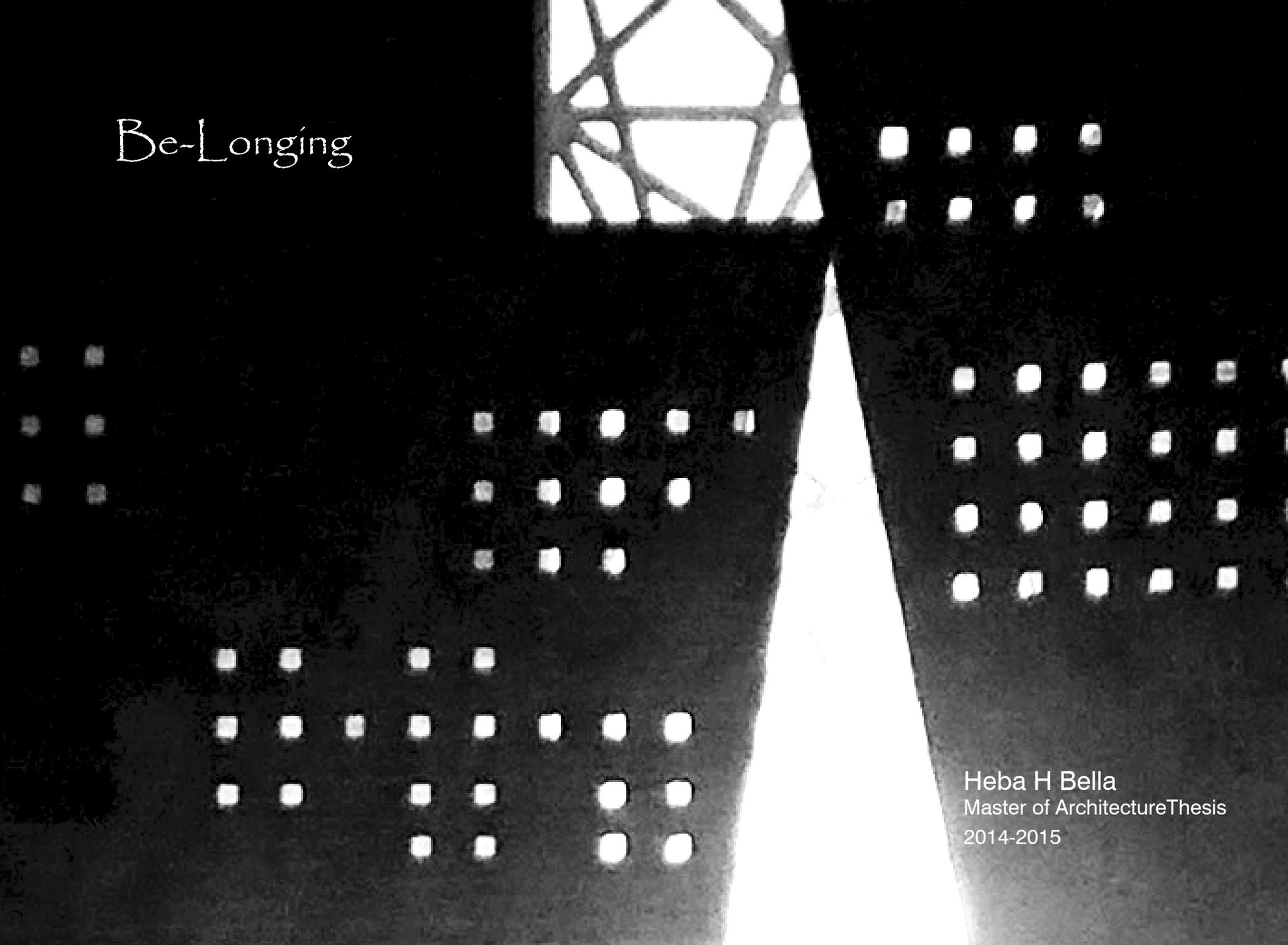


Be-Longing

A black and white photograph of a building facade. The building features a grid of square windows. At the top center, there is a decorative geometric pattern consisting of interconnected lines forming a series of triangles and polygons. The overall composition is high-contrast, with the dark building and the bright light coming through the windows and the decorative pattern.

Heba H Bella
Master of Architecture Thesis
2014-2015

Be-Longing

St. Thomas' Boarding School of The Liberal Arts

Heba H. Bella Elamin

Thesis submitted to the faculty of
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of
Master of Architecture in Architecture

Feb 25th 2015
Alexandria, VA

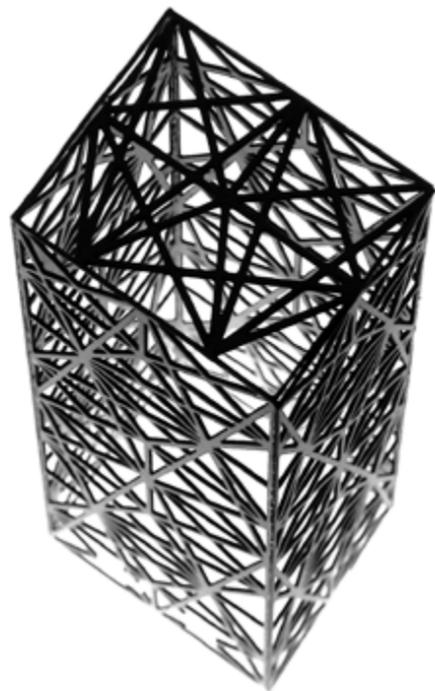
Paul Emmons - Chairman
Jaan Holt
Susan C. Piedmont-Palladi-

Key Words: Architecture, Design, Education, Liberal Arts, Belonging

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“Only if we are capable of dwelling, only then we can build”
Martin Heidegger



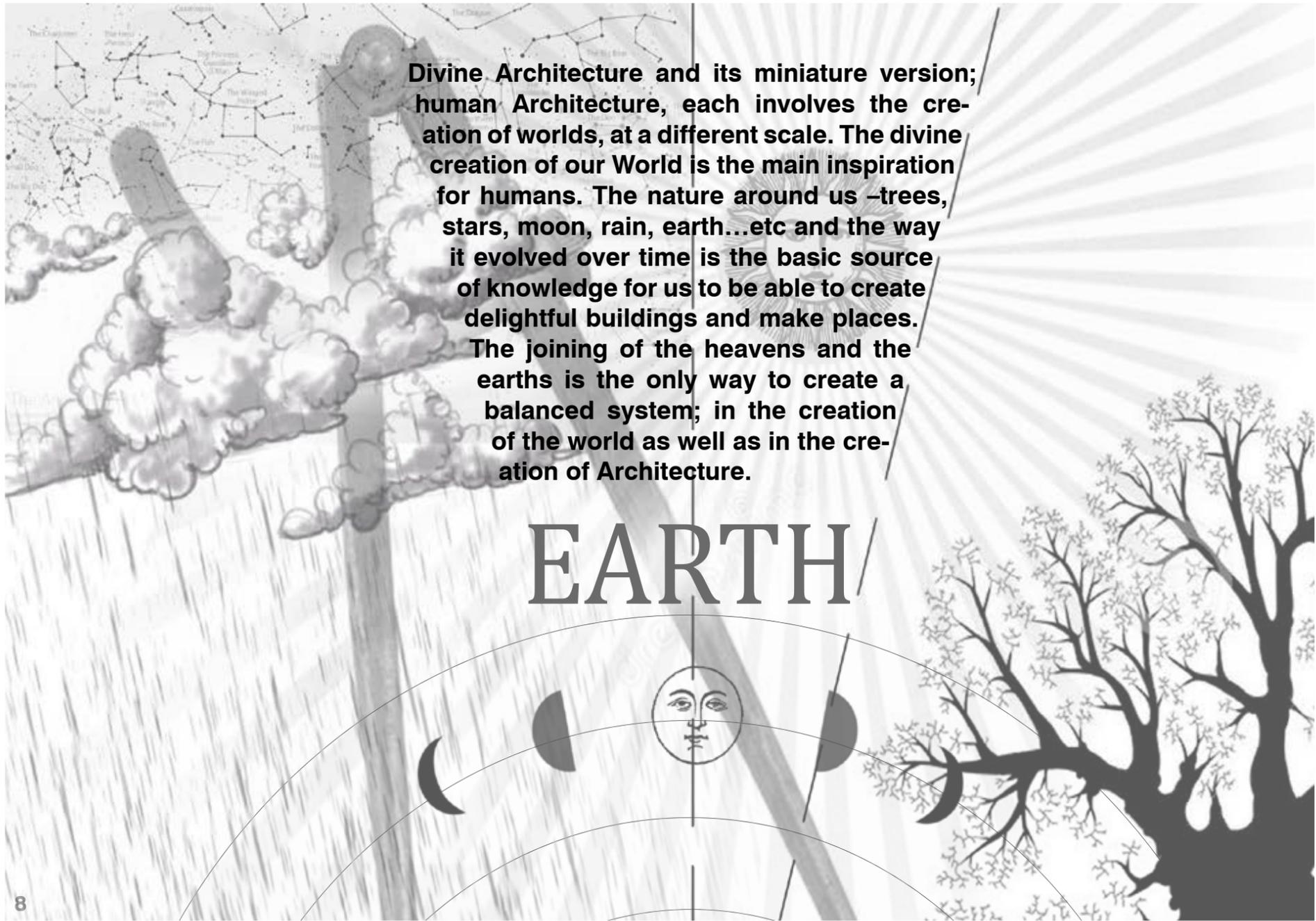
Abstract

No, she is not my mom, not my aunt, we are not family. Yes, we do look alike, we do live in the same neighborhood, we smell the same coffee beans each morning, and we share the same zip code. The only difference between us is I do have an actual address here, she does not. Yes, she must have lived here much longer than me, she has a history in this town, a lot of the people would recognize her smiling spirit right away, yet she only occupies a corner in a street near a coffee shop most of the year. Everyone knows that space is hers, except the legal papers.

Where are you from? The question may seem so simple, but regardless of how many times I am asked the answer has never been so easy for me each time I am asked, and I am asked very often. Belonging, identity, countries, tribes, bloodlines and borders are things that confuse me a lot, and for that I decided to do my thesis about them, trying to find an answer to a simple question, in a very complicated universe.

I chose to study these matters through a transitional program, in a transforming neighborhood and for users who are in their most confused age; an international boarding school in Dupont circle.





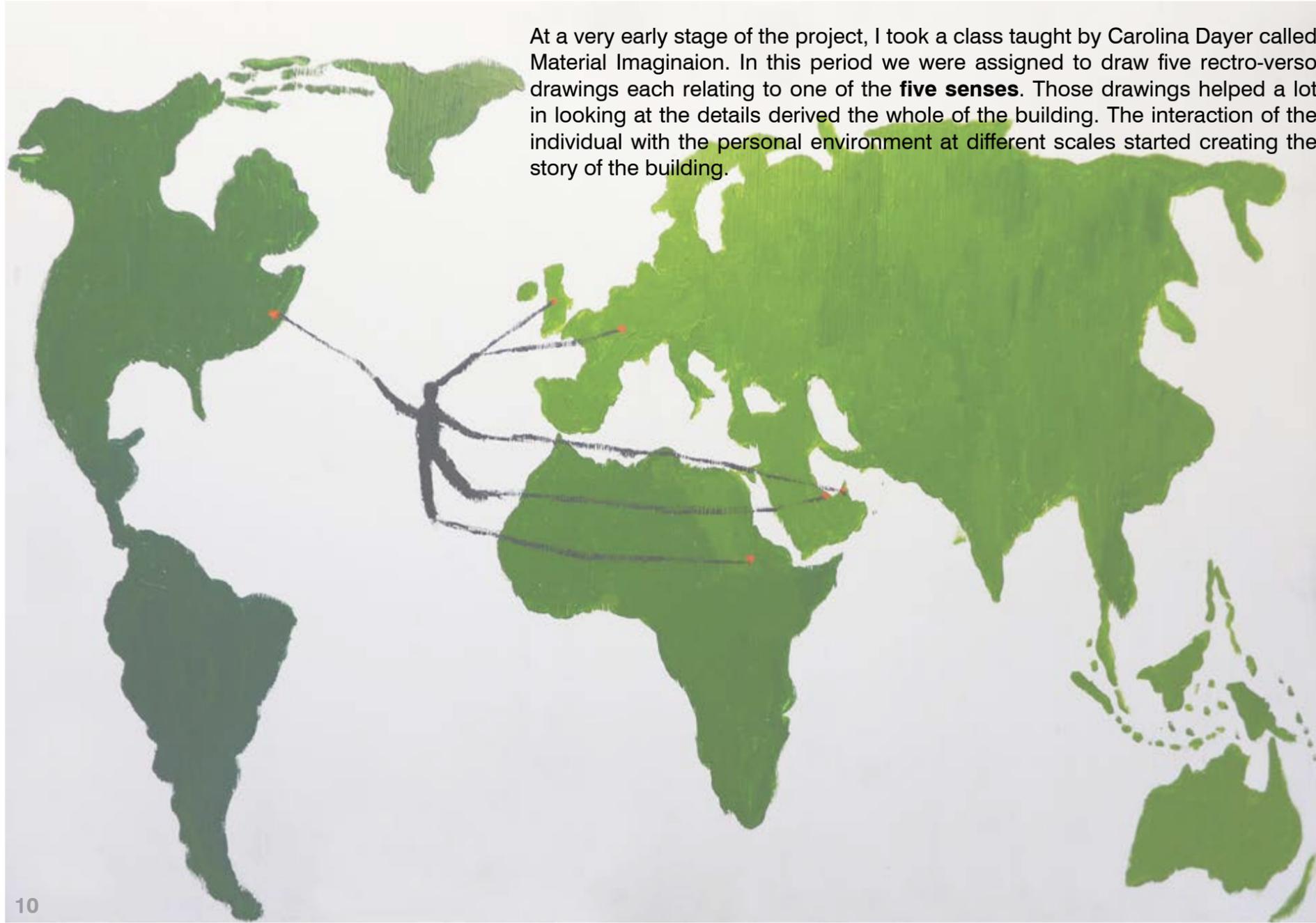
Divine Architecture and its miniature version; human Architecture, each involves the creation of worlds, at a different scale. The divine creation of our World is the main inspiration for humans. The nature around us –trees, stars, moon, rain, earth...etc and the way it evolved over time is the basic source of knowledge for us to be able to create delightful buildings and make places. The joining of the heavens and the earths is the only way to create a balanced system; in the creation of the world as well as in the creation of Architecture.

EARTH



Material Imagination Drawings

At a very early stage of the project, I took a class taught by Carolina Dayer called Material Imagination. In this period we were assigned to draw five retro-verso drawings each relating to one of the **five senses**. Those drawings helped a lot in looking at the details derived the whole of the building. The interaction of the individual with the personal environment at different scales started creating the story of the building.

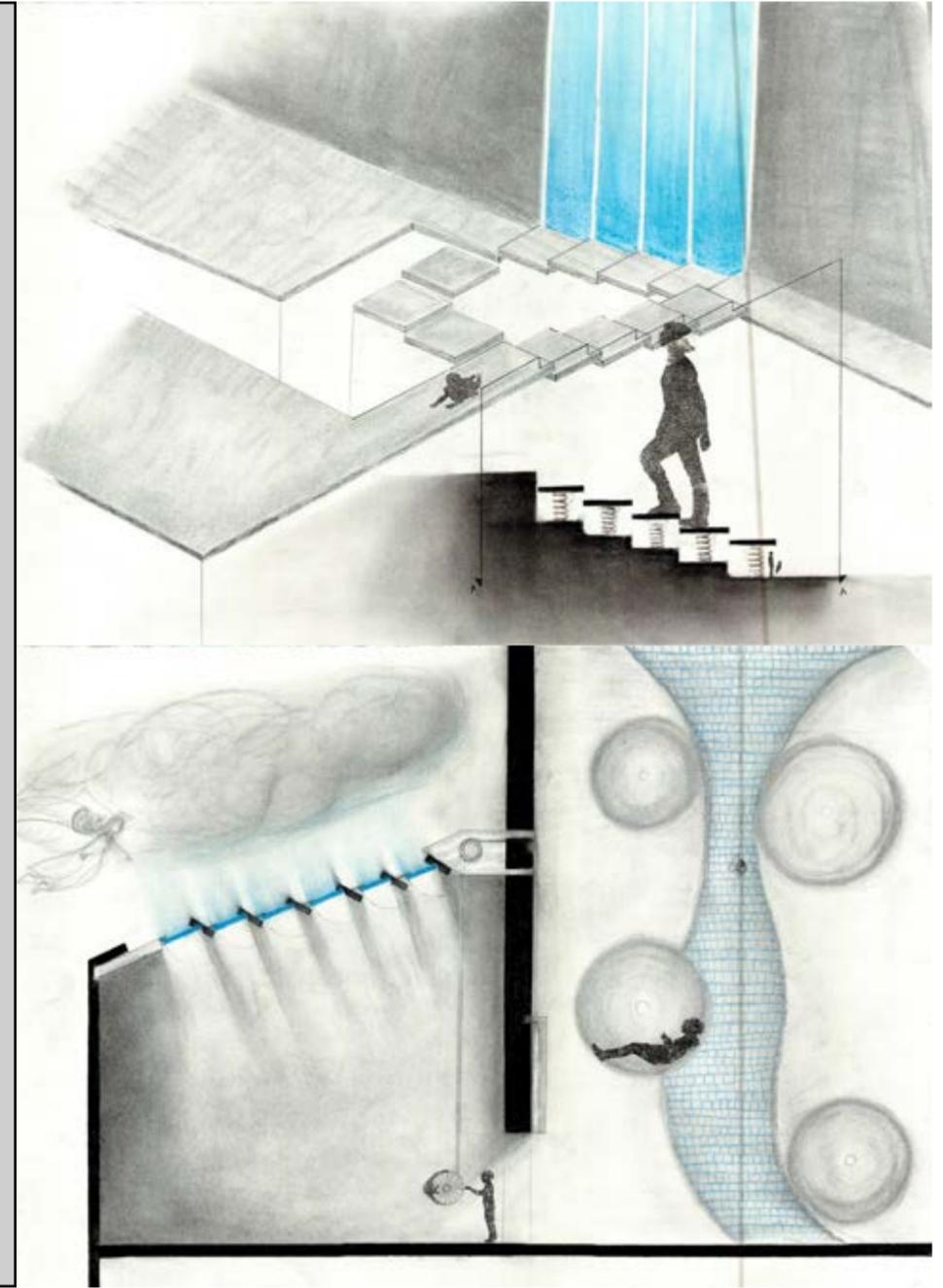


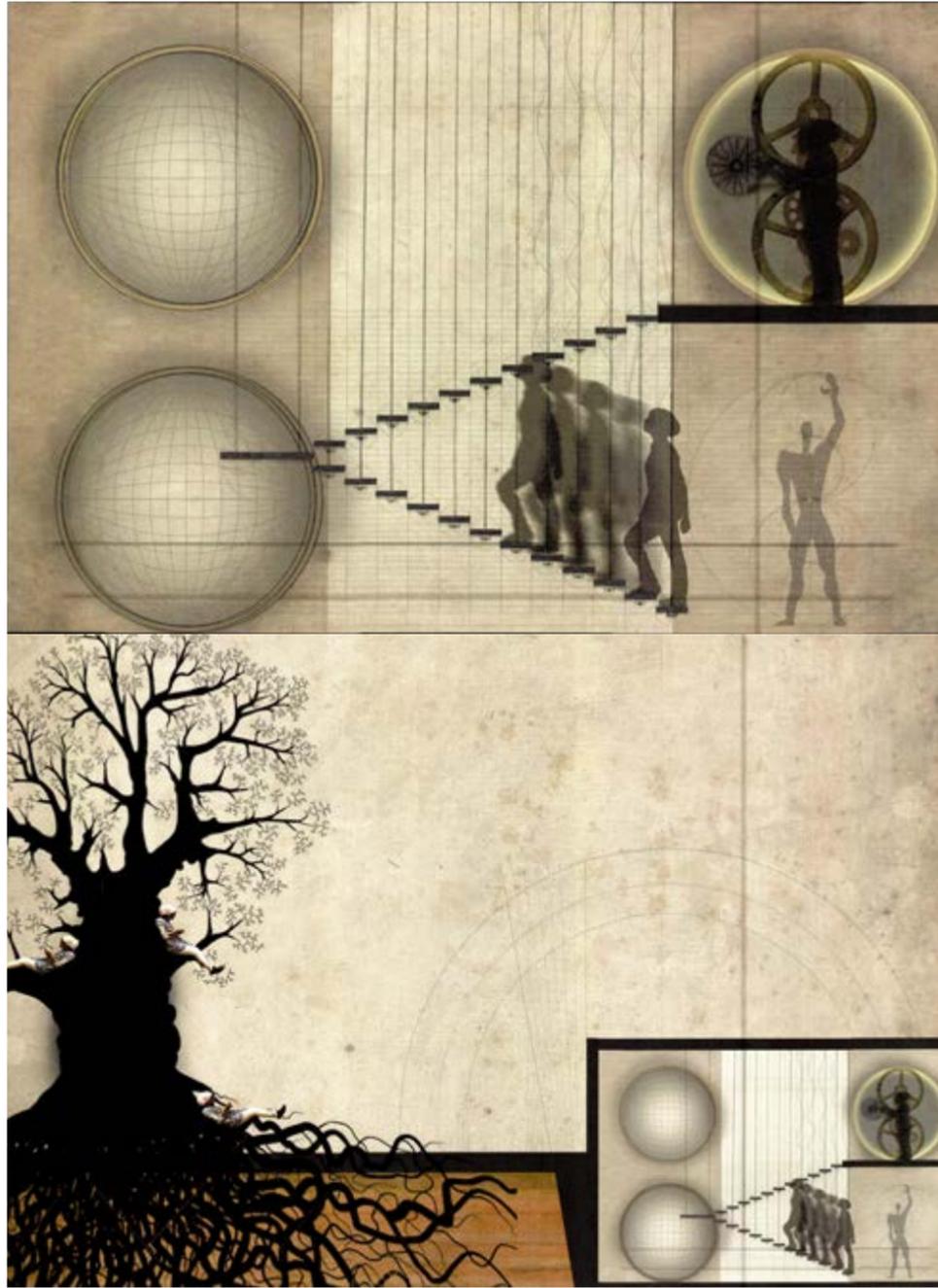
See

It is a vast room, she could tell, by the echo of their steps while entering. They wrapped her eyes up telling her they are going to surprise her. They think she was naïve, but she knows it all. She made the call in the first place. They were taking her away from her troubled parents. What she did not know though, is where they are going to place her.

She is scared, but she has nothing to lose. They take her further in, she imagines it to be an old abandoned building, she can tell from the dust smell coming from the thick carpet under her feet, she can tell from the thick air irritating her lungs already. The door in which she entered is being closed; she can hear the sounds of it squeaking in pain, she could tell that the old metal hasn't been oiled for a while. Now the door is totally shut; she can't hear the sounds of the birds outside any more.

They take her up some stairs. They keep on going up, or maybe down; she is so out of balance she cannot tell anymore. But she only knows one thing now; that they are taking her to nowhere.





Hear

The name was Zack. He has OCD.

Thee season was spring. It was that time of the year where he allows air from the outside world to roam freely in and out of his sunken studio. For three days, he opens his tightly sealed circular windows. He frees himself from his cleanness obsession, or at least he attempts to.

In order to do that, Zack forced himself to leave the place; to go out and reconnect with nature. On his descent to the outer world, he couldn't help but pay attention to each detail of his free hanging stairs. How each connection sits on the center of the riser, splitting it in half. How each wire vibrates in a perfect rhythm according to the way he places his disturbed feet on the steps. How the concrete ceiling receives those vibes with open hands and gently sends them back with less frequency for the bare metallic steps to end its short life time.

He goes up and down helplessly to make sure he actually opened the windows. On the third rise he decided that it is time to go out. Reaching the landing, he starts rolling the three round locks of his circular door. The suction sound that came from parting between the rubber of the door and the walls gave him goosebumps and disturbed him a bit, but eventually he pushed himself out of his silent walls, and into a vibrant humming world.

Smell

"a degree of dimness, absolute cleanliness, and quiet so complete one can hear the hum of a mosquito" Those were the prerequisites of reaching a 'psychological delight' that Salah was reading about on his –what seemed to be- an endless flight to Washington DC.

He opened his suitcase to unpack and settle down in what is going to be his home for the next year. A cocktail of emotions as strong as the mixture of scents that emerged from his bag struck him; his favorite cooking spices that are freshly ground by his mom, the soothing scent of musk that came out of her scarf whenever she gave him his daily goodbye hugs. The dour smell of the dried hibiscus leaves that he can't wait to prepare so he could relax and fix his mood. He was wondering if the new batch of students would enjoy his cooking as skills as the new chef in residence.

After settling in at his room, he picked up his towels and the local traditional sandal soap that his wife made sure he takes a bunch of and headed to the regular first destination; the bathroom. The journey to his much-needed hot shower reminded him of his childhood summers at his grandpa's place. In the old country house he had to leave the main house and head to the bathroom which was located on the opposite side of the yard.

Walking down the corridor, he could already sense the slight humidity of the steam coming from the end of it. Reaching the wide wooden sliding door, he noticed that there isn't any lock on it. He went through and the first thing he saw was his dim reflection on the glass wall that separates him from the narrow bamboo garden. He was informed upon his arrival that he will be sharing this bathroom with three other people. He already noticed that the door to the toilet was closed indicating that someone is using it. So he started to place his soups and towels on the shelves beside the sink. He then head to the wooden shower booth. Letting the water flow, layers of old scents emerged from the wooden floor recalling all the different soups that have been used on it throughout the years.

A few seconds later, the water reached the perfect temperature; he let his body totally be under the water's control. His mind now was totally free, his muscles ultimately relaxed, his vision blurred by the steam of his own skin. Only then he realized that he has reaches his own psychological delight.





Touch

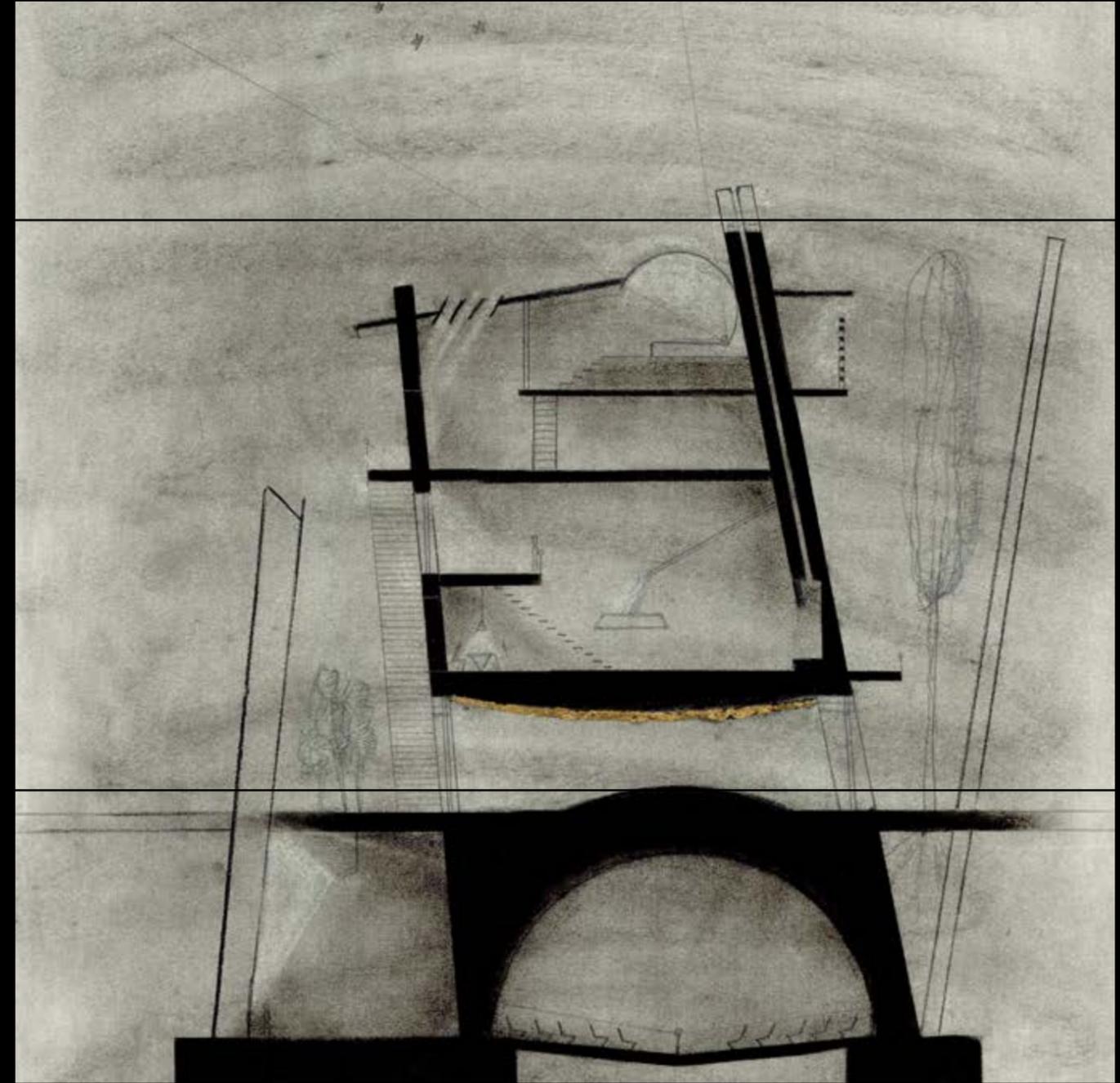
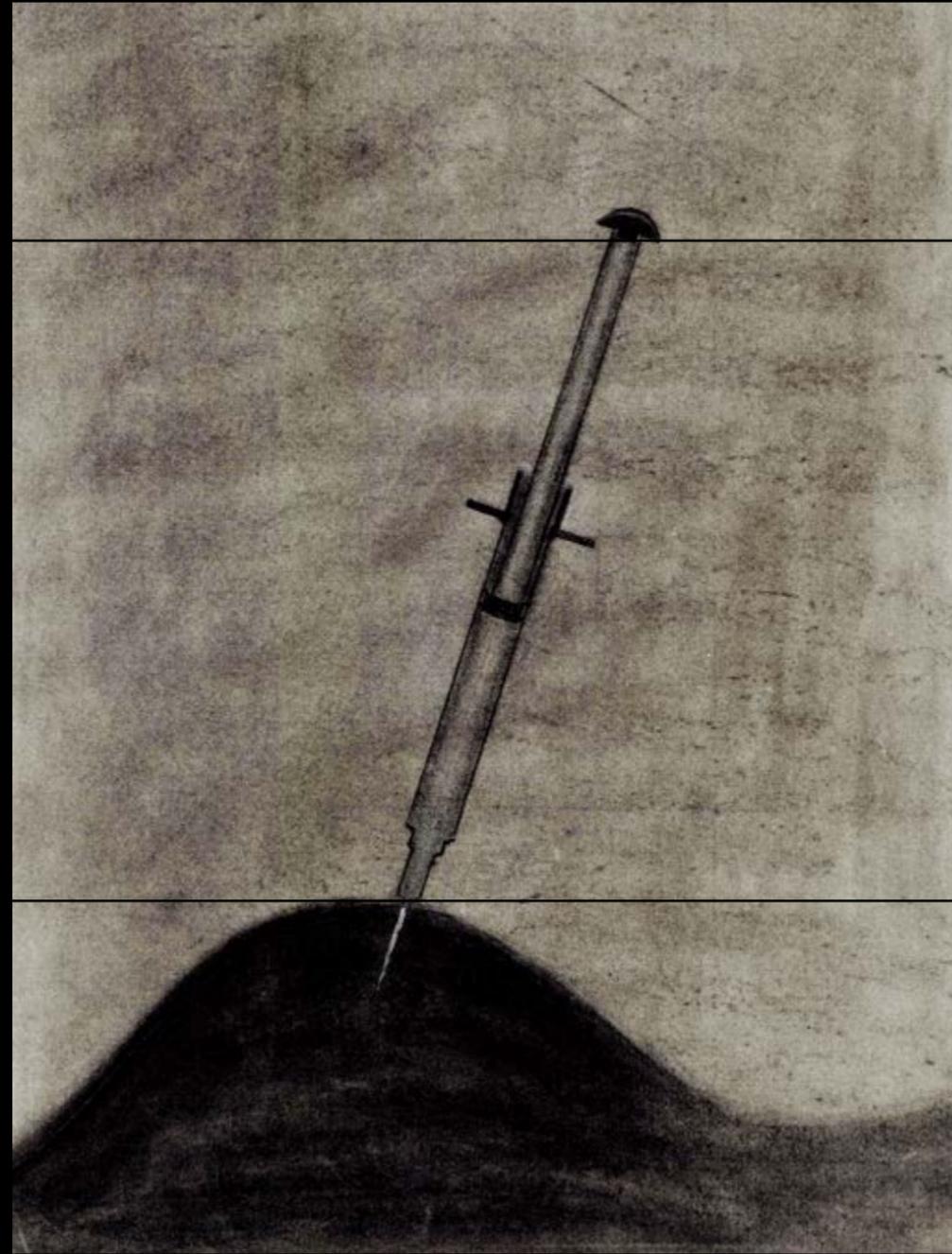
4:30 m. Monday. September 2015

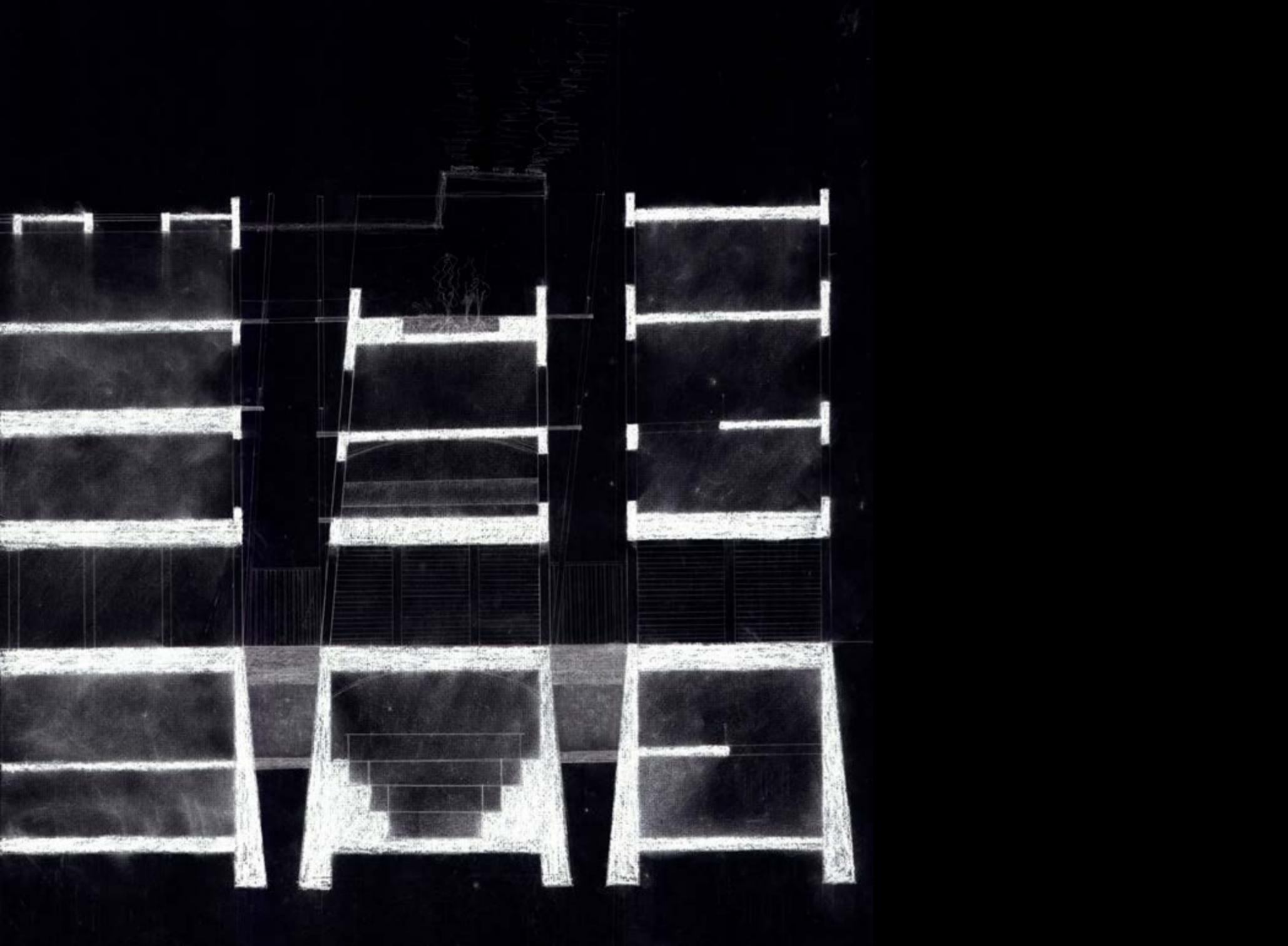
A furious old school alarm went on next to George's bed. He had been using this same alarm for the past 27 years but it still freaked him out every single morning. He put it off lazily, and as every morning, he had the urge to cry; 'why do I have to wake up this early!'. But that day the feeling didn't last long. It was a big day for him; he was going to start a new project, one of the biggest he managed in his career life. It was the day they start digging the deepest hole in the world, or at least attempt to.

He reached the construction site. A lot of memories rushed into his head instantly. He remembered the very early beginning of his first job, when he was assigned to demolish what was left of the burned church on this very same site. Ironically, he was now assigned to build a whole new building above its ashes. This construction was different though; they were supposed to dig a very deep hole in the ground, and since the earth on that site is muddy, they were supposed to cook clay bricks on site using the extractions coming from the hole. With those bricks, his team would be simultaneously building a new boarding school structure.

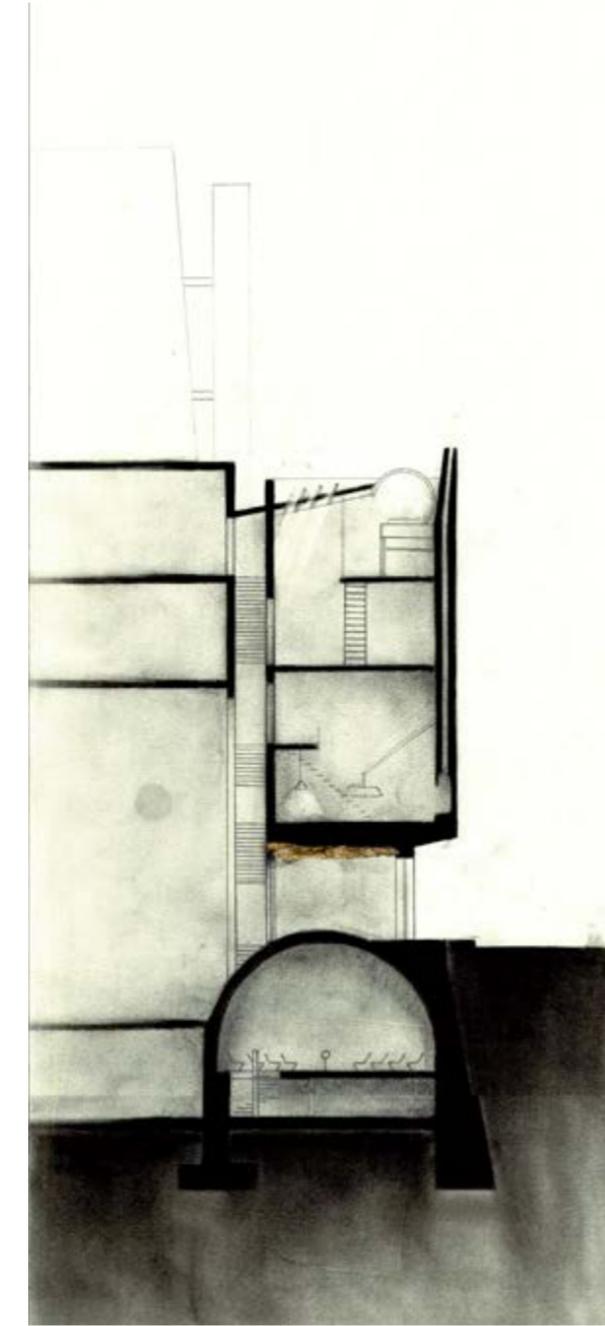
He was dragged back to reality by the vibration of a huge truck coming their way, announcing the arrival of what had been waiting for all morning; the ultra new digging machine. When it was finally visible to him, his eyes grew wider and his hands automatically raised to his head, and he was speechless. This was definitely a beginning of a totally new phase of construction.

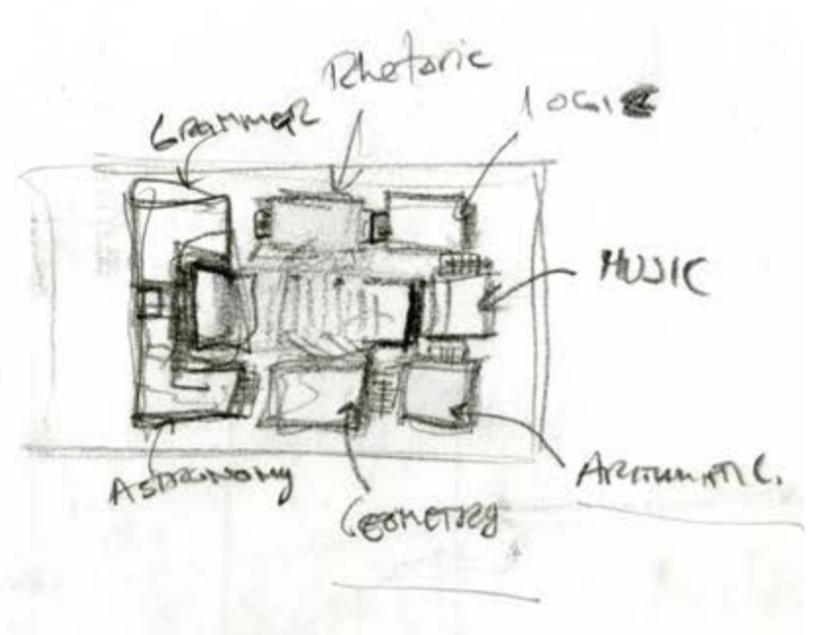
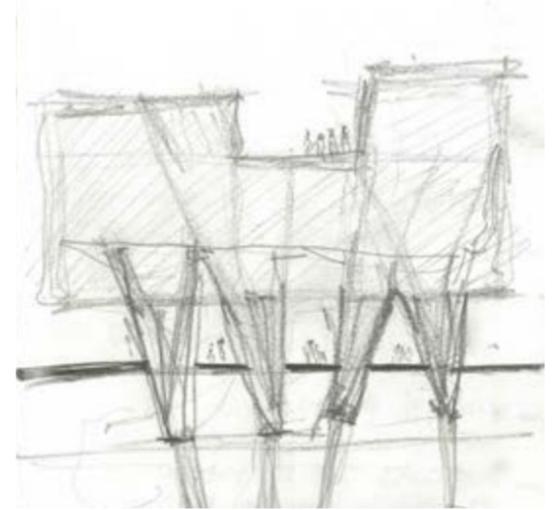
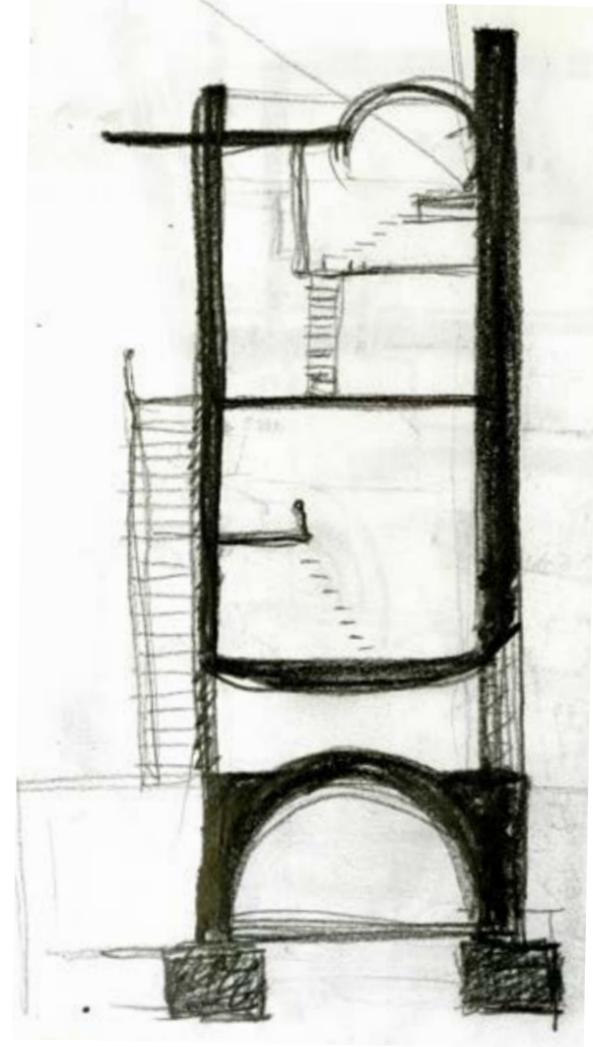
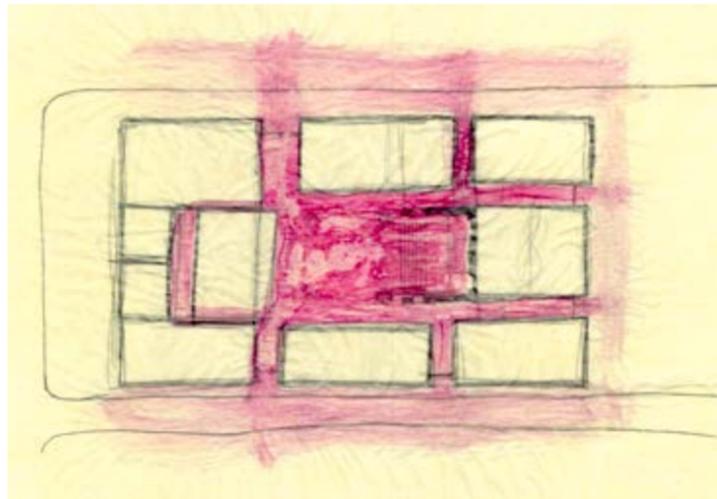
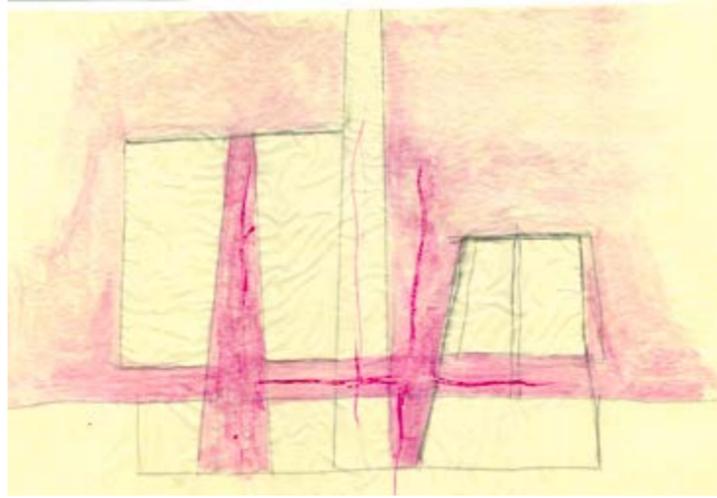
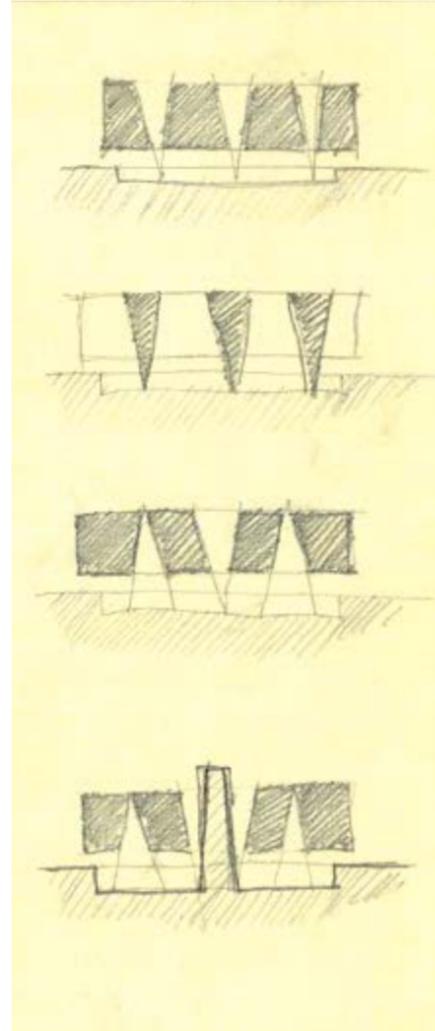






Each of the buildings has its own character, motivated by the art which it is hosting. The below inspiring the above. The Astronomy building, which is one of the first buildings developed even before the layout was set, the activities held there were the main force behind the design outcome. A mini planetarium is the main aspect of that building, stated two grades below ground level. Mirroring it on the top are circular mini skylights on the highest floor, right above each of the hanging sleeping spaces. For the Rhetoric building, the main learning space is a tight theater where there is a solo or small group speaker spot at the focus point. The roof of that building steps in a similar manner as the theater creating an interactive source of light. The living space is organized in such a manner that would allow debate sessions or poetry gatherings.





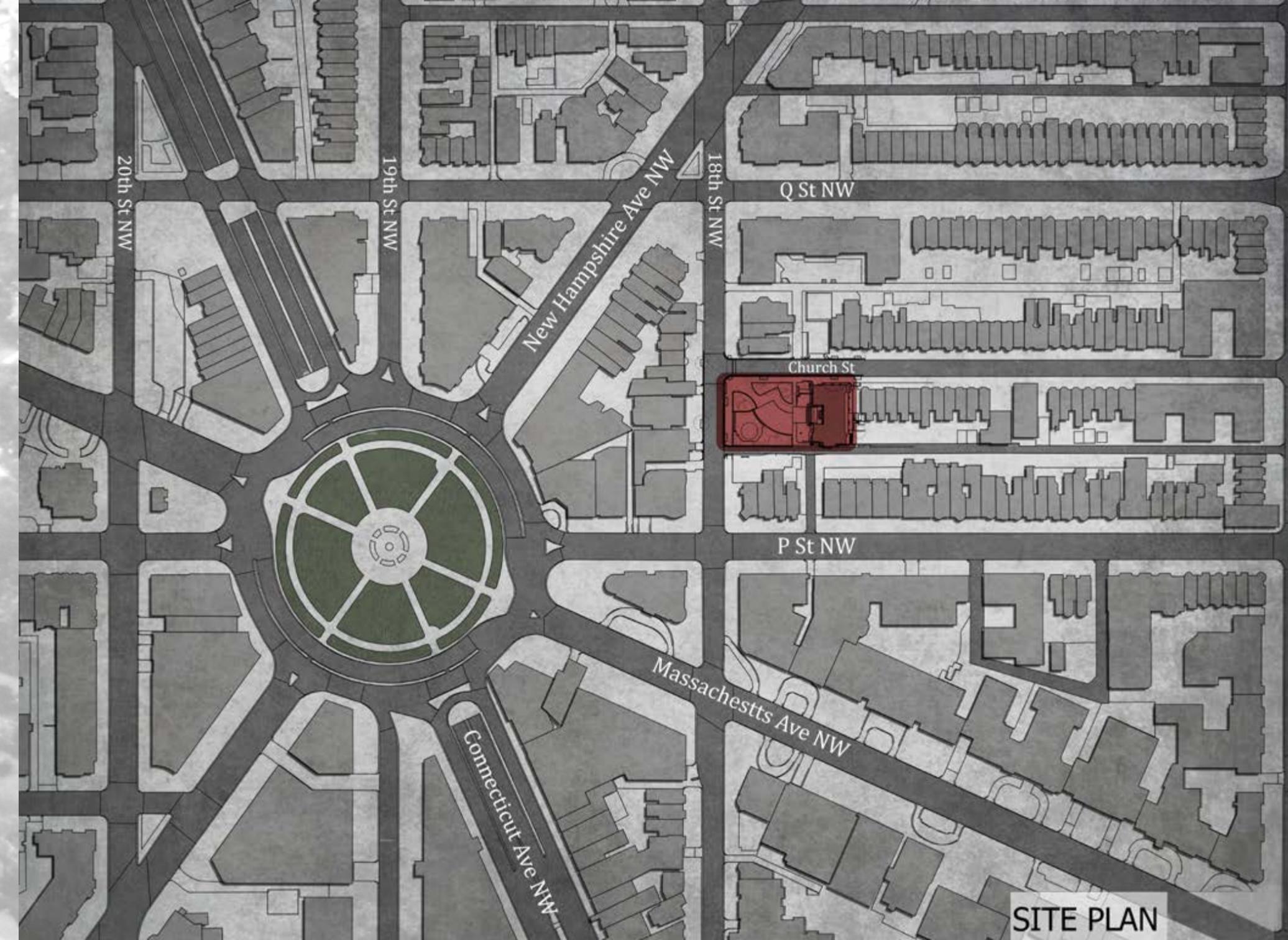
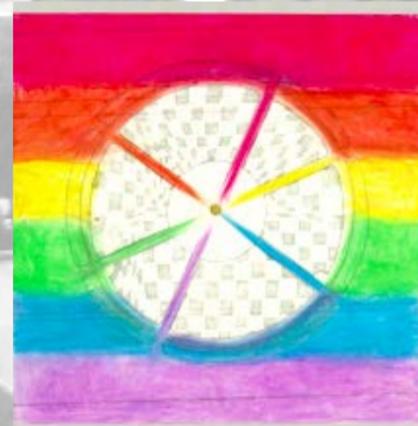
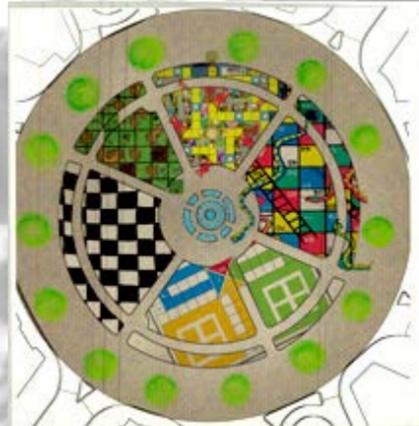
The Site

Unlike the late coming spring we have this year, it was a sunny day during early spring 2013, on one of our explorations of Democratic Spaces in Washington DC (A class held by Susan Palladino). We were sitting on a big circle east of the fountain listening and discussing the history of Dupont Circle. Post the gathering we were asked to explore the area on our own and find the limits and special characteristics of the Dupont Circle Neighborhood. That day, I did not step off the circle, instead I went directly to what caught my attention throughout the time I was there; the Chess Tables located at one of the edges of the circle.

It was lunch time by then. Although each part of the traffic circles at that time had a special character, the relationships of total strangers with each other in that specific area of the circle fascinated me. There was a homeless guy who is stationed at one of the few chess tables, opposite to him was a well suited man who seems to be in a short break -from the way he rests his foot on the stool rather than sitting-. I interrupted their timed game with a sign that I would love to sit and watch the game and they both nodded with approval while they are in intense thinking of heir next critical move, and so I sat, and that was the beginning of my ongoing relationship with Dupont Circle.

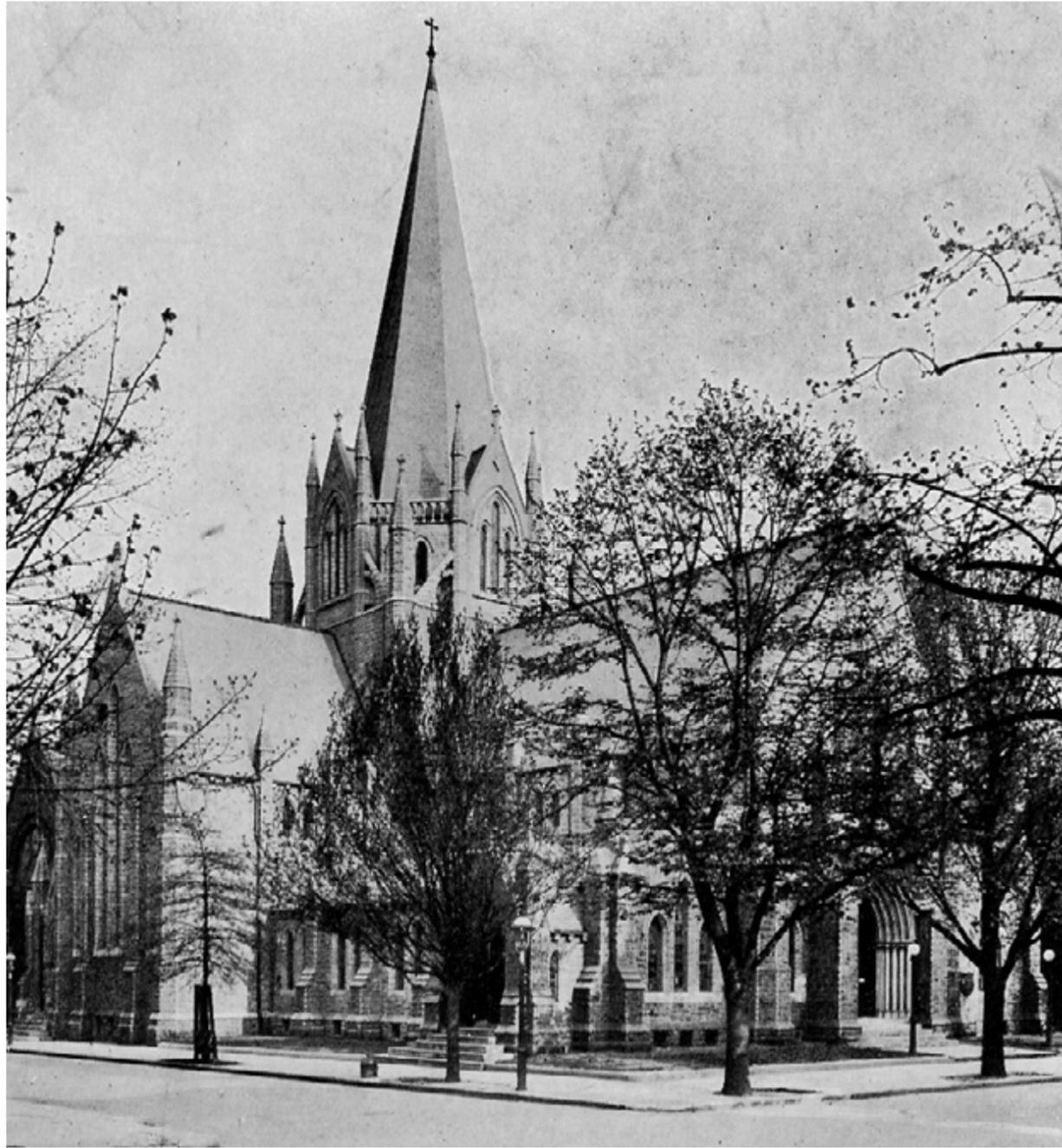
The following fall I got interested in public/private spaces; the topic deals mostly with public spaces that are used by the same people over a long period of time and unofficially they hold ownership to it, it becomes their private space. Dupont Circle made a perfect case study for my photography project. The diversity of race, thoughts, and financial status in the circle could not get any better. There are a lot of tourists and passersby though out the day and night, but there are a good number of people who are very attached to the circle. They go there on a daily basis for long years, quite a few actually live there.

I got curious about the different stories of all these different people and what brings them all down to the same place regardless of all the different backgrounds they have. So I decided to spend more time there, talk to the people, and know their stories, as the sum of their stories, will make the story of Dupont.



Starting my thesis the following semester, my topic being confusion in belonging, I could not think of a site more confused than Dupont. I started to get out of the perimeter of the traffic circle, looking at Dupont as a neighborhood. I found that its whole is as diverse as its core. Hosting the majority of the embassies of Washington DC makes it one of the most diverse neighborhoods in the district. The land of each of the embassies belong to the country which it represents, all gathered in American land. It's also a hub for many think tanks and high societies and clubs, as much as it being a home for many homeless people.





St. Thomas' Parish, ca. 1910s

Being a very dense part of the city, there were only very few vacant sites in close proximity to Dupont Circle. The one I landed belonged to the St. Thomas Parish, an Episcopal church that had suffered a big fire in 1970. Since then the church has lost most of its gothic structure, and with it a lot of its members. Only the high altar and the Parish Hall had been spared. The rest of the site was converted into a community park. In my project, I chose to celebrate the old





Program

Looking deeper at the topic of belonging -or confusion in belonging-, I got interested in transitional living places. Places where you would reside for a certain amount of time and feel homely -or not homely- in but at the same time it's only temporary. The specific program didn't matter much at the beginning, rather more the aspects and activities of the built -or unbuilt- environment that could affect one's belonging to the space. Orphanages, hotels, guesthouses, retreats are a few programs that I explored at the beginning of my thesis, but I finally landed on "Boarding School for the Liberal Arts" program. During the years spent at the WAAC, I realized that learning and living are not separate, their interaction enhances the experience of the student. The school would be a specialized pre-college one. The main idea of the school is that it would adopt the classical schooling system used in the Roman Empire era where they taught the seven liberal arts.

The Liberal arts are divided into two sections; the Trivium -the three roads- which included of Grammar, Rhetoric and Logic, and the Quadrivium -The four roads- which included Arithmetic, Geometry, Music and Astronomy.

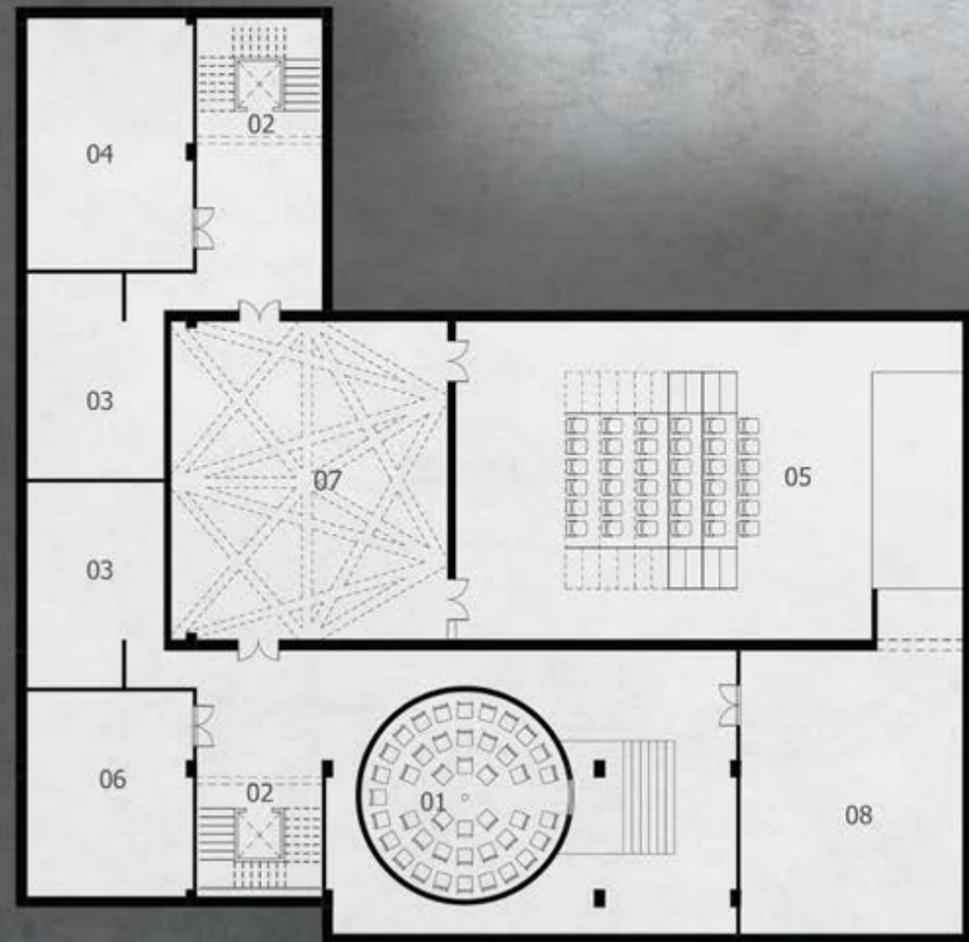
The order of the sciences is a very important factor of the educational system. For so it has a big influence on the layout of the boarding school. Richard Marcus explains the significance of the order in his article 'A Stroll through The Seven Liberal Arts and Sciences' as follows:

"As infants, we are unable to speak. We must learn words to describe everything. Words organize our thoughts. Language is essential for learning. As we progress up the winding stairs, we learn to speak with eloquence and grace, which is rhetoric. We learn to use logic to make our arguments persuasive and true.

We advance up the lessons to higher levels of arithmetic, geometry, and music. These require abstract thinking and greater levels of concentration. As we mature in life, we gain perspective and wisdom as we enjoy the glorious works of creation, the stars and planets, astronomy, and the Divine."

In this thesis project, the boarding school is made of seven buildings, each representing one of the seven liberal arts, starting from Grammar as the main entrance to the school and ending with Astronomy representing the end of the cycle. All are revolving around the heart of the building; a tower library which holds the source of all the knowledge, books. Like in the ancient educational system, the library in this building represents the core of the arts and sciences; Philosophy. In the painting of the Seven Liberal arts -drawn by Herrad of Landsberg (1180 AD)- the writing on the upper right describes the central part of the drawing which represents Lady Philosophy: "Seven fountains of wisdom flow from Philosophy which are called the seven liberal arts. The Holy Spirit is the inventor of the seven liberal arts, which are: Grammar, Rhetoric, Dialectic, Music, Arithmetic, Geometry, Astronomy."

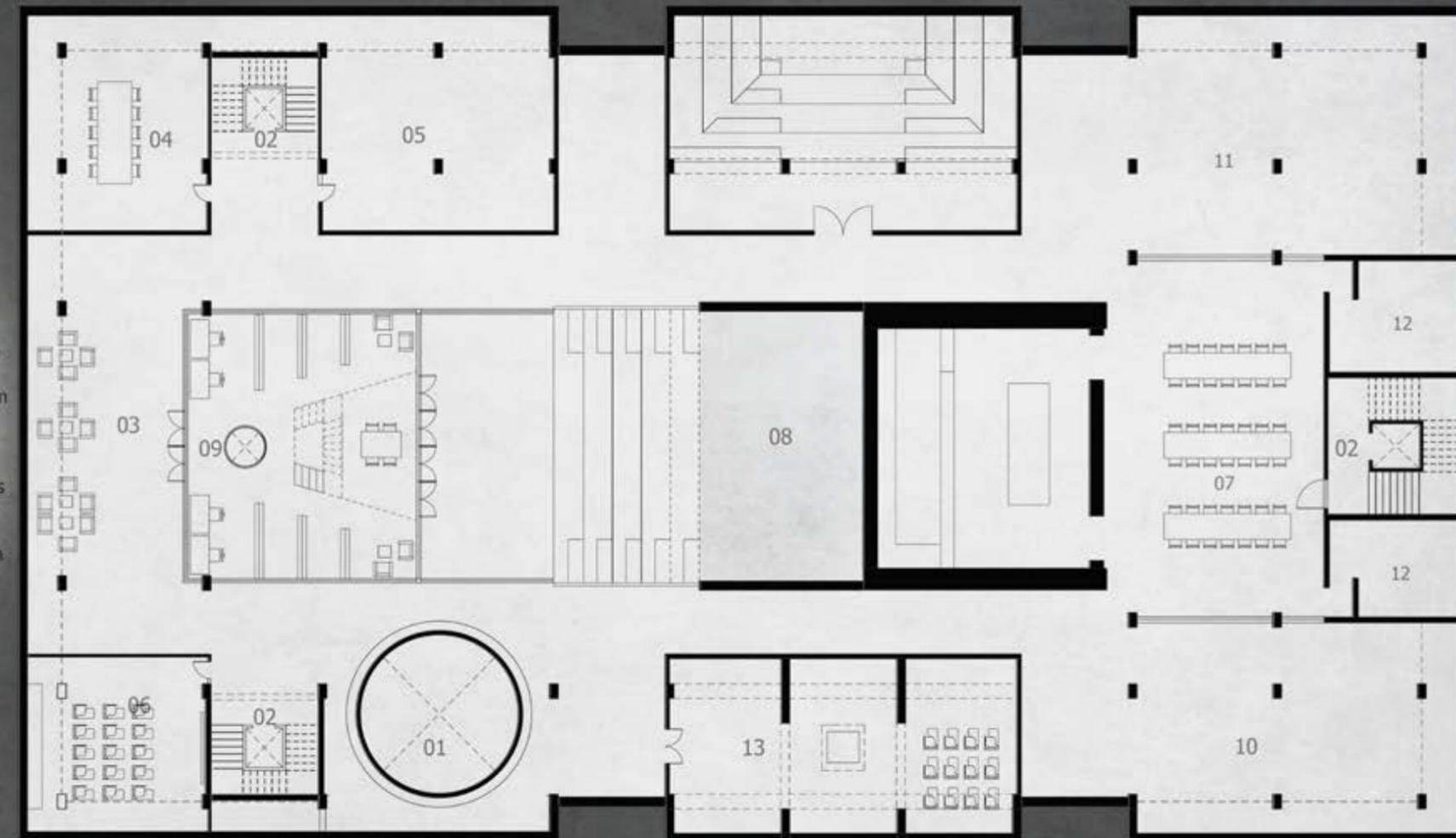
The buildings are organized at the perimeter of the site, creating a central courtyard facing the old preserved Altar wall, which is the main gathering space of the school. Within the central courtyard -and occupying most of it- are series of wide steps that leads to the underground, and the main entrance to the library. In the old Gothic church, this area was the main prayer hall. It had a high magnificent ceiling held up with seven pairs of circular columns. The Fire against the water that was used for baptism in the church, the fall of the church against the rising columns inspired the creation of a void where the solid used to be, the digging rather than the rising, the ashes returning where it came originally from; the ground.



- legend
- 01 planitarium
 - 02 vertical circ core
 - 03 w/c
 - 04 mechanical room
 - 05 stage
 - 06 laundry room
 - 07 multipurpose room
 - 08 side of stage



PLAN | LEVEL -2

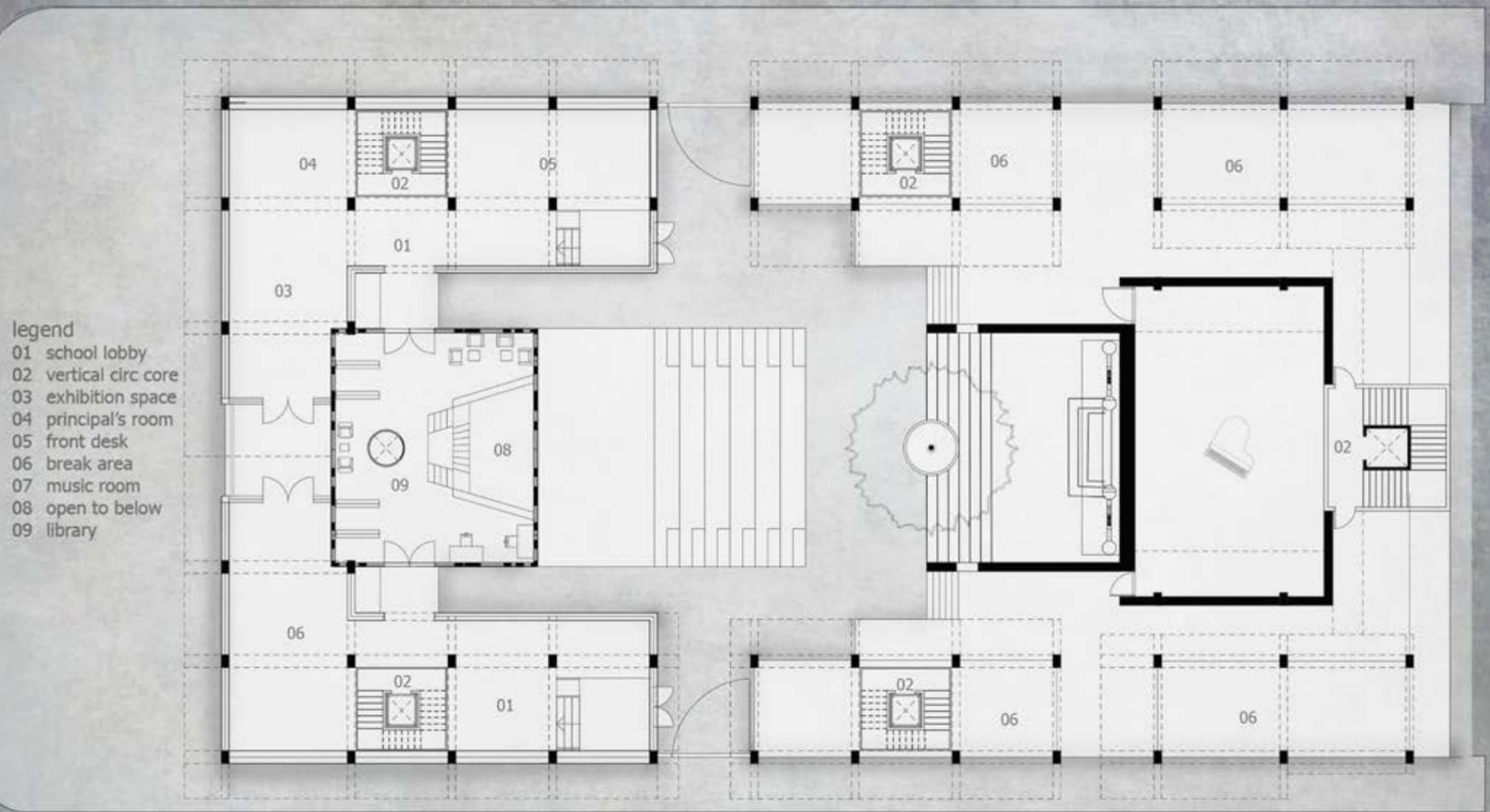


- legend
- 01 planitarium
 - 02 vertical circ core
 - 03 students lounge
 - 04 students conference
 - 05 grammer classroom
 - 06 astronomy classroom
 - 07 dining area
 - 08 open to below
 - 09 library
 - 10 arithmetic open class
 - 11 logic open class
 - 12 w/c
 - 13 gerometry classroom



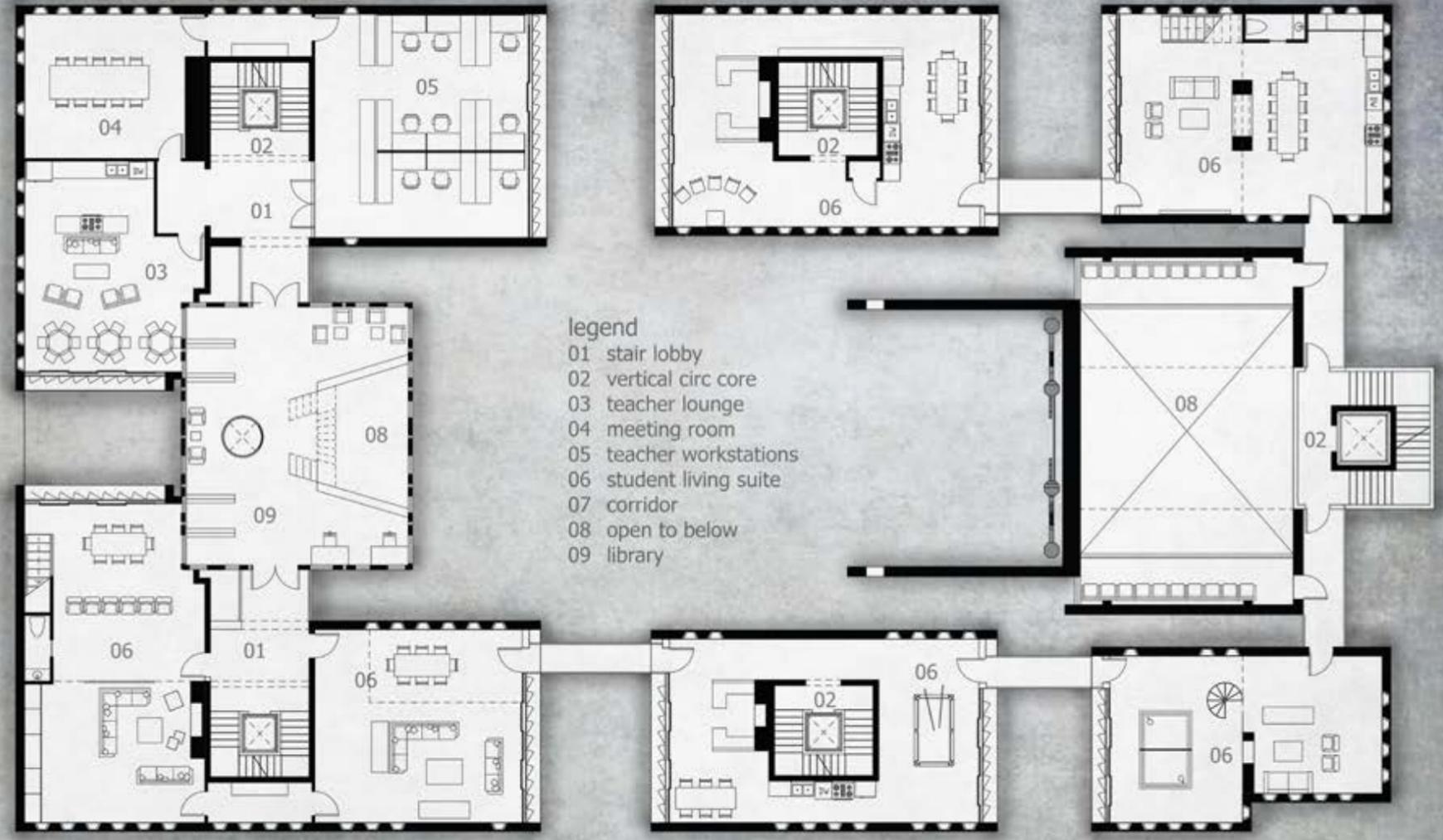
PLAN | LEVEL -1





- legend
- 01 school lobby
 - 02 vertical circ core
 - 03 exhibition space
 - 04 principal's room
 - 05 front desk
 - 06 break area
 - 07 music room
 - 08 open to below
 - 09 library

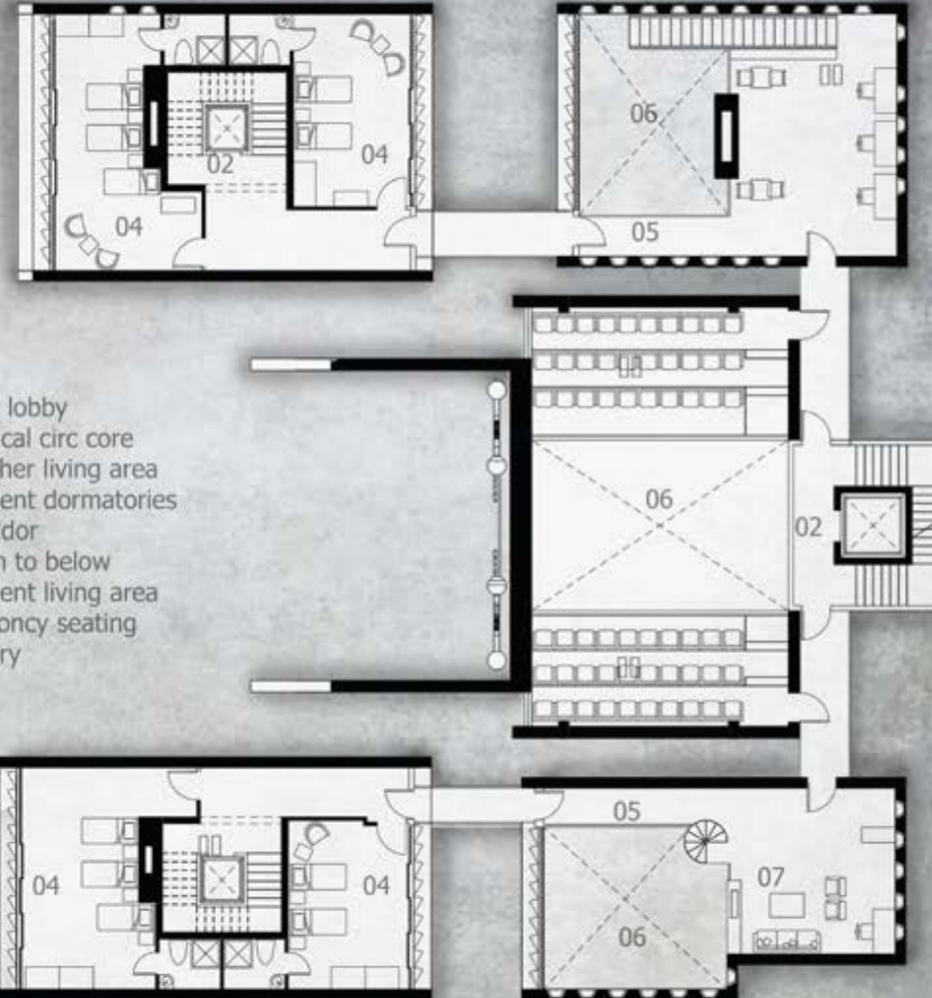
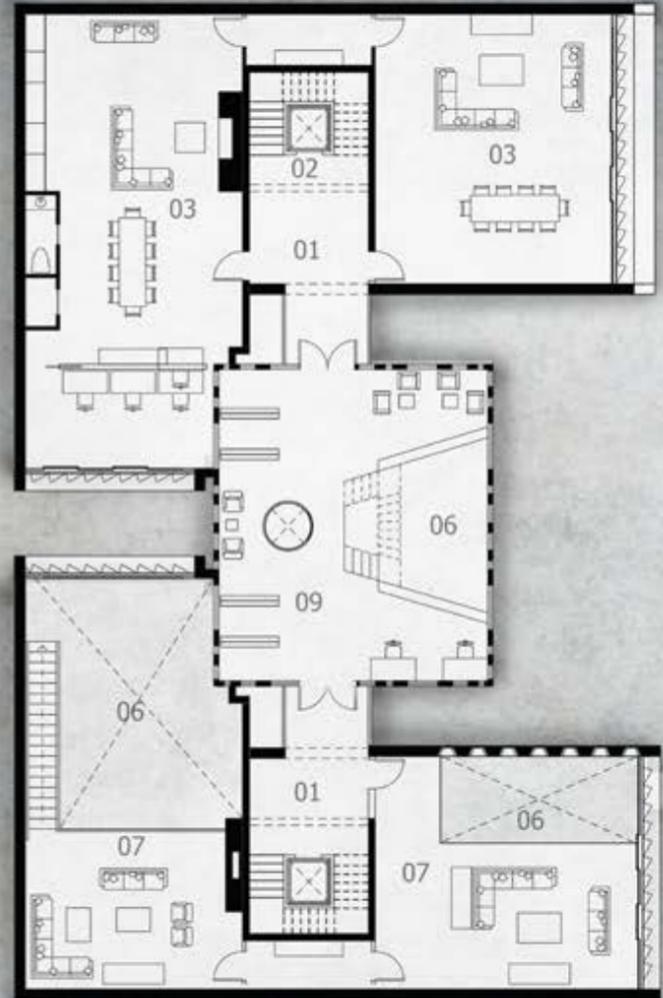
PLAN | LEVEL 1



- legend
- 01 stair lobby
 - 02 vertical circ core
 - 03 teacher lounge
 - 04 meeting room
 - 05 teacher workstations
 - 06 student living suite
 - 07 corridor
 - 08 open to below
 - 09 library

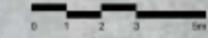
PLAN | LEVEL 2



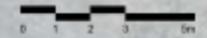


- legend
- 01 stair lobby
 - 02 vertical circ core
 - 03 teacher living area
 - 04 student dormitories
 - 05 corridor
 - 06 open to below
 - 07 student living area
 - 08 balcony seating
 - 09 library

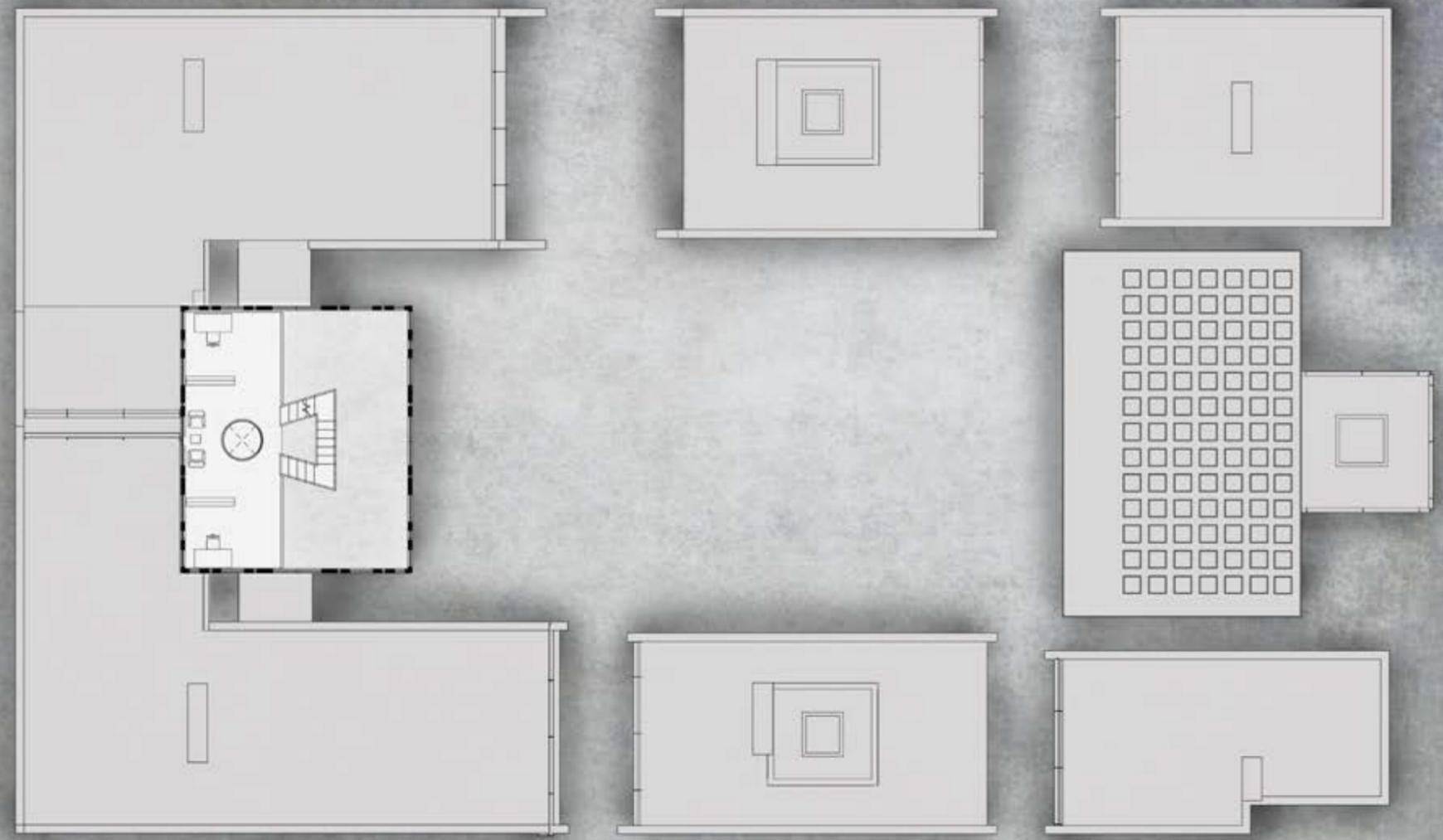
- legend
- 01 stair lobby
 - 02 vertical circ core
 - 03 teacher's terrace
 - 04 teacher living suite
 - 05 student terrace
 - 06 corridor
 - 07 student dormitory
 - 08 open to below
 - 09 library



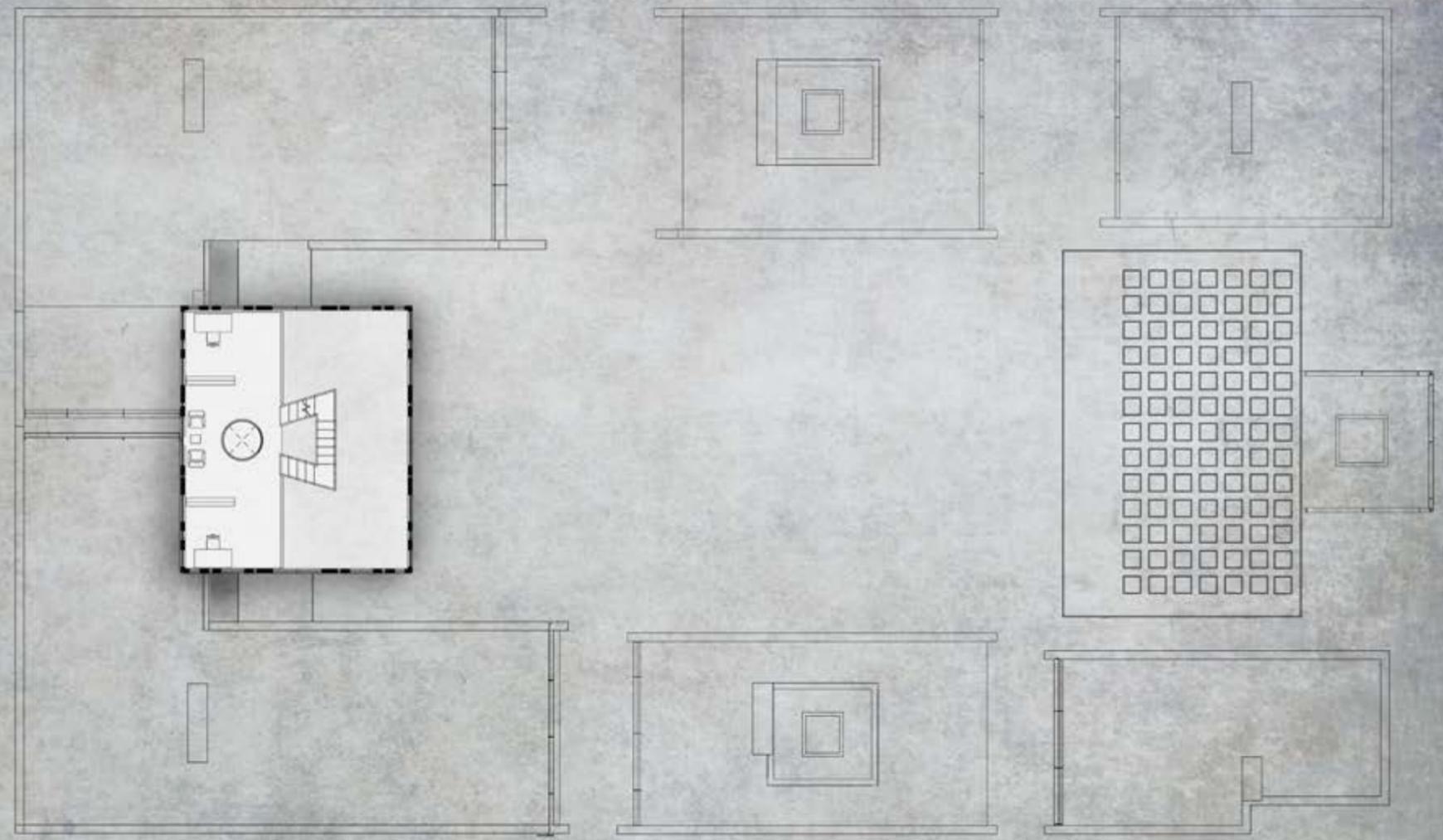
PLAN | LEVEL 3



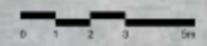
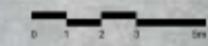
PLAN | LEVEL 4

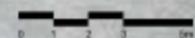
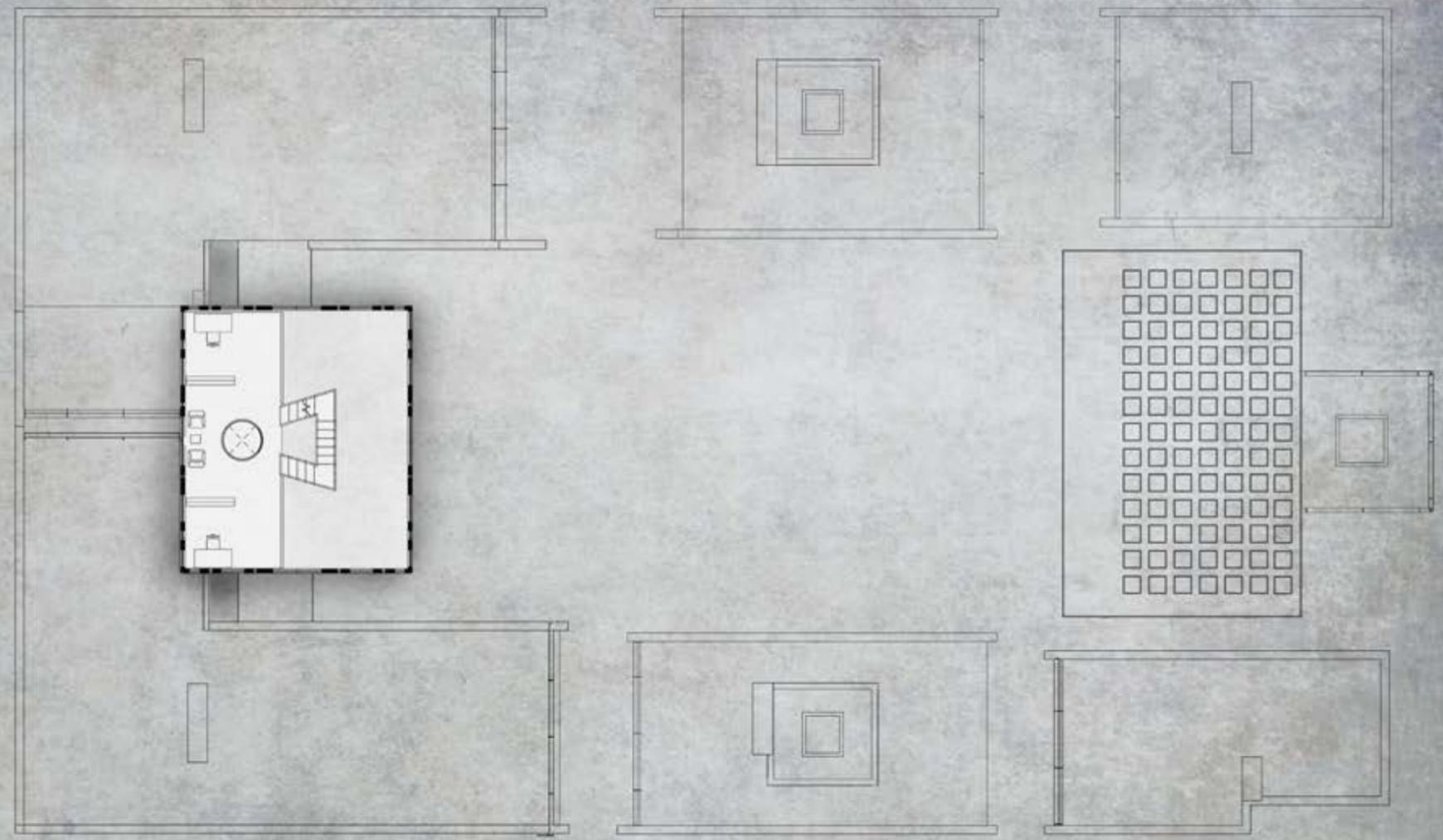


PLAN | LEVEL 5



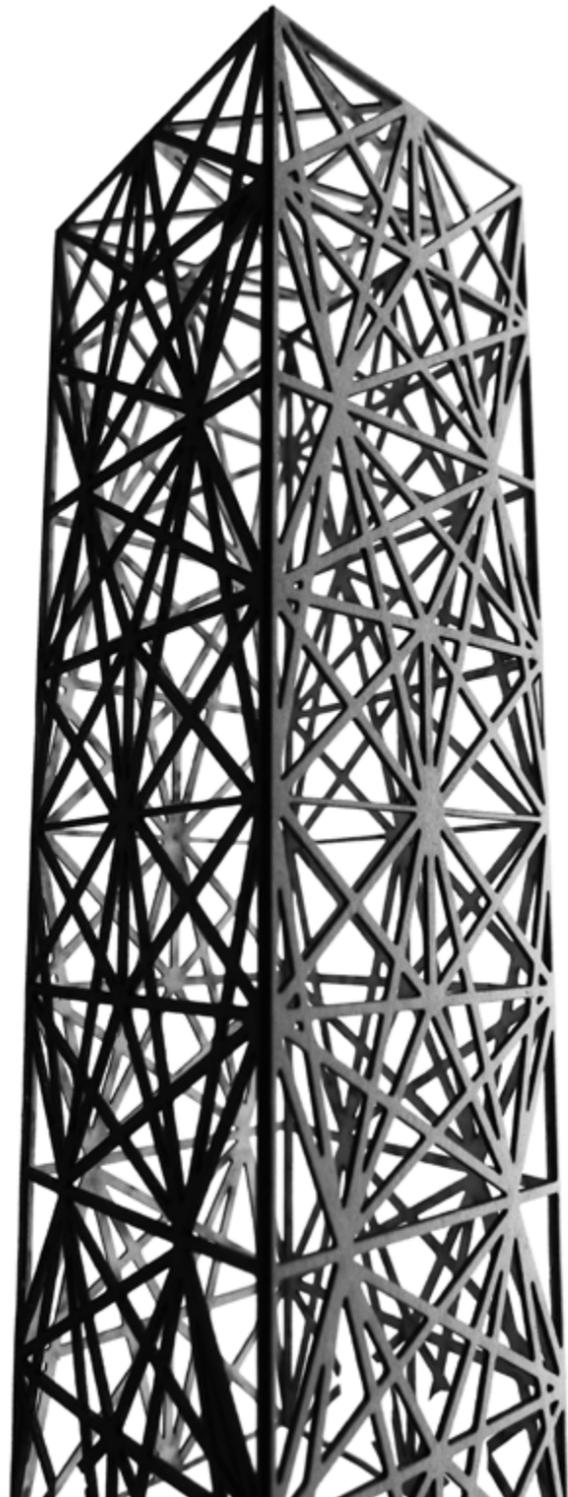
PLAN | LEVEL 6



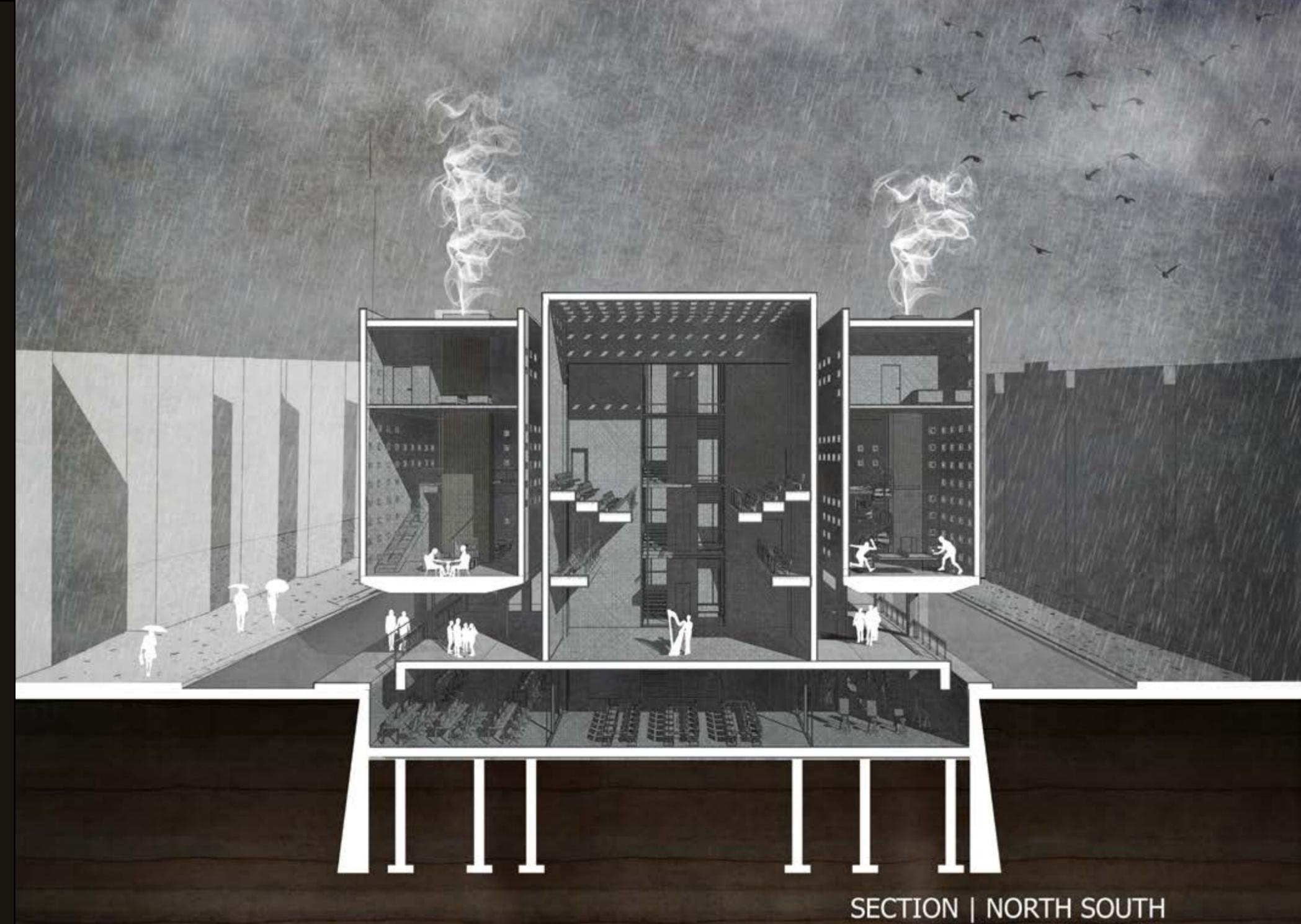


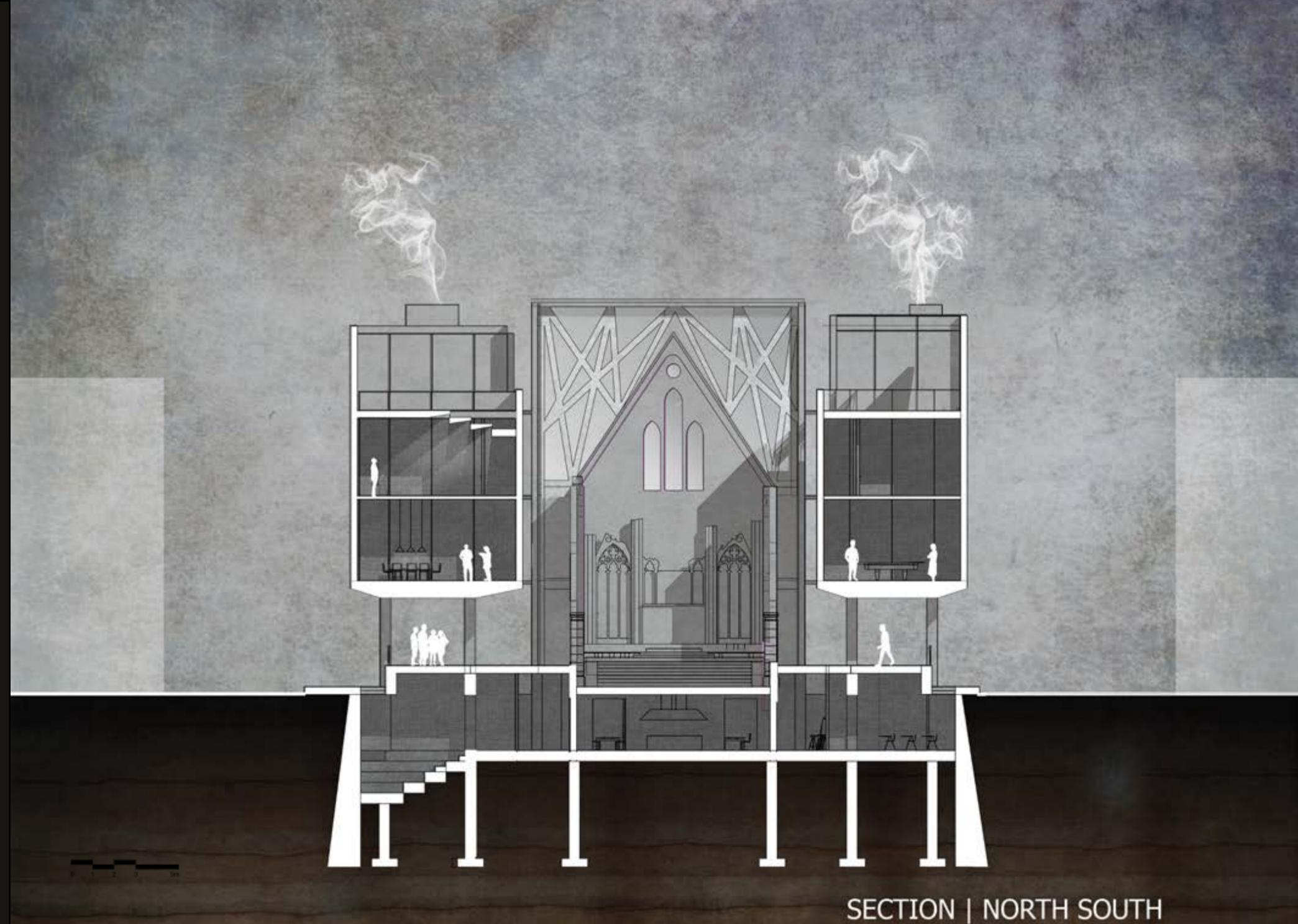
PLAN | LEVEL 7





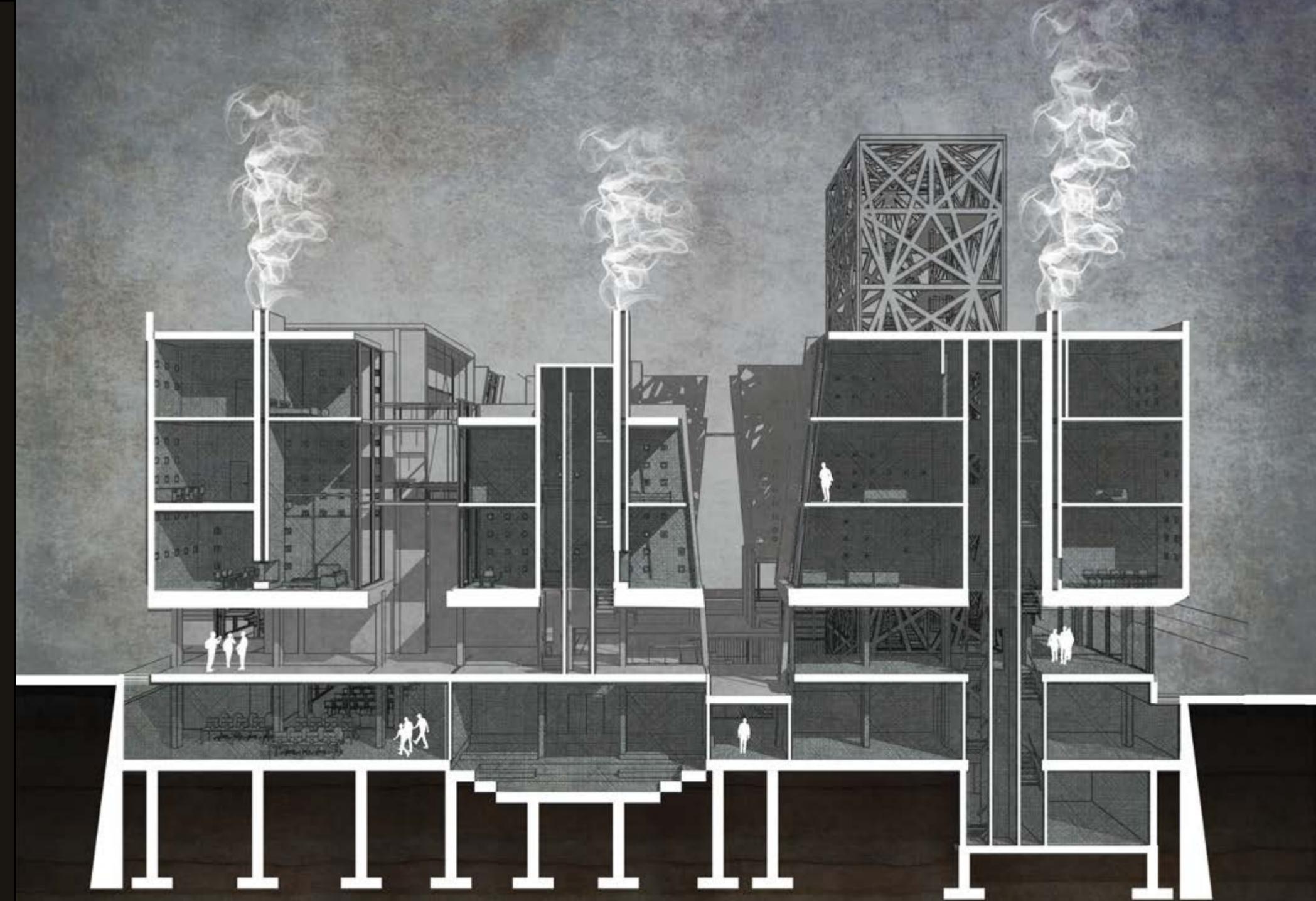
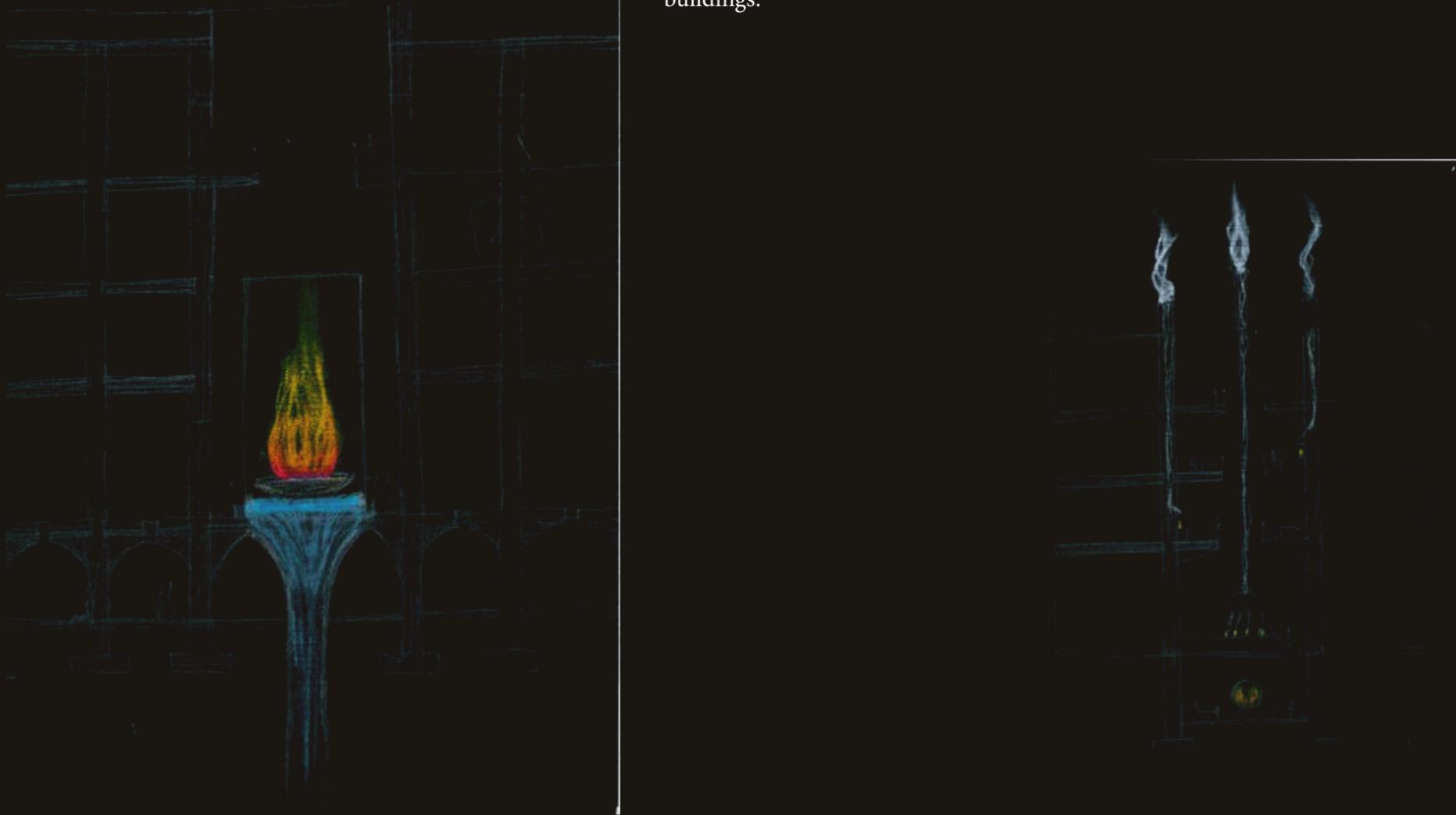
Throughout the process of the design, there was a debate between the privacy of the school and the public's right to the old ruins of the neighborhood. That issue enhanced the design idea a lot. All the seven buildings were elevated a whole story, standing on thin columns to give transparency and fluidity to the ground level of the building. The upper part of the seven buildings –excluding the music building- were mainly the living and sleeping spaces, all the learning spaces were below the grade. To bring the light to the underground, in addition to the main courtyard steps that connects the underground to the sky generously, the slabs of each of the buildings were raised up 4 feet of the pedestrian level allowing the light to flush in through the outer as well as the inner perimeter of the site. That also helped a lot in enhancing the security of the school and creating a level of separation between the public and the users of the school. There is a gated path that leads from north to the south of the site passing by the ruins that indicates the public's realm.





SECTION | NORTH SOUTH

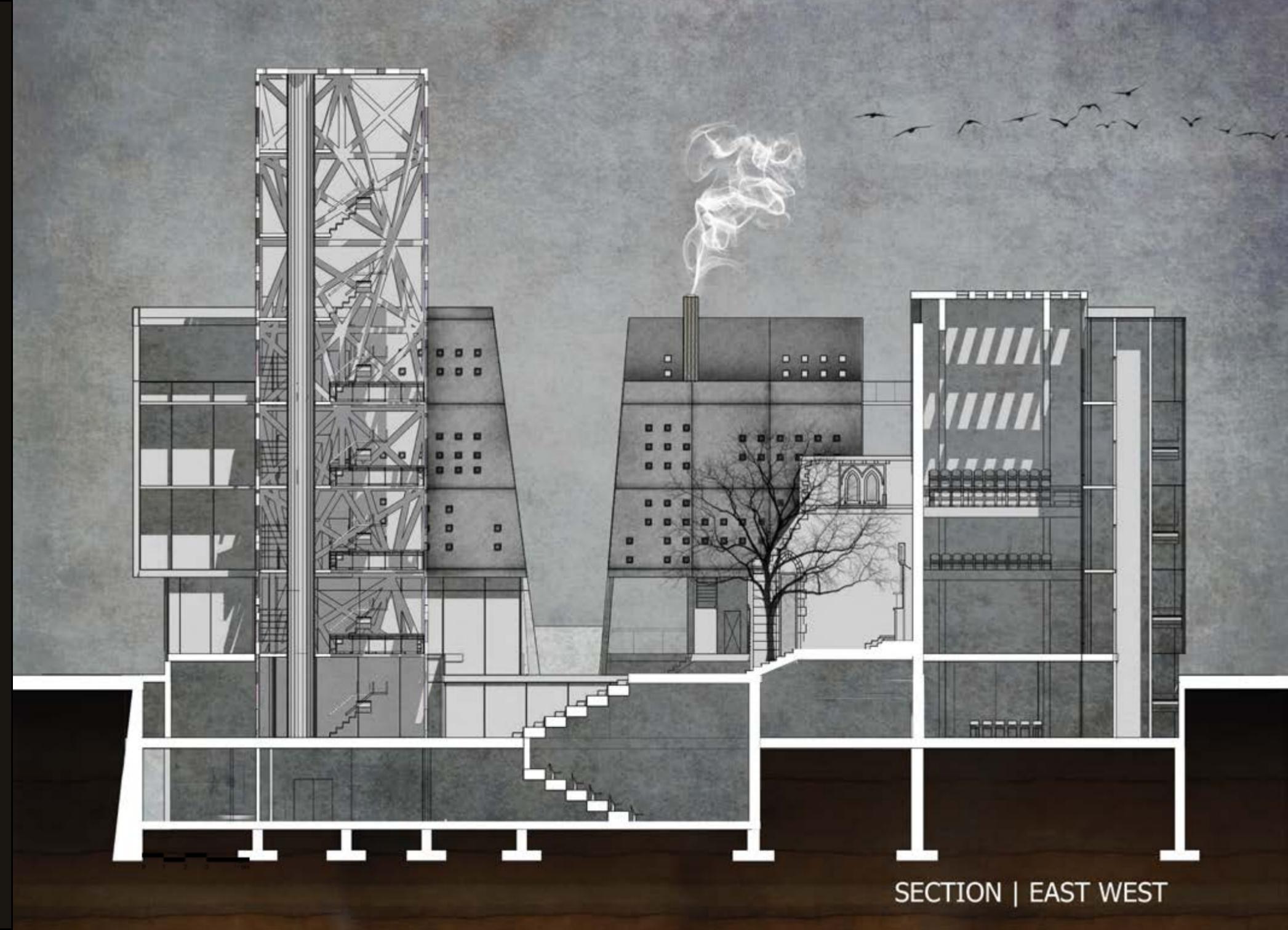
"Taming fire is the origin of culture, the token of control over environment. Fire is also the mark of settlement. Hearths and middens, kitchen-refuse heaps, are some of the earliest traces of human habitation- the very notion of home seems to have grown round the hearth". Those are the words of Joseph Rykwert about the beginning of home. The heart of each of the living spaces is the fire place. Around it an inglenook, a seating area is built very on the two sides of a fire. The inglenook is the main seating area in all the residences. A chimney marks the highest point of each of the buildings.

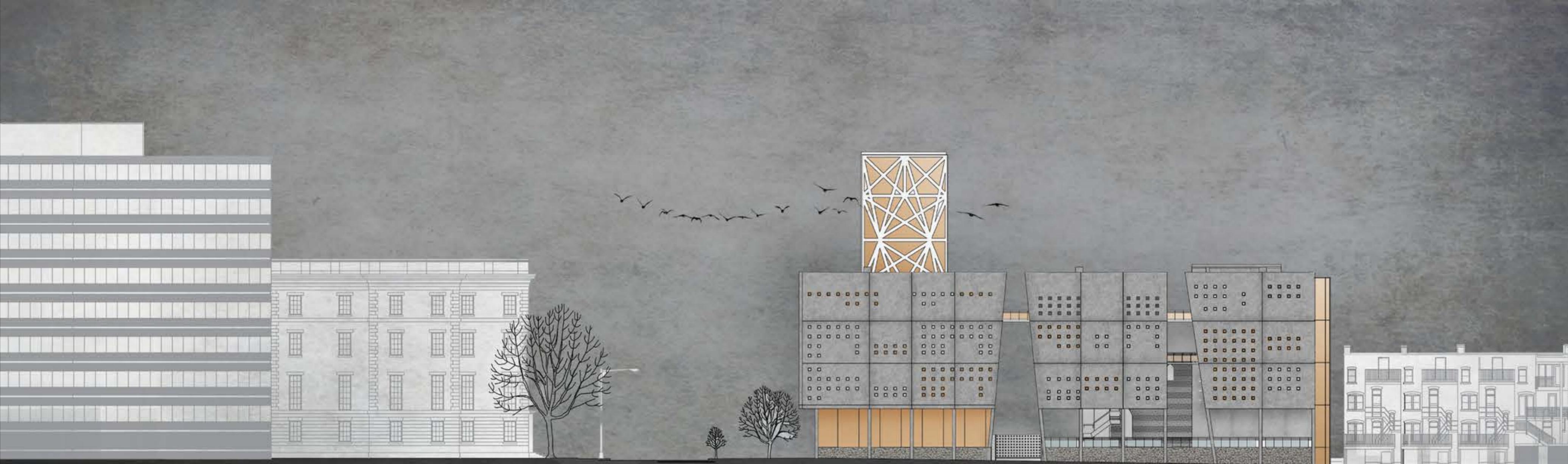


SECTION | EAST WEST

The tower Library is seven levels, each devoted to one of the arts, and an eighth level that is the main reading hall. The main reading tables are sitting in an atrium space that runs throughout all the levels. The structure of the tower is very different than the structure of the other buildings -which are mainly sitting on columns on the ground level and then the load transfers into thick solid walls, it is mainly a light glass tower with a metal mesh holding the tower together. The pattern on the tower comes from connecting seven points at the perimeter of the tower to a central eighth point. Opposite to the tower is the old Altar wall and the Music room behind it. The connection between the old and the new structure is a pattern borrowed from the tower and related to the existing gothic structure. All the rest of the buildings are mostly concrete and glass.

The Music building is an exception to a few things that applies to the other buildings; it doesn't have a living/sleeping space above it. The reason that makes it special is that it sits right behind the old altar wall. A large hall celebrating the beautiful openings on the altar wall made Music the best fit for that location. Three levels of hanging balconies are added to the space for a larger audience or for choruses.



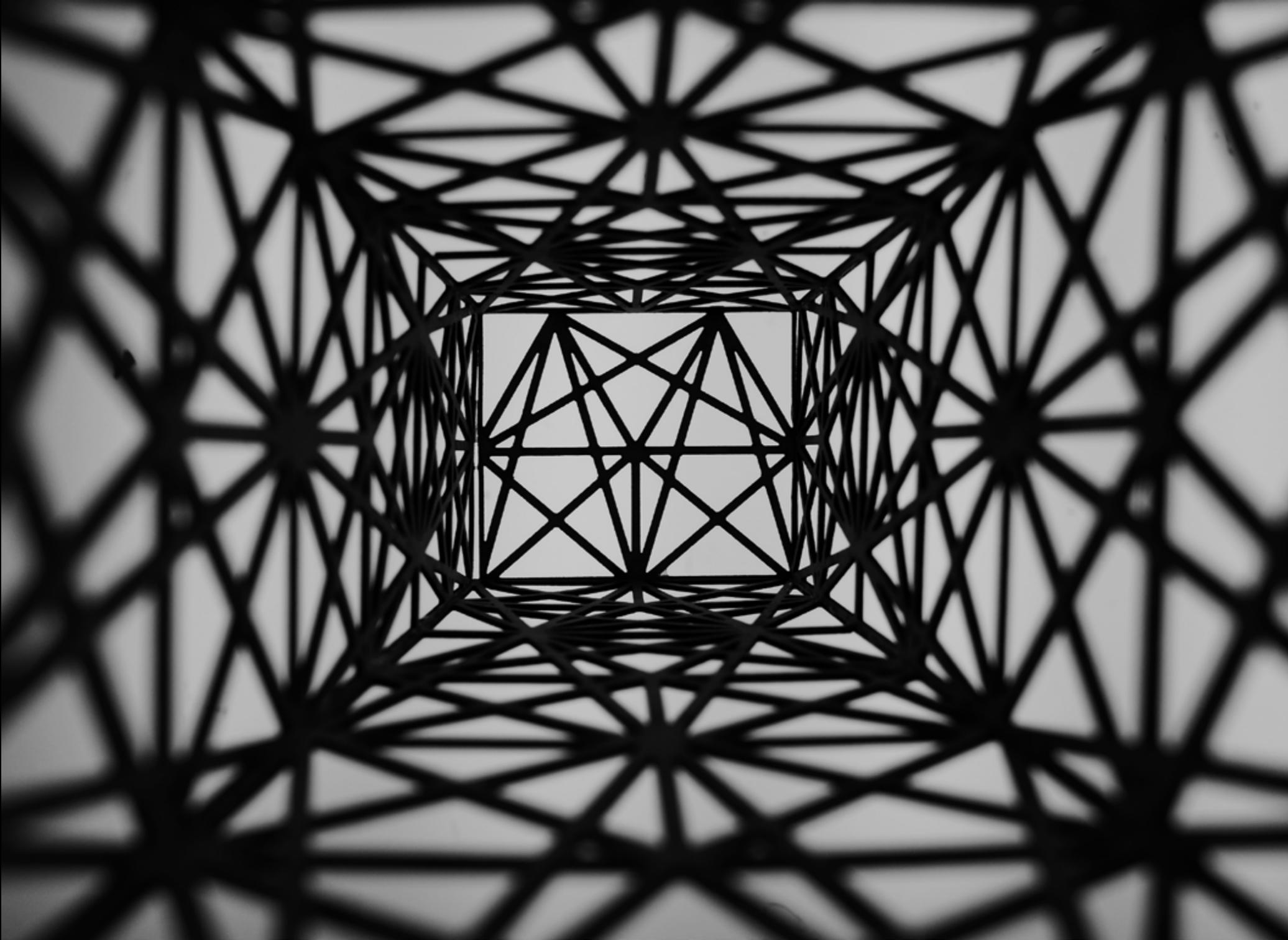


ELEVATION | SOUTH



ELEVATION | WEST



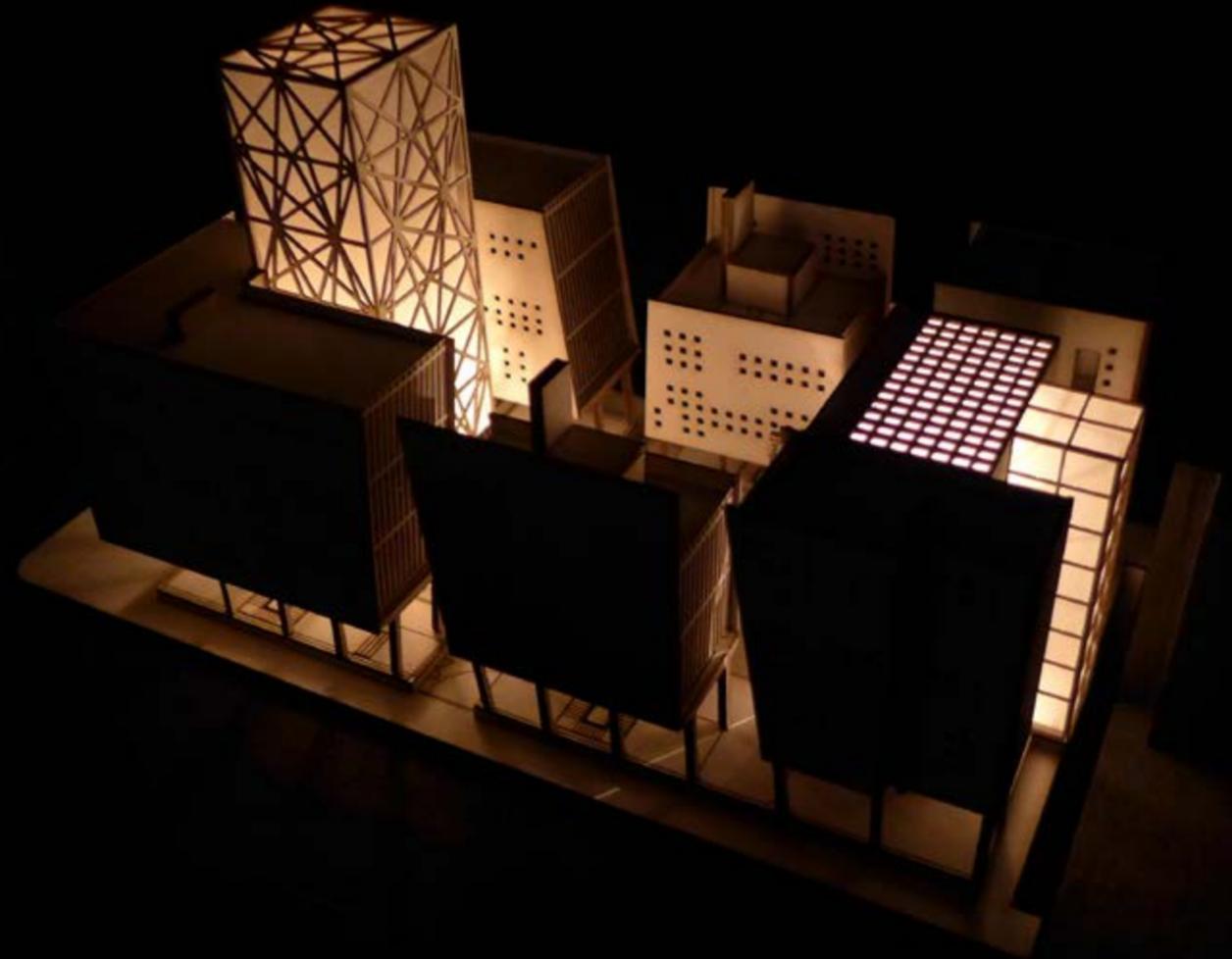


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