

An Experiential Approach to Architecture: Design of an Architecture School and Student Housing

Kiruthika Balasubramanian, 2016

An Experiential Approach to Architecture: Design of an Architecture School and Student Housing

Kiruthika Balasubramanian

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

Master of Architecture
In
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abstract

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Figure 1 : Collage of inspirations

“The architectural experience silences all external noise, it focusses attention on one’s very existence.”

An architecture of the Seven Senses: Juhani Pallasma

As I sat down thinking about this quote images of the courtyard of the Salk institute, the central reading area of the Library of Congress, Tadao Ando’s Church on Water and light, the step wells of Adalaj in India, Peter Zumthor’s Therme Vals came to my mind.

I feel that the scale and being part of something larger than what man could create such as the sky, the ocean and an experience that appeals to the senses, one that is a perfect orchestration of the color of light, the pattern of shadows, the materiality of the wall, the feeling of warmth, the sound of waves, the reflection of the water creates a sense of calm within.

Drawing from my personal experiences, the thesis shall explore the above idea in a school of architecture with a public interface located along the waterfront.

“Buildings should be monumental and spiritually inspiring.”
Louis Kahn

general audience abstract

An Experiential Approach to Architecture: Design of an Architecture School and Student Housing

Kiruthika Balasubramanian

Old town has an interestingly rich population of artists and architects. The presence of the existing architecture schools on the Prince street, the demand for student housing and the desire to enhance the experience of a building led to the idea. The proposal is to design an architecture school and student housing alongside the waterfront in Old Town Alexandria at the end of Prince Street. This shall help foster a dialogue between the students, the artists of the Torpedo Art Factory and the public along the waterfront. The focus of the design shall be the experience of the space. The light, shadows, the materials used, the sound of the waves and the reflection of the water shall enhance the experience of the space.

This thesis is dedicated to my parents, Vijayalakshmi and Balasubramanian and my husband, Anand Gopalakrishnan

Acknowledgements

I would like to thank my committee for this incredible learning opportunity, for having faith in me and instilling the confidence and skills needed to become an architect! I am so grateful to you for this.

Jaan, thank you for your priceless wisdom and being such a great source of inspiration. You have been a great mentor with whom I have enjoyed working and learning a lot about architecture during my days at the WAAC. I feel fortunate to have been at the WAAC during your tenure.

Paul, thank you for your constant encouragement and faith in me. Your generous desk crits, clarity and patience have helped me to realise the vision and made the project richer. Arzu, thank you for all the desk crits along with Paul.

Susan, thank you for your invaluable comments that have helped make the project more real and better.

Marcia, thank you for believing in me.

Henry, thank you for all the support with the school.

I would like to express my deepest gratitude to my family who helped me to start this architectural journey and without whom it would have been IMPOSSIBLE.

Mom, thank you for your unconditional love and support throughout this journey. I couldnot have started and finished school without your help. I wouldnot be what I am today without you.

Dad, thank you for your abundant love, wisdom and belief that architecture is a blessing in disguise for me. I wouldn't be the person I am if not for you.

Anand, thank you for all the love and support, helping me edit the book and putting up with me through the school years.

I would like to specially thank Tenun, for the timely help and Adedotun for helping me finish up the model and being a constant source of encouragement. I would like to thank all the faculty at WAAC. I would like to thank all my friends at the WAAC. It is your passion and work that has been a source of inspiration and you shall be ingrained in my memory of 2014-2016.

Finally thank you God for this blessing!

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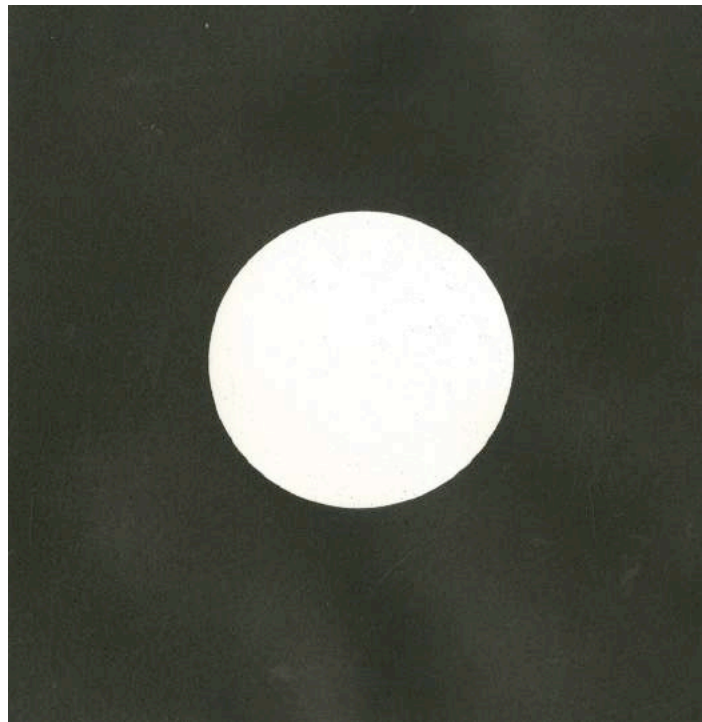


Figure 2 : Tranquility: Print Making, Fall 2015

The Beginning: Forming the project brief

This thesis is a personal journey. When I began to do the thesis, I asked myself what is it that really interests me in architecture and what distinguishes architecture for me from the other arts. It takes a long time for a building to be completed unlike photography and painting which gives me an instant gratification. When I dug deep into the question of what will still sustain me in architecture, the answer was the experience of the space that is so unique to architecture.

“The most essential auditory experience created by architecture is tranquility. Architecture presents the drama of construction silenced into matter, space and light. Ultimately architecture is the art of petrified silence. When the clutter of construction work ceases and the shouting of the workers dies away a building becomes a museum of a waiting patient silence.”¹

Having discovered my area of interest in architecture, the next step was to decide what would be the building type and where the project would be located. I personally believe that choosing the site and the program is a hand in hand process as the site often gives cues to what the building could be and the building often desires a certain place.

I also had a desire to do a project close to the water. As I was studying the possible sites along the waterfront in Old town Alexandria, I was struck by the unique character of Old town Alexandria consisting a high population of artists and architects. The presence of the architecture school, the Torpedo Art factory and a number of architecture firms in close proximity to D.C contributes towards the high population.

I felt that the Washington Alexandria Architecture Centre with the presence of its buildings on 1001 and 601 Prince street has given a character to the street. Reinforcing that character at the urban realm, I felt that a proposal of the architecture school at the end of Prince street along the waterfront would be ideal for the architecture students. The fact that it is in close proximity to the Torpedo art factory and the existence of the 601 building leads to a richer dialogue between the artists and architects. The school being located along the waterfront would be an opportunity for the public to be engaged as the nature of the school with its open houses and exhibitions allows for such interactions. The high cost of living in Old town Alexandria forces students and younger generation to move out of the city. The inclusion of the student housing in the project would be appropriate thus providing a place for students to work, learn, live and reflect on architecture.

¹ Page 37, Silence, Time and Solitude, The Eyes of the Skin by Juhani Pallasma



Figure 3 : Photography, Fall 2015

The Inspiration

I began by taking photographs of spaces which spoke to me about the spatial quality and resonated a deep voice within.

I was inspired on reading the incident in Jonas Salk's life. When he was struggling to find a cure for polio, he retreated to Umbria, Italy to the monastery of St. Assisi. He felt that something about the place, the design and the environment helped clear his obstructed mind and inspired him to find a vaccine for polio.

Thus believing that the experience of a space can inspire creativity and new solutions, I began researching monasteries.

The interesting similarity between the architecture school and the monastery.

The school is a place of learning and reflection like a monastery. The students spend a lot of time working and learning in the studios just like monks in the cells. Just like the monastery, which is a building occupied by a community of monks living in their own religious world, an institution is a community of students living in their own academic world. Studying the different spaces in the monastery such as the place to learn, reflect, eat, live and exhibit and the need for such spaces in the architecture school helped me program the spaces.

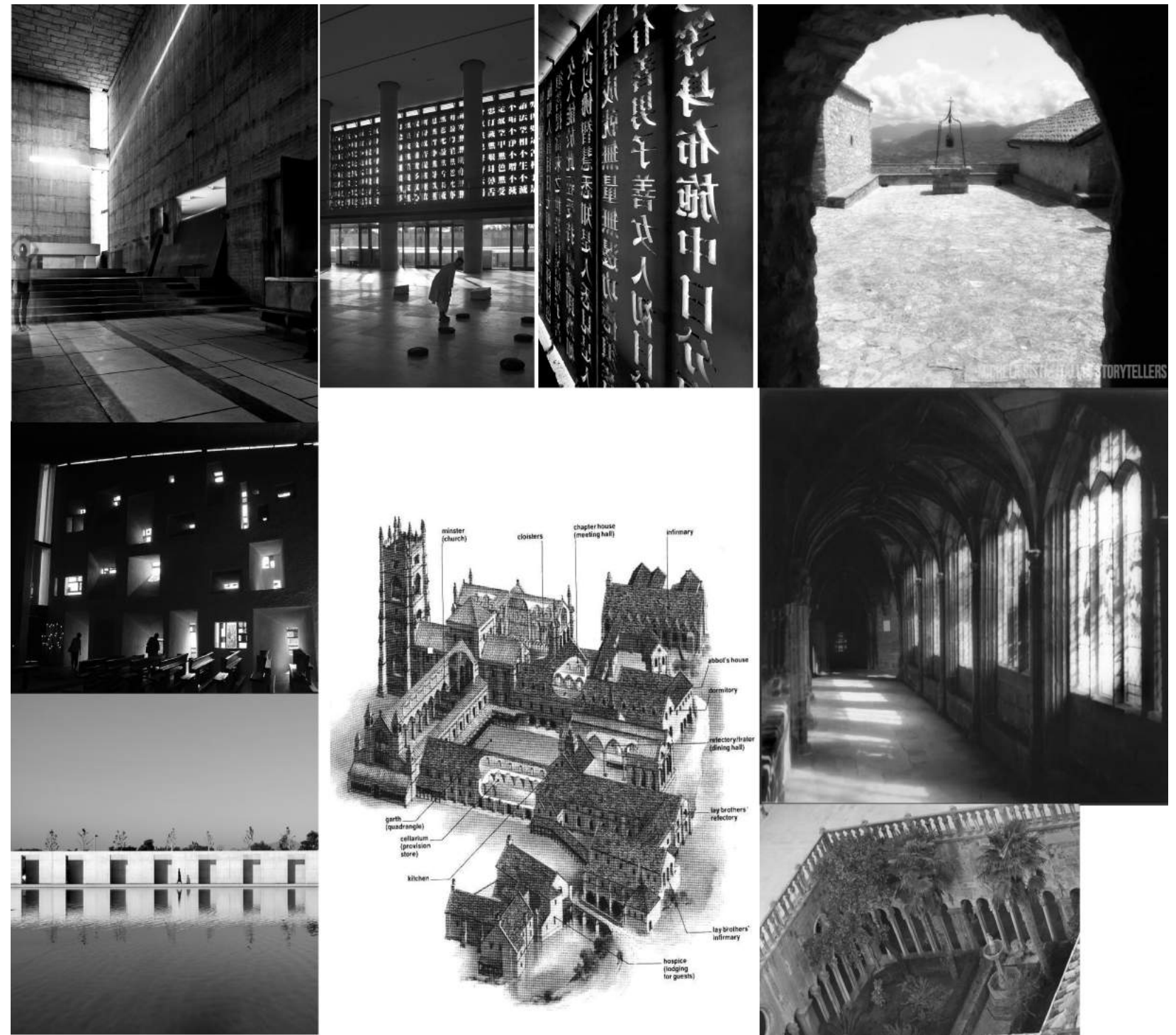


Figure 4 : A collage of monasteries.

Having decided to do an institutional building, I began researching institutions across the world which had a powerful experiential quality to the spaces that struck a chord with me.

“Institution stems from the inspiration to live. The three great inspirations are the inspiration to learn, the inspiration to meet and the inspiration for well being”. These inspirations fulfill Kahn’s idea of an existence-will, the desire for man to be. The institutions serve as a beginning for the assembly of man. From the human desire to gather, comes a sense of commonality. These commonalities become the institutions of learning, of work, of health and of recreation that form our cities. “The city from a simple settlement, became a place of assembled institutions.”¹



Figure 5 : Collage of the architectural schools and institutions across the world.

² Kahn, Louis I., and Alessandro Vassella. Silence and Light: The Master’s Voice in the Lecture for Students at the Department of Architecture of the Eidgenössische Technische

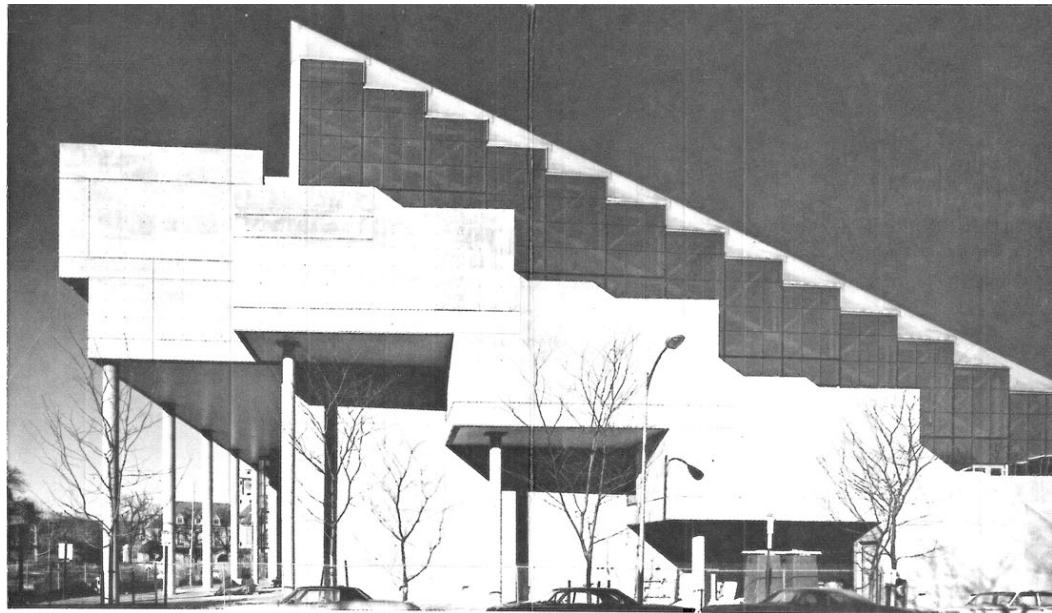


Figure 6 : Gund Hall, Graduate School of Design, Harvard University

Visit to the Gund hall, Graduate School of Design, Harvard University

I visited the Gund Hall, Graduate School of Design, Harvard University designed by John Andrews, Anderson, Baldwin of Toronto. While the tiered seating served as an inspiration for an open studio environment, I felt that it could have been executed differently. The roof is held by a truss structure. It is exposed on the interior and the depth of the structural member makes the volume of the studio seem small.

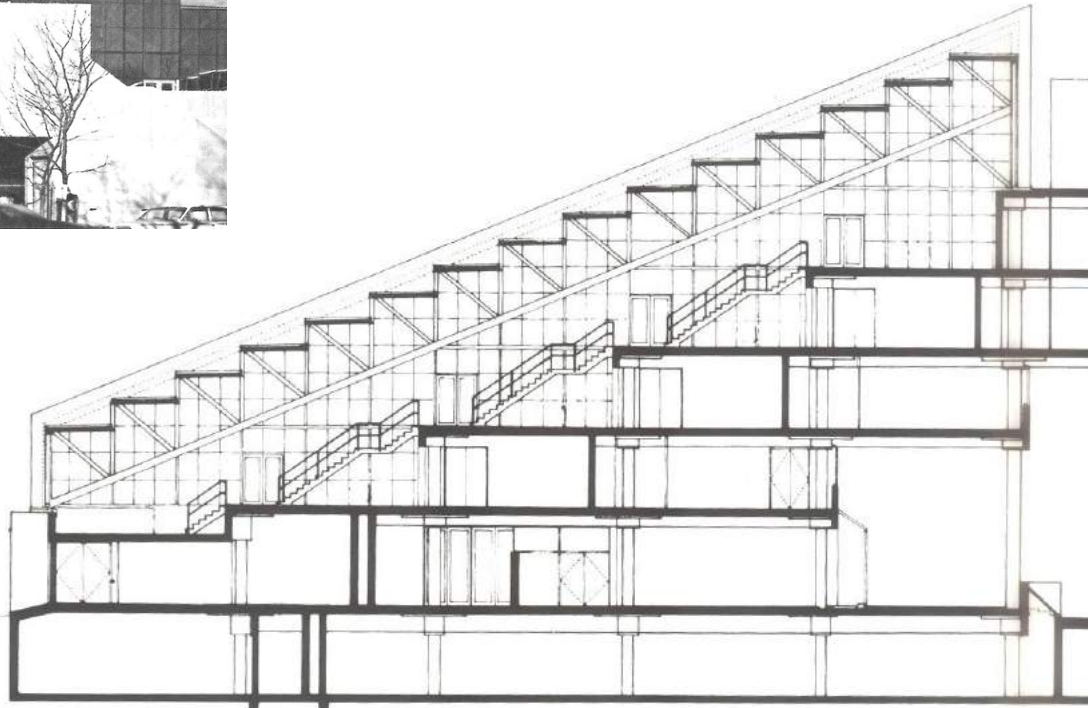


Figure 7 : Section Gund Hall, Graduate School of Design, Harvard University



Figure 9 : 1001 Prince Street



Figure 10 : 601 Prince Street

WAAC-1001 and 601

Having spent considerable time in both the buildings of the WAAC and interacting with my friends, I realised what made one building better than the other for different people. It also helped me understand the different needs for us at school and the importance of natural lighting for the spatial experience. The need to have a centralised place with all the facilities, the need for different kind of spaces, an open working environment and some specialised nooks and corners for people who preferred to work in isolation.

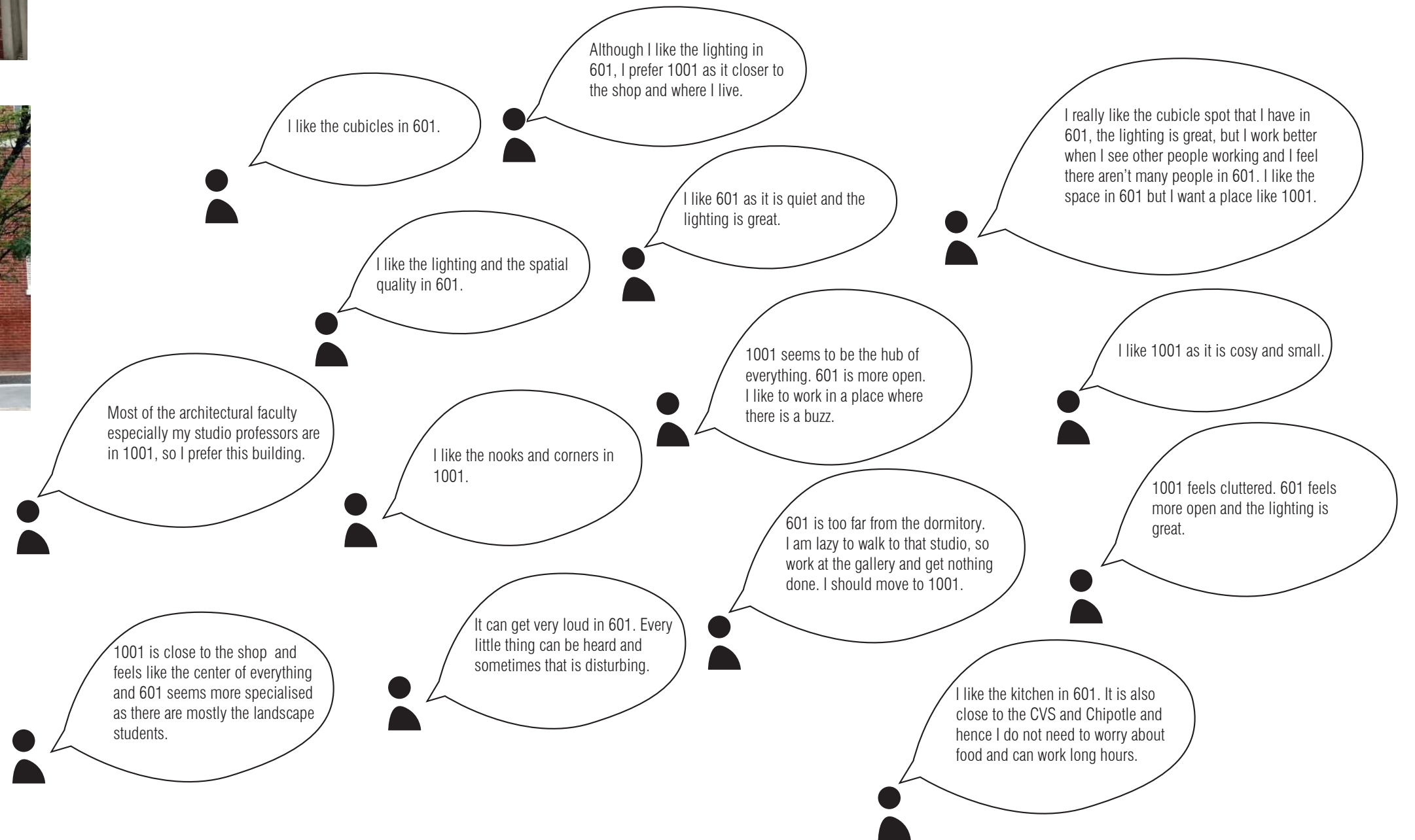


Figure 8 : Understanding people's preferences between the two buildings on Prince street.

Site Analysis

The site is at the end of Prince street along the waterfront on the Strand in Old town Alexandria. Old town is the historic center of Alexandria along the Potomac river. The site is subjected to flooding by the Potomac during the tidal action.



Figure 11 : Plan-Old town Alexandria



Figure 12 : The Site highlighted on the aerial view of the Alexandria Waterfront.

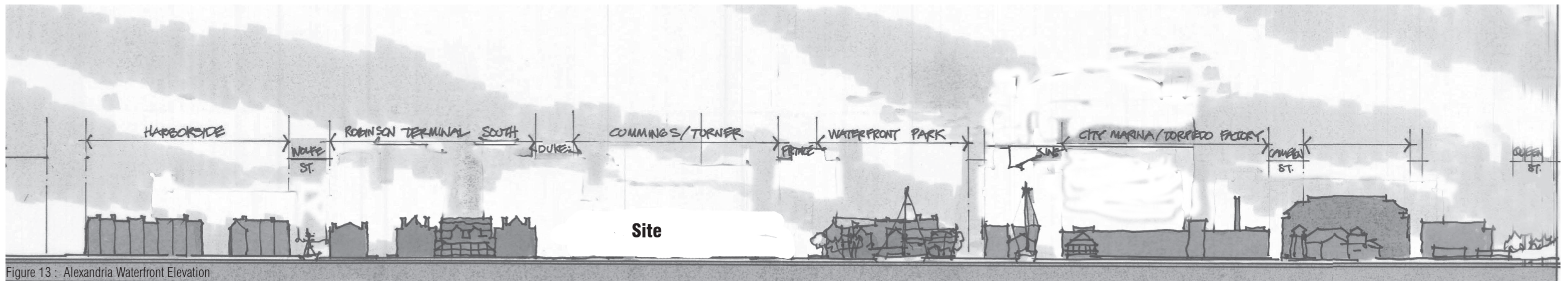


Figure 13 : Alexandria Waterfront Elevation



Figure 14 : The site at the end of Prince street and the immediate surrounding.



Figure 15 : Panoramic views around the site



Figure 16 : Beach Combers building on the site.



Figure 17 : The site highlighted on the proposed masterplan for Alexandria

The site is bounded by the Waterfront park on the northern side, the Point Lumley park on the southern side, the Potomac on the eastern side and by the city on the western side.

The parking space between the two buildings on the South Union street feels like a framed vista to the Potomac.

It is often a delight to see the flight of birds above the site as it is the home to many birds.



Figure 18 : The site with its immediate surrounding.

Dream Drawings

The desire for the studios to be terraced such that one descends towards Potomac and ascends to look at the city.

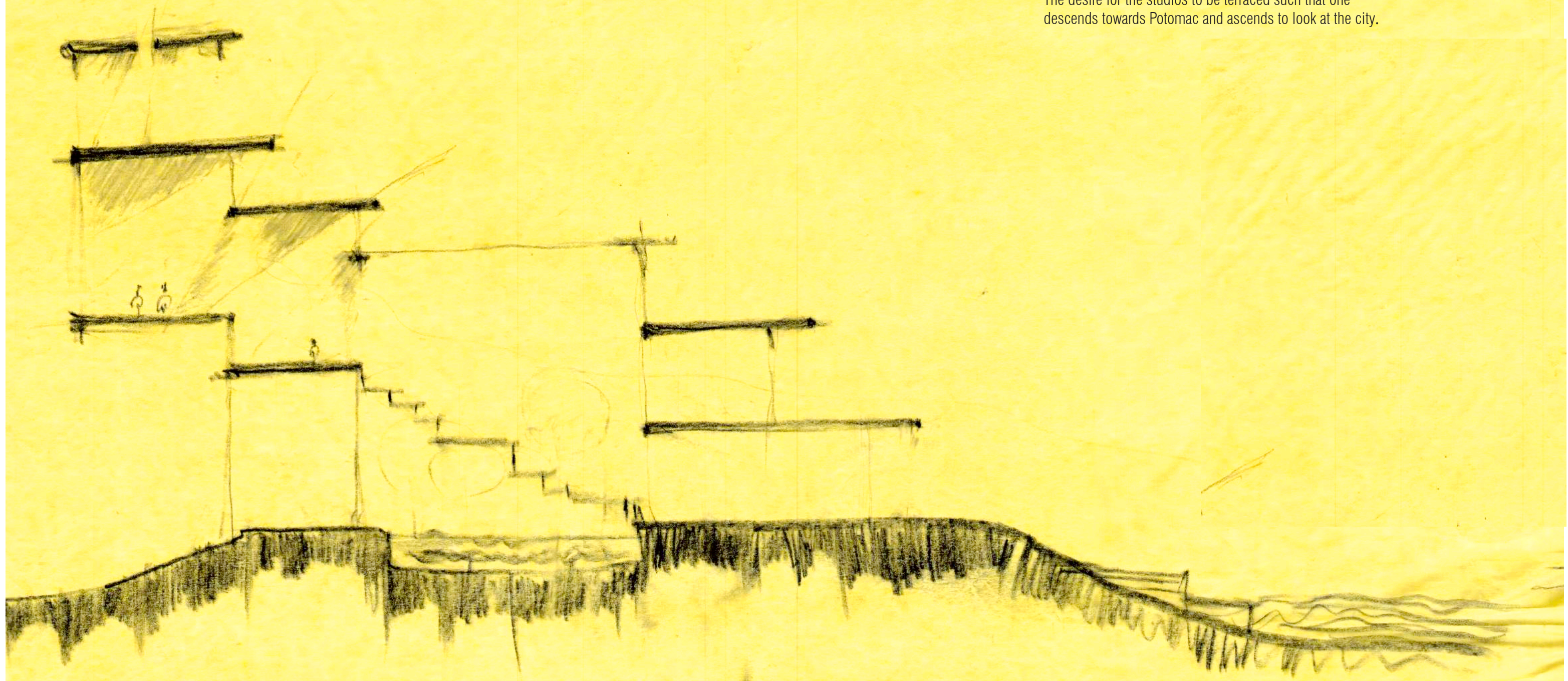


Figure 19 : Conceptual sketch: Section along the site and the Potomac

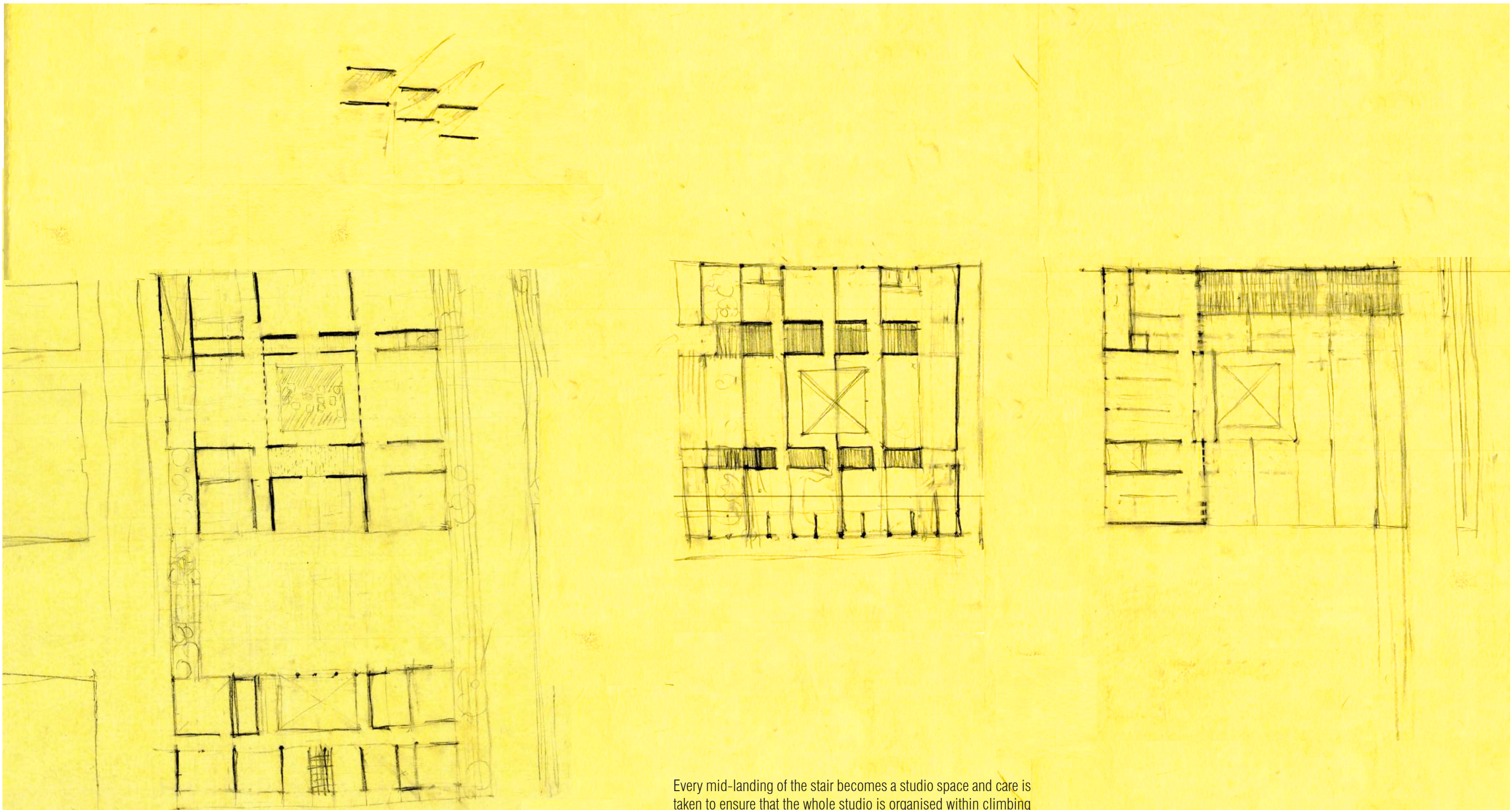


Figure 20 : Conceptual Sketches

The desire for the courtyard between the school and housing framing the Potomac .

Every mid-landing of the stair becomes a studio space and care is taken to ensure that the whole studio is organised within climbing two sets of stairs. Sitting down on the stairs, one can look up to the sky and reach for the stars.

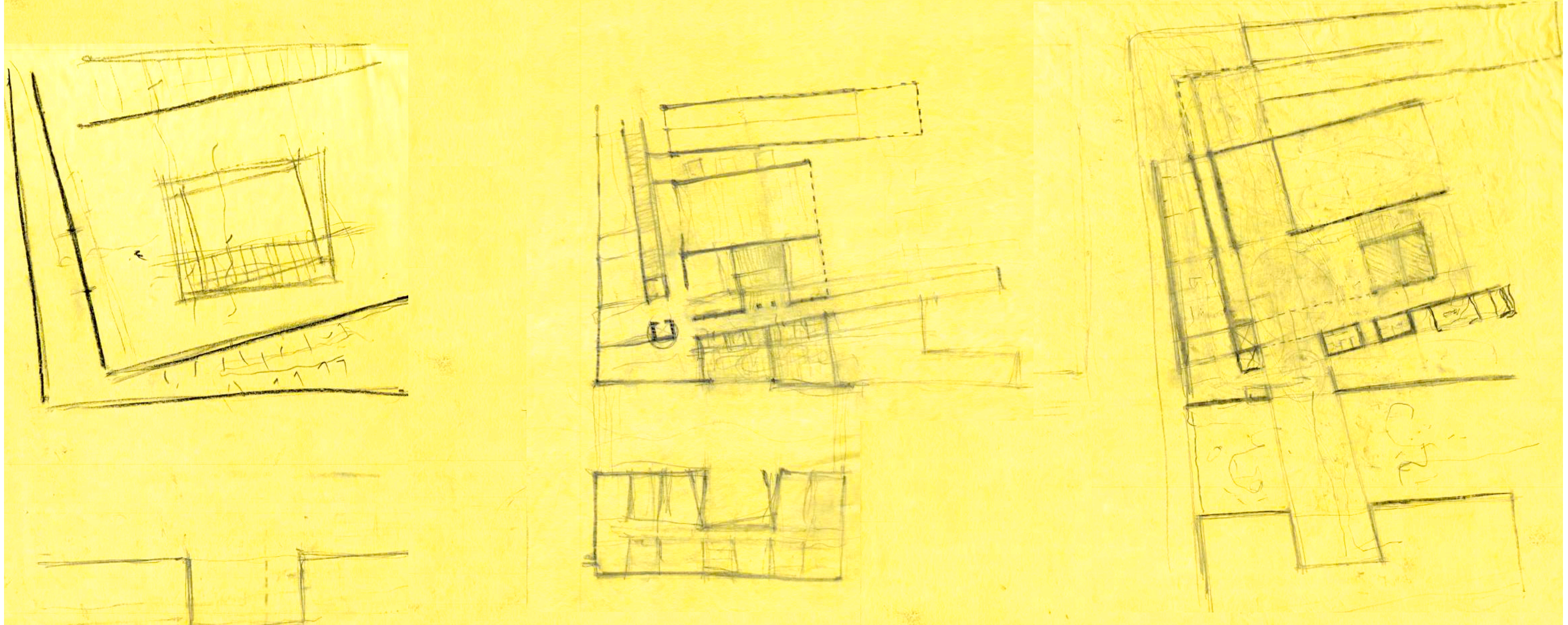


Figure 21 : Conceptual Sketches

While the walls along the streets respect Alexandria's grid, at the centre there is a shift in the grid for the studios. The studios are oriented along the true east west direction. After spending a night in the studio, working for a presentation, it would be a delight to see the sun rise in the morning with its reflection on the Potomac.

Conceptual Parti

The design evolution through the various iterations.

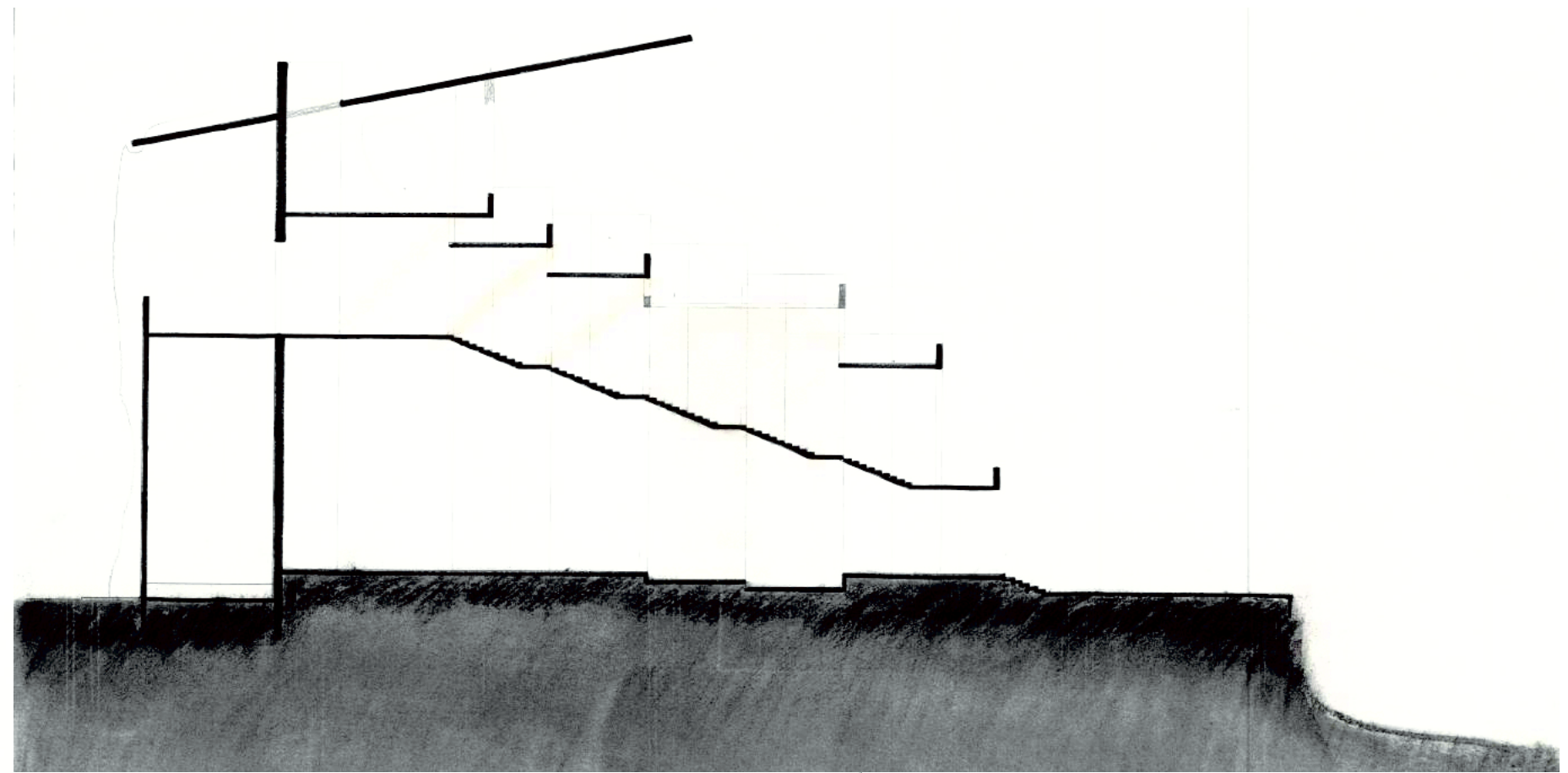
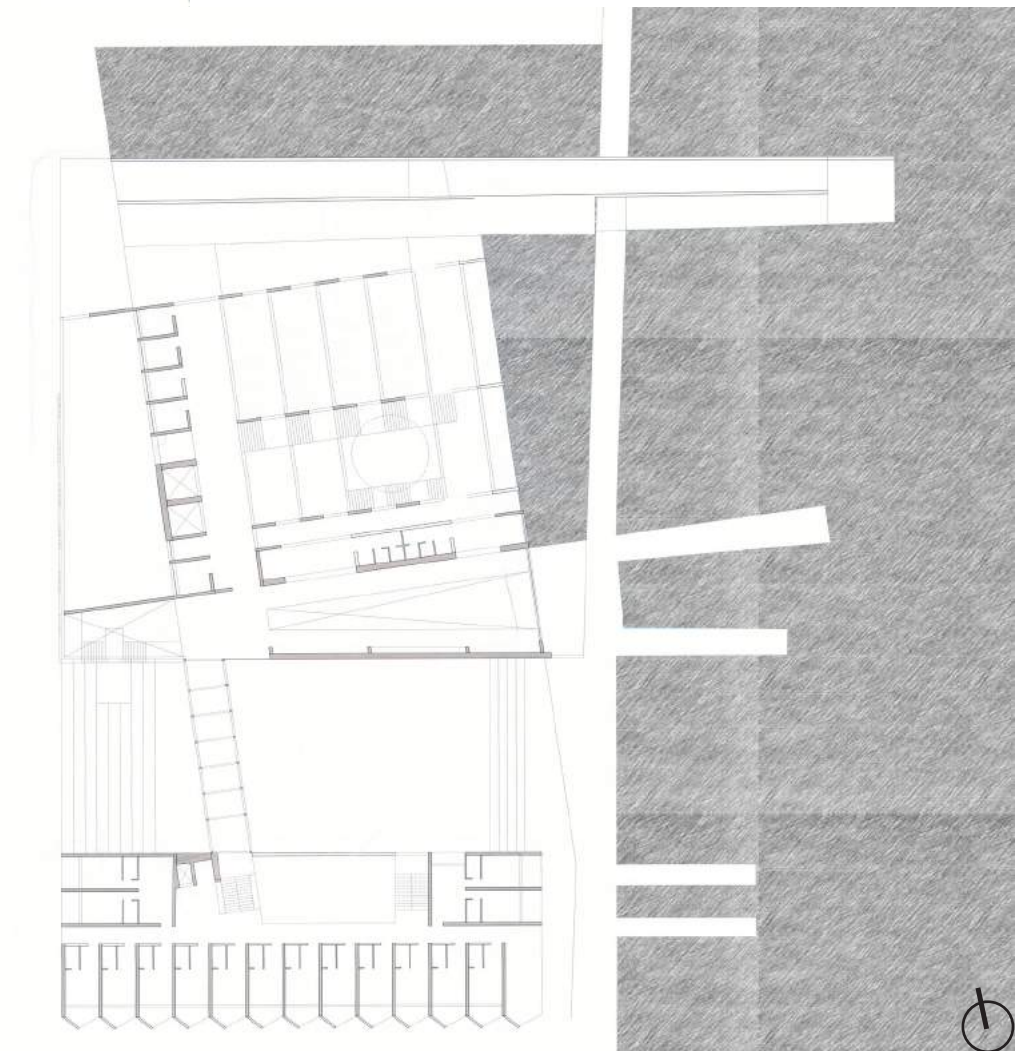
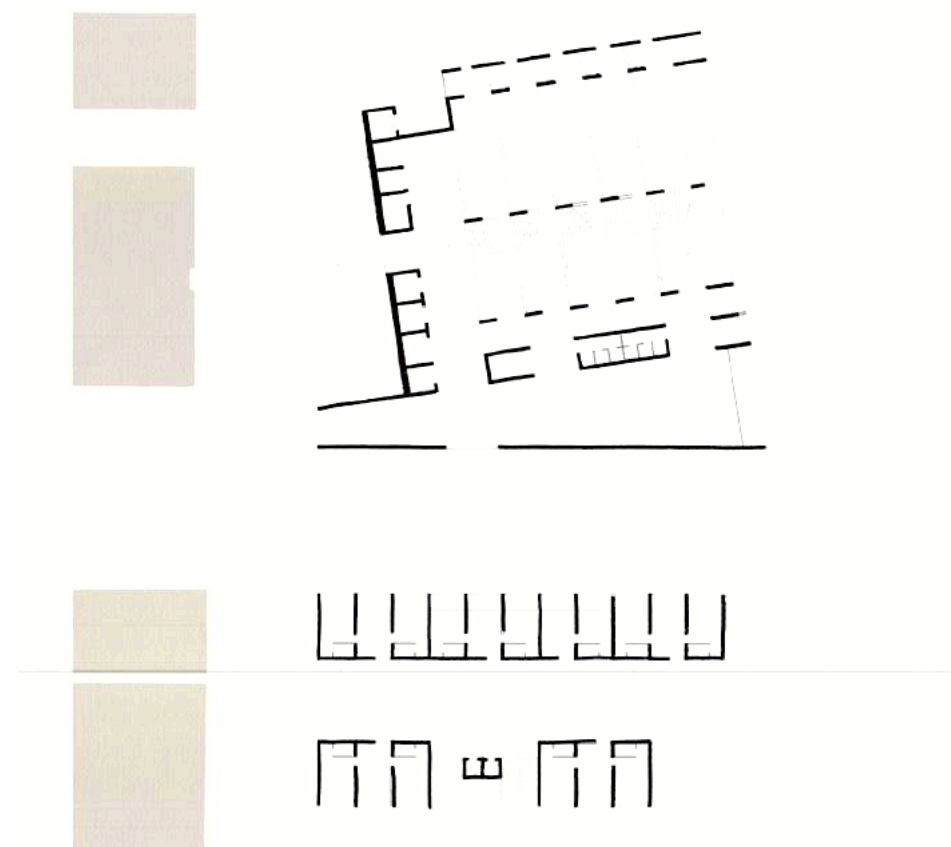
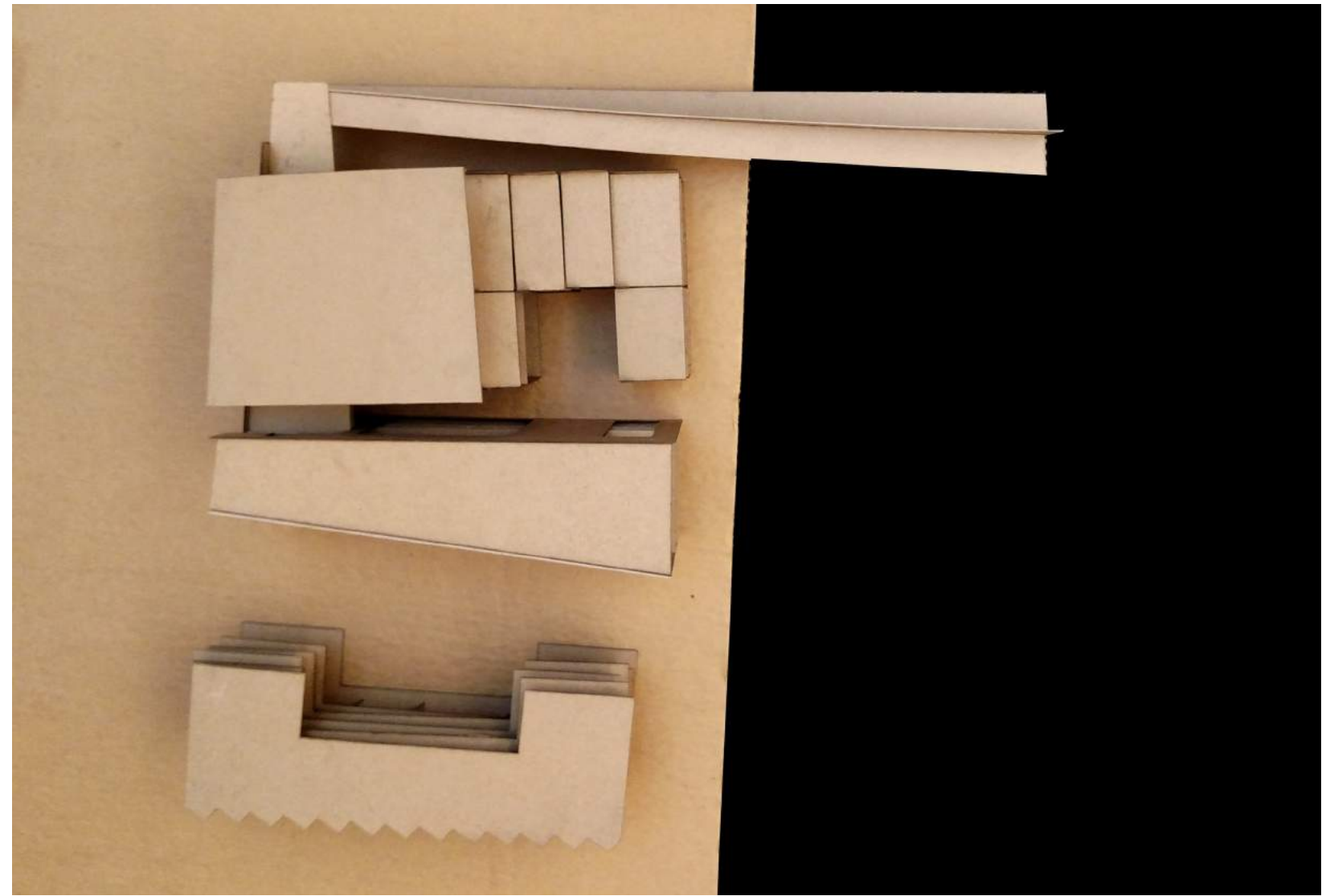
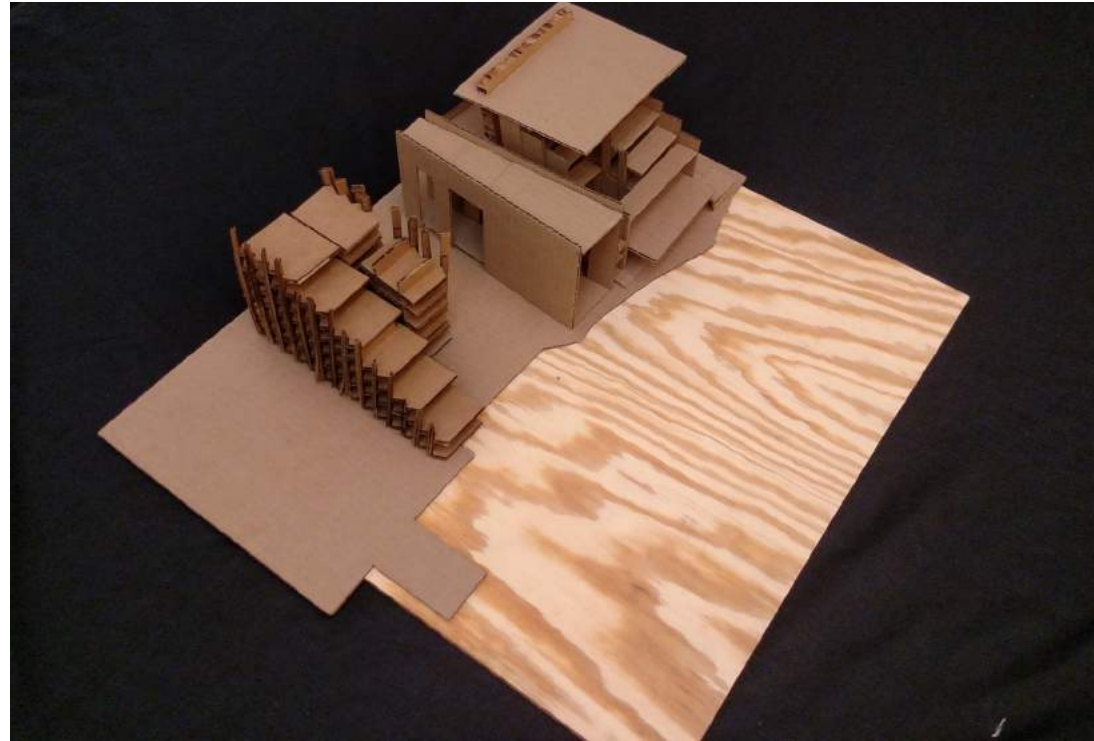


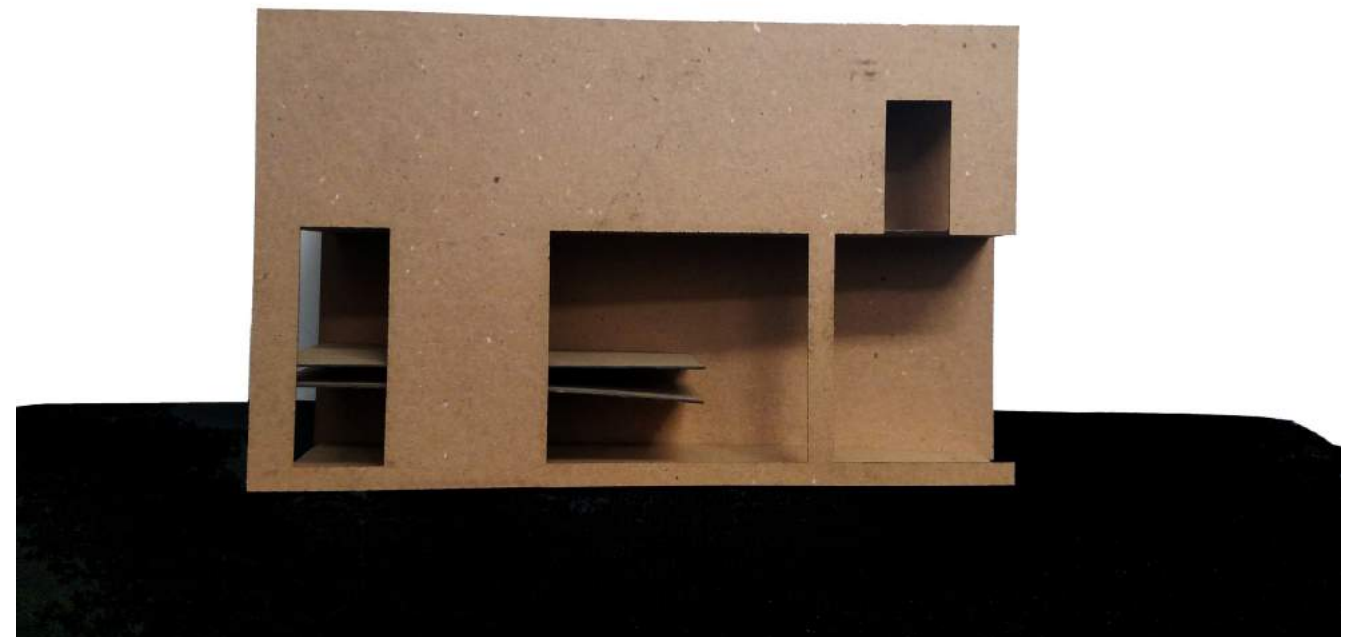
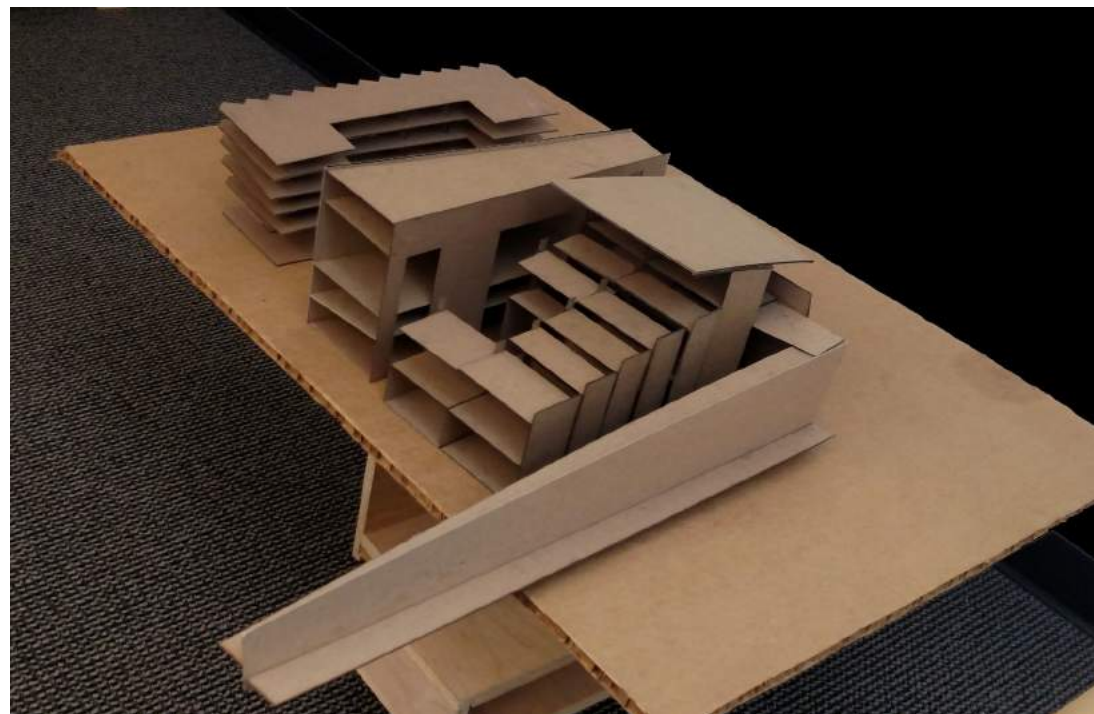
Figure 22 : Conceptual parti diagrams





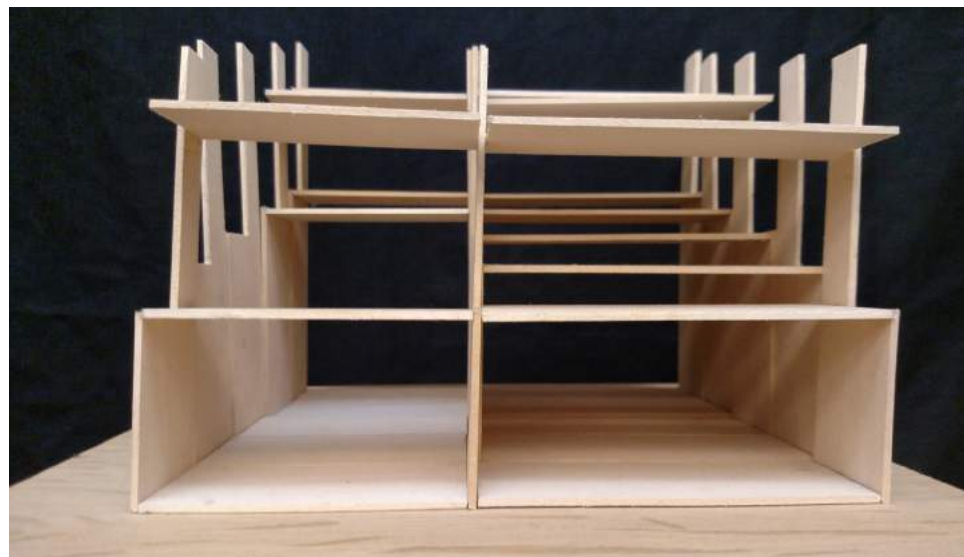
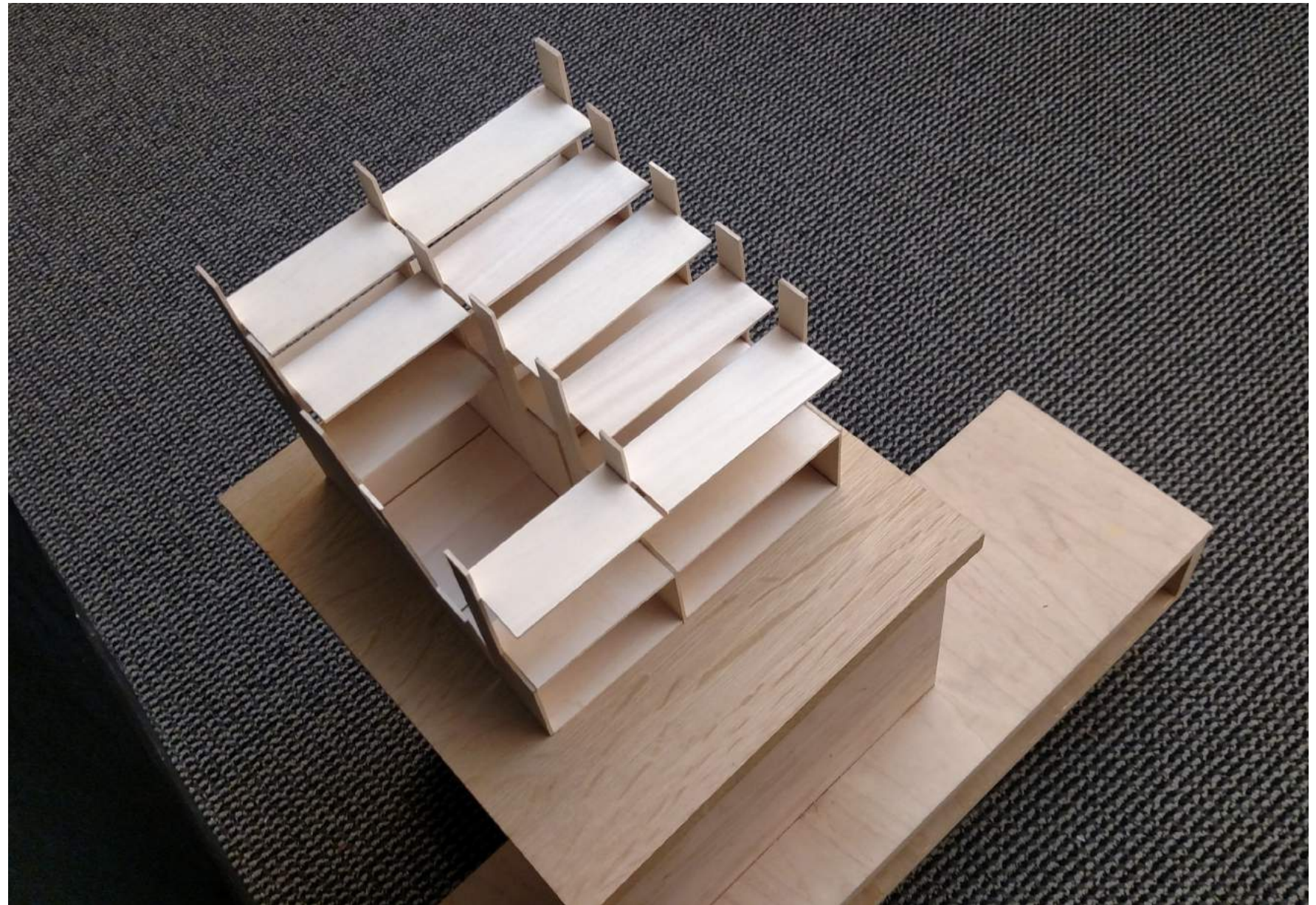
Process Models

The models made during the design process helped to make some important architectural decisions.



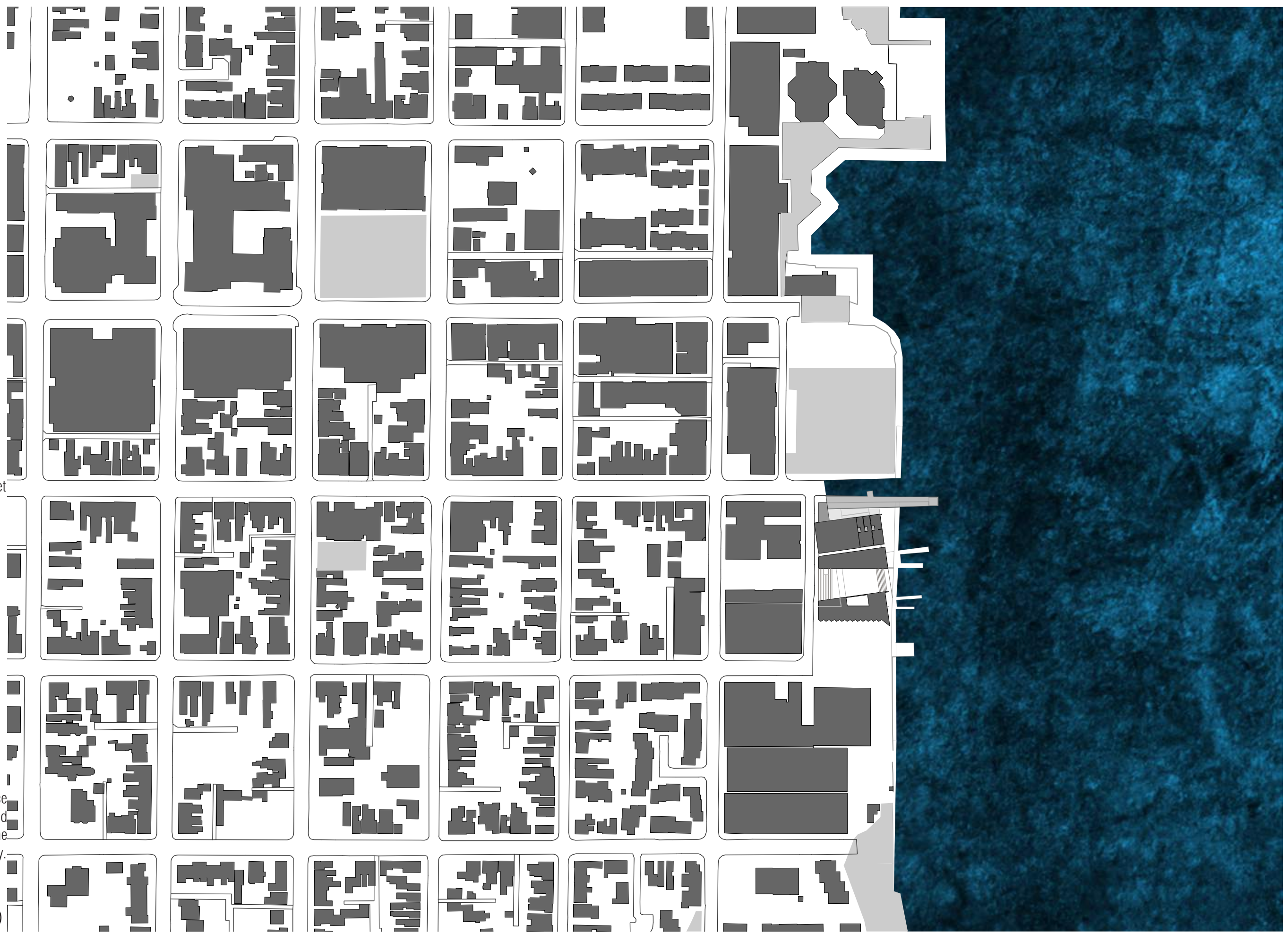


Process Models

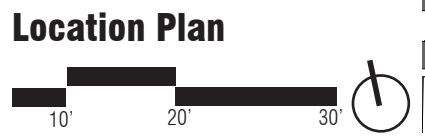


Final Drawings

Prince Street



The existing slope of the Prince street is continued and exaggerated where it joins the Potomac and the river is welcomed back into the city.



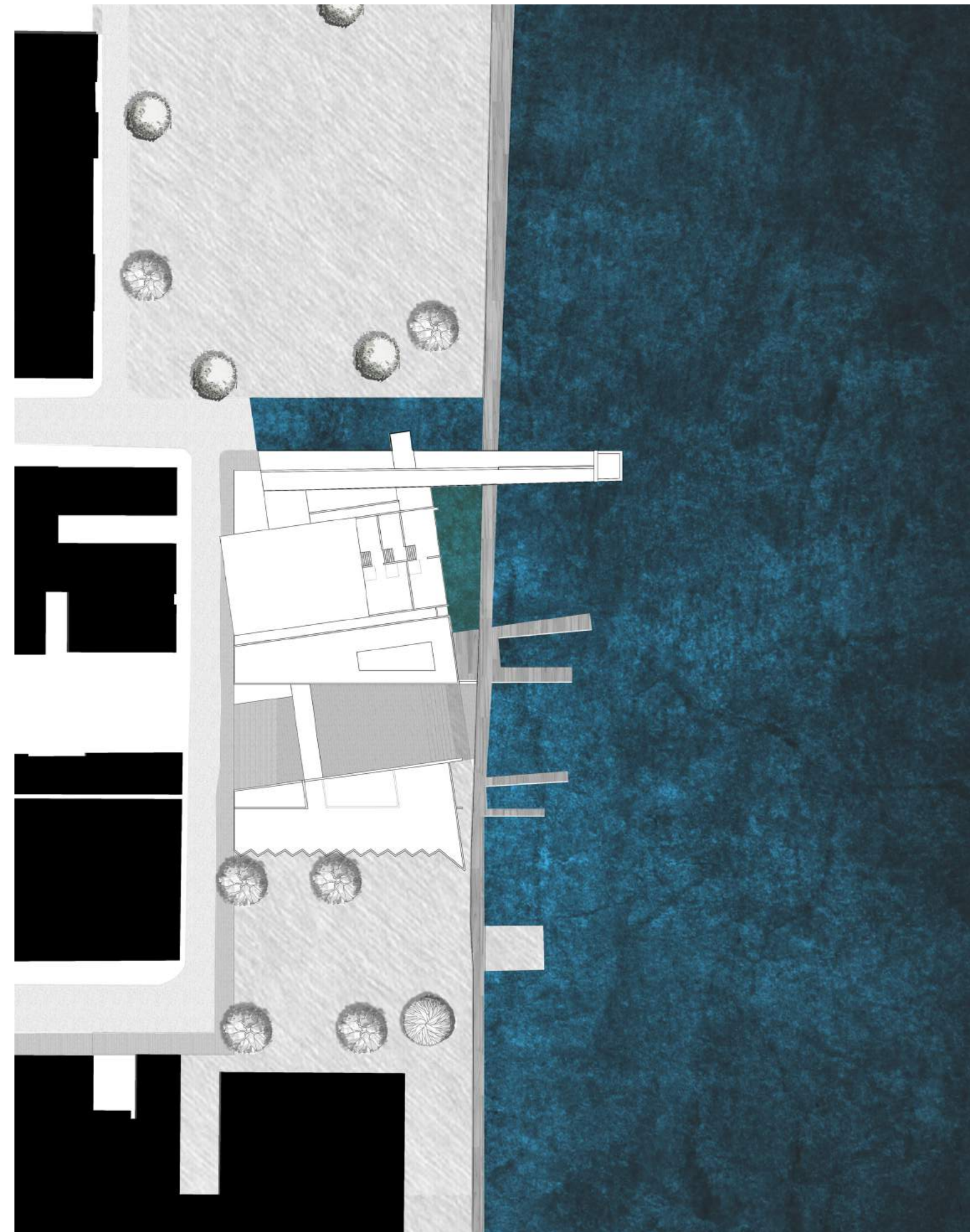
The school and the housing share a courtyard which frames the view of the Potomac.

The courtyard is designed taking into consideration the existing open space between Chadwicks and the proposed hotel such that there is an unobstructed view to the Potomac from the South Union street.

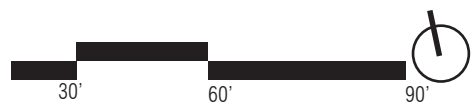
The floor of the courtyard is designed as an extension of the sidewalk and thus is paved with brick.

The plinth of the school and the housing is raised to 5 feet as a protective measure in case of flooding.

The City of Alexandria has a proposal to have a continuous walkway along the waterfront which patronises art and heritage and thus the walkway is integrated with the design of the school with piers extending into the water.



Site Plan



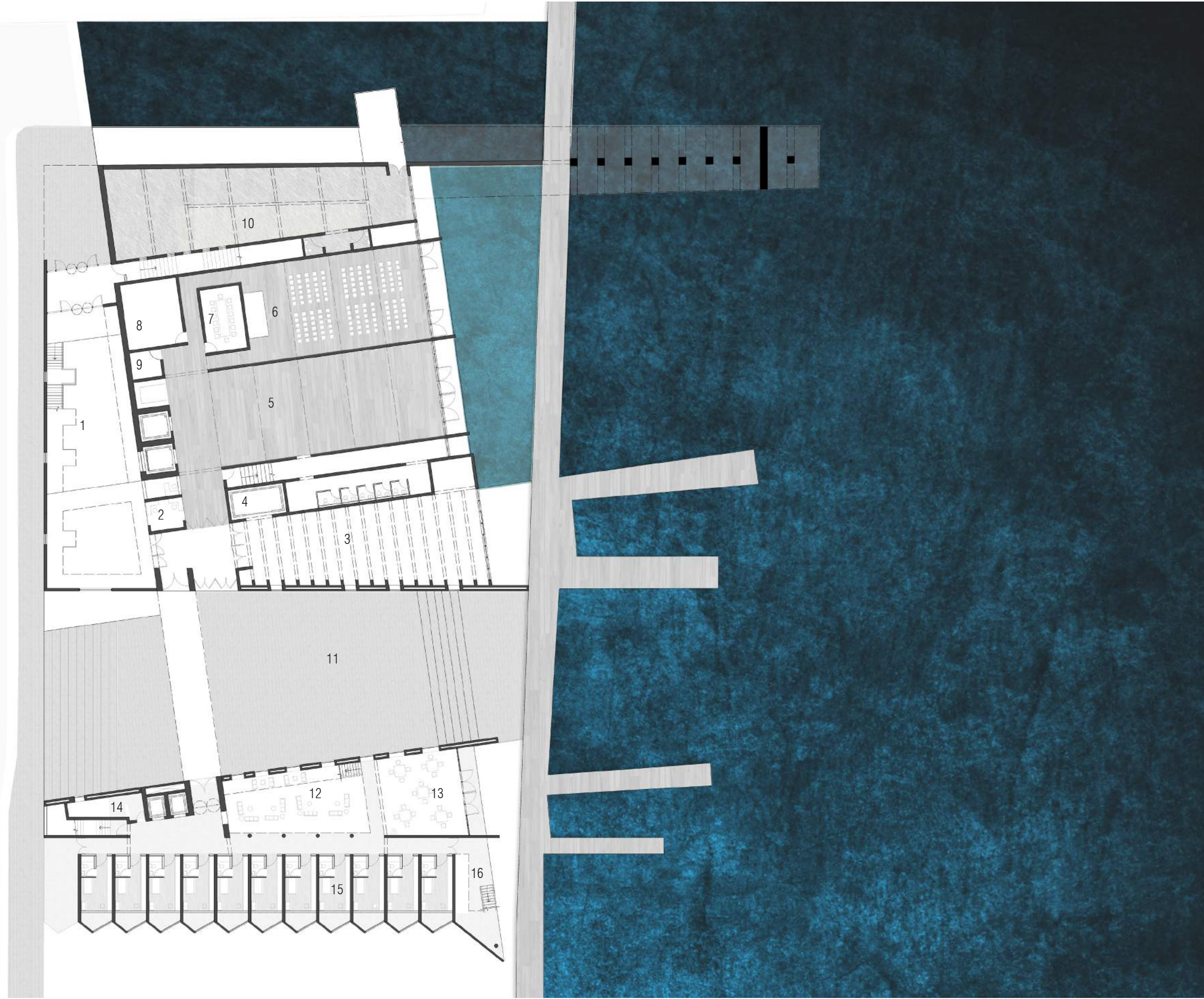
One can enter the school at the ground level or at the top most level of the studio

Architecture: the art of drawing and making buildings

One enters the school at the ground level through the world of drawing (the room with the wall of drawings). There is a stair along the wall abutting the sidewalk which has landings that project out as balconies to look onto the wall of drawings. Then one stops to get a glimpse of the world of making (the shop) before taking the elevators or the stairs to reach the studios. One could also take the ramp which projects into the Potomac river to enter the top most tier of the studio. The ramp is also accessed by the public and the landing over the water becomes a destination for the public.

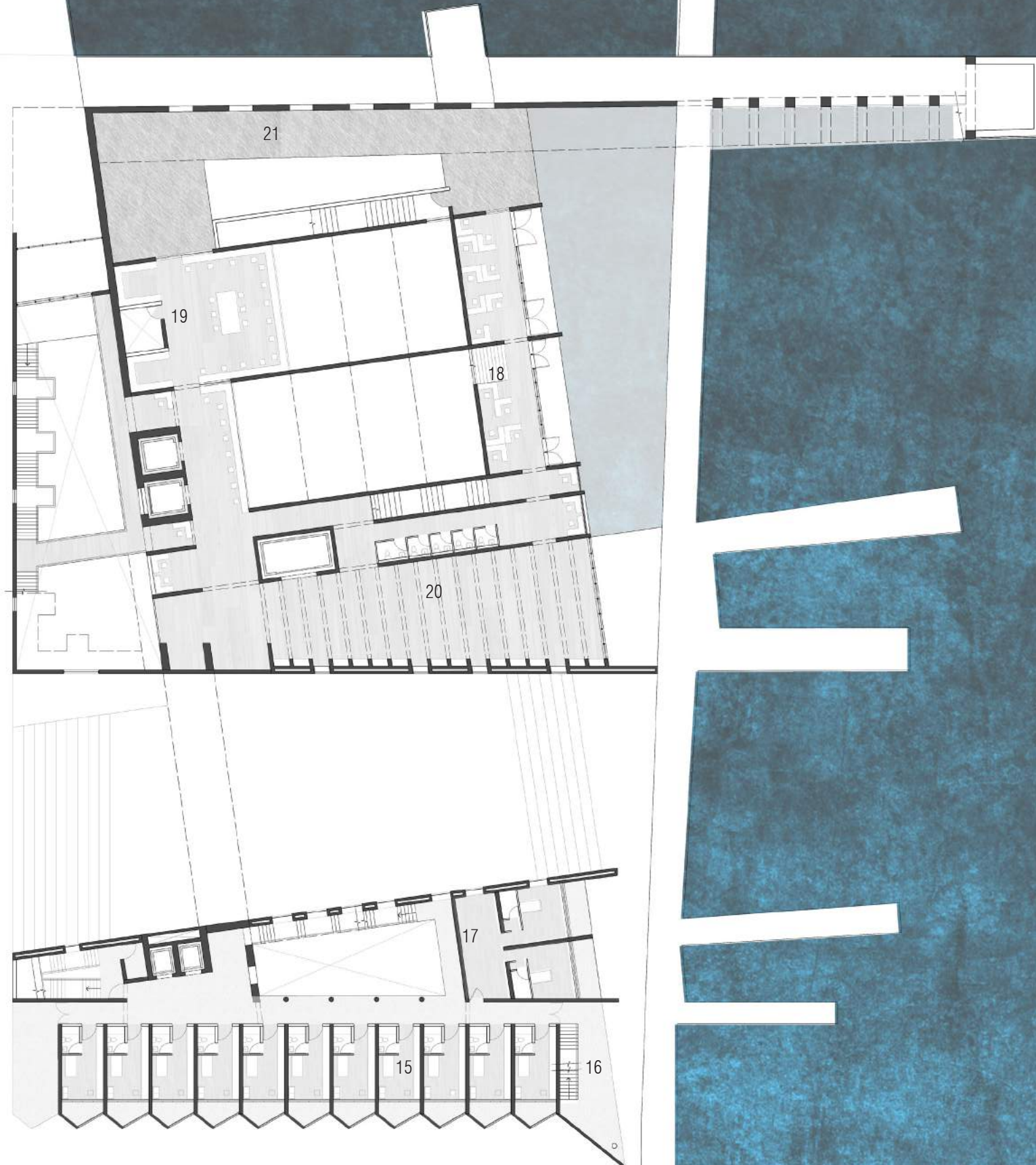
- 1. Room with the wall of drawings
- 2. Administrative office
- 3. Shop, 4. Lift to carry materials
- 5. Exhibition hall
- 6. Seminar Hall
- 7. Conference Space
- 8. Mechanical Services
- 9. Dark Room
- 10. Art gallery
- 11. Courtyard
- 12. Atrium
- 13. Lounge
- 14. Laundry
- 15. Housing Units
- 16. Porch

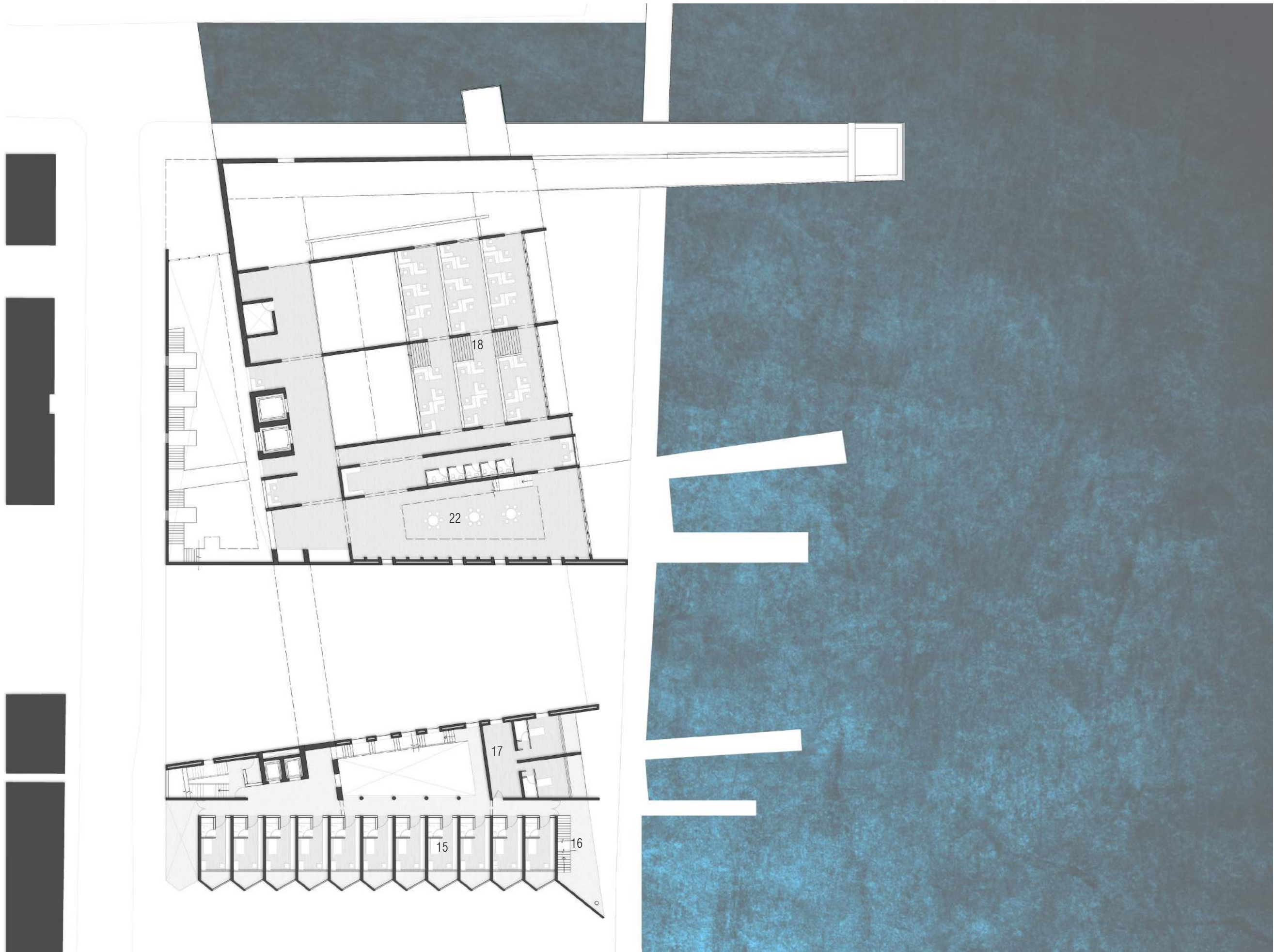
Plan at 11'



- 15.Housing units
- 16.Porch
- 17.Special unit
- 18 Studio
- 19.Computer Lab
- 20.Material Library
- 21.Terrace

Plan at 24'





- 15. Housing units
- 16. Porch
- 17. Special unit
- 18. Studio
- 22. Library

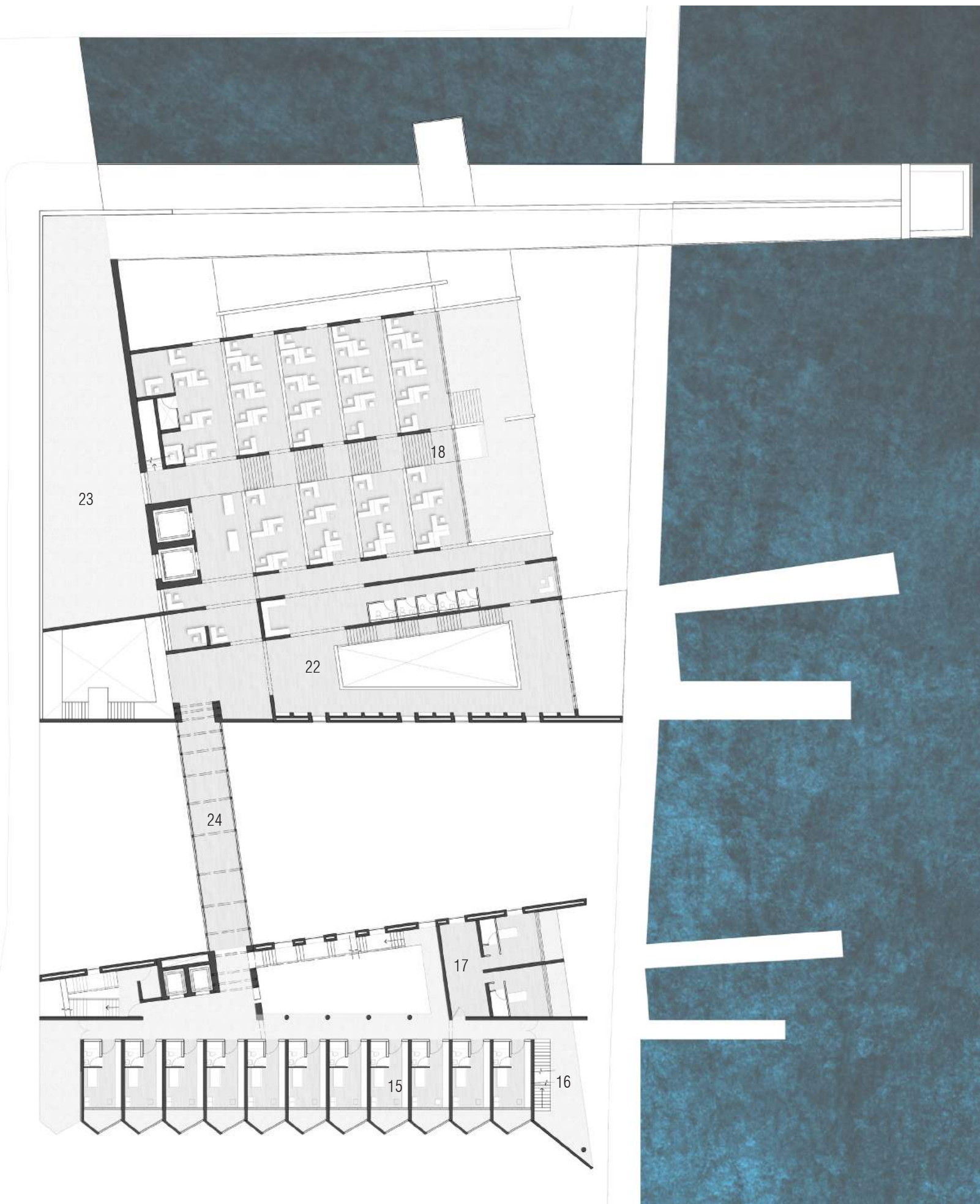
Plan at 34'

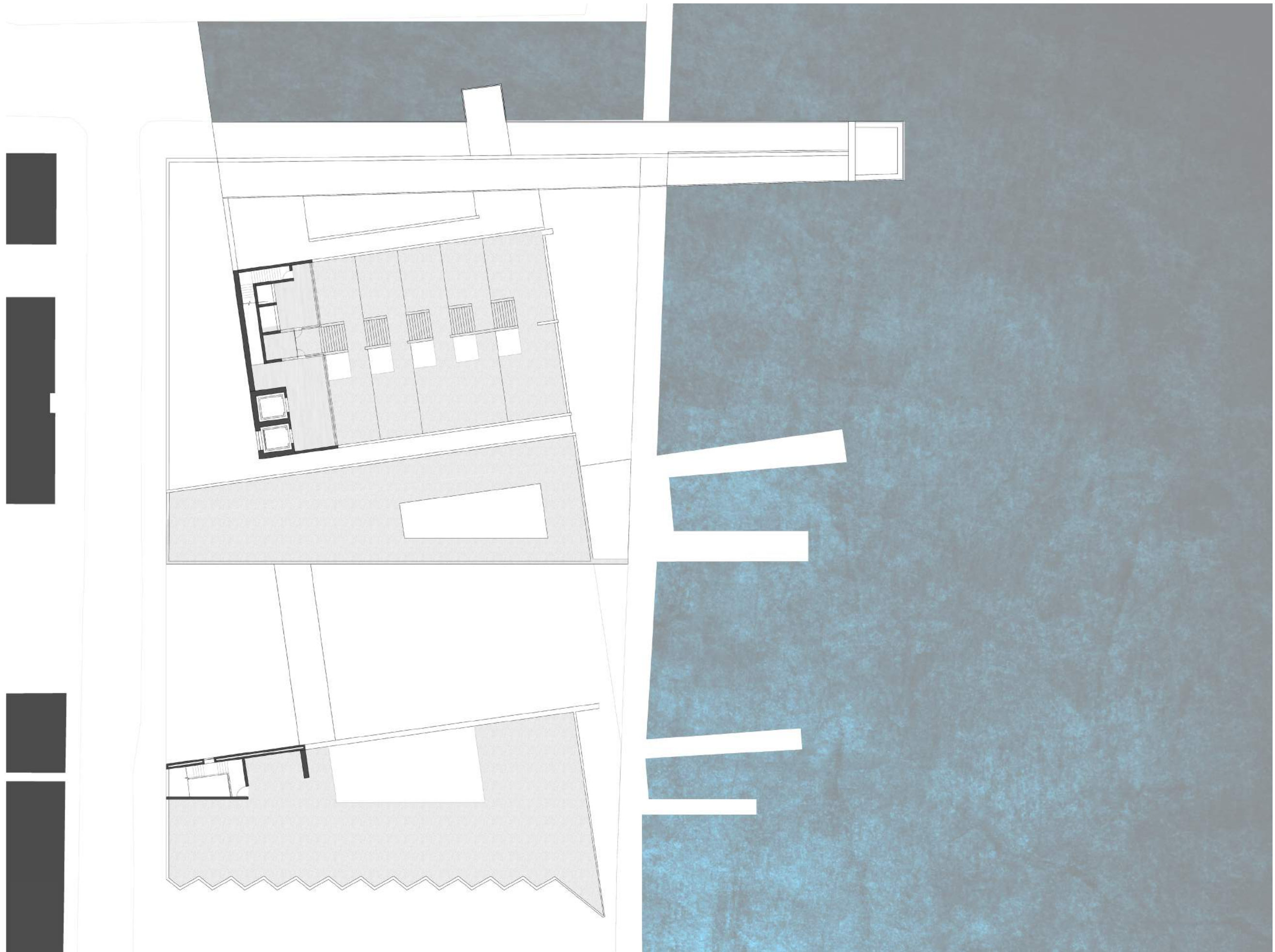


The studios are tiered overlooking the Potomac. Every landing is a studio space. The desks are arranged such that there is a pin up wall for every student. Every 5 feet is a landing. Each landing has about ten students. Thus although it is an open studio, the tiered arrangement allows for some privacy. The studios are oriented towards the true east west direction such that one can see the sun rise and its reflection on the Potomac.

- 15.Housing units
- 16.Porch
- 17.Special unit
- 18 Studio
- 22.Library
- 23.Terrace
- 24.Bridge

Plan at 47'

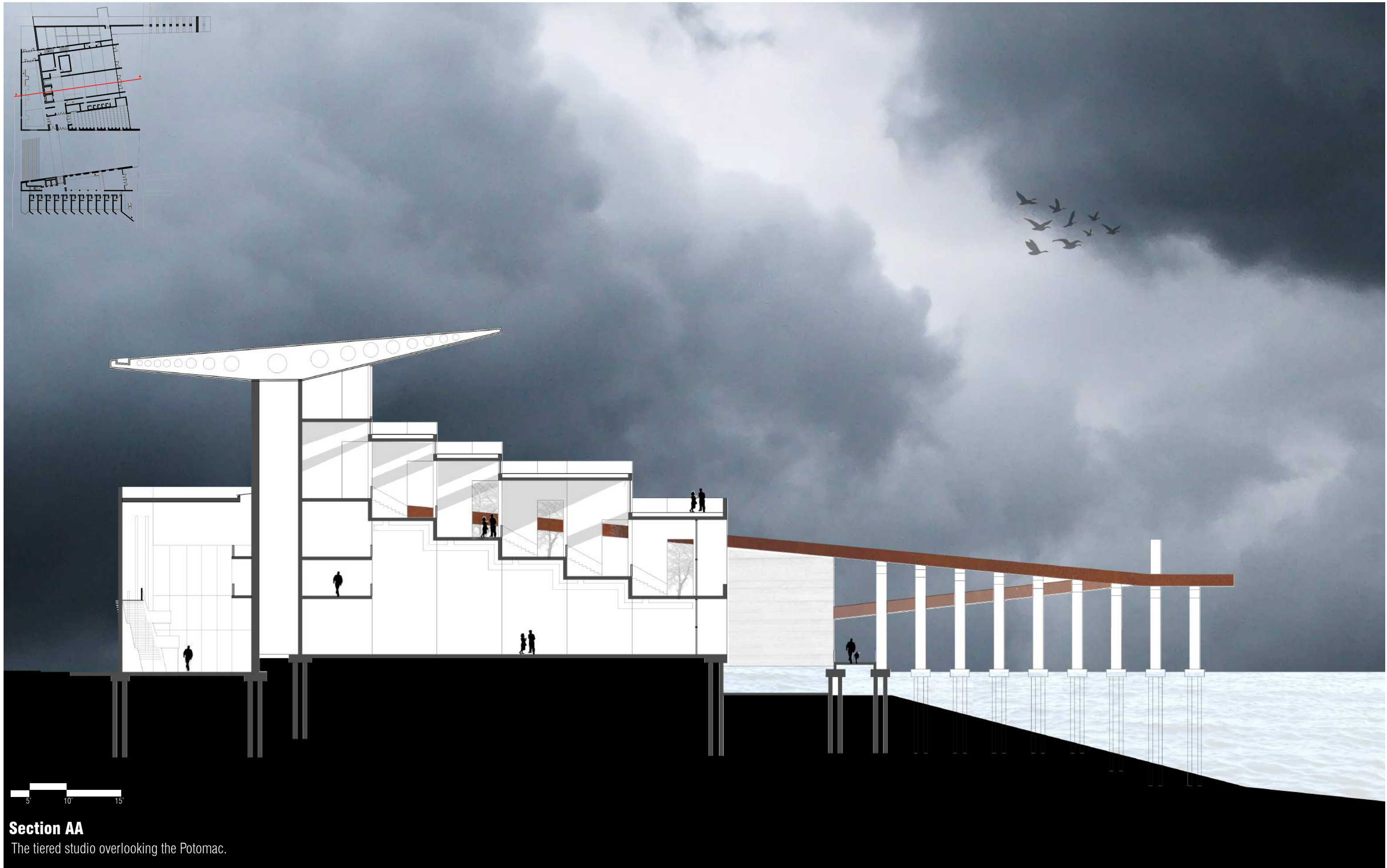




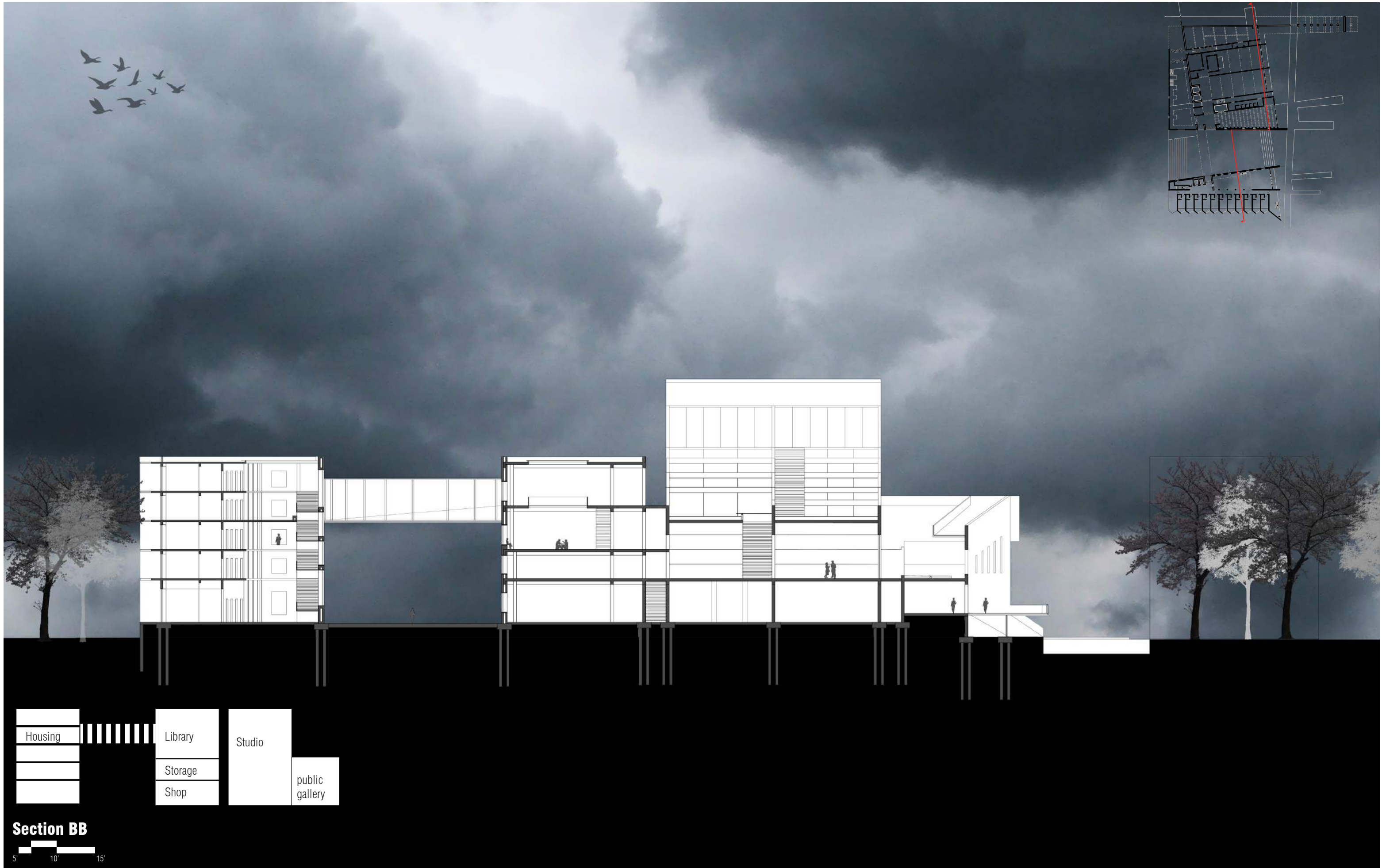
The top most floor of the school is a gallery to pin up sheets and congregate. It overlooks the green terraces and the Potomac.

Plan at 64'





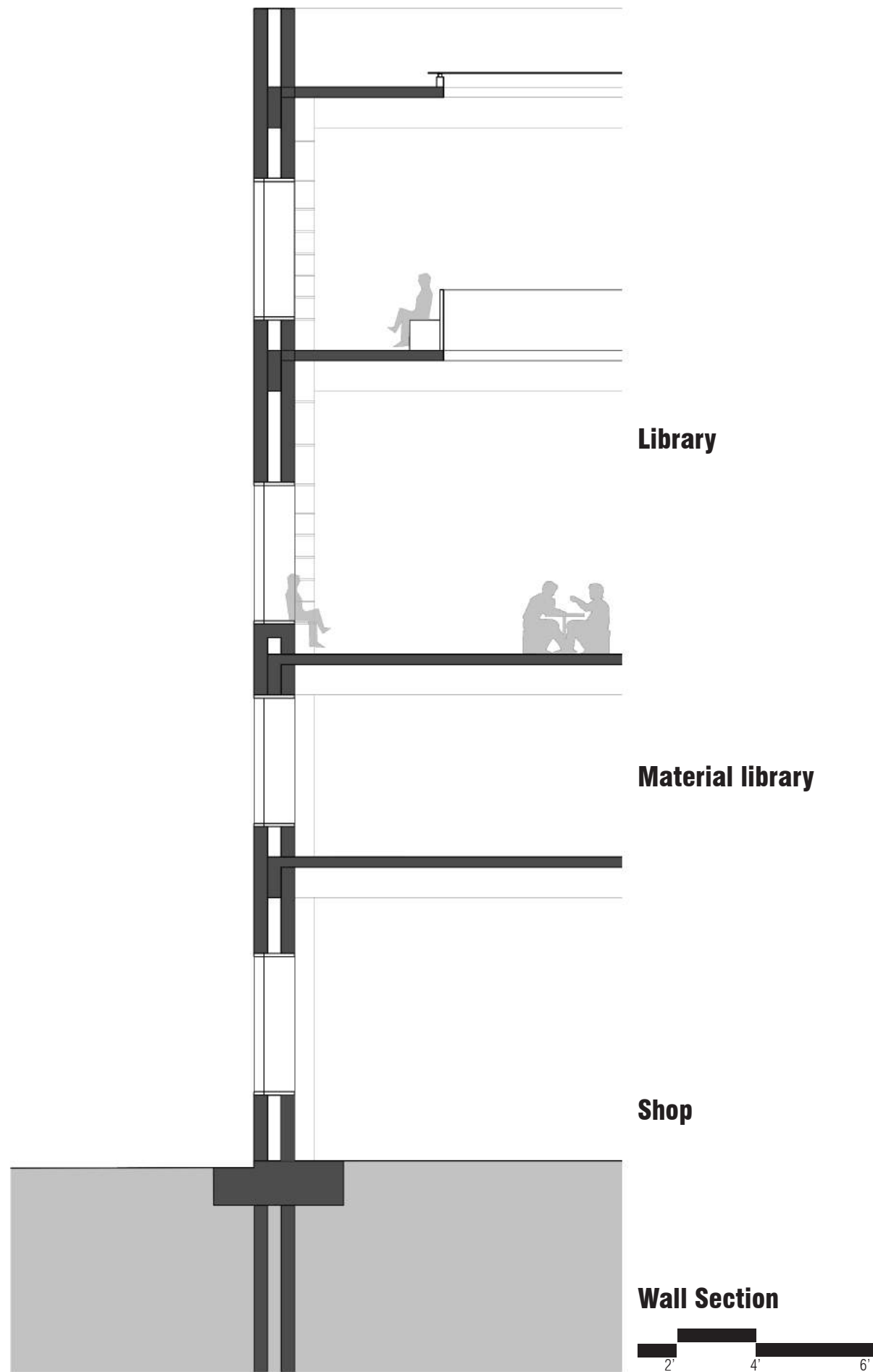
Section AA
The tiered studio overlooking the Potomac.

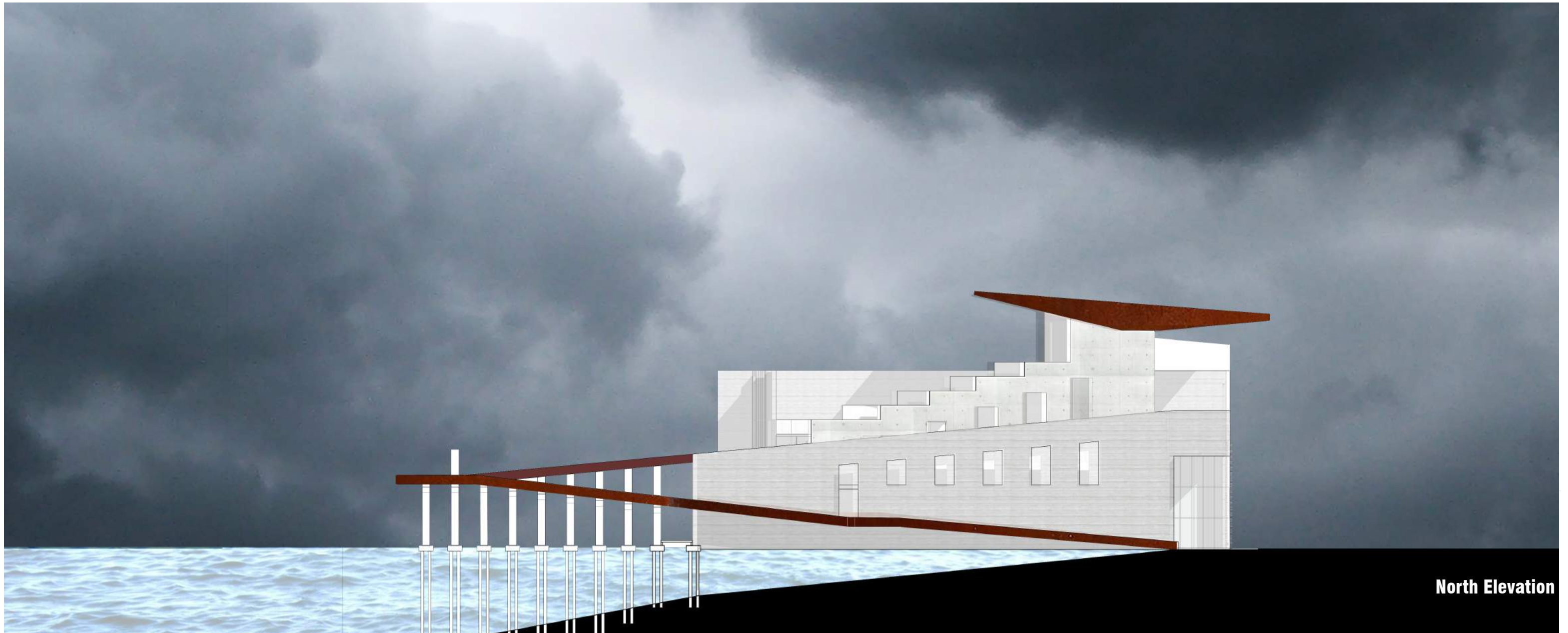


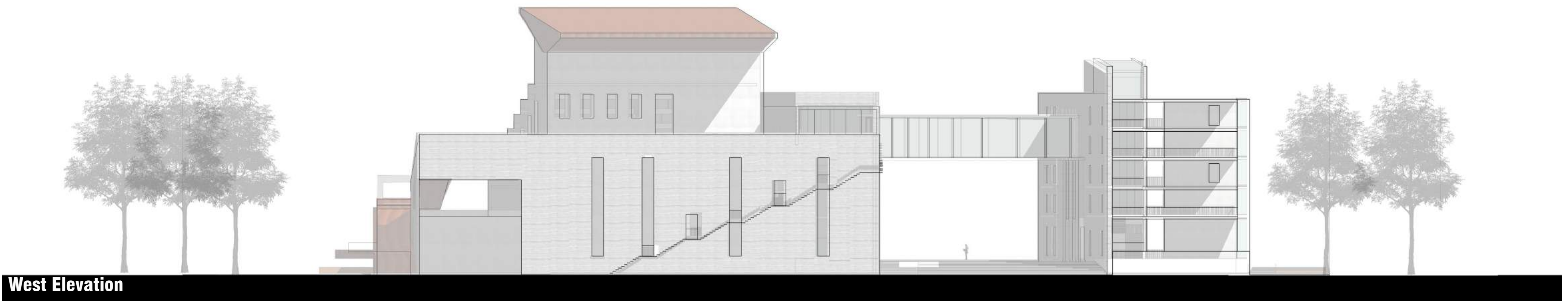
Housing	Library	Studio	public gallery
	Storage		
	Shop		

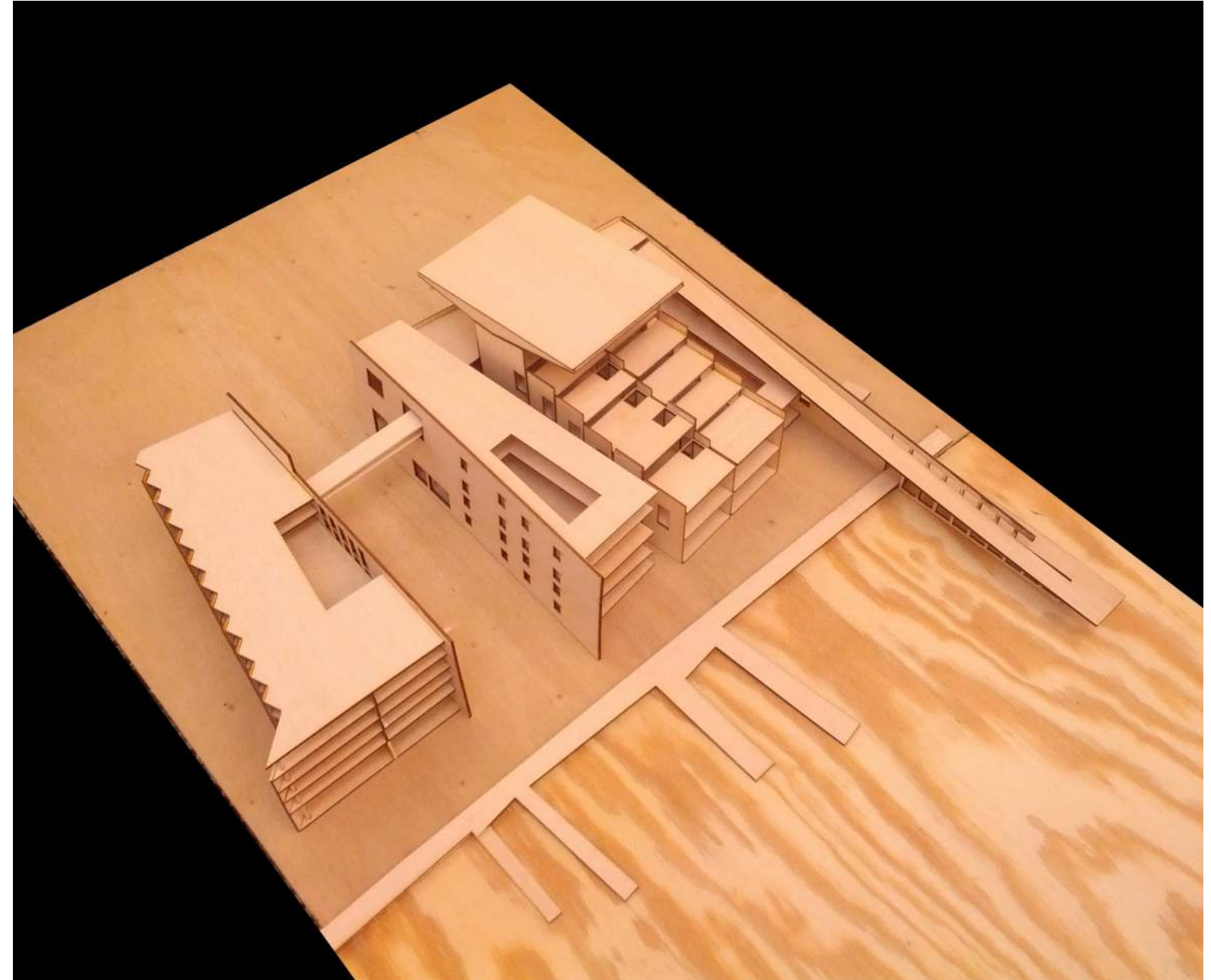
Section BB

5' 10' 15'



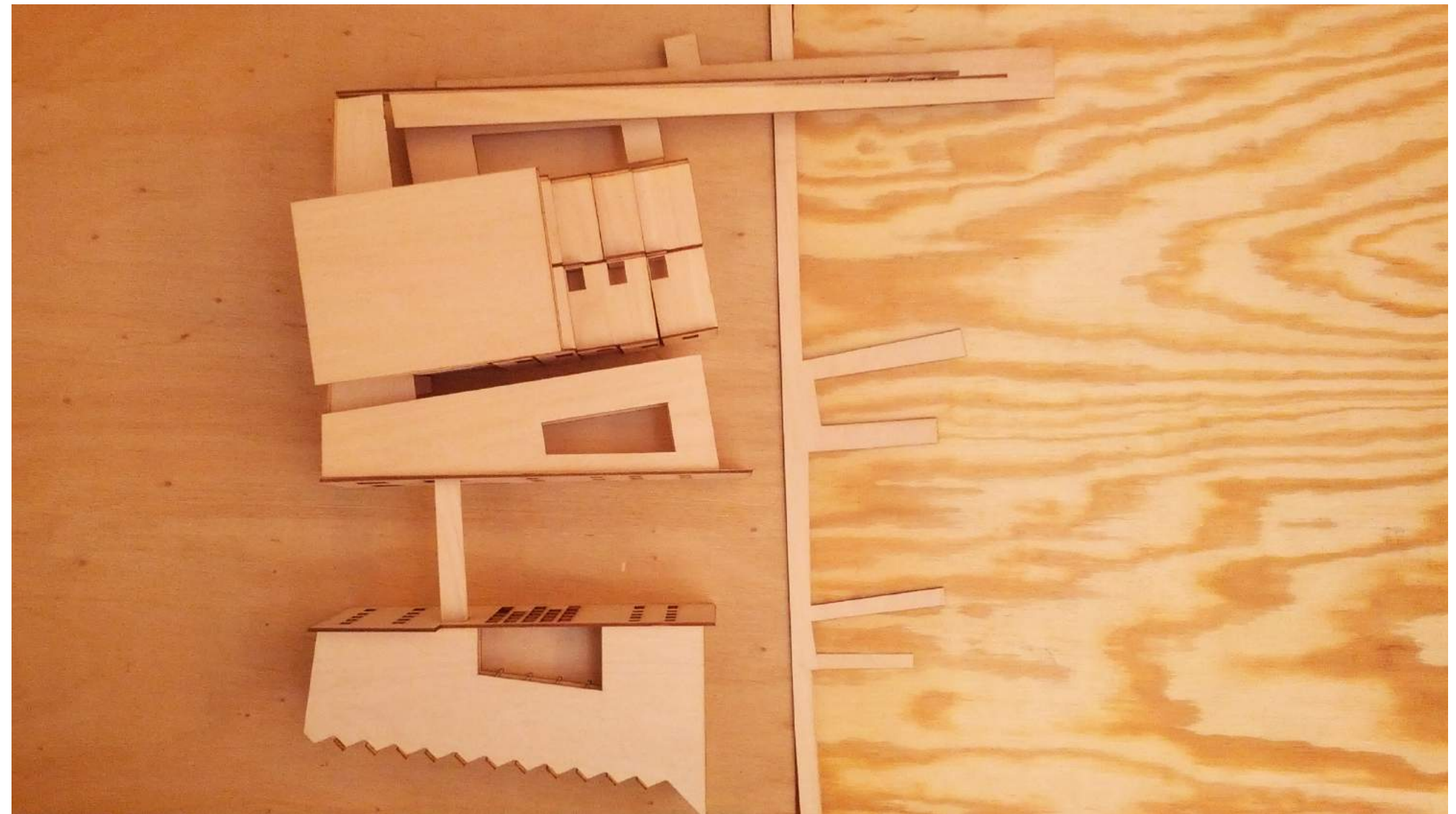






Final Model

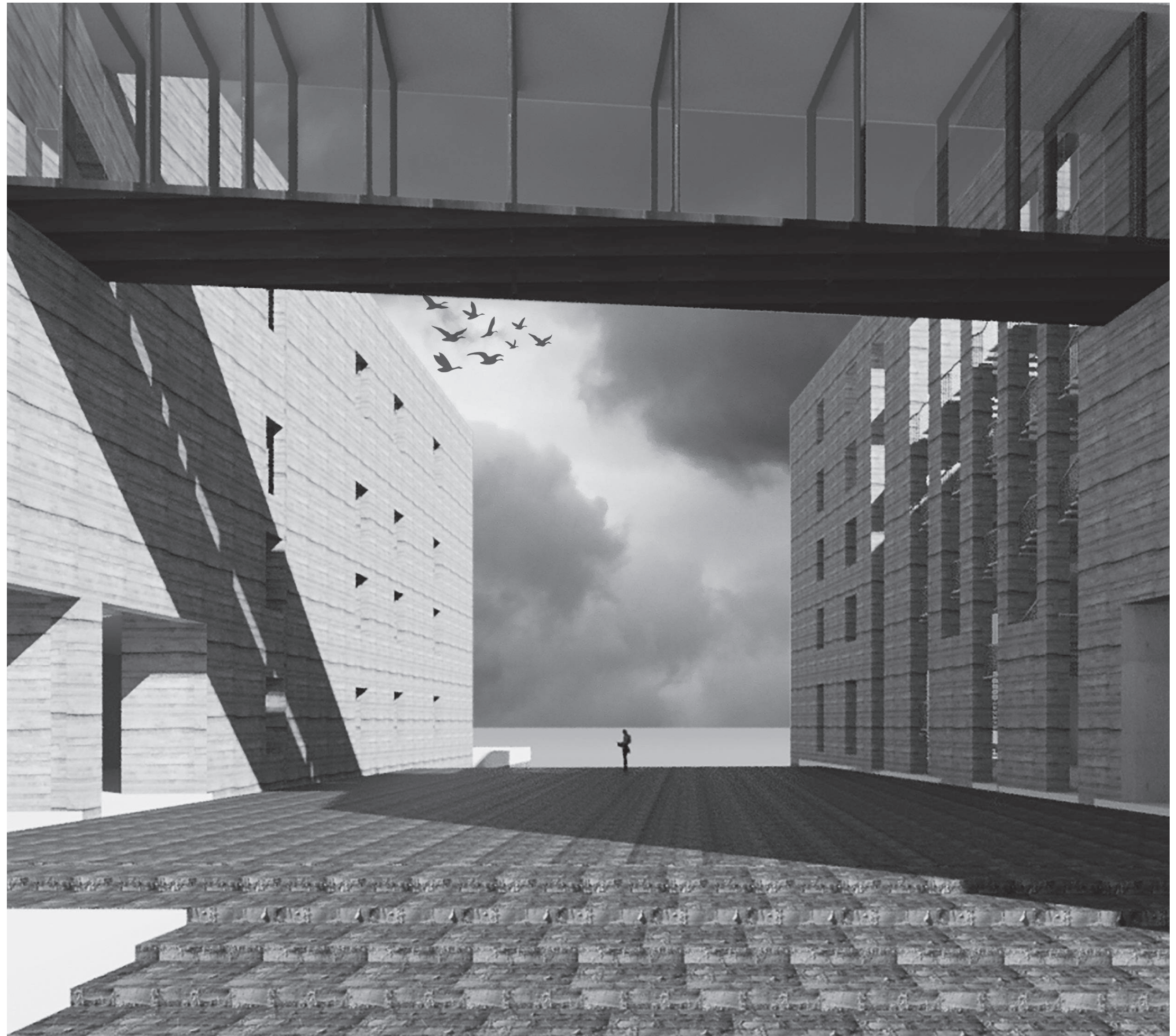
Final Model



Views of the Project



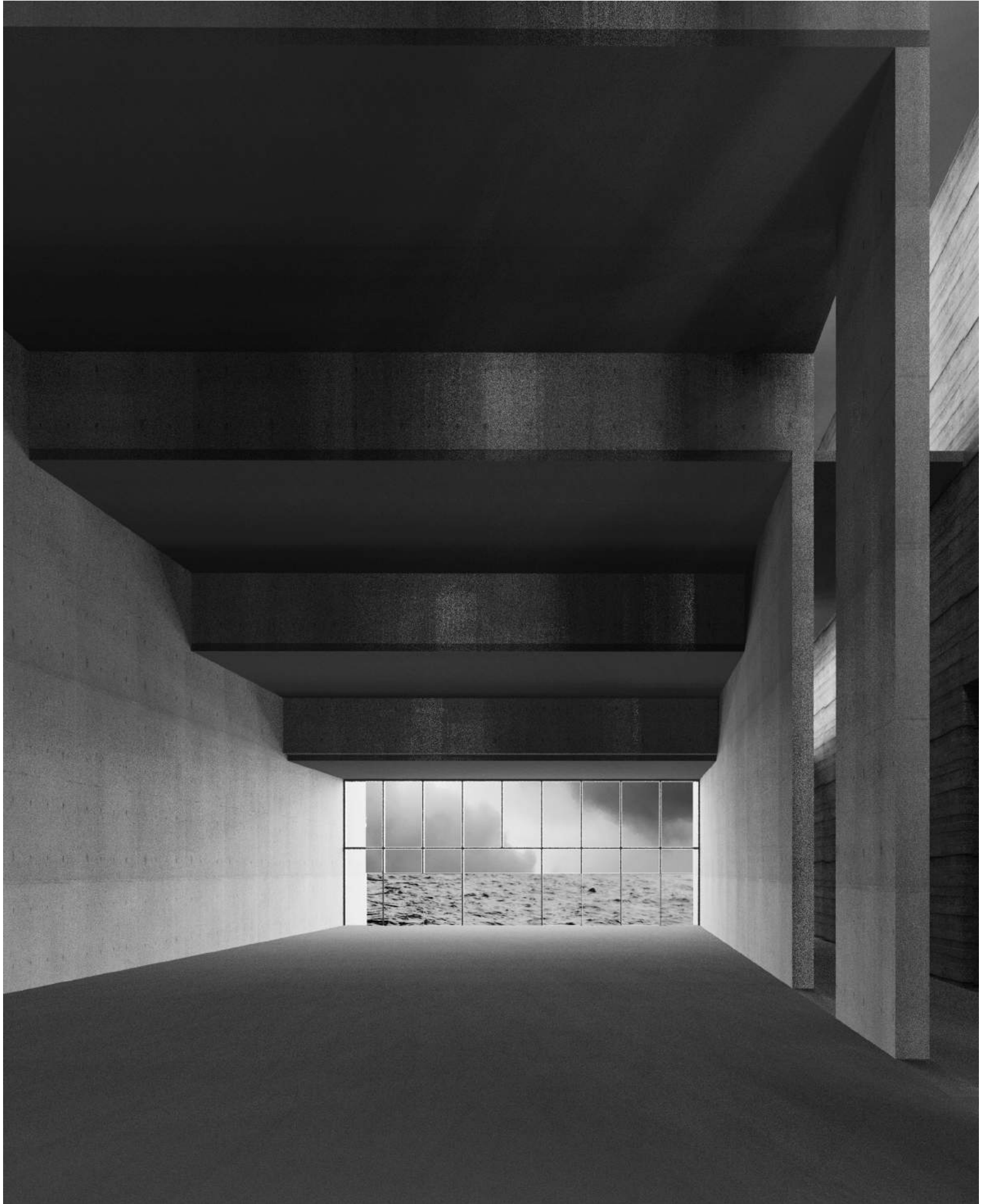
View of the courtyard framing the Potomac.



While the walls of the building forming the courtyard are of board formed finish concrete, the floor is of brick. The structure of the bridge connecting the school and the housing is a vierendeel truss/girder which has only vertical members connecting the top and bottom chord of the truss. The girder is a corten steel structure.



View of the studio framing the Potomac



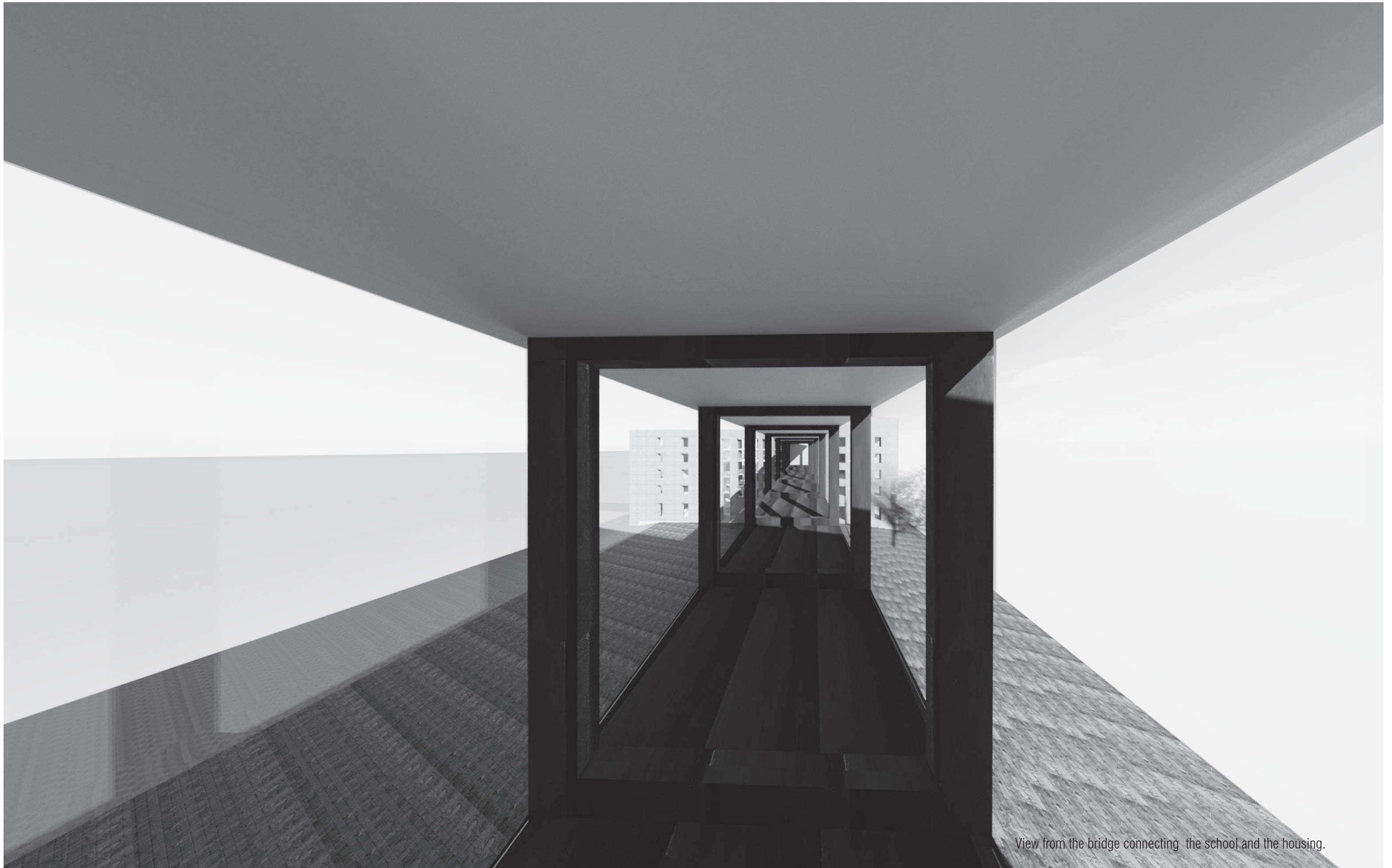
View of the exhibition hall



View of the school from the waterfront promenade



The entrance as viewed from the Prince street.



View from the bridge connecting the school and the housing.



Interior view of the studio. The flooring is engineered wood and the walls are reinforced concrete.



Interior view of the studio



View of the ramp at the entrance. The exterior walls are of board formed finished concrete. The flooring and railing of the ramp are of corten steel.



View of the terrace and the Potomac from the top most floor of the studio.

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Figure 4 Collage of Monastries. Images modified and collage created by the author. Credits for the original images: From top to bottom and left to right.

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Figure 5 Collage of the architectural schools and institutions across the world. Images modified and collage created by the author. Credits for the original images: From top to bottom and left to right.

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<https://cakboris.files.wordpress.com/2012/11/belem-058.jpg?w=590>

Figure 6: Gund Hall, Graduate School of Design, Harvard University, <http://www.gsd.harvard.edu/images/content/5/1/v3/519278.jpg>

Figure 7: Section Gund Hall, Graduate School of Design, Harvard University, <http://3.bp.blogspot.com/-60-Lc6z4DFQ/TtKNtvPG2UI/AAAAAAAAABu8/MjmF9X-rvdg/s1600/11.jpg>

Figure 12: The Site highlighted on the aerial view of the Alexandria Waterfront : http://redbricktown.com/wp-content/uploads/2013/09/aerials_0018_small.jpg

Figure 13: Alexandria Waterfront Elevation. Original image modified by the author. https://www.alexandriava.gov/uploadedImages/planning/info/Waterfront/national%20harbor%20comparison_large.jpg

Figure 14: The site at the end of Prince street and the immediate surrounding. Google earth map of Old Town

Figure 16: Beach Combers building on the site, <https://www.alexandriava.gov/uploadedImages/special/WaterfrontPlan/beachcomber.jpg>

Figure 17: The site highlighted on the proposed masterplan for Alexandria. https://www.alexandriava.gov/uploadedFiles/planning/info/Waterfront/Entire%20Plan_No%20Appendices_080111_258pm.pdf



to be continued....