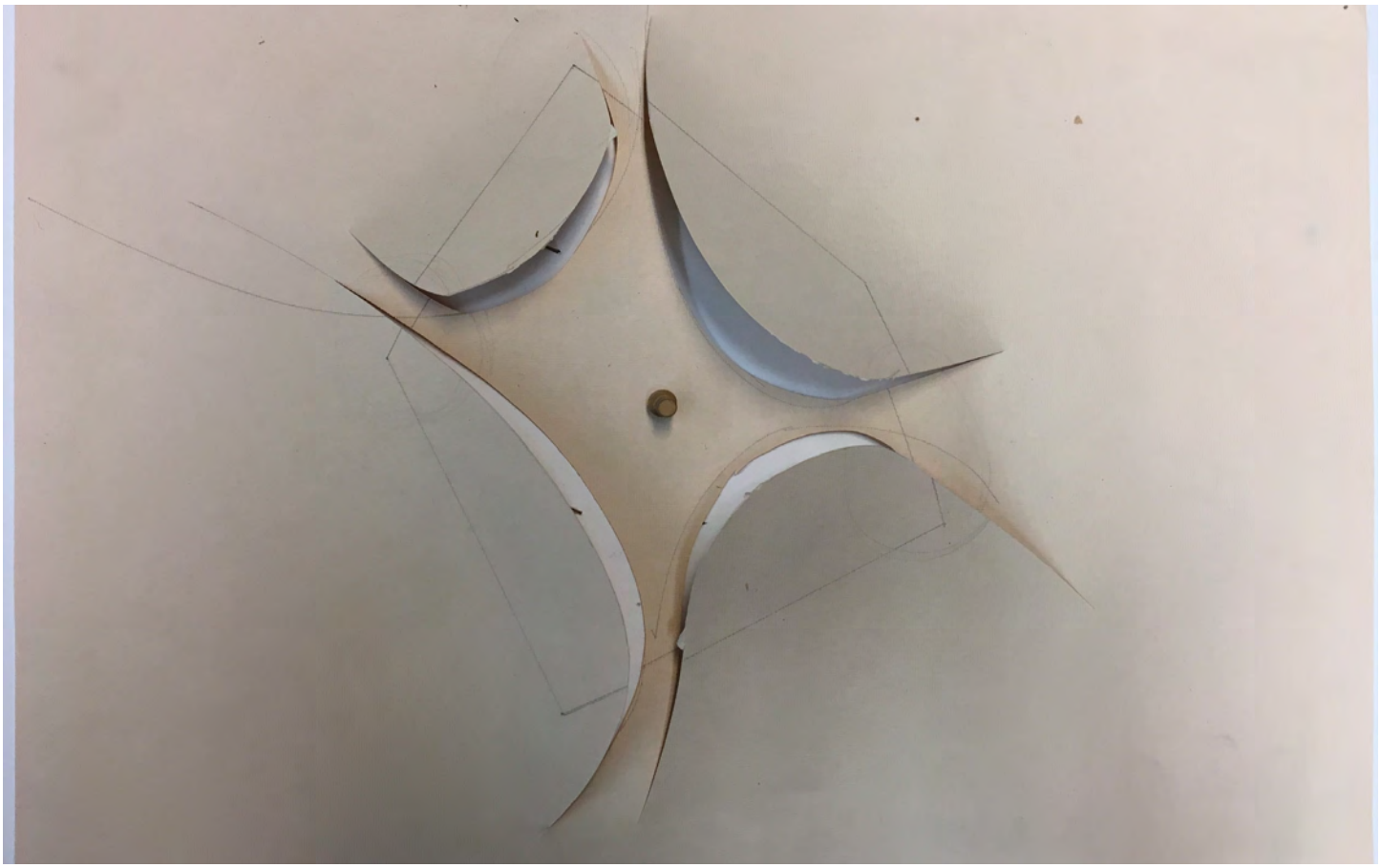
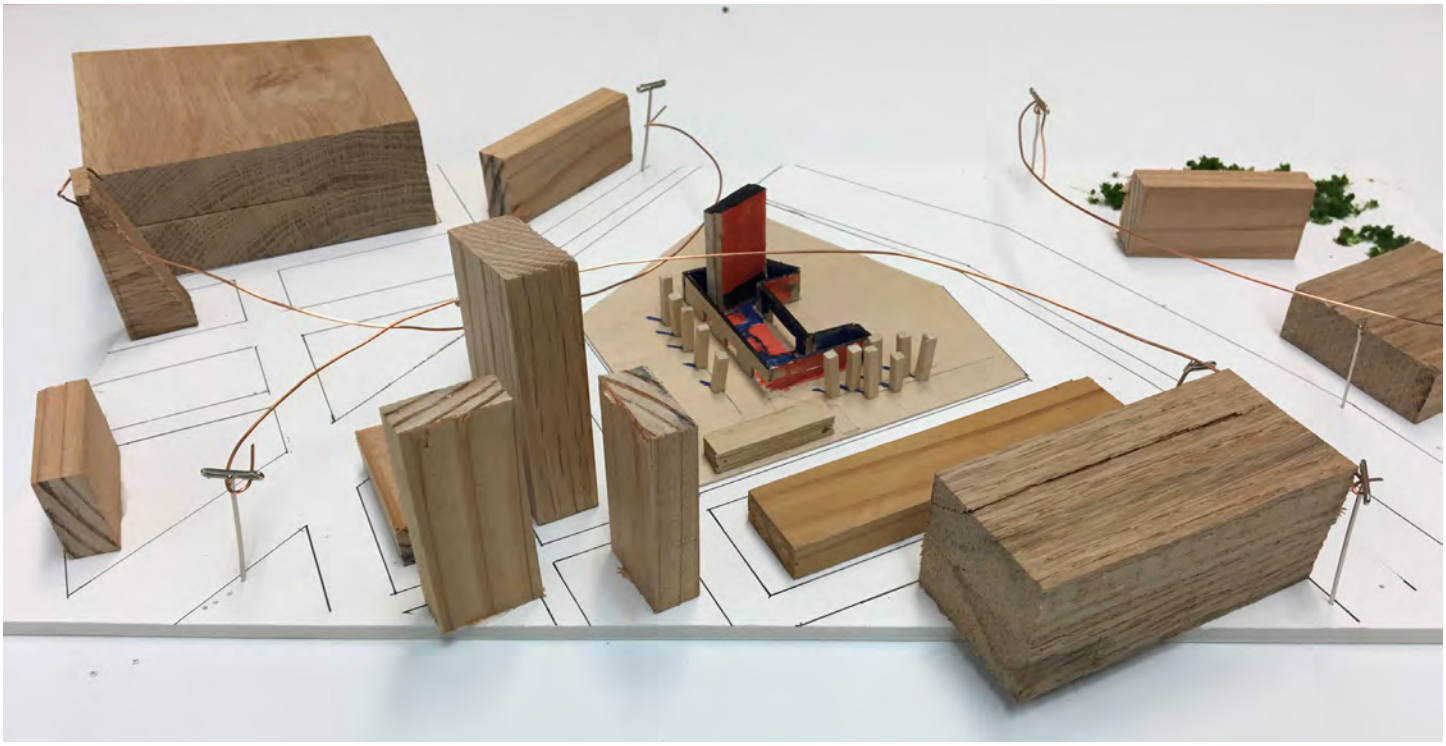
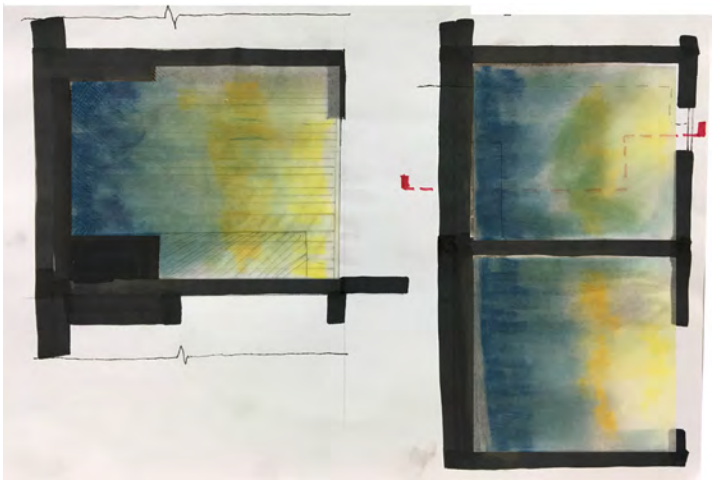
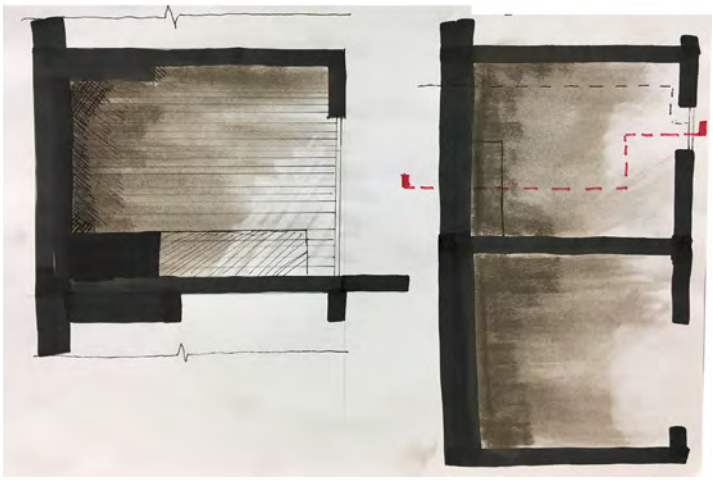


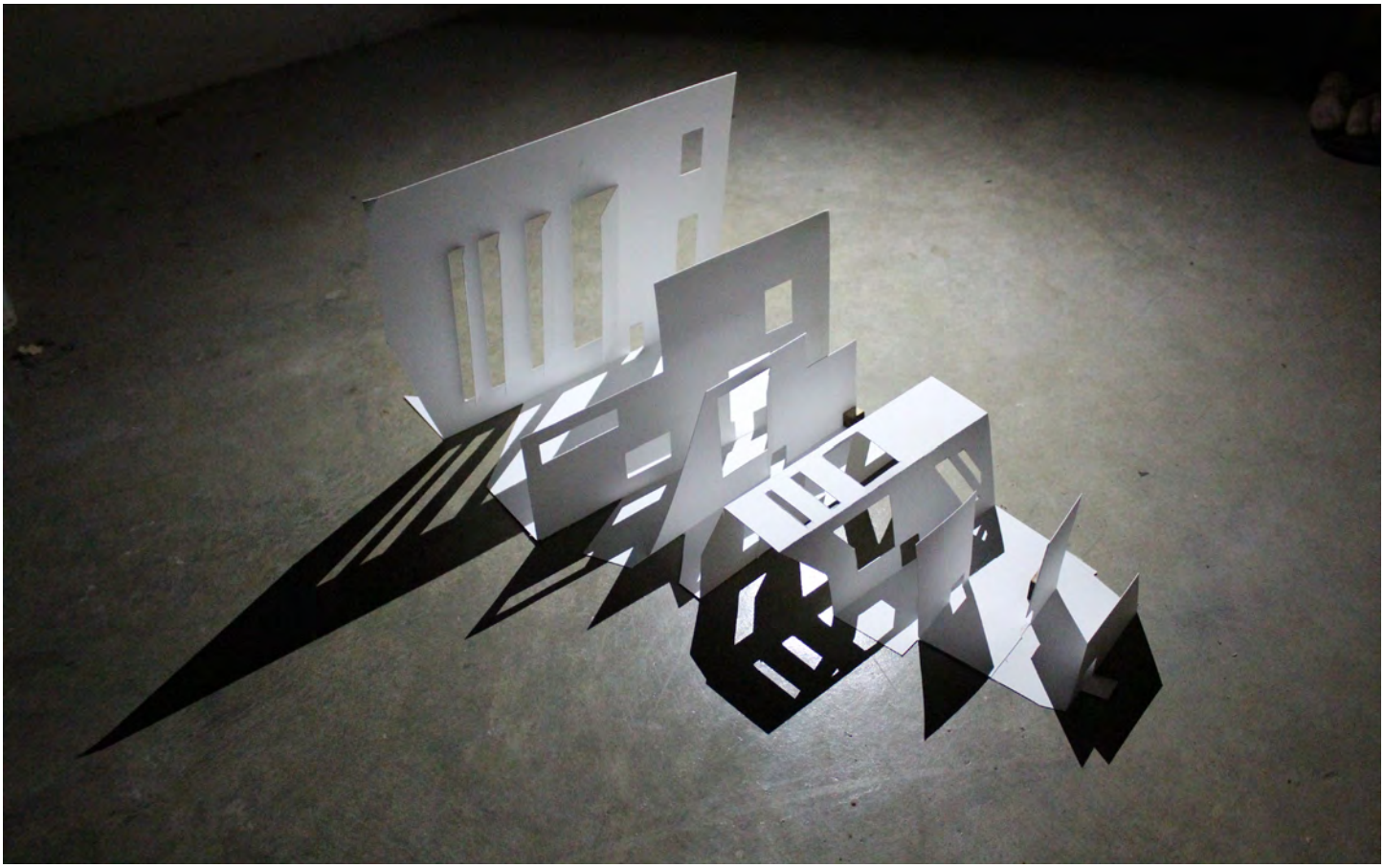






STUDY MODELS

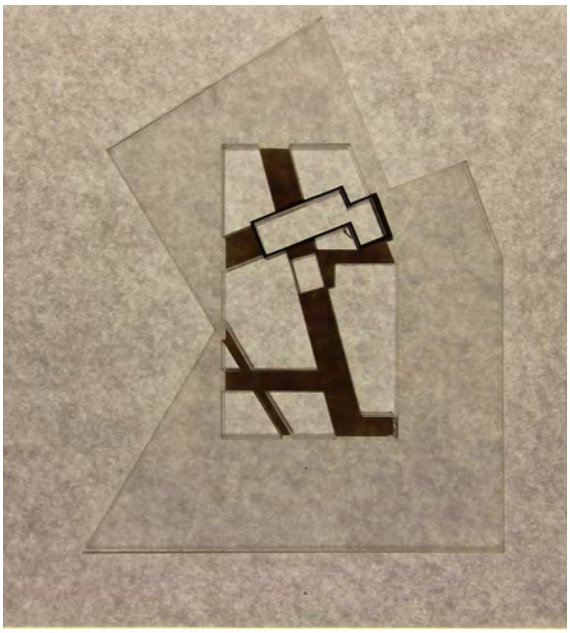


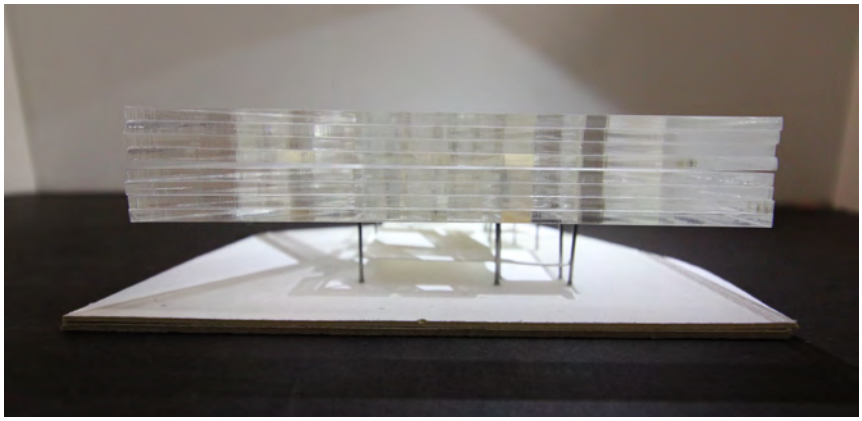


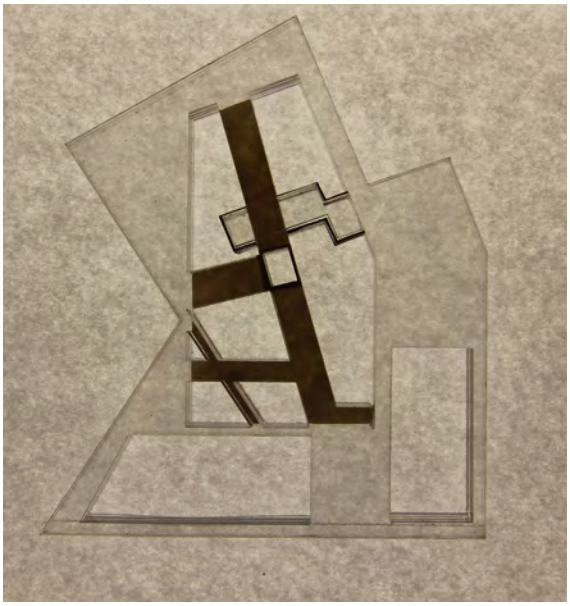


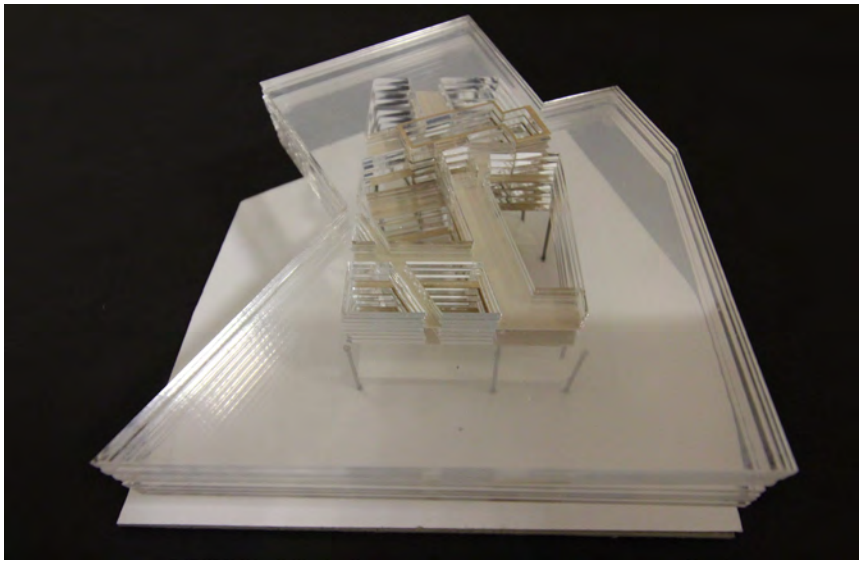


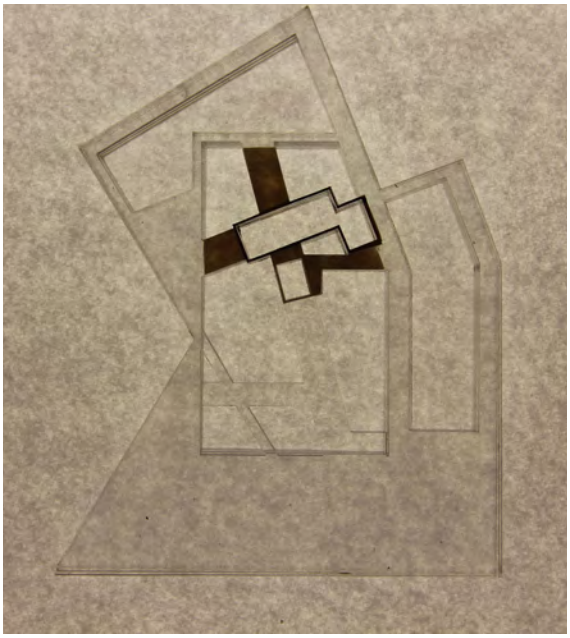


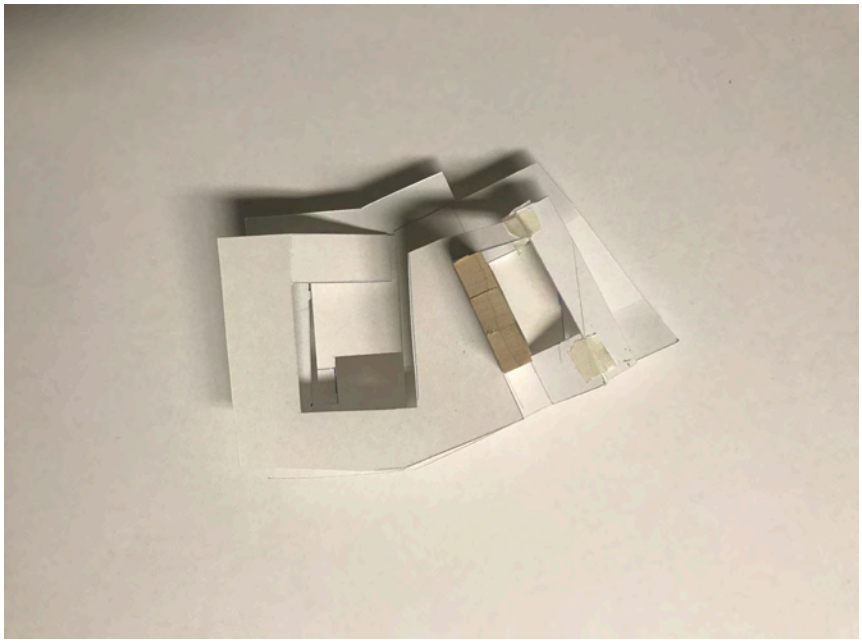




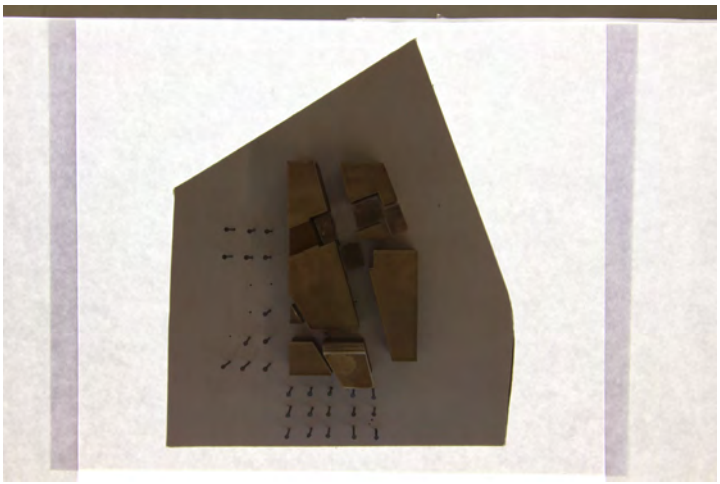


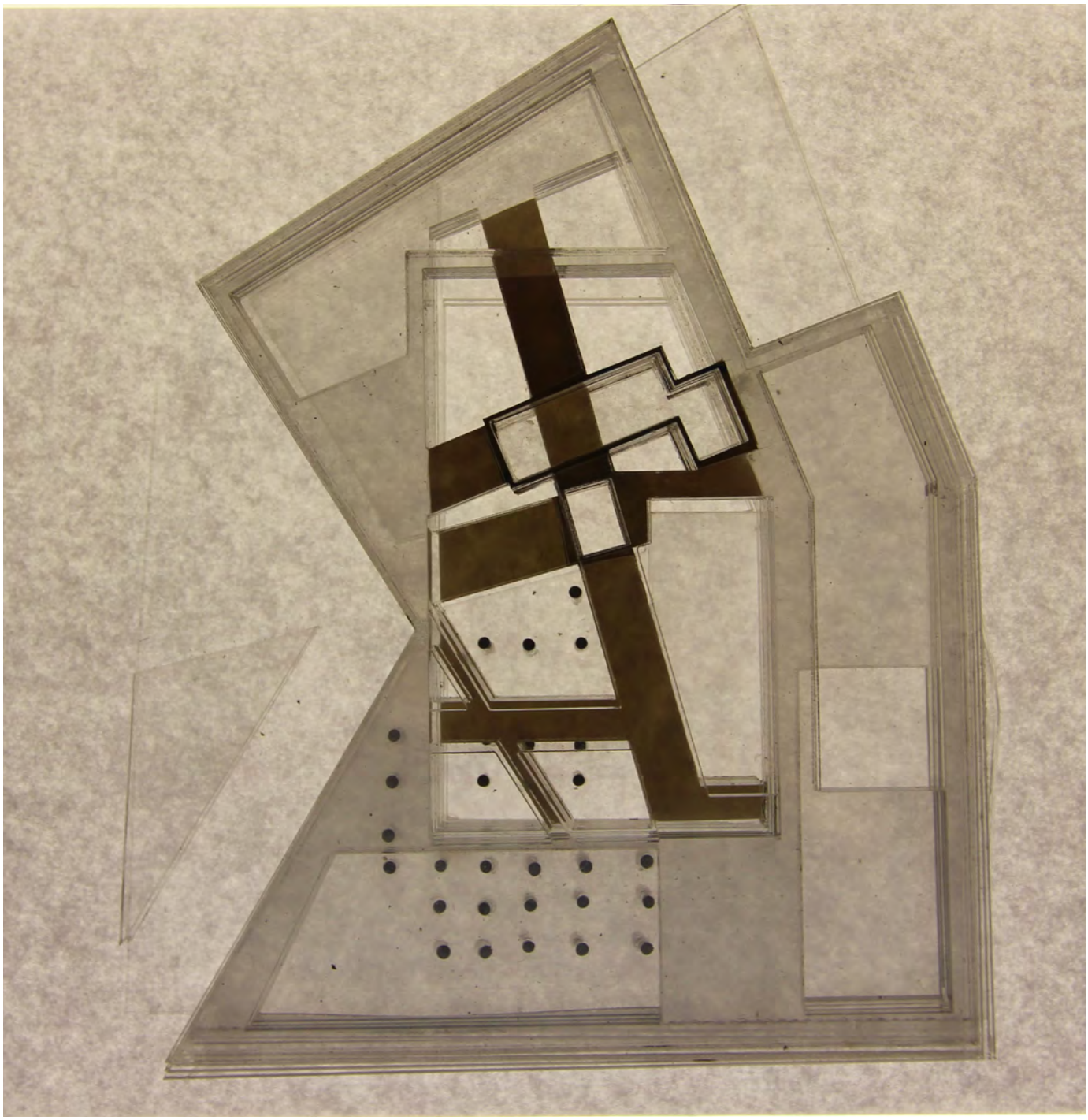


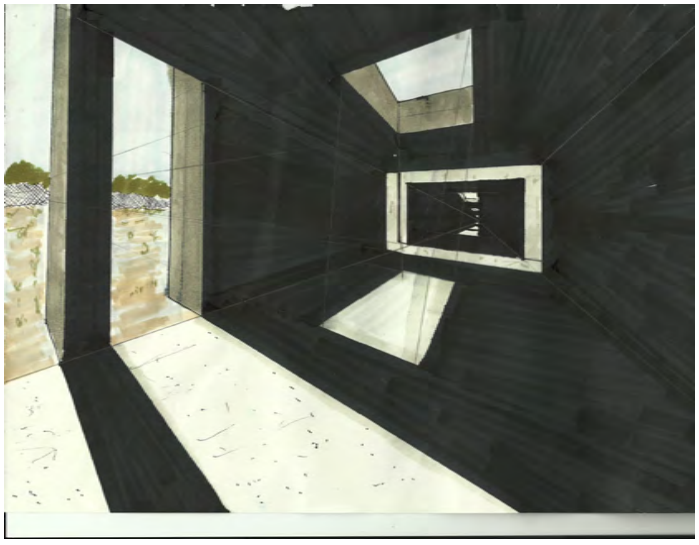


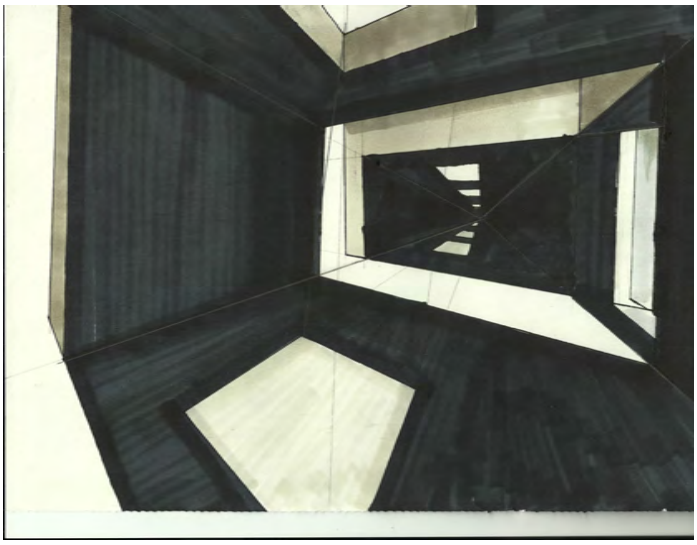


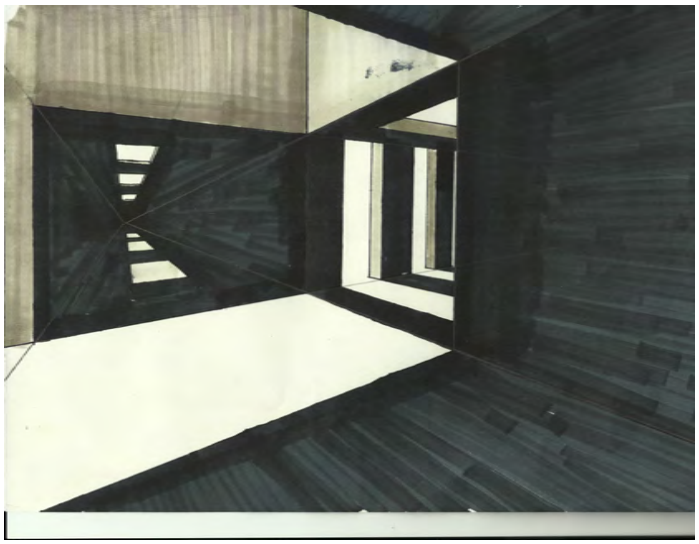


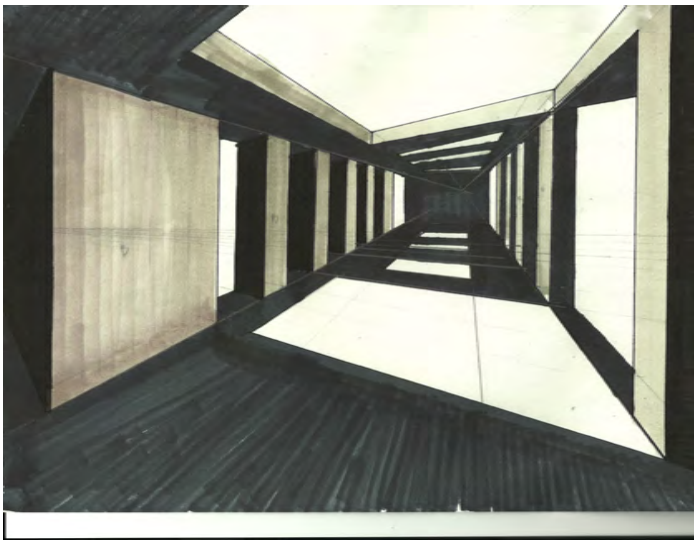


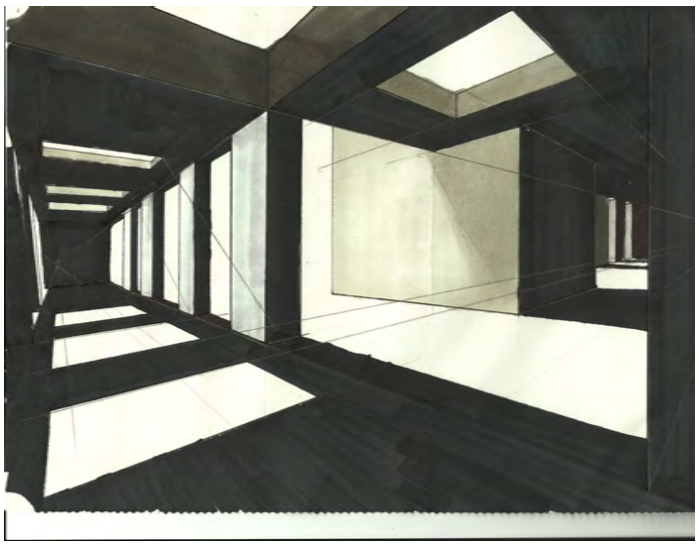


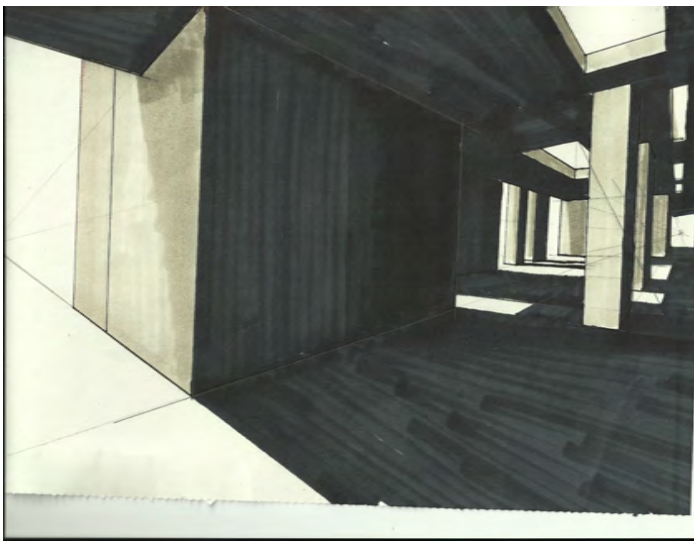


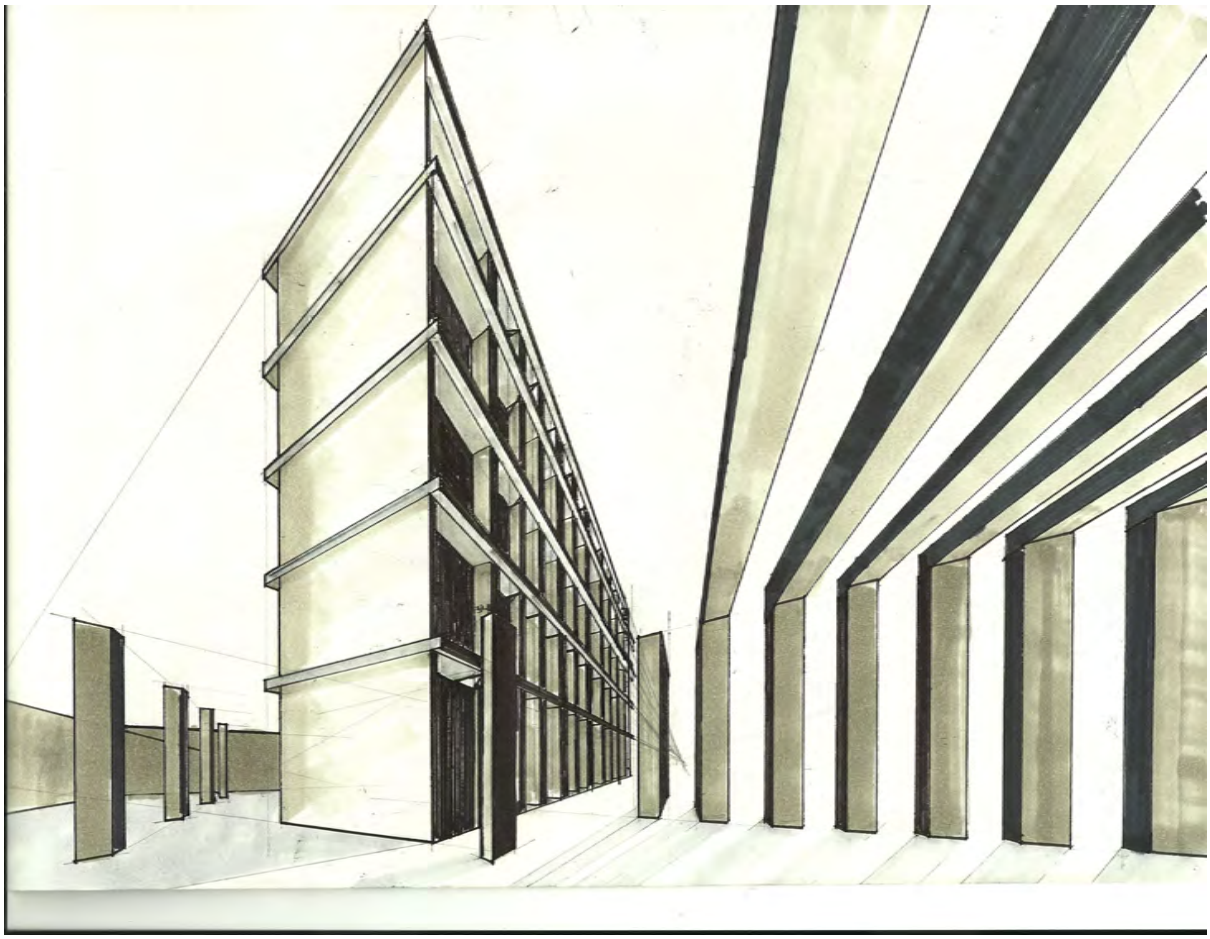


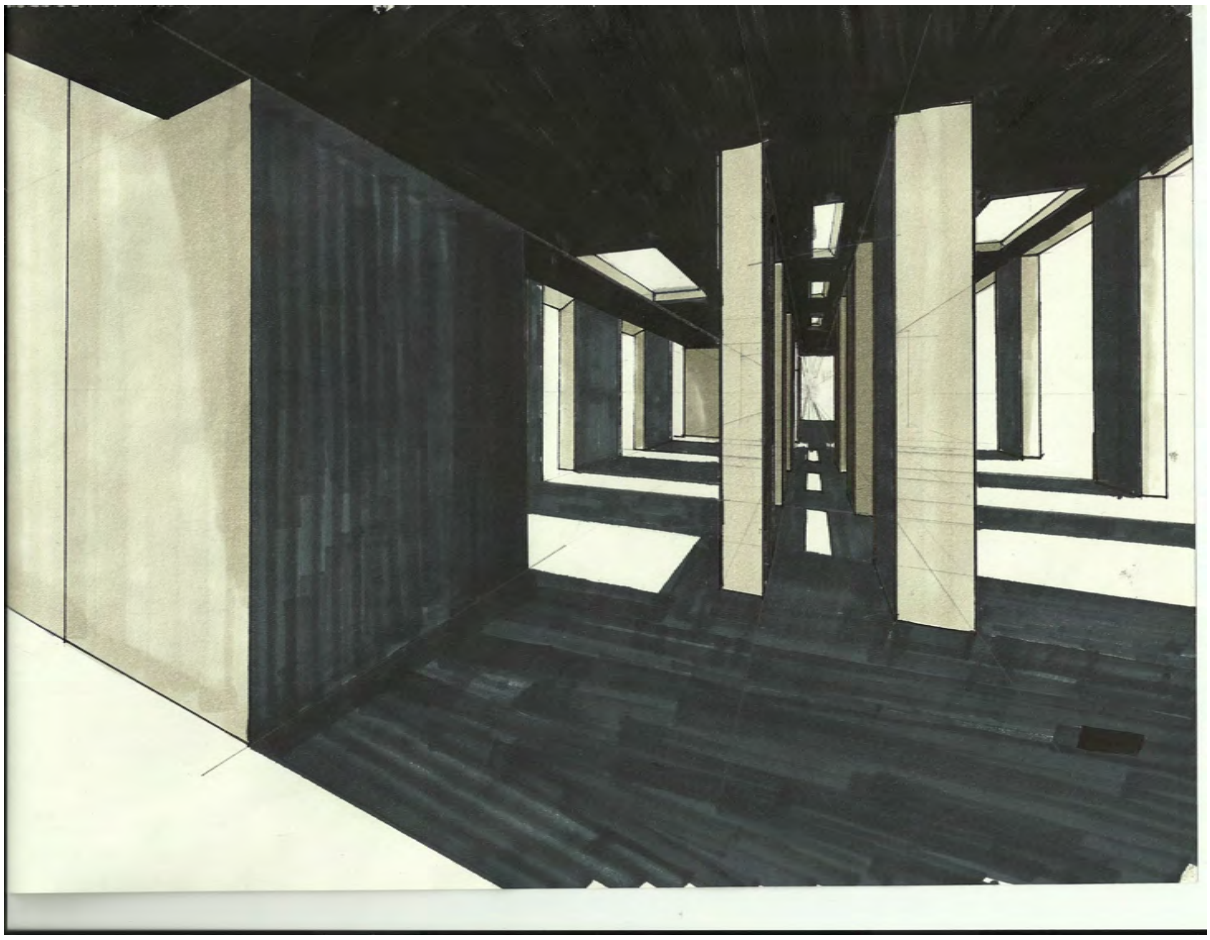




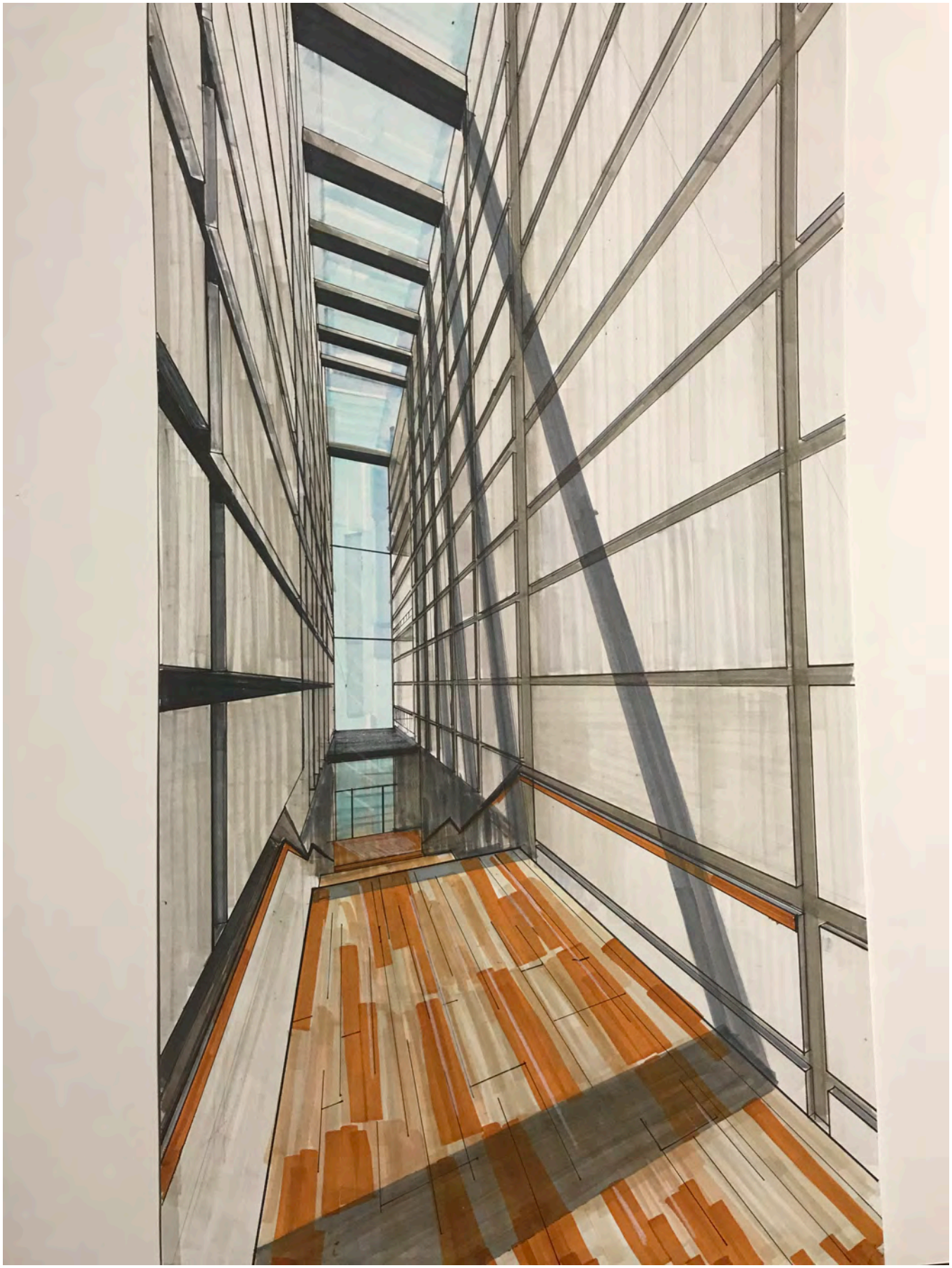








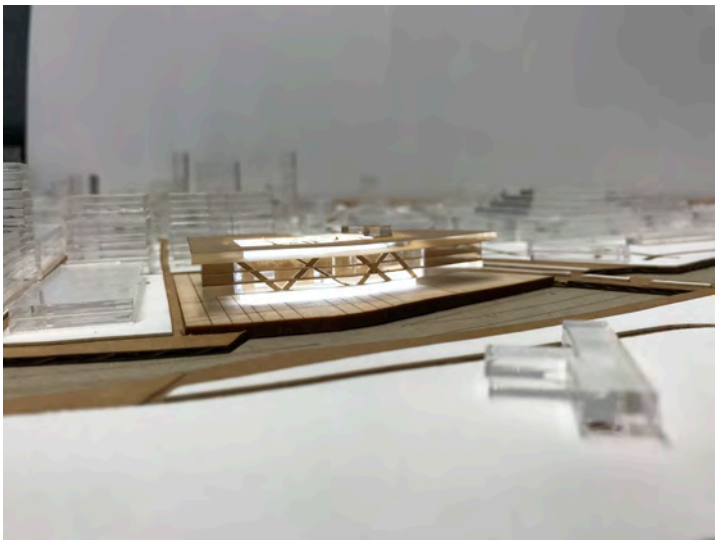
THE ARCHITECTURE

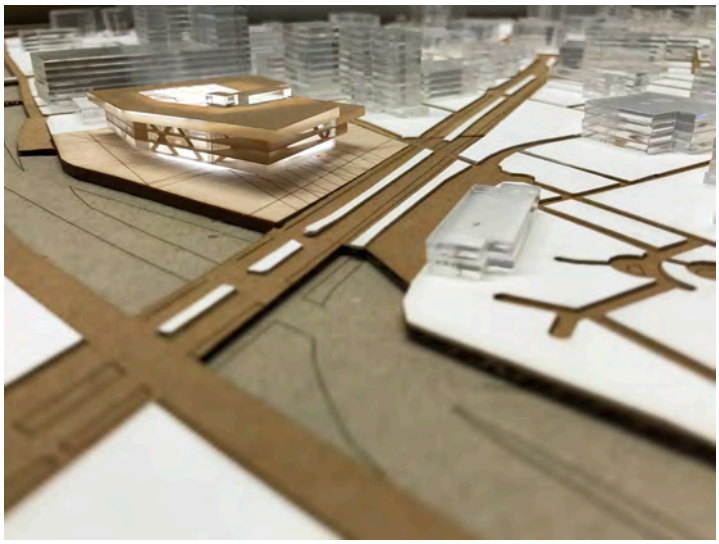


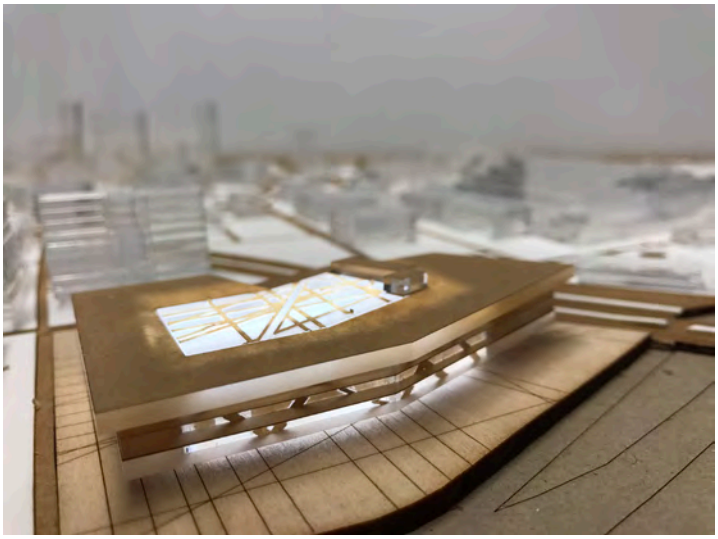
FINAL MODELS

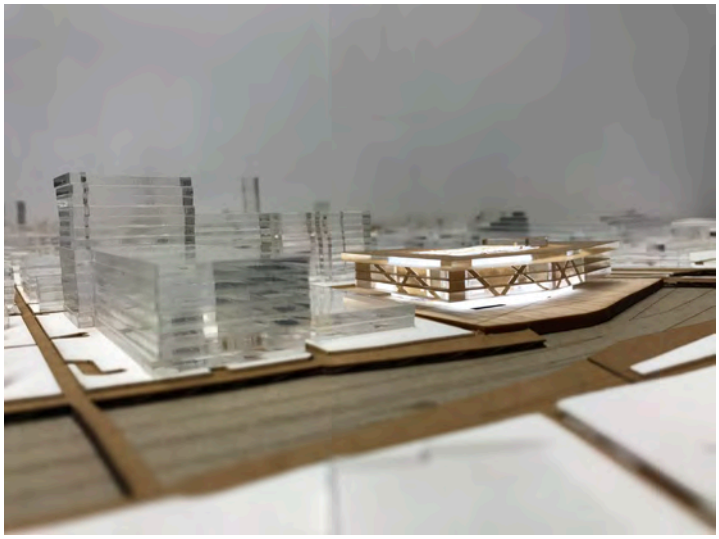


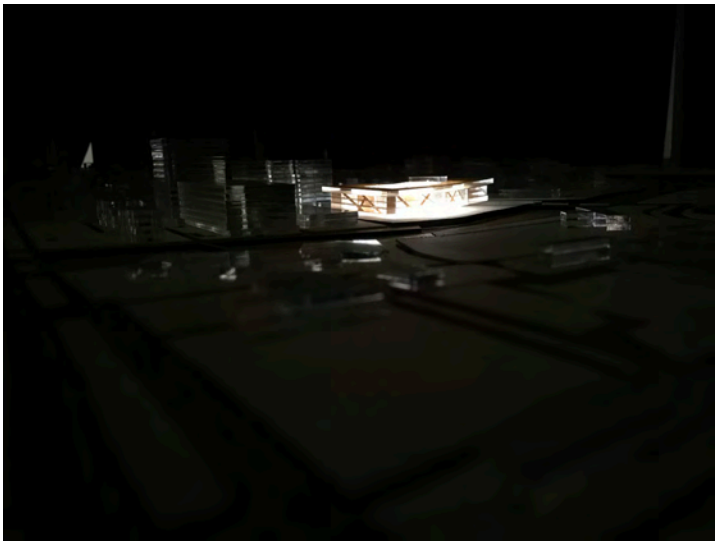


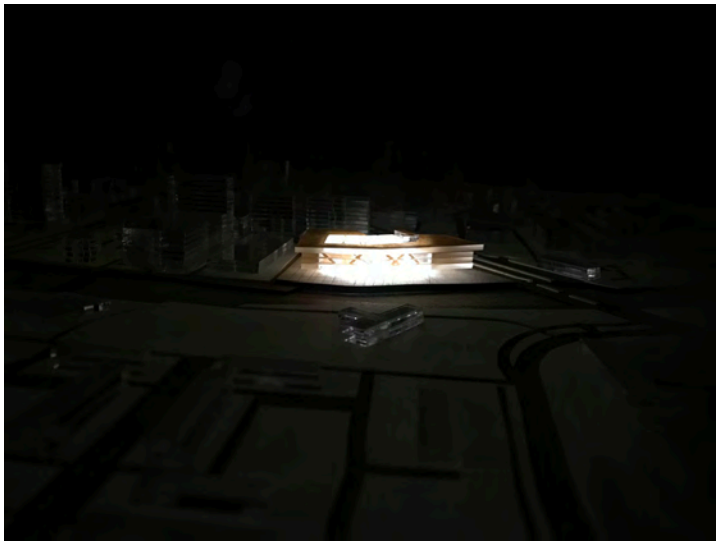


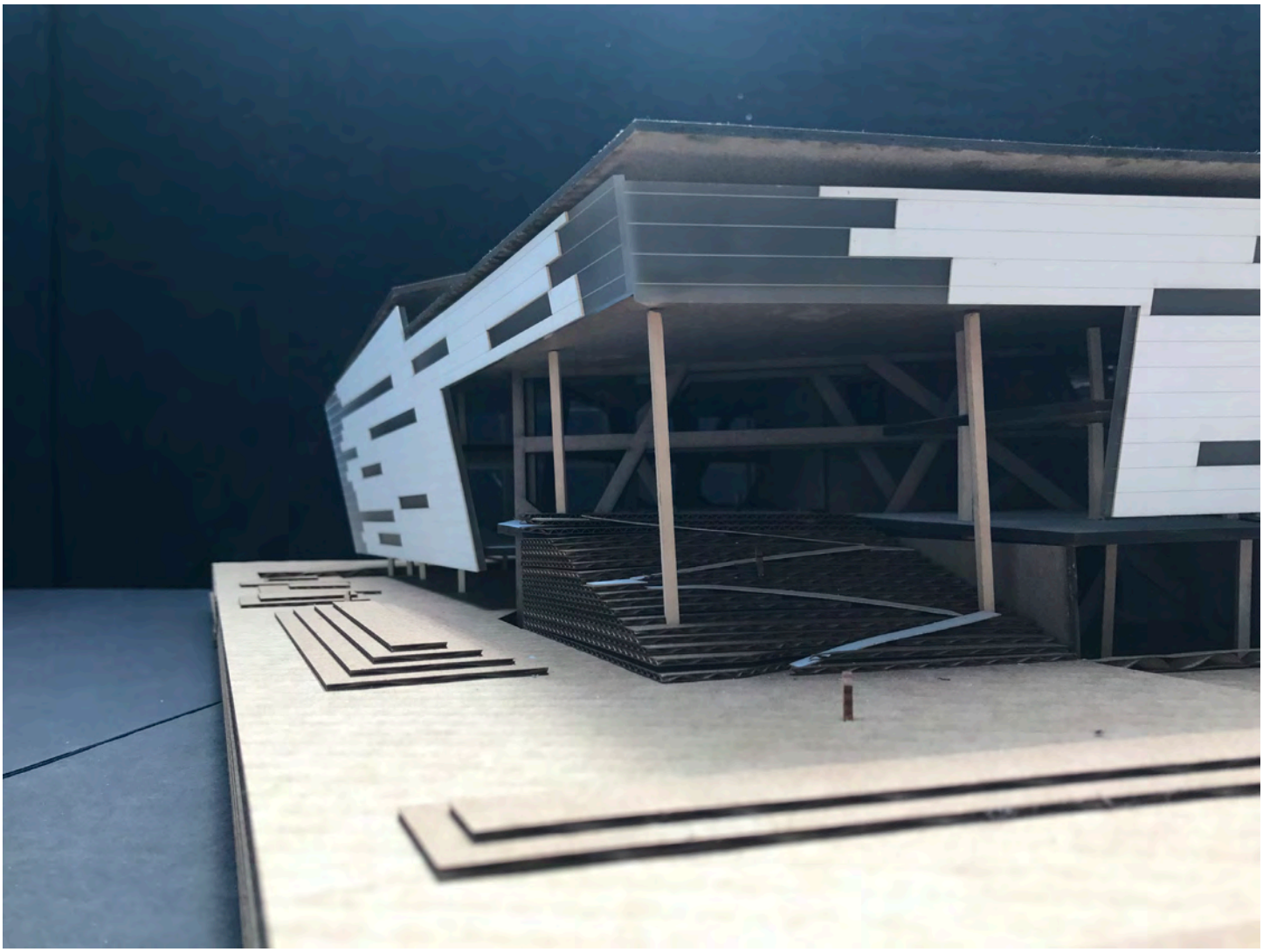




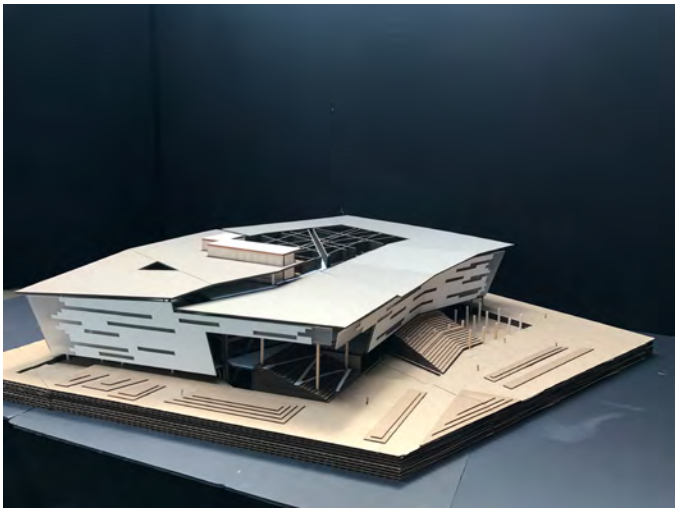




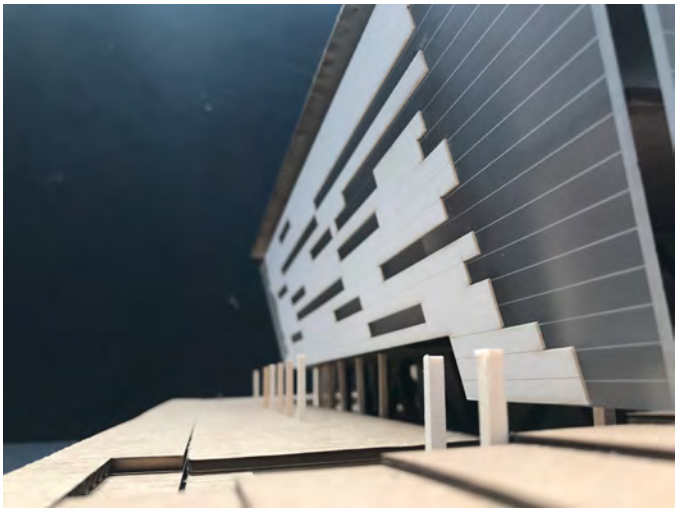


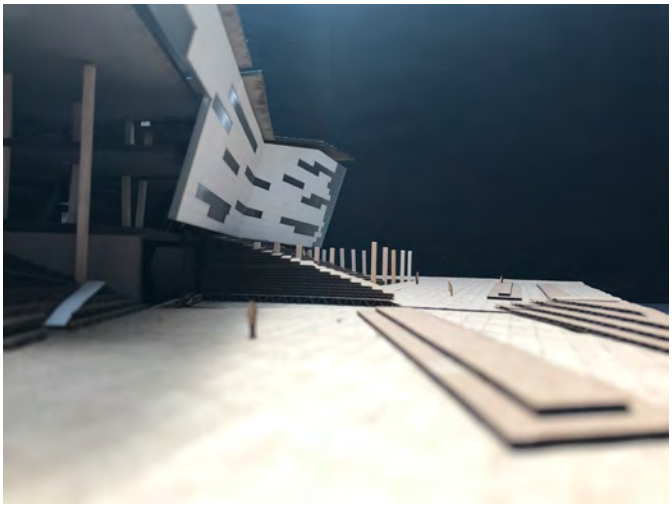




























FINAL PRESENTATION DRAWINGS

ARCHITECTURAL PHENOMENOLOGY
EXPERIENCE THROUGH ARCHITECTURE

Phenomenology can enhance the cumulative design of space through our sensory perceptions, including attention to materiality, sound, light, shadow, temperature and smell. This method of design has the potential to transcend human experience and elevate the experience of daily life through phenomena the emerge from specific places, programs and forms.

How can phenomenology enhance the experience of architecture through our sensory perceptions and phenomena the emerge from specific sites?

Unified Automotive and
Contemporary Art Museum of Detroit

Detroit, Mi.







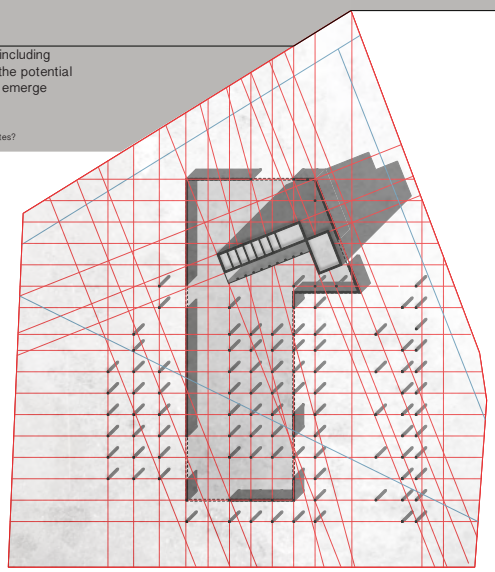








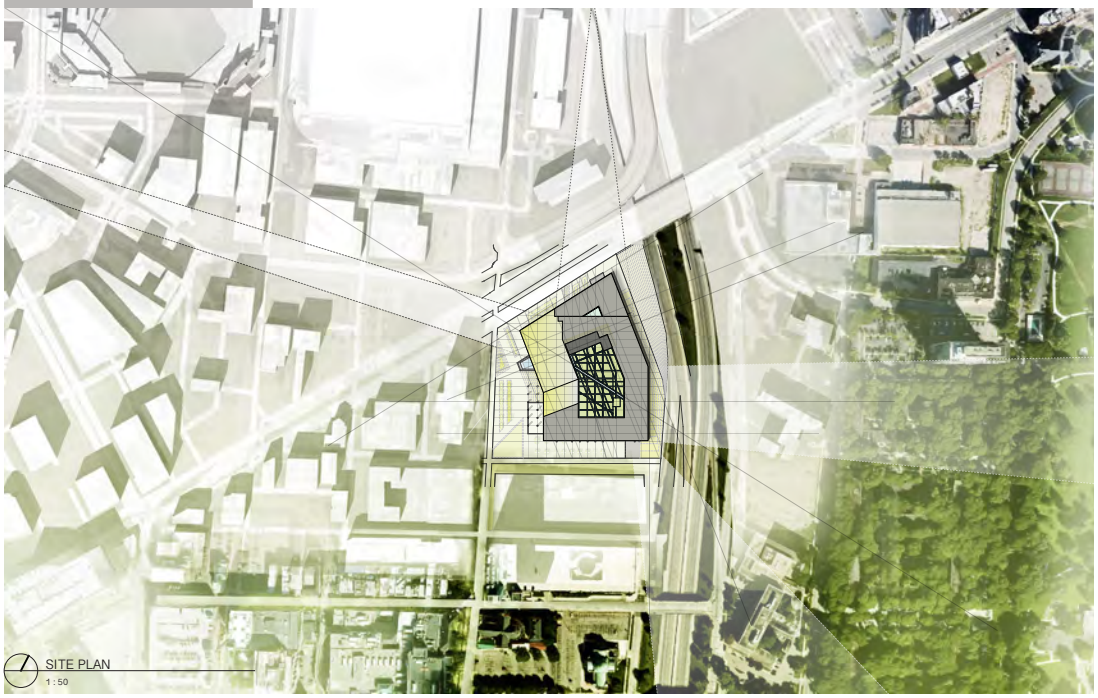




EXISTING SITE
N.T.S







SITE PLAN
1 : 50

LAYERS OF INFRASTRUCTURE











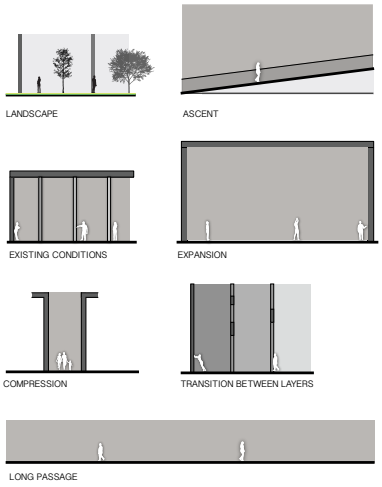


SPATIAL PERCEPTION

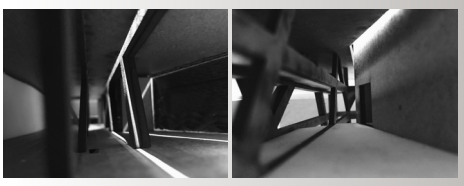
SCALE



EMBODIMENT

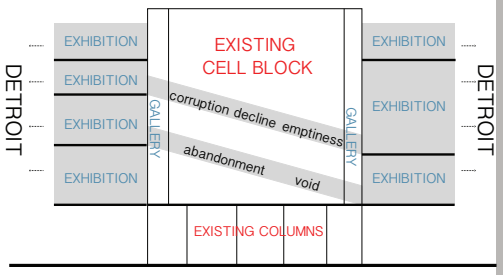


LIGHT



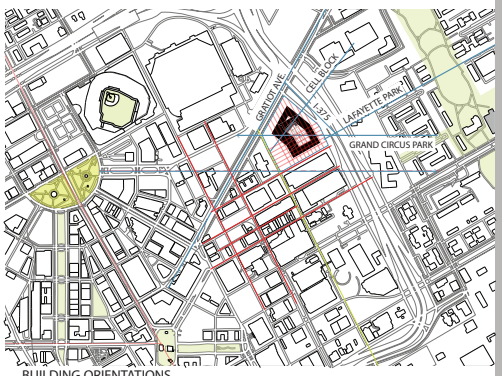




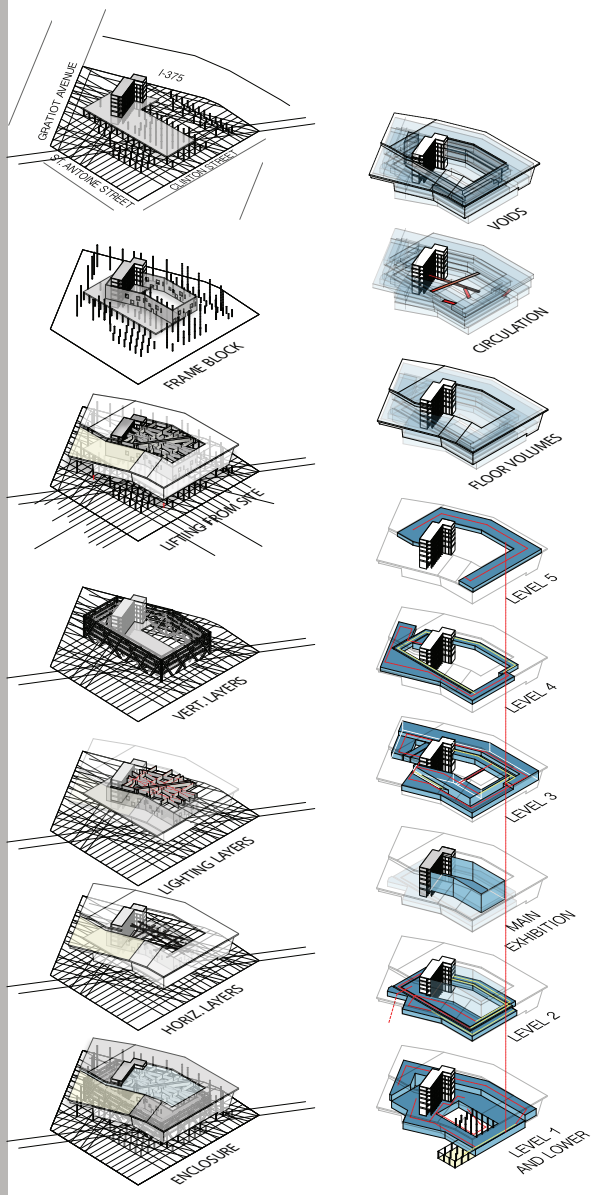




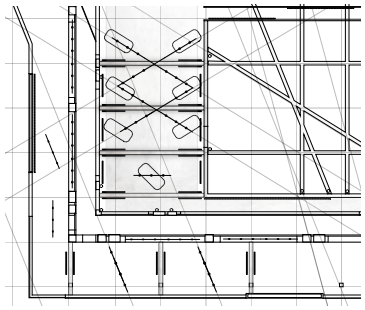
CITY GRID ORGANIZATION

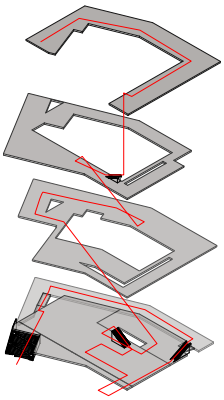


BUILDING ORIENTATIONS

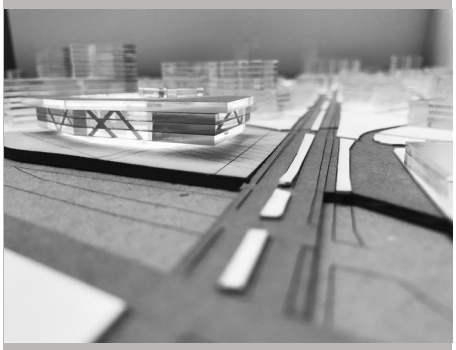


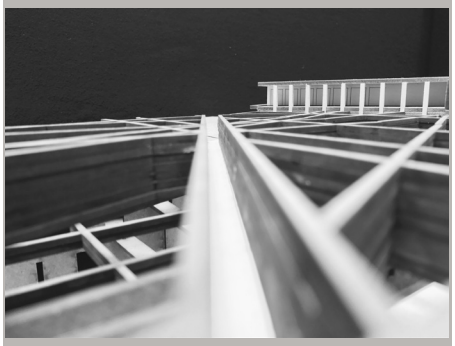


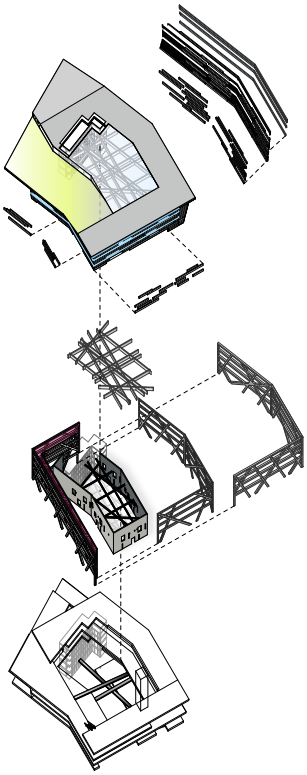




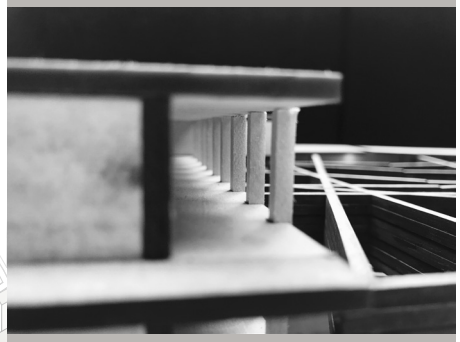
PARTIAL SECOND FLOOR REFLECTED PLAN
SCALE: 1/16" = 1'-0"

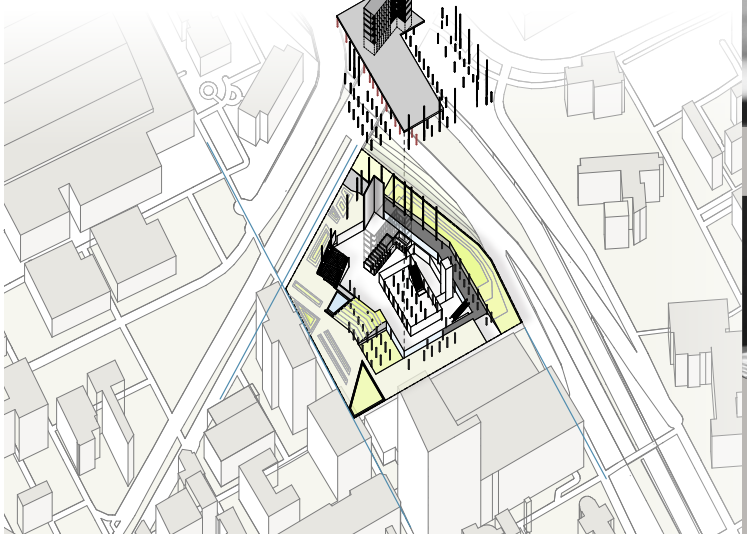


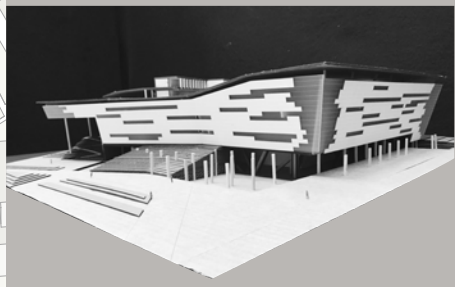


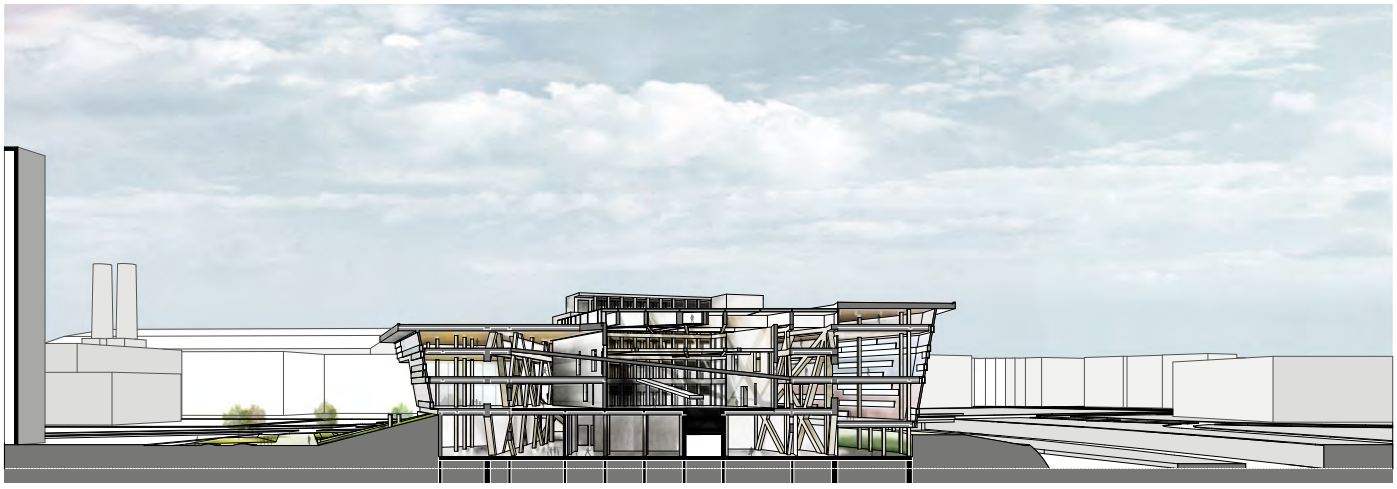




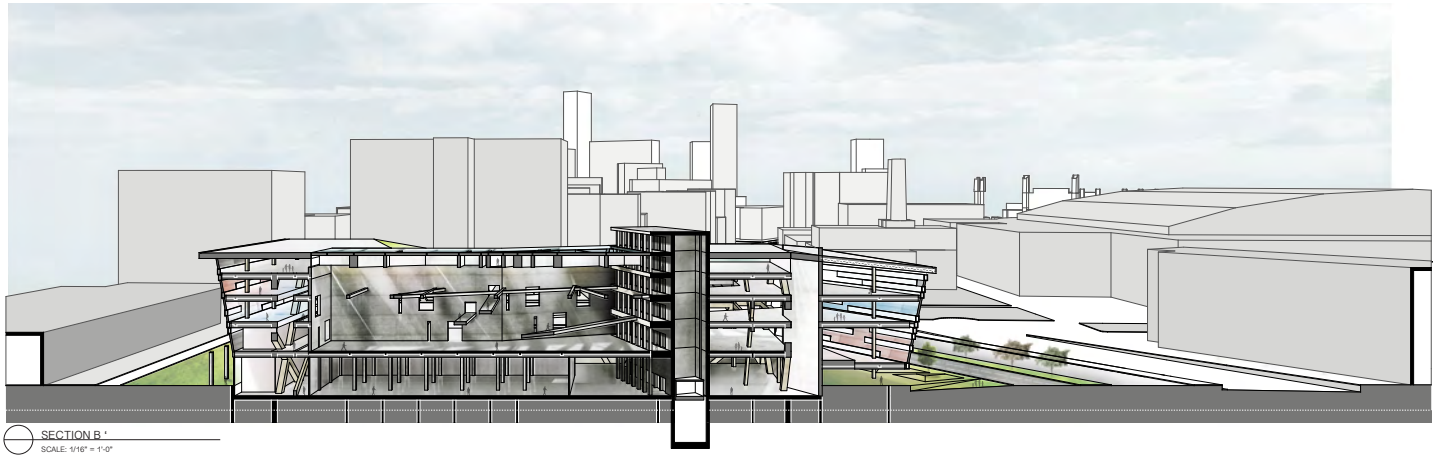




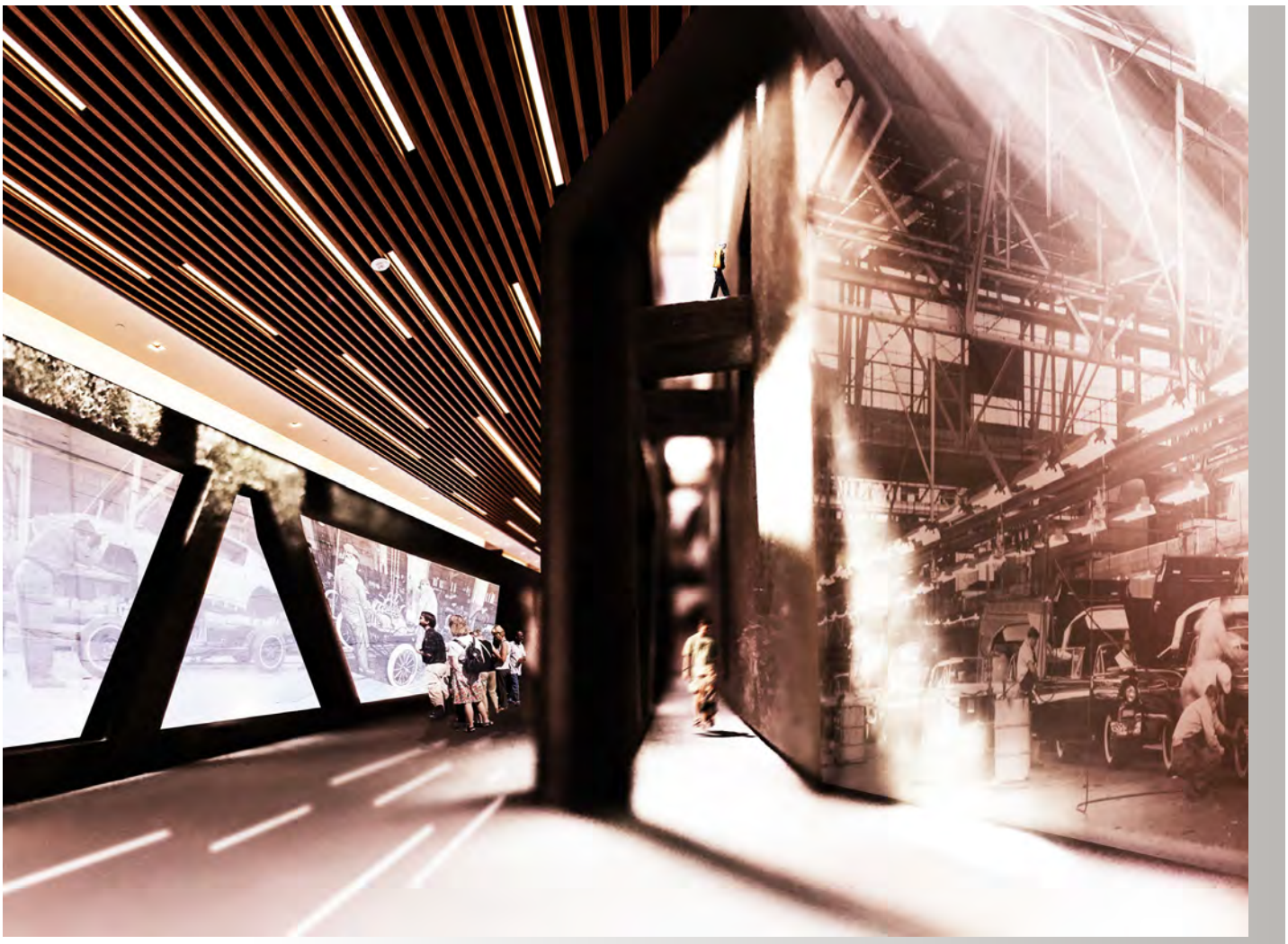


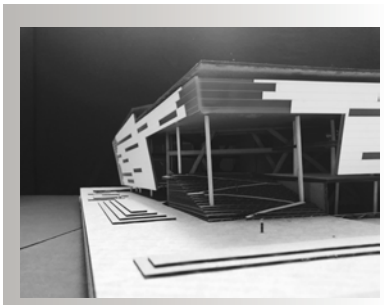


SECTION A '
SCALE: 1/16" = 1'-0"



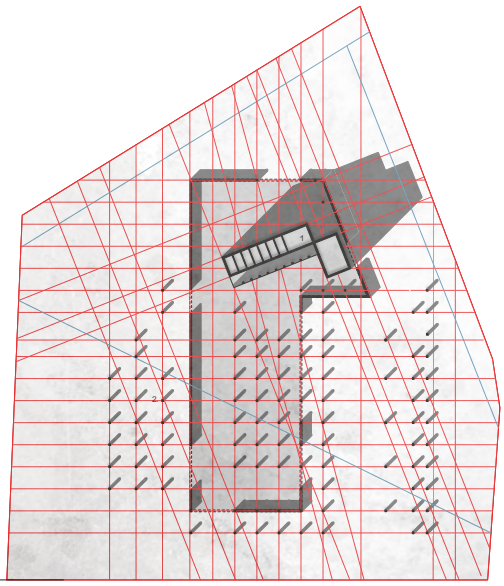
SECTION B '
SCALE: 1/16" = 1'-0"







1. EXISTING CELL BLOCKS
2. EXISTING COLUMN GRID

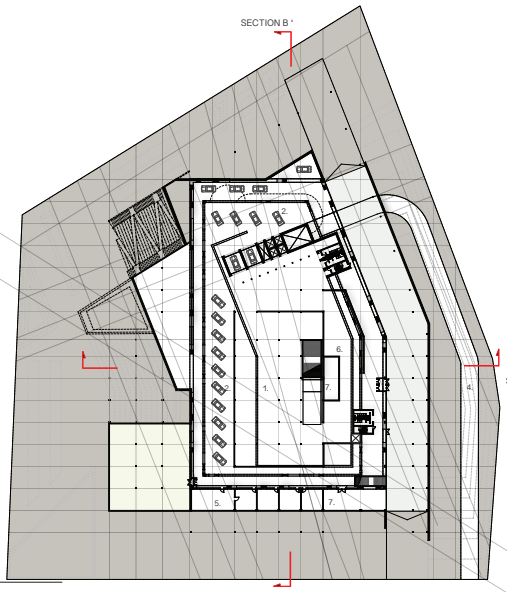


EXISTING SITE PLAN
SCALE: 1/32" = 1'-0"





1. SITE GALLERY
2. VEHICLE EXHIBITION
3. EXTERIOR GARDEN
4. VEHICLE ENTRY
5. ADMINISTRATION
6. CAFE SPACE
7. SERVICE

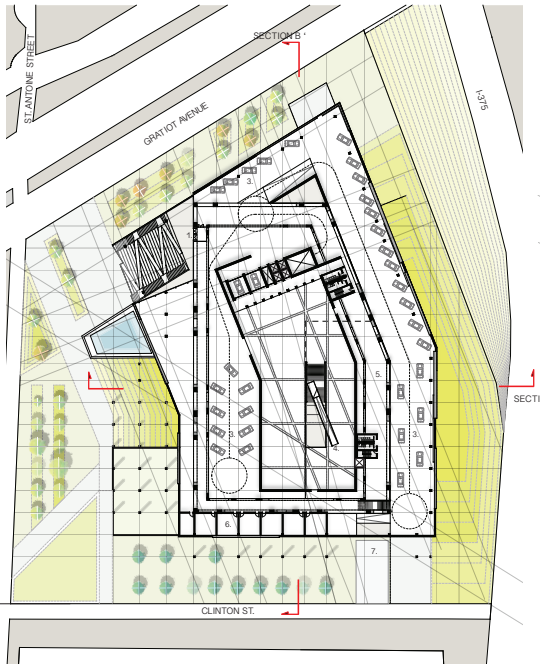


LOWER LEVEL PLAN
SCALE: 1/32" = 1'-0"

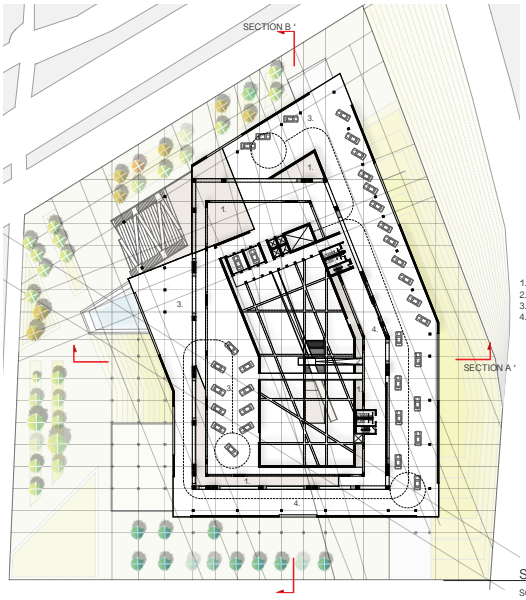




1. MUSEUM ENTRY
2. MAIN EXHIBITION
3. VEHICLE EXHIBITION
4. RAMP TO FL. 2
5. ASSEMBLY LINE GALLERY
6. ADMINISTRATION
7. LOADING DOCK



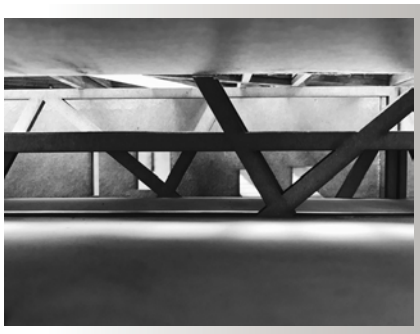
FIRST FLOOR PLAN
SCALE: 1/32" = 1'-0"



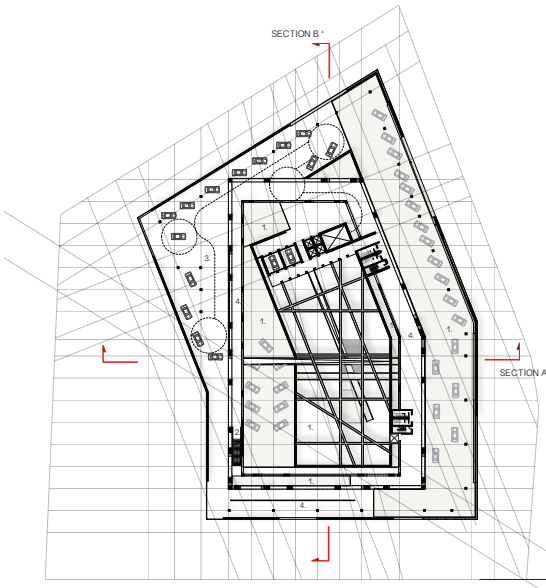
1. OPEN TO BELOW
2. RAMP TO FL 3
3. VEHICLE EXHIBITION
4. GALLERY SPACE

SECOND FLOOR PLAN

SCALE: 1/32" = 1'-0"





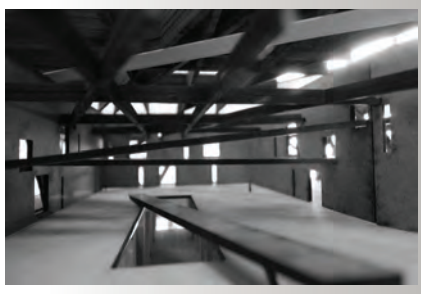


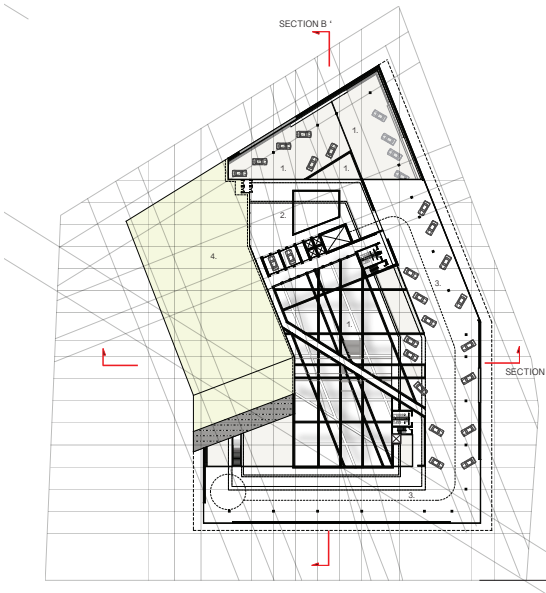
1. OPEN TO BELOW
2. STAIRS TO FL 4
3. VEHICLE EXHIBITION
4. GALLERY SPACE

THIRD FLOOR PLAN

SCALE: 1/32" = 1'-0"





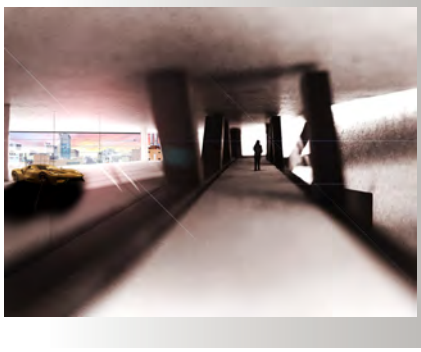


1. OPEN TO BELOW
2. RESTAURANT
3. VEHICLE EXHIBITION
4. ROOF GARDEN

FOURTH FLOOR PLAN

SCALE: 1/32" = 1'-0"





END

SPECIAL THANKS TO THE 2017 MASTERS CLASS. WE WERE IN IT TOGETHER, AND WITHOUT ALL OF THE FRIENDS I MADE HERE I WOULDN'T HAVE BEEN ABLE TO FINISH.