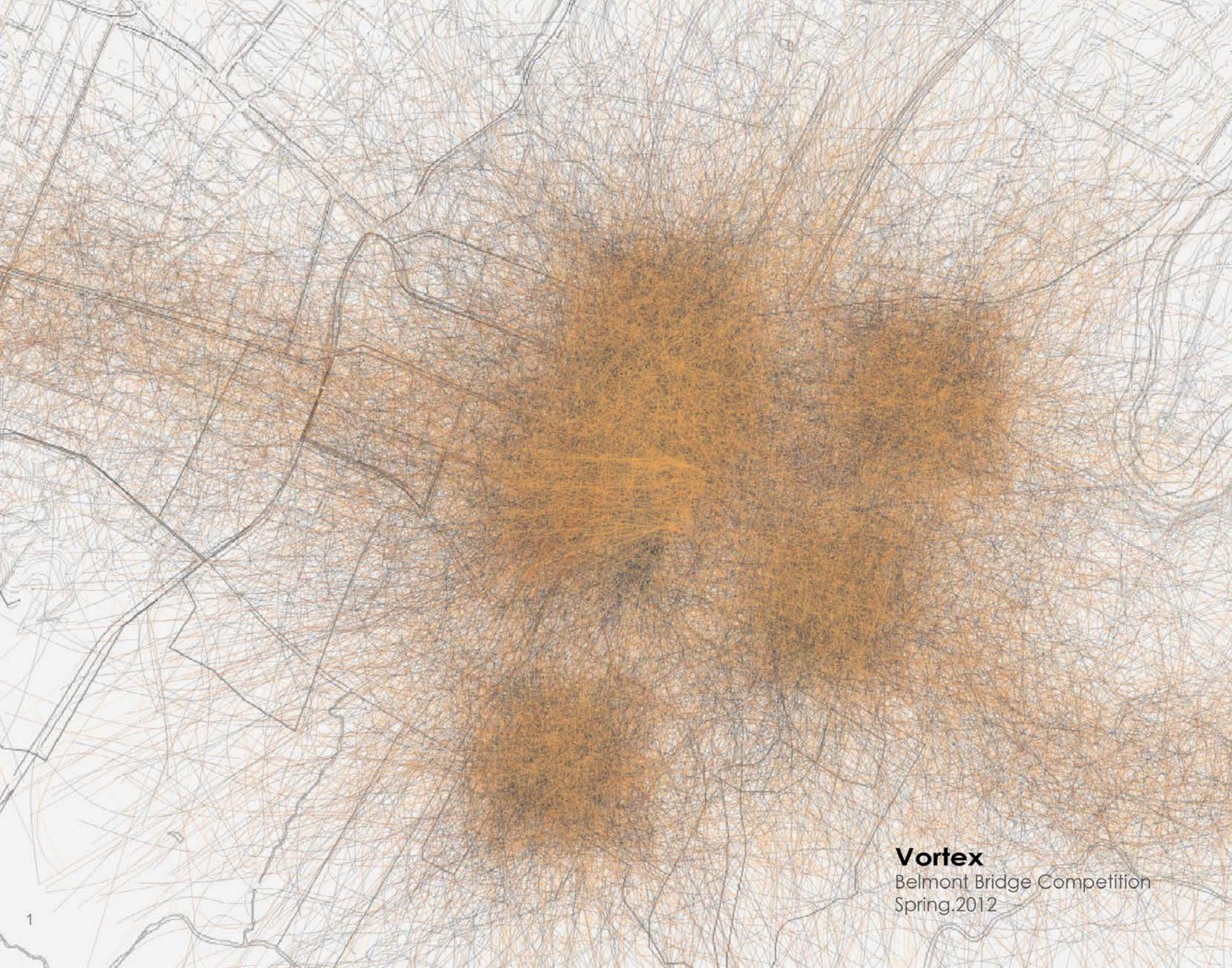




PORTFOLIO OF **YANG WANG**
LANDSCAPE ARCHITECTURE FROM AUBURN UNIVERSITY, USA



TIME-LINE

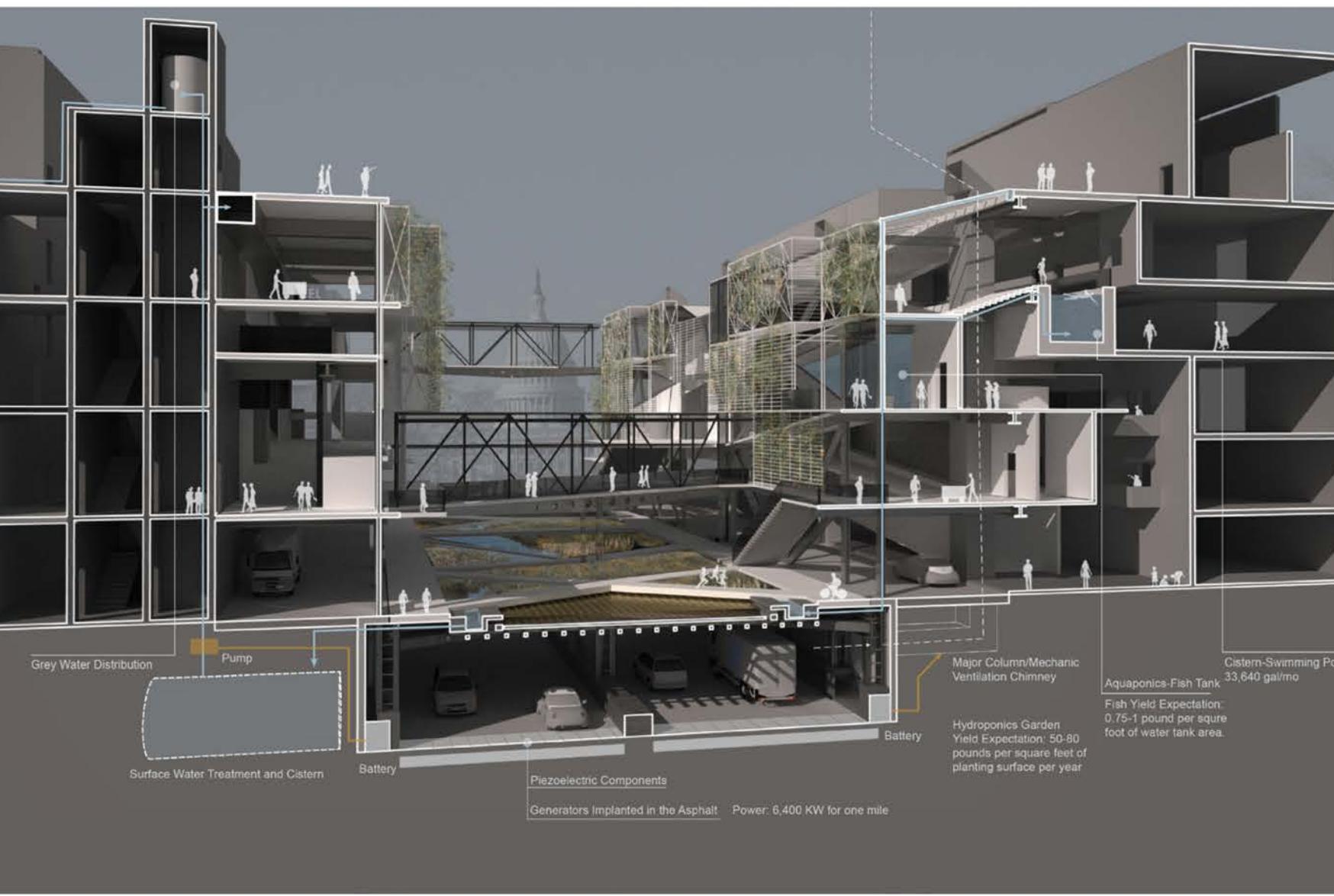
- [2013 spring] **Urban Infrastructural Threshold** P3-P26
A hybrid emergent infrastructure system to become a generator of animated urban life
- [2011 spring] **Metropolitan Kitchen** P27-P38
Central Park West Culinary Institute
- [2012 spring] **Flow Integration with BIM** P39-P46
Design Development of A Meditation Room with Revit, Tas and Eco-tect
- [2012 spring] **The Third Detector** P47-P56
Reading of Time and the Universe at Fermi-Lab: National Accelerator Laboratory
- [2010 fall] **Parametric Hill Town** P57-P60
Barracks Road Residential Community
- [2011 fall] **Weaving** P61-P70
Roots of Music: Marching Band School in New Orleans
- [2011 spring] **Reaction** P71-P72
University of Virginia Art Museum Addition

[Thesis]

Urban Infrastructural Threshold

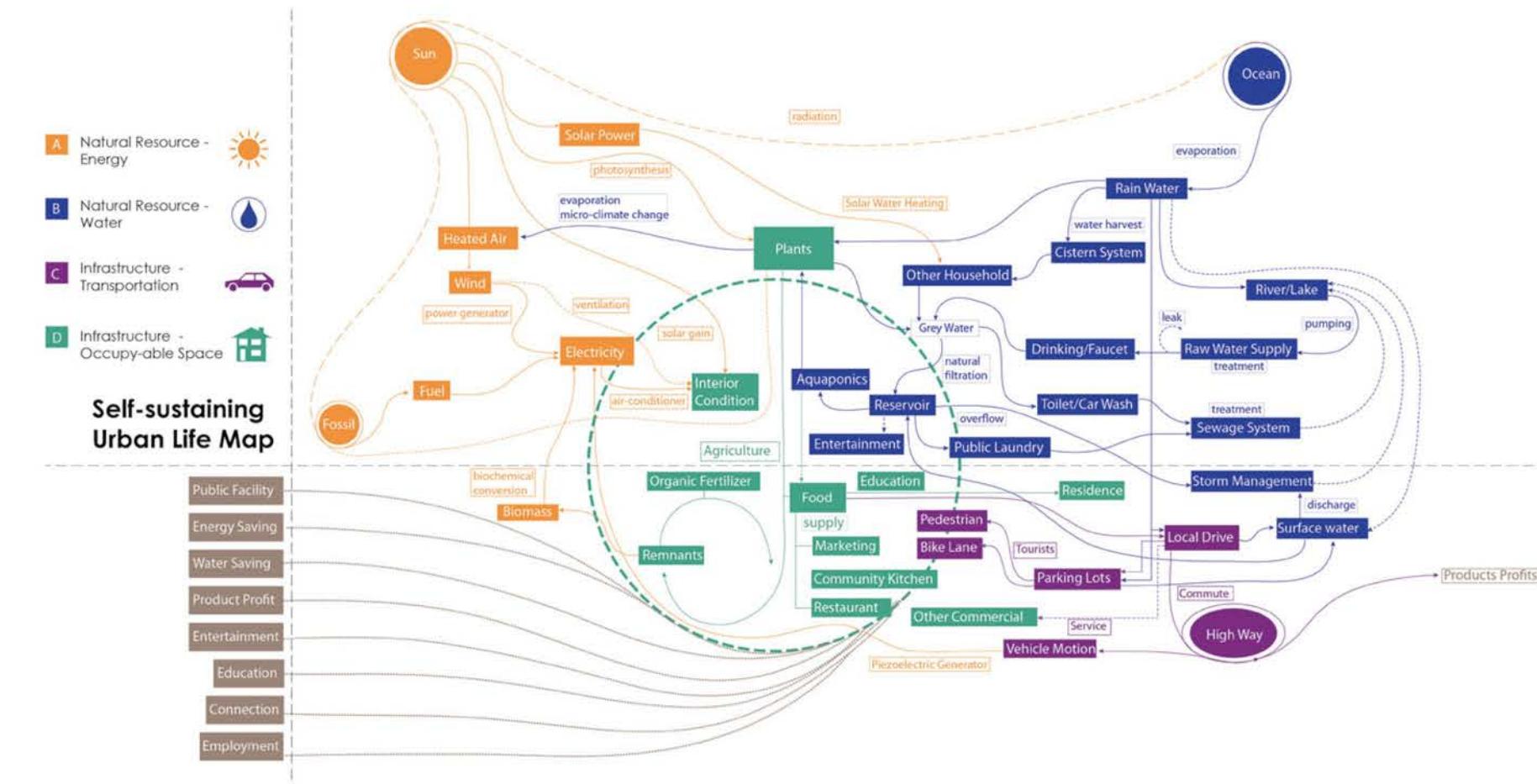
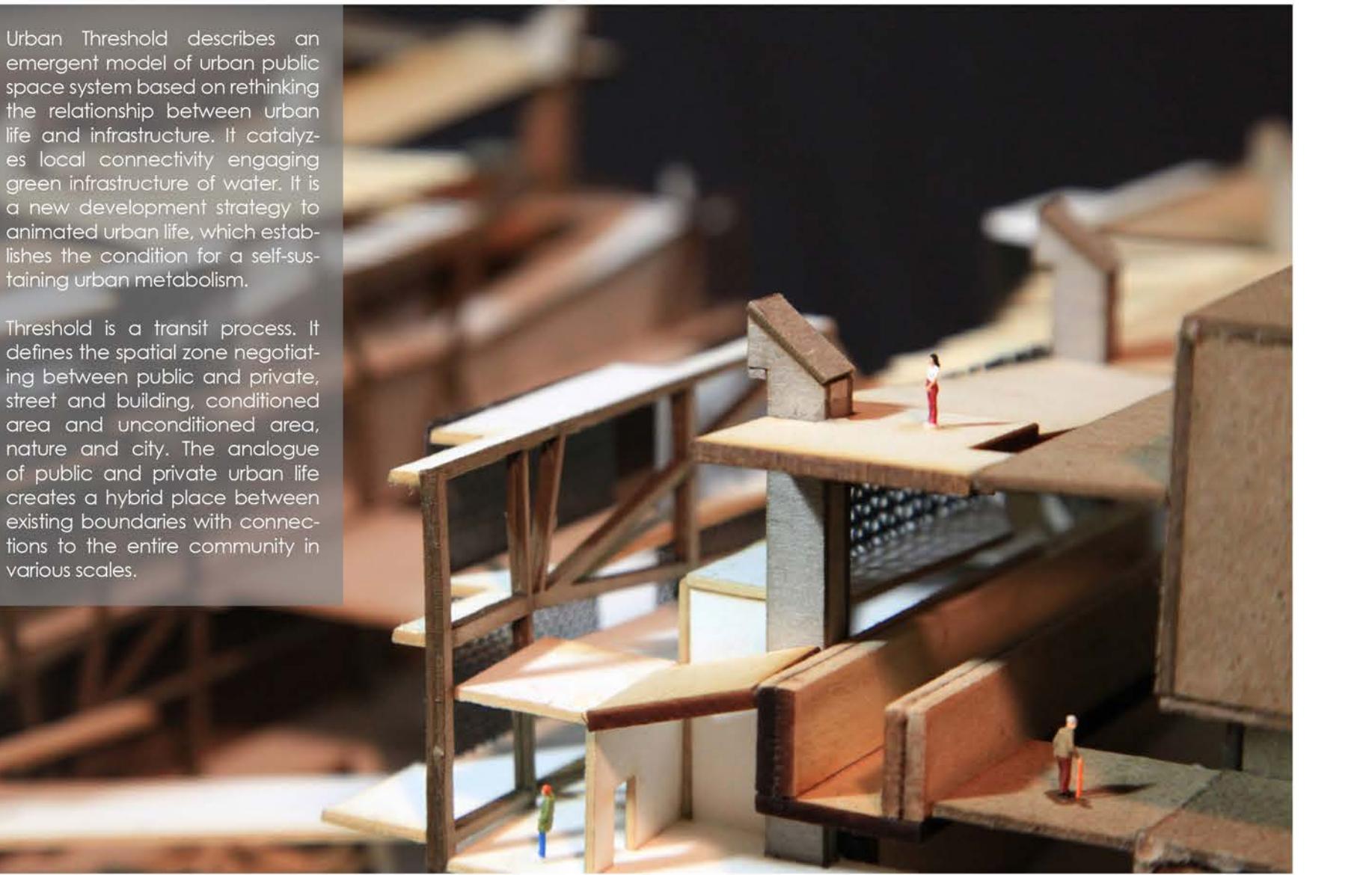
A hybrid emergent infrastructure system to become a generator of animated urban life

3

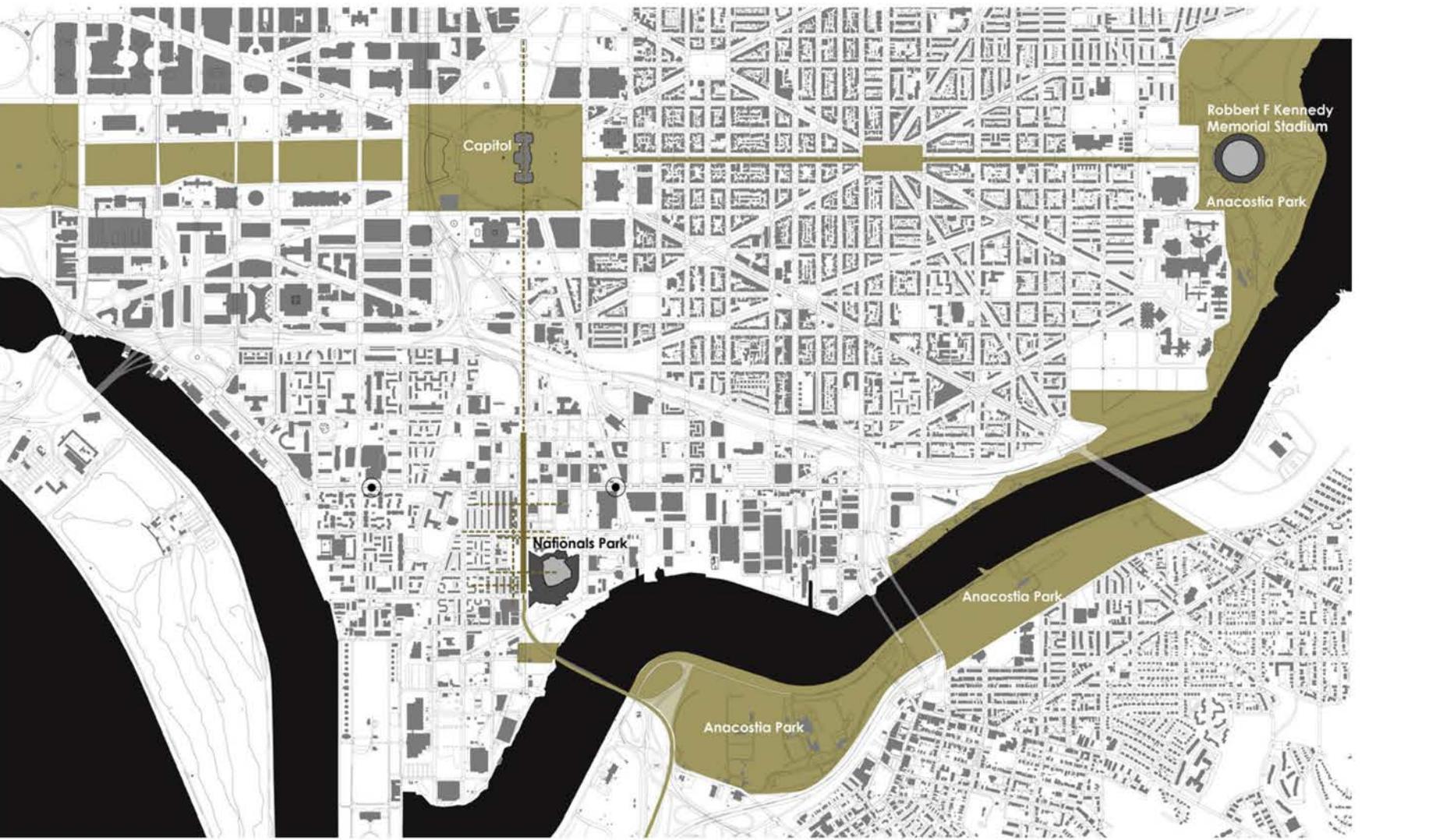


Urban Threshold describes an emergent model of urban public space system based on rethinking the relationship between urban life and infrastructure. It catalyzes local connectivity engaging green infrastructure of water. It is a new development strategy to animated urban life, which establishes the condition for a self-sustaining urban metabolism.

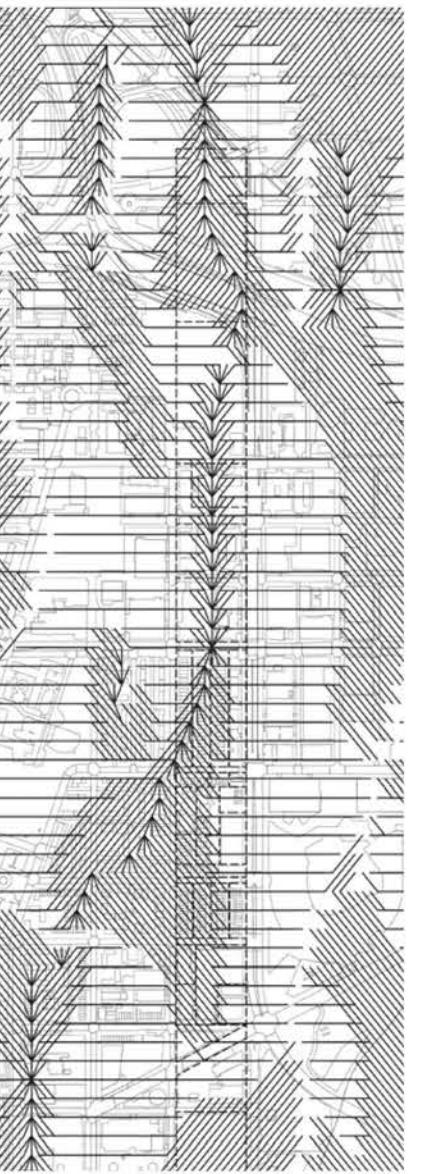
Threshold is a transit process. It defines the spatial zone negotiating between public and private, street and building, conditioned area and unconditioned area; nature and city. The analogue of public and private urban life creates a hybrid place between existing boundaries with connections to the entire community in various scales.



Systematic thinking is the fundamental strategy, because urban life is the result of the interaction among different systems. I am trying to decode those connections, both ecological and social, as much as possible in this self-sustaining map. You can see, natural resources, I choose water and energy here; engage with transportation infrastructure and occupyable space. They create all kinds of activities, and those subsystems and loops generate public and ecological benefits.



The locale site is South Capitol St. which is on the border of the two urban systems with some problems such as population decreasing and low income. Considerable vacant lands indicate the lack of social and economic connection for the local community. On the other hand, it is the crucial north-south axis of the capital perpendicular to the Mall, which holds the potential for future civic landmark with the crowds hailing in the Nationals Stadium nearby. In my proposed self-sustaining process, the community is formed by different models including water harvesting, urban farming, and on-site sewage treatment and so on, which creates a Water Armature for adjacent neighborhood to plug into. And this new inhabitable water infrastructure makes social and cultural dialogue with original city canal in the history.

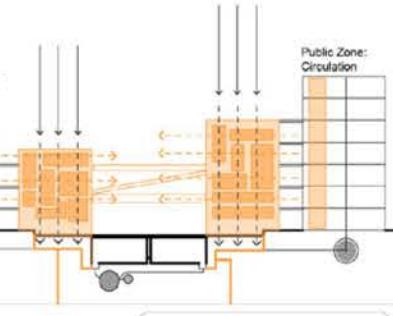
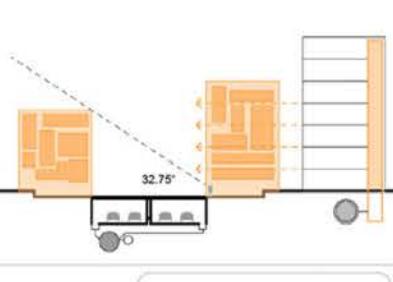
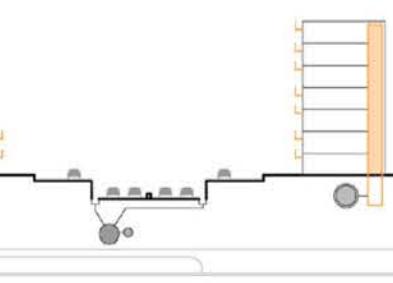
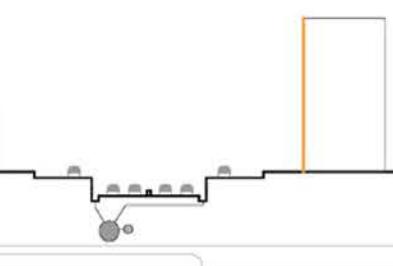
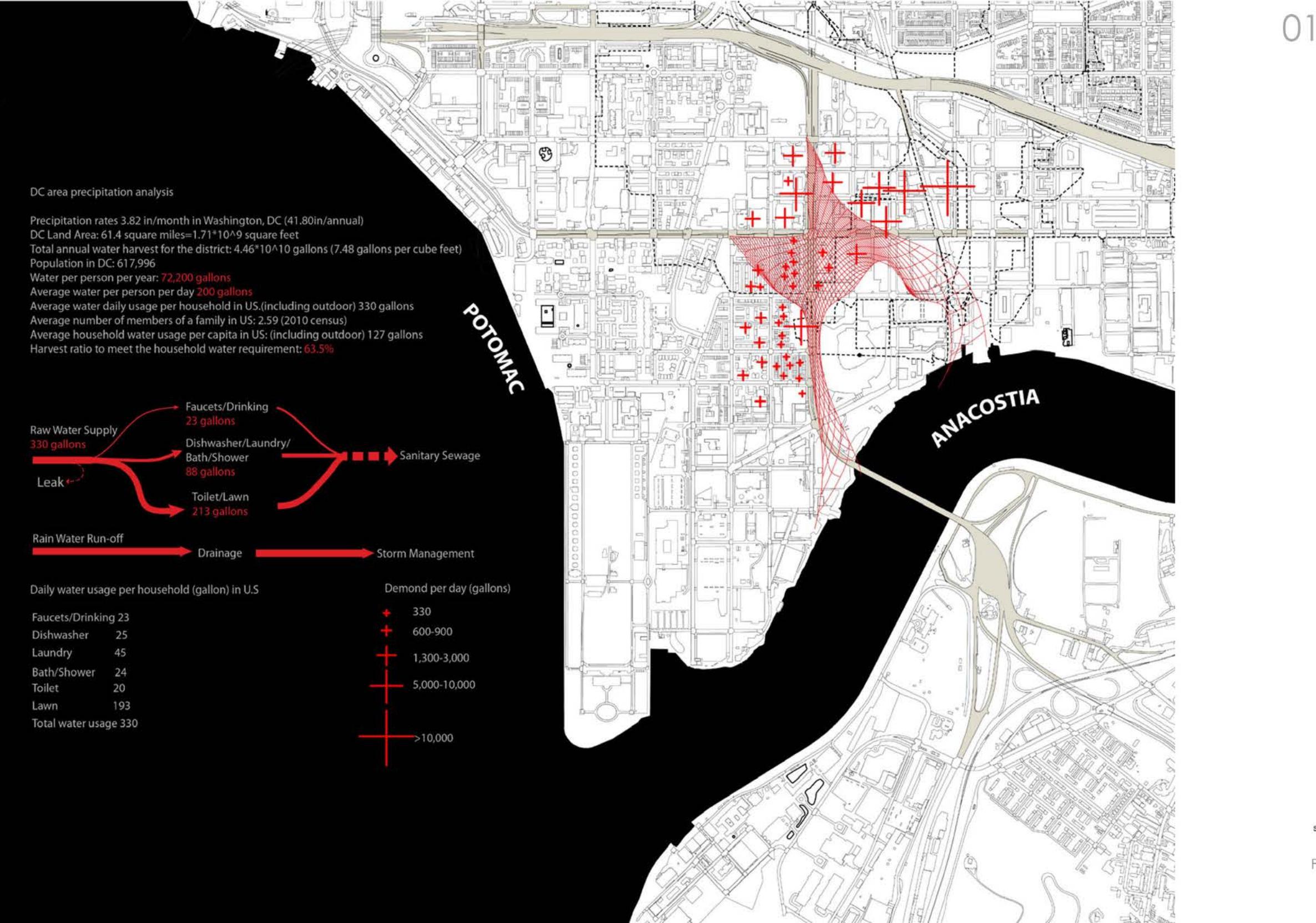


In the heart of the democratic stage, local neighborhood has been isolated ever since L'Enfant's plan with 120-feet wide South Capitol Street cutting through. The street is an important highway connecting the southern area with busy commute traffic. The community suffers from high vacancy and unemployment.

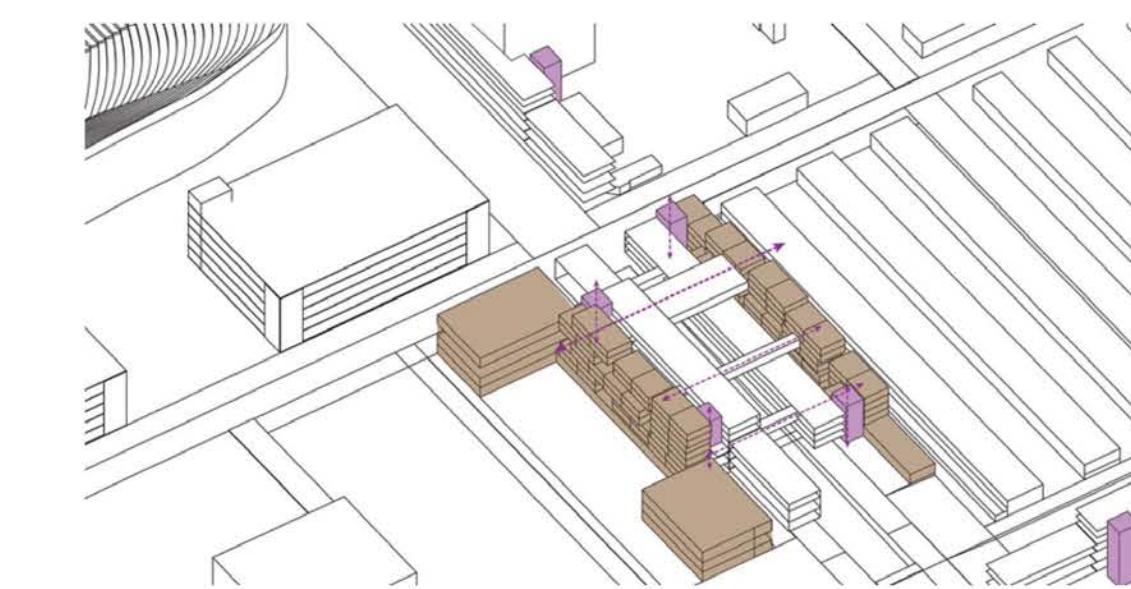
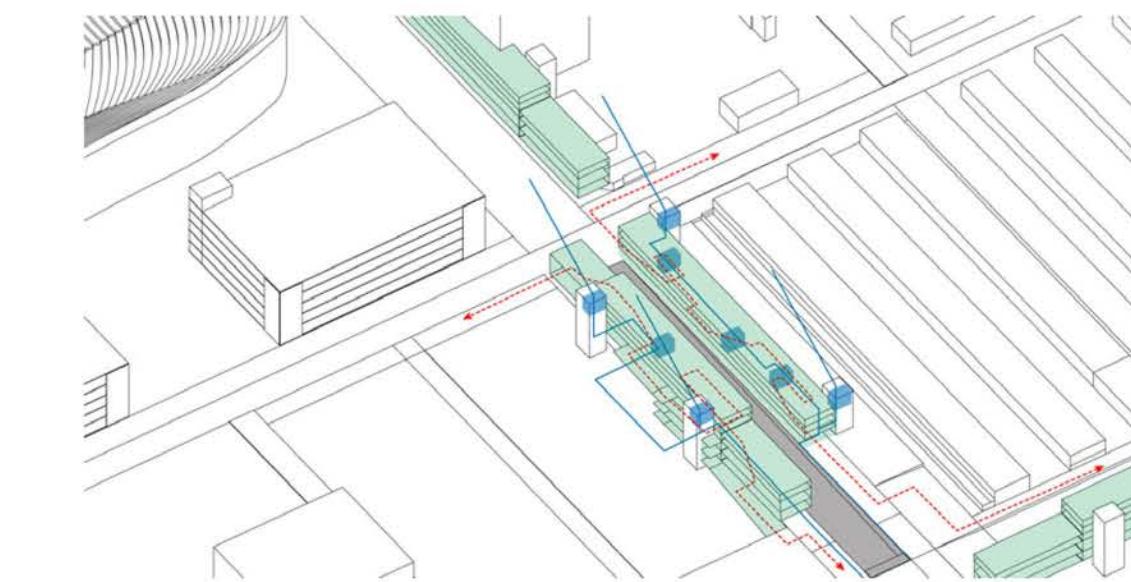
The street in the history back to 1861 was a canal connecting Anacostia. Currently the topography and watershed study indicates the street surface with its tunnel still moves converged ground-water south.

01

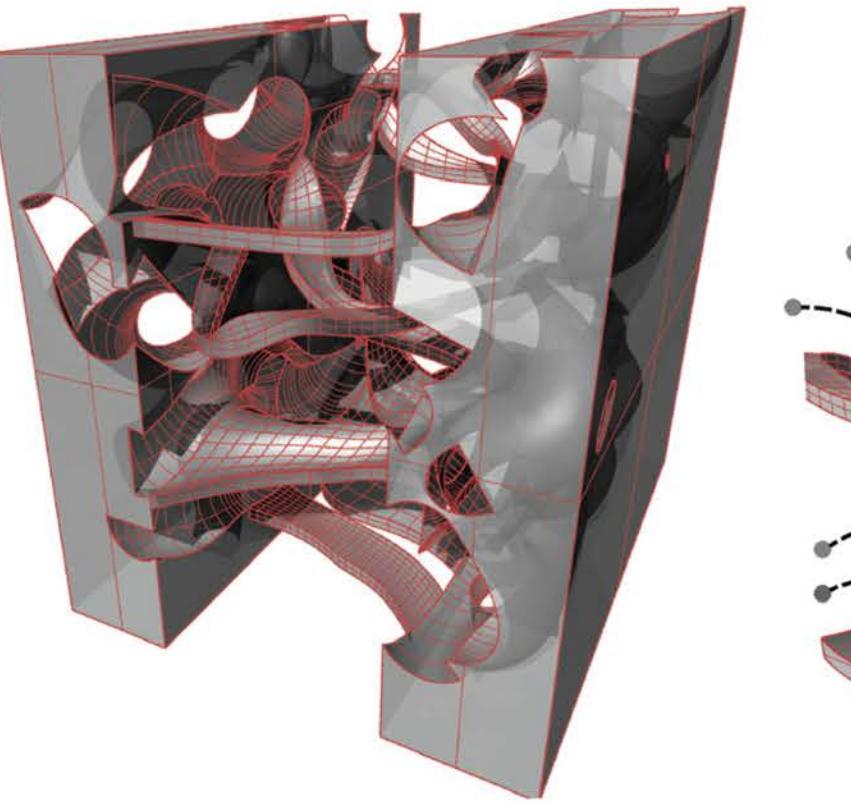
[Thesis 01]: Urban Infrastructural Threshold



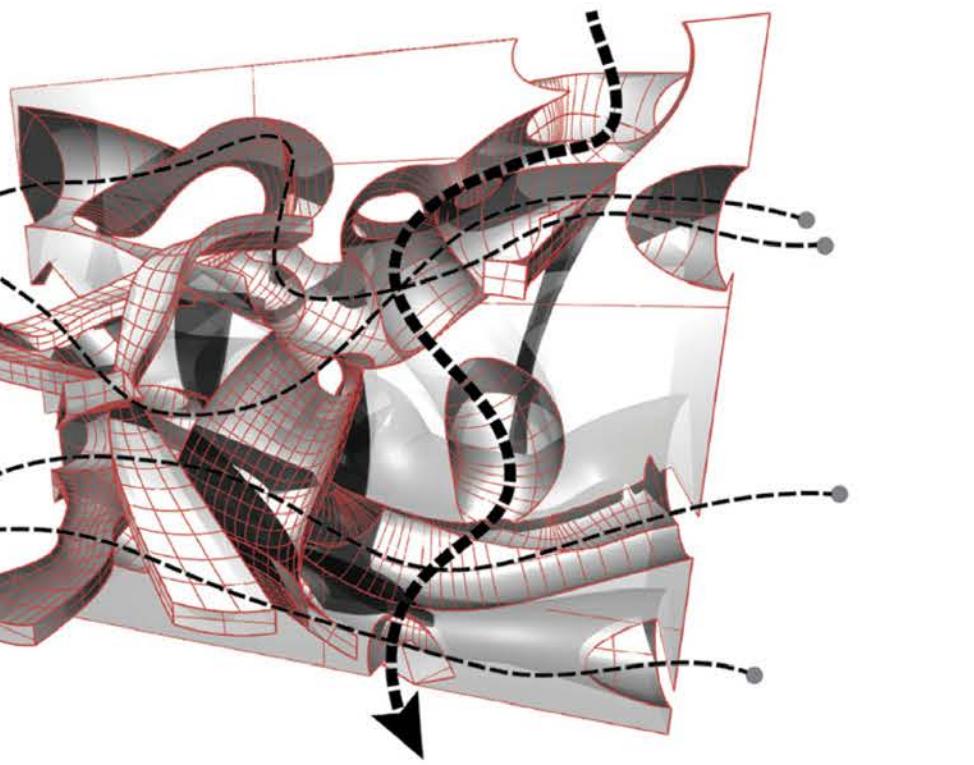
Facade: Threshold and Filter



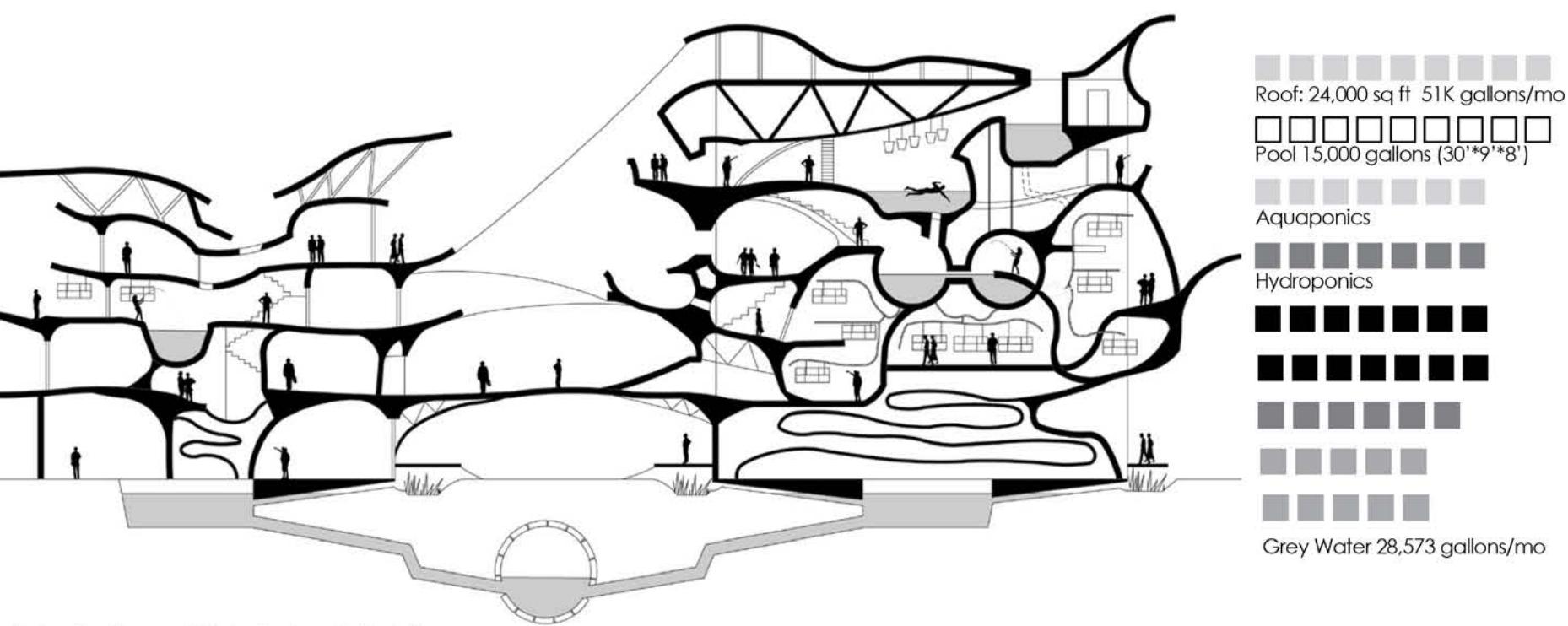
Along with the history of architecture, façade becomes more and more independent to the content of the building itself. It represents more public meaning to the outside than its function as part of the building envelope. In my case here, I would like to detach the façade from building behind as a self-support public component. So this threshold becomes occupiable with public programs such as green space, commercial space, and educational space. This new façade is fully integrated with the street, the side walk, the bridge and even the infrastructure underground.



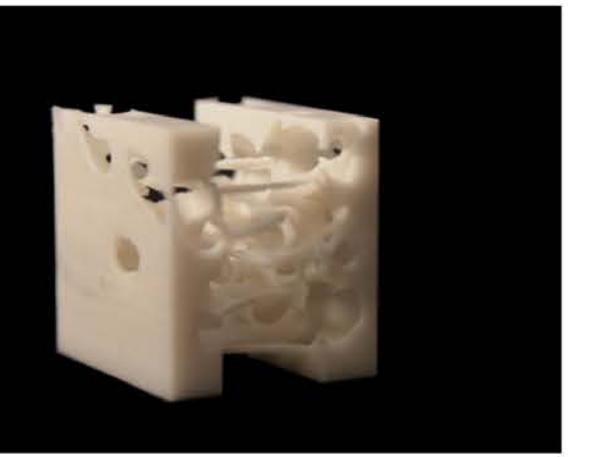
Imitation Sectional Model for Water Feature with Public movement



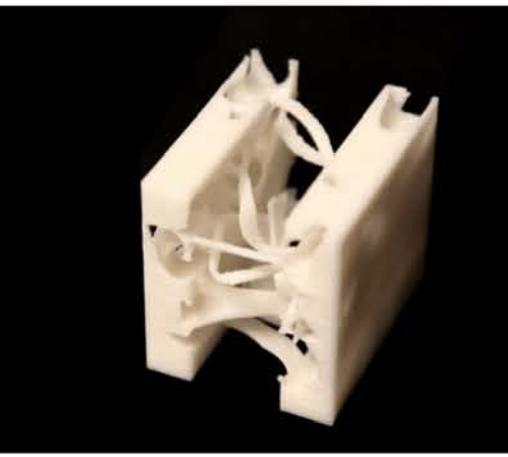
Imitation Sectional Model for Water Feature with Public movement

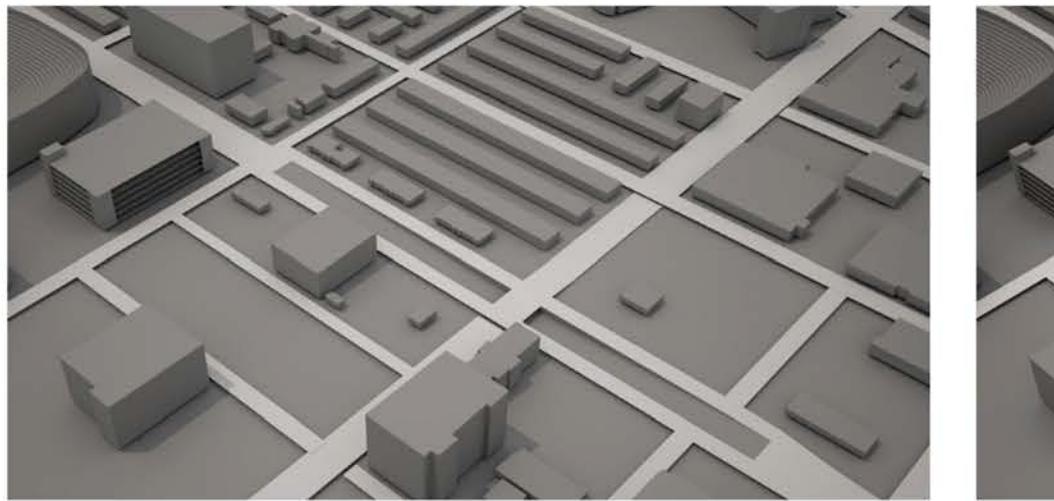


Imitation Section and Water Feature Calculation

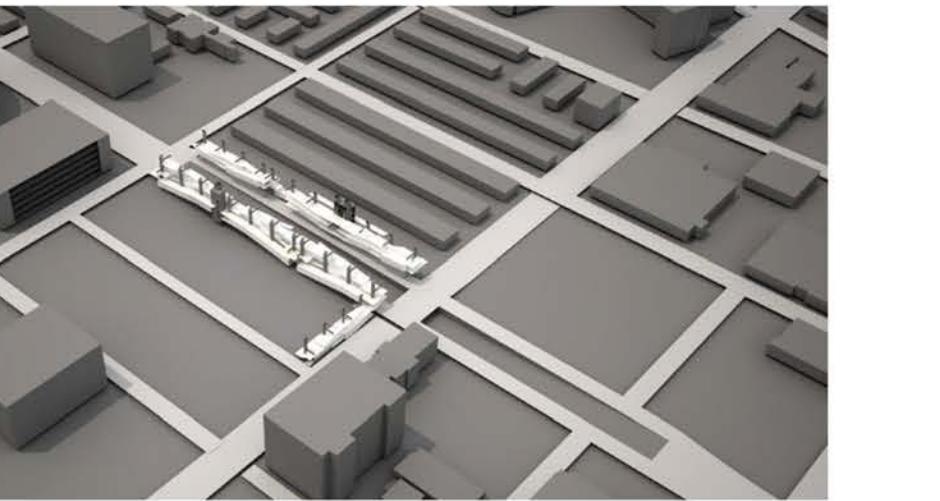


3D Printed Parametric Imitation Model

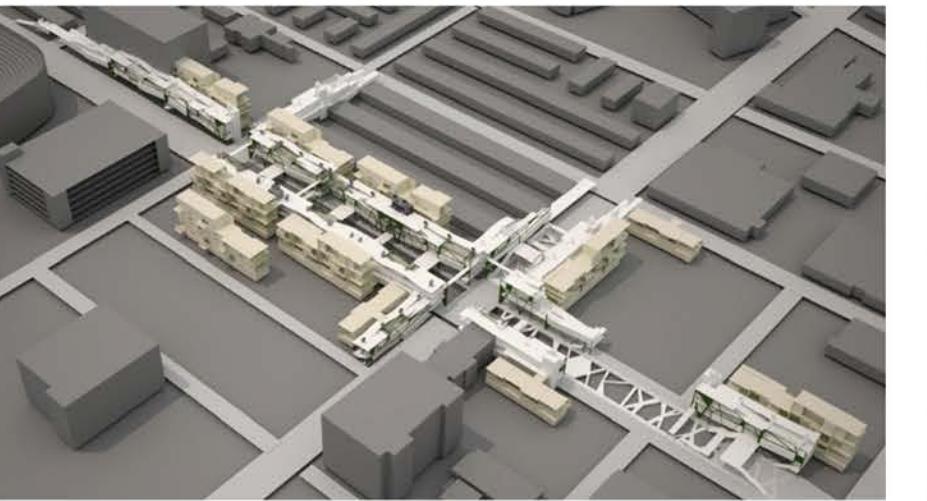




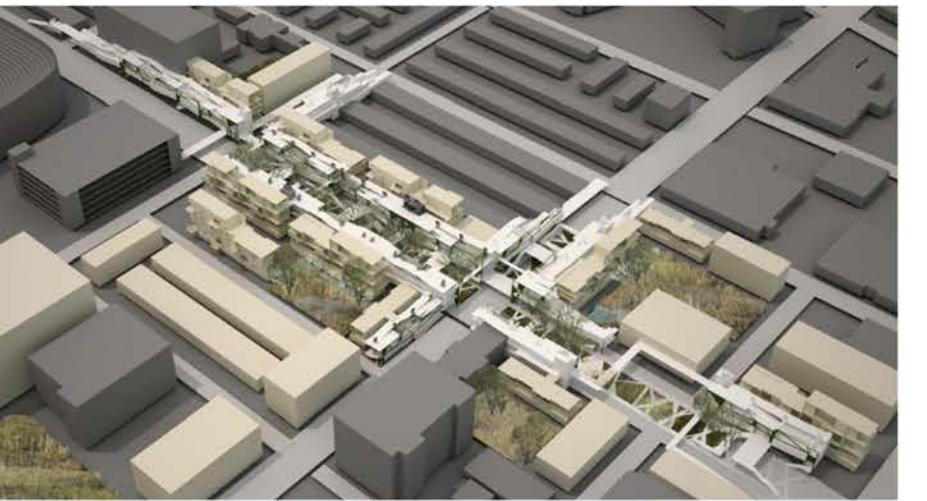
[2013]



[2015]



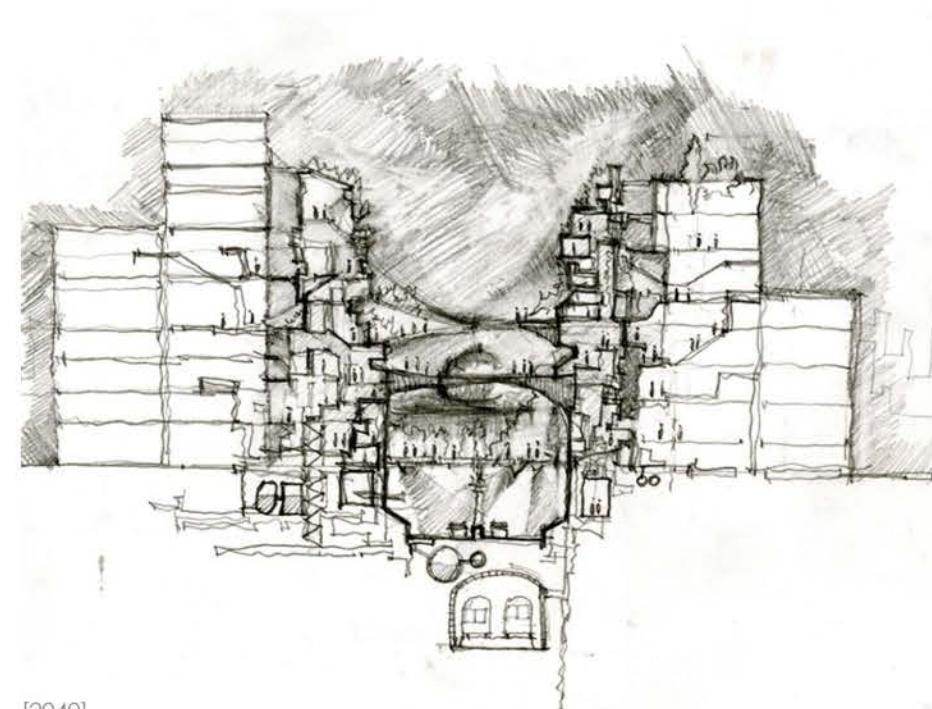
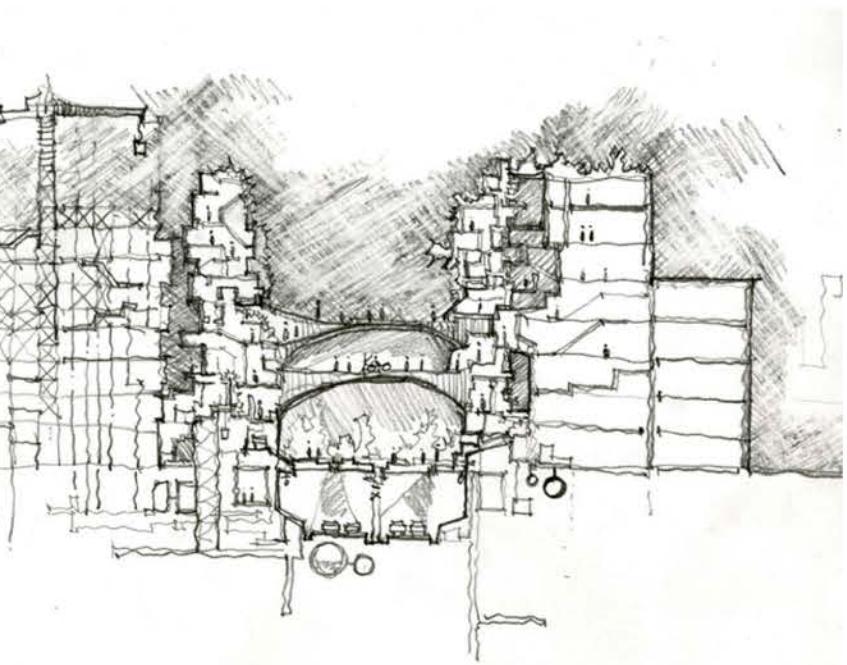
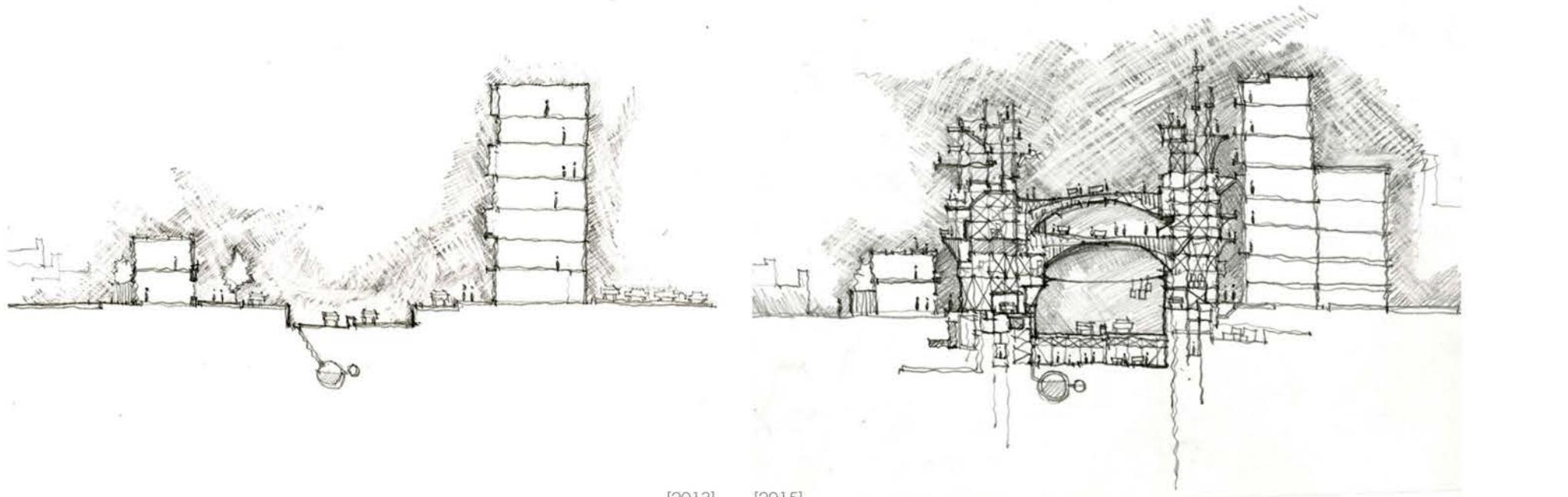
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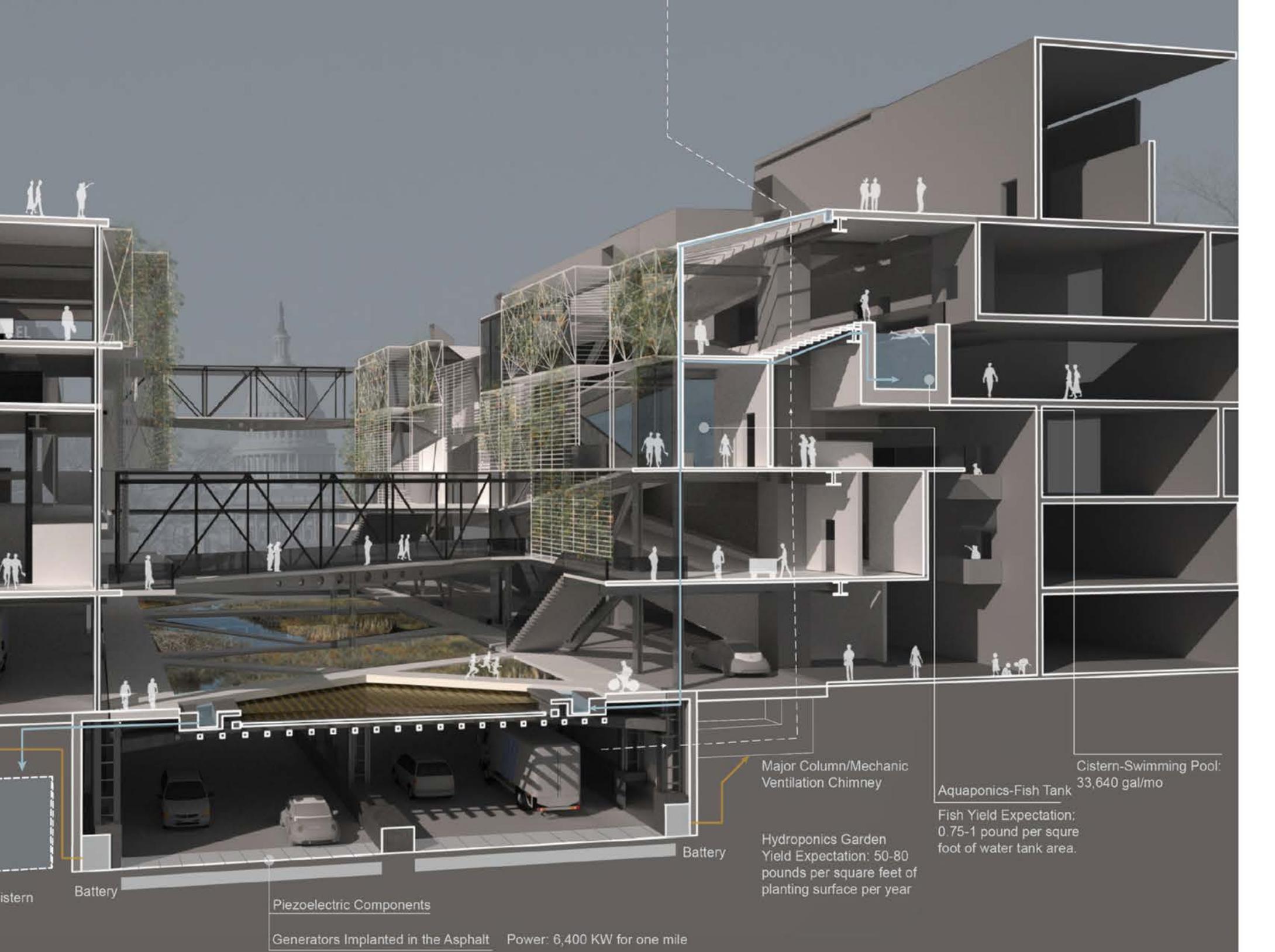


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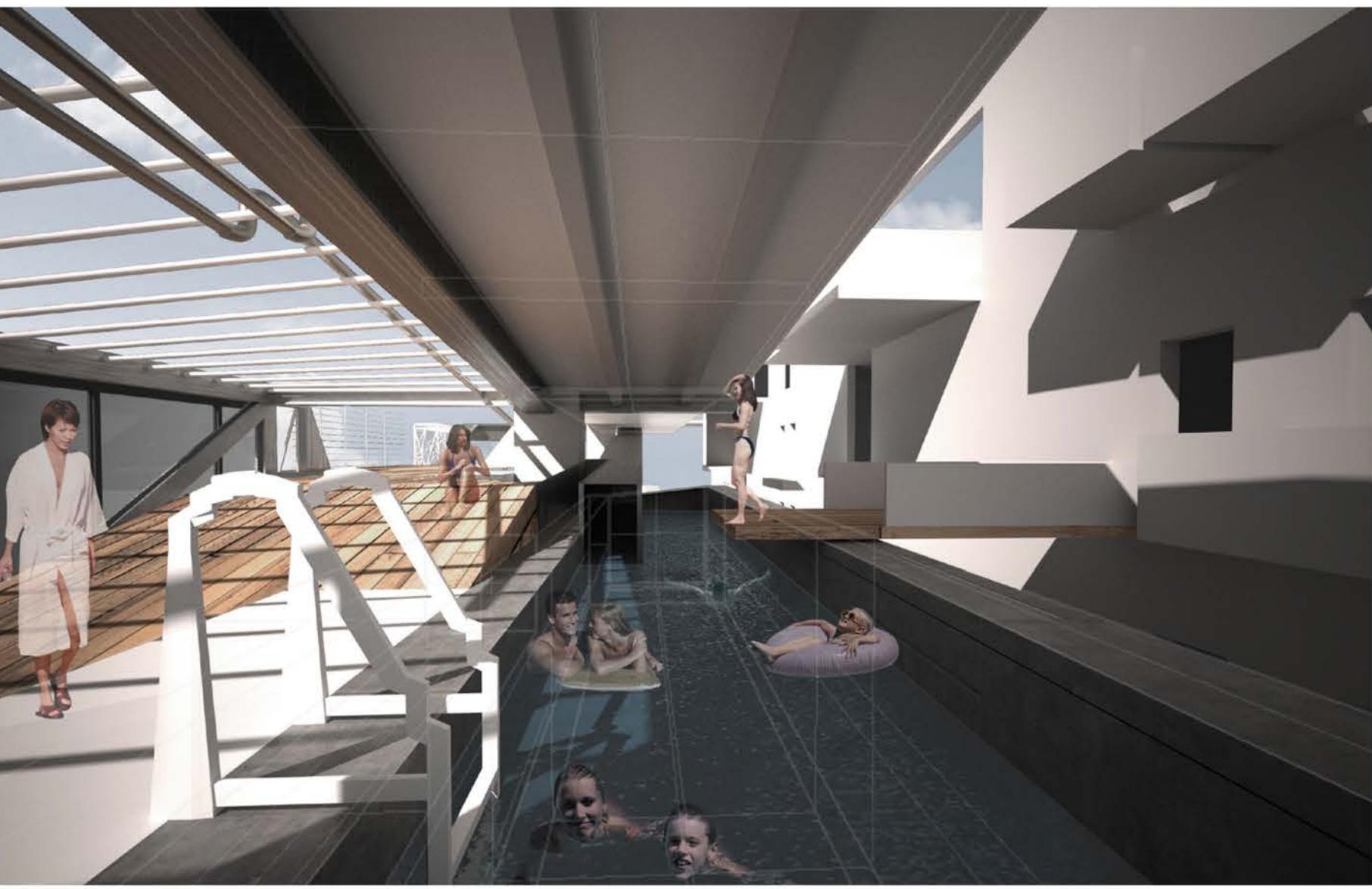
Process is a threshold to understand the future. With the consideration of the future demographic pressure of D.C., and the local development prediction, this system becomes an emergent one with process strategy. After it is established, the related buildings, residential or commercial, are able to attach to it with the benefits of public function as well as sustainability features. This is the Phasing diagrams of such development methodology. The first one is the existing condition with lots of vacant land. As the agency issue, the government firstly builds the main structure to define the boundary and negotiated with private and public zone. Then, certain programs can be inserted as well as different types of circulations. After that, new buildings are

built to attach to their urban façade. I image that the residents here can choose their method to make such connection, even change the program at the attach location. So it is totally a non-linear system working in progress to become a armature attached with all kinds of possibilities in the future. With those green features, this is my vision of this local community, and the loud high way becomes a landscape promenade towards to the Capitol.

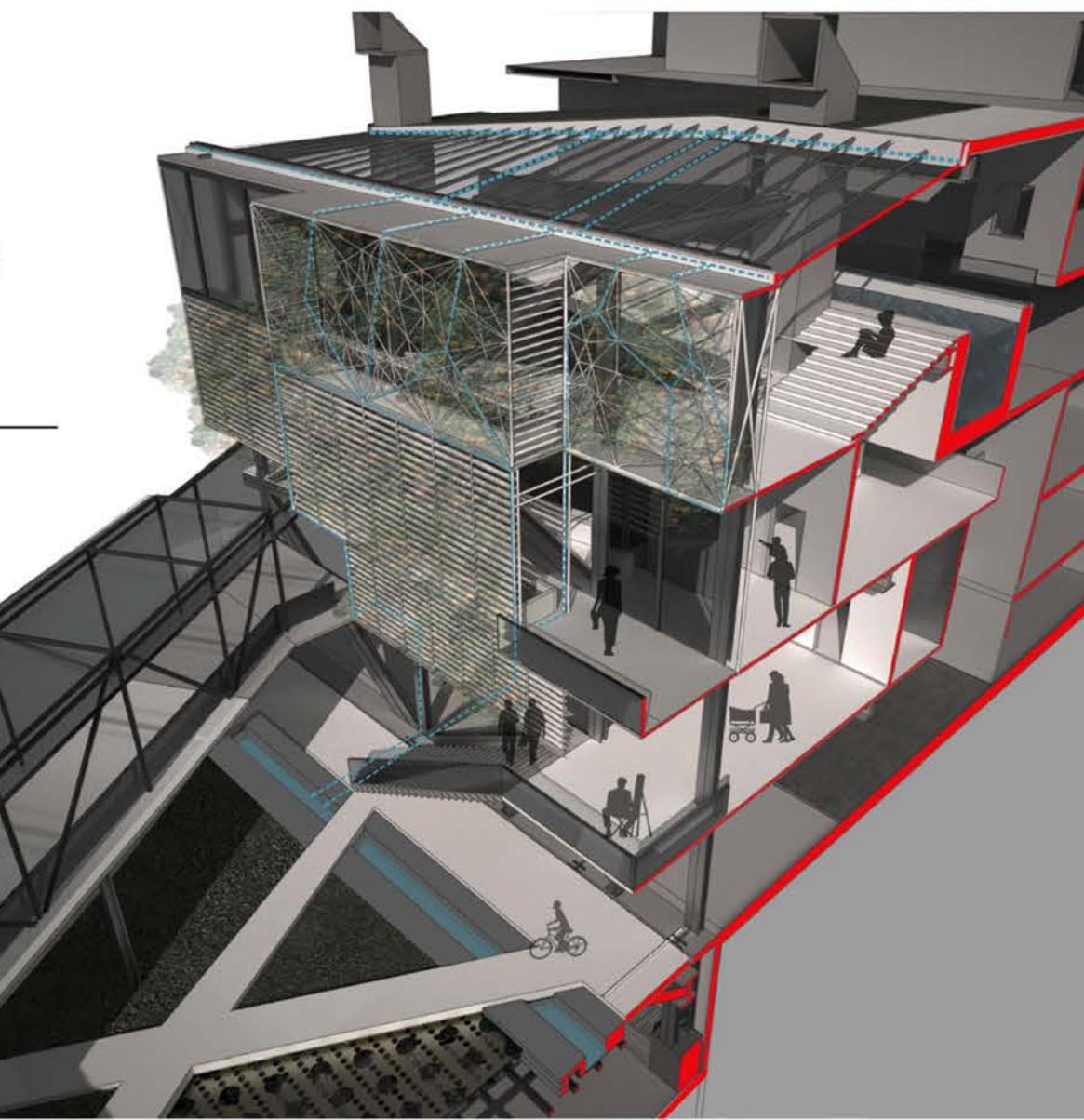
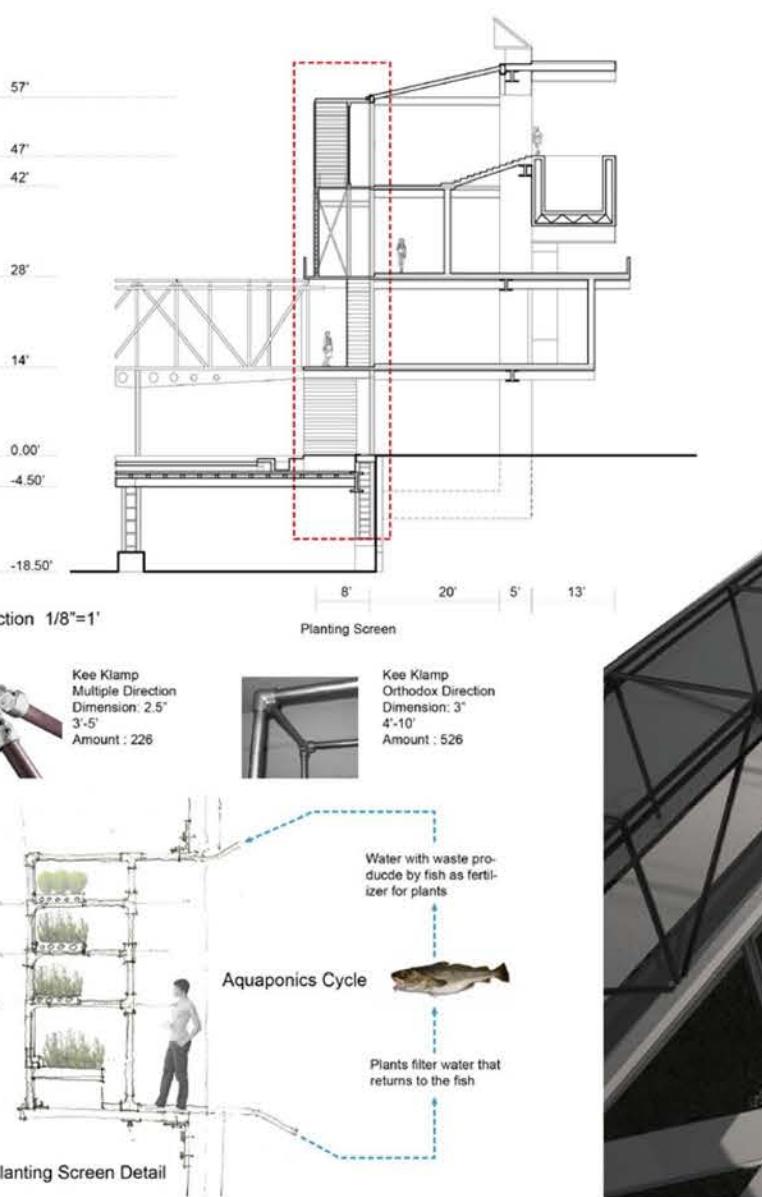
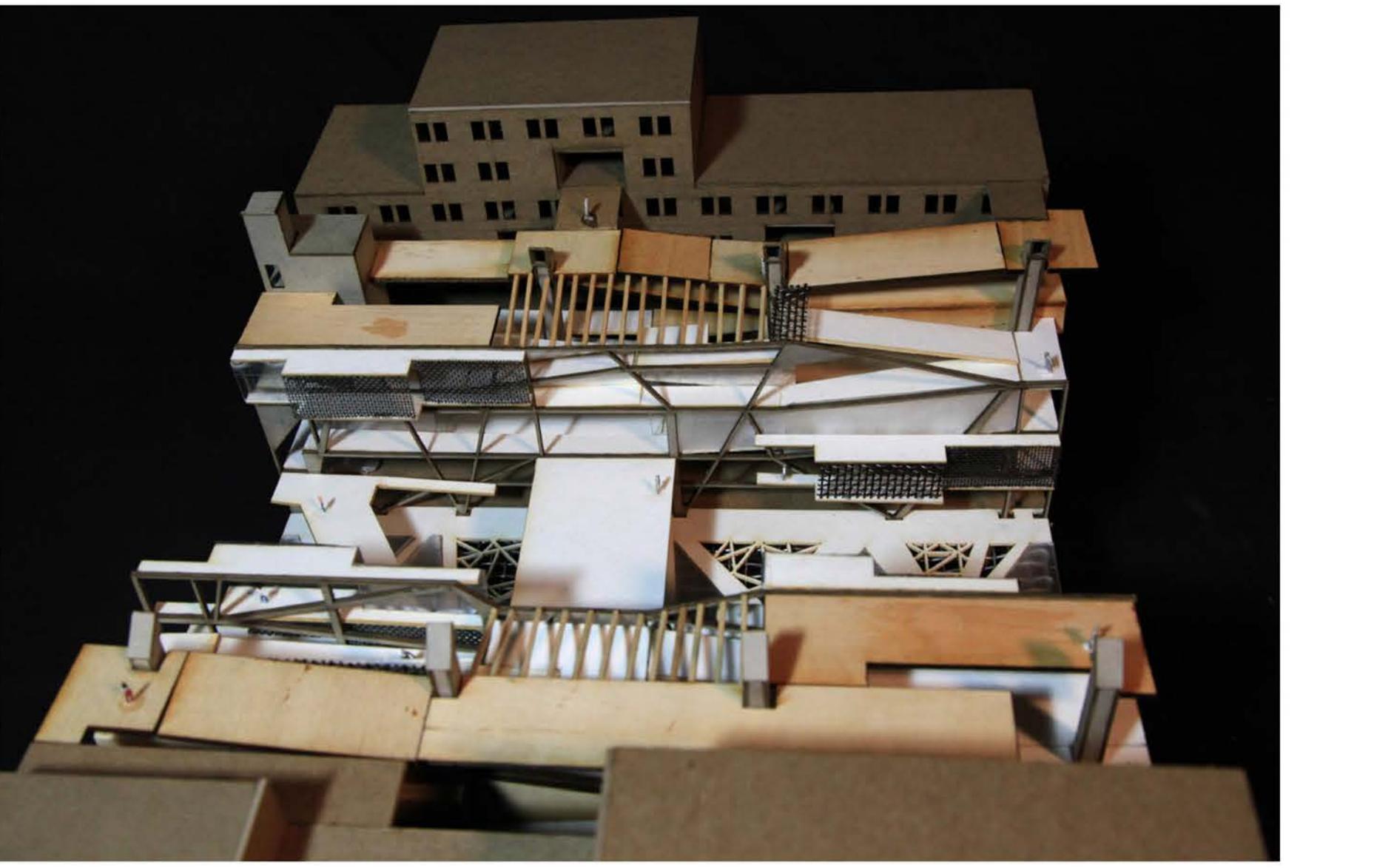




Program One: Vertical Farmers Market



Program Two: Roof Top Swimming Pool



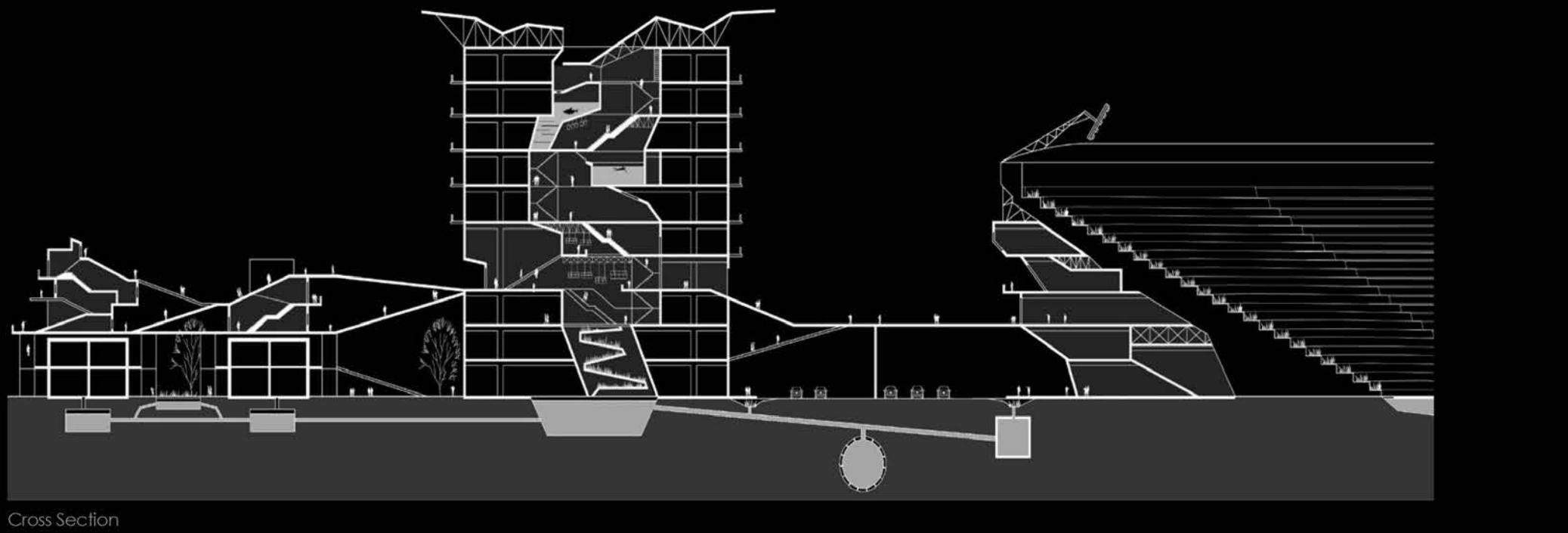


Circulation System Plan

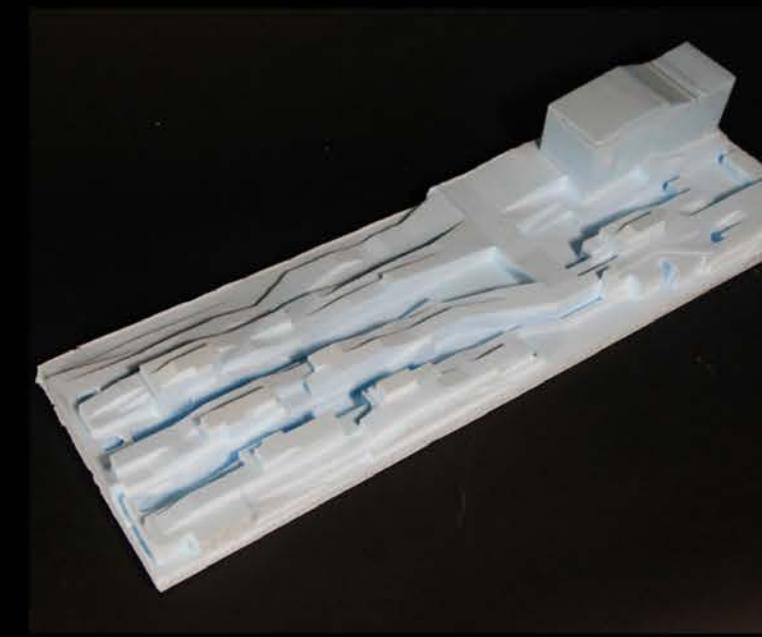
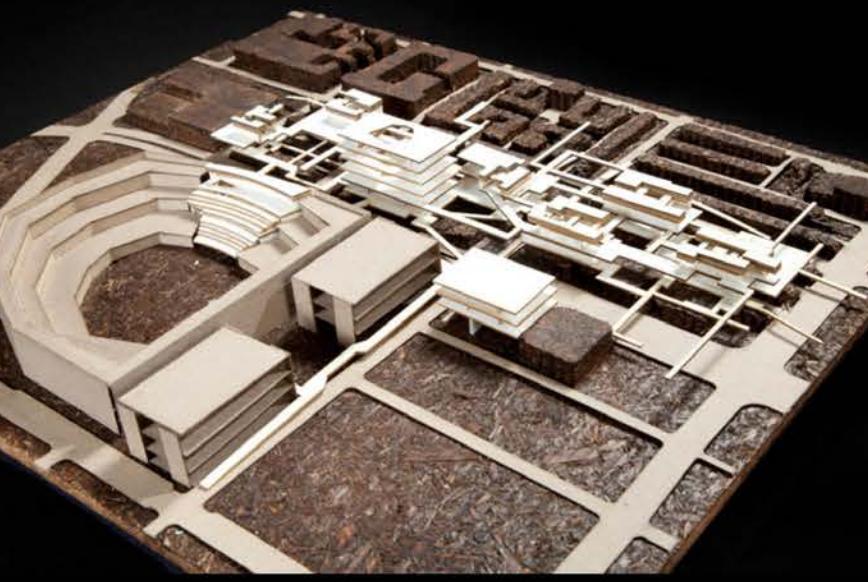
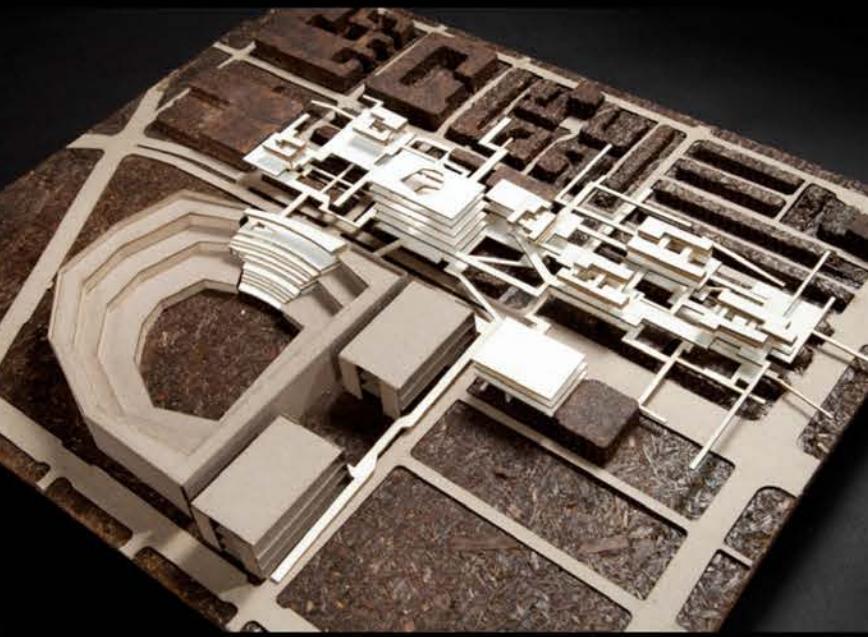


Program Layout





Cross Section



Compared with conventional linear workflow, I would like to pursue an alternative way with systematic thinking and analytical approach, because traditional process may not be able to solve the problems located in architectural design in terms of sustainability. Architect always makes a deconstruction to have each specific items about sustainability, and then add these individual items onto the box or the space they have already made. In this process, a lot of internal relationships are turn down by superficial additions, and those vital while invisible connections with other systems in bigger scale are ignored.

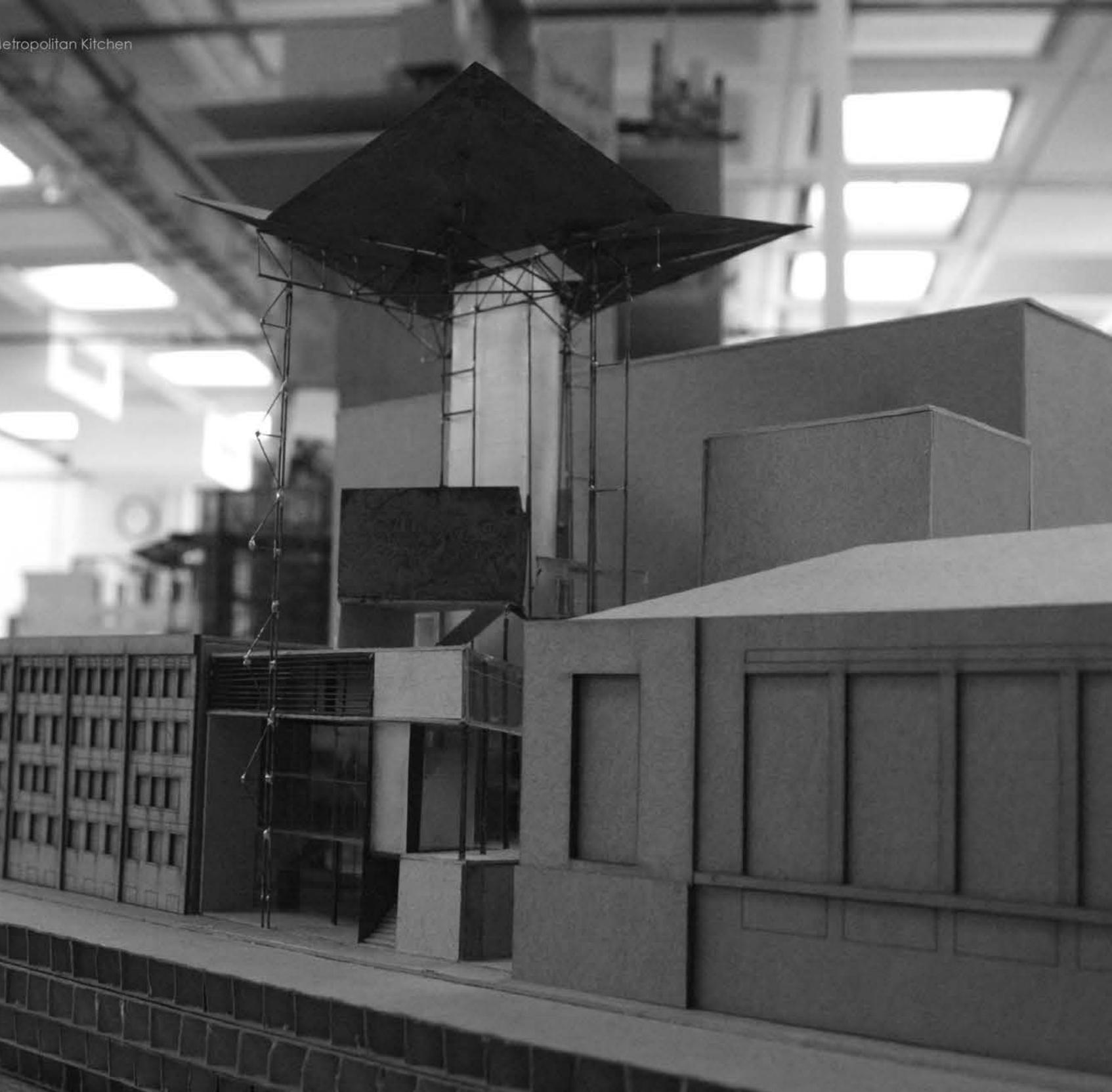
Based on these analysis, I come up with a generic methodology to apply autonomous structure into modern sustainable design with water system. Looking back to the idea of organism, city becomes an aggregation entity growing with water rules and models embedded with ecological, cultural and social parameters. Moreover, the rules and its self-established structure benefits our society and the natural in terms of various scales from region to household.

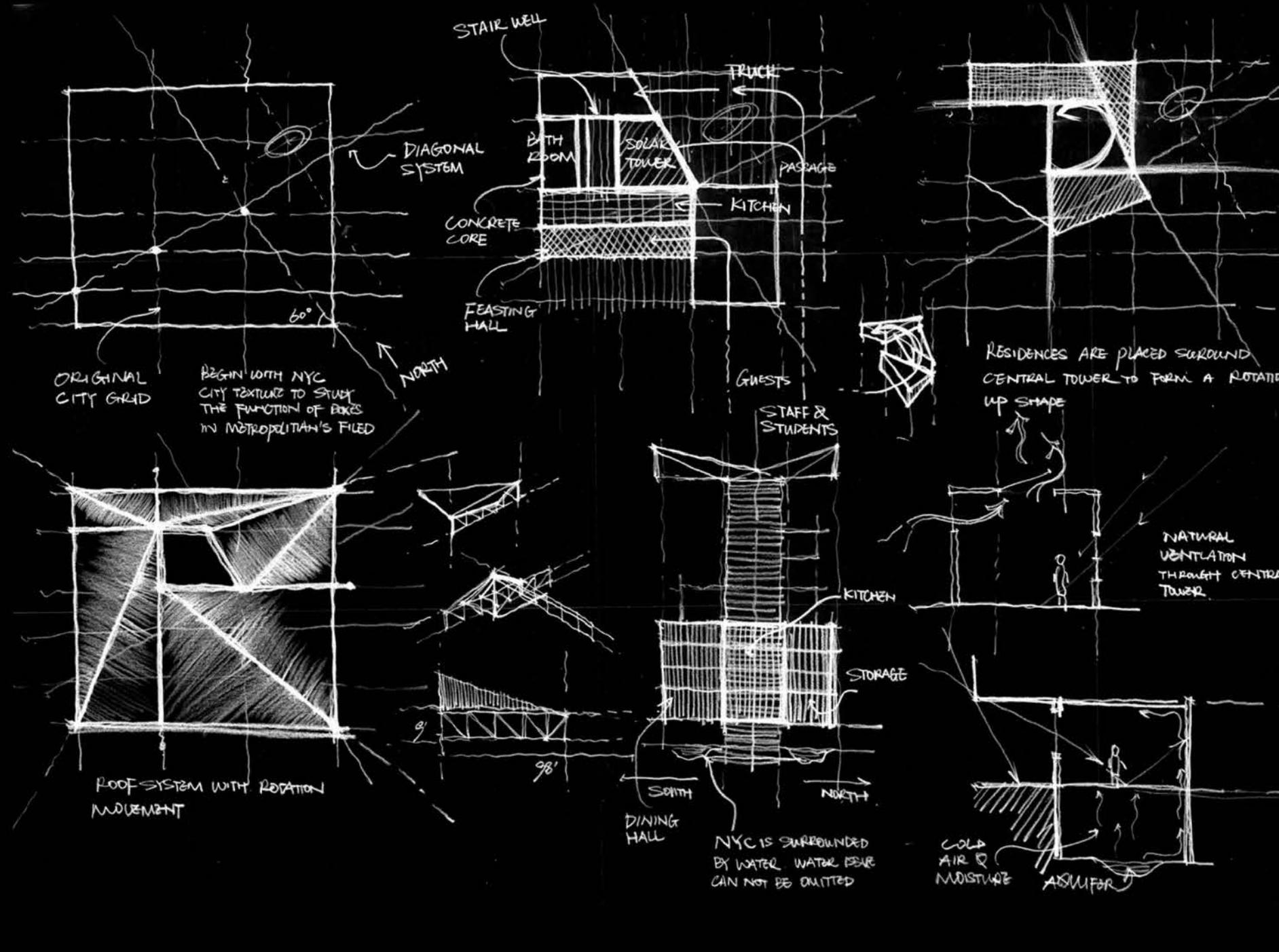
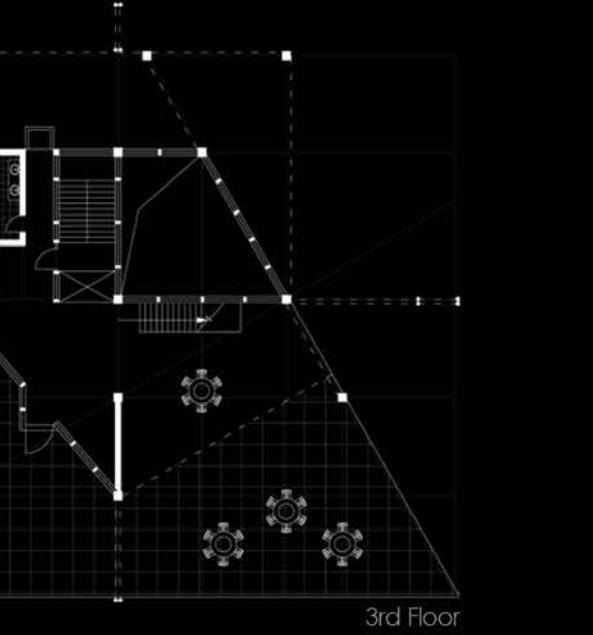
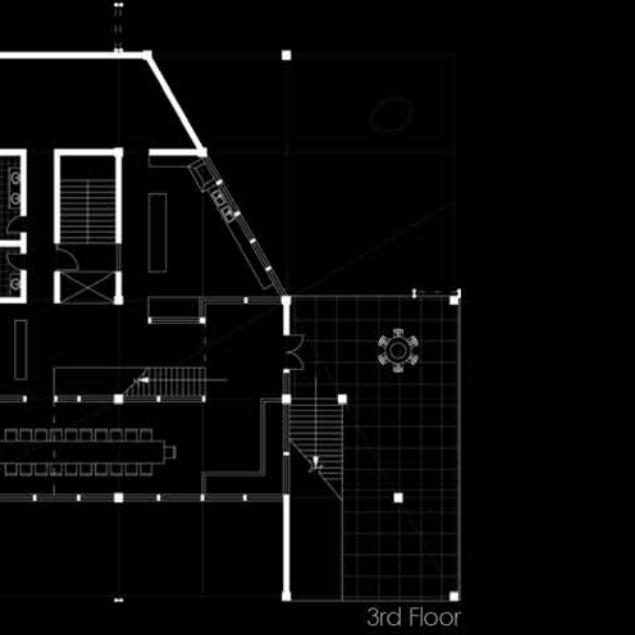
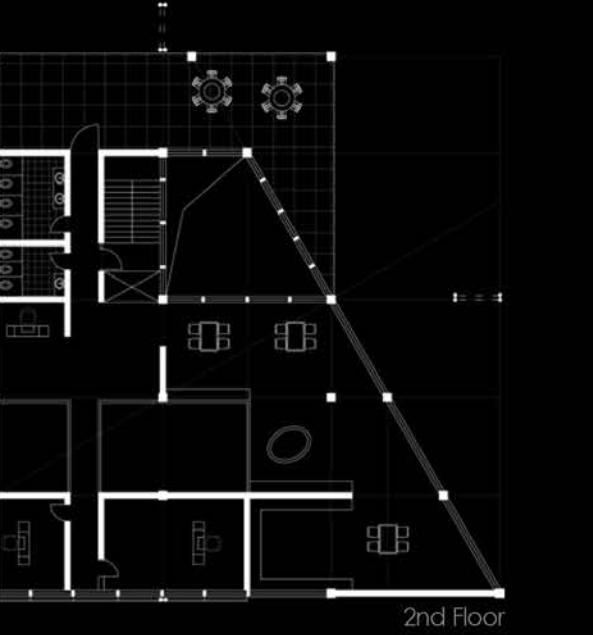
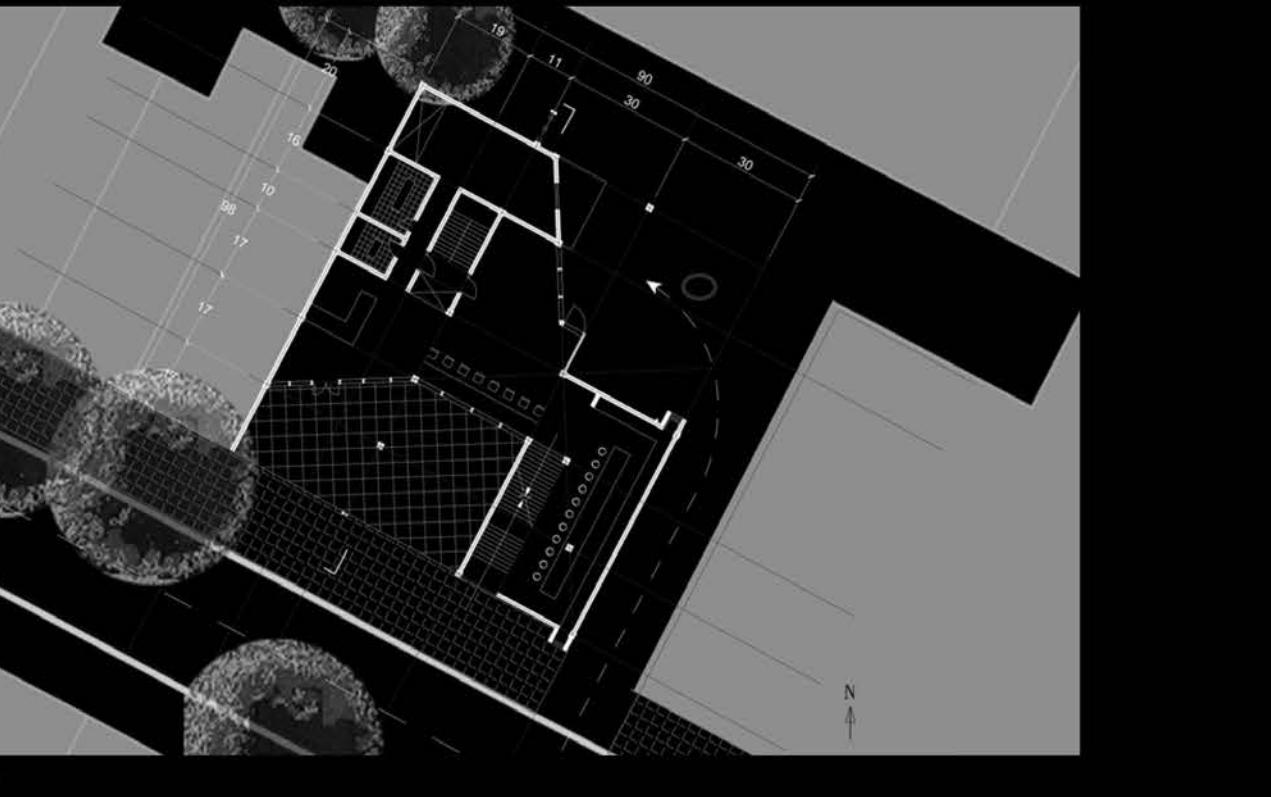
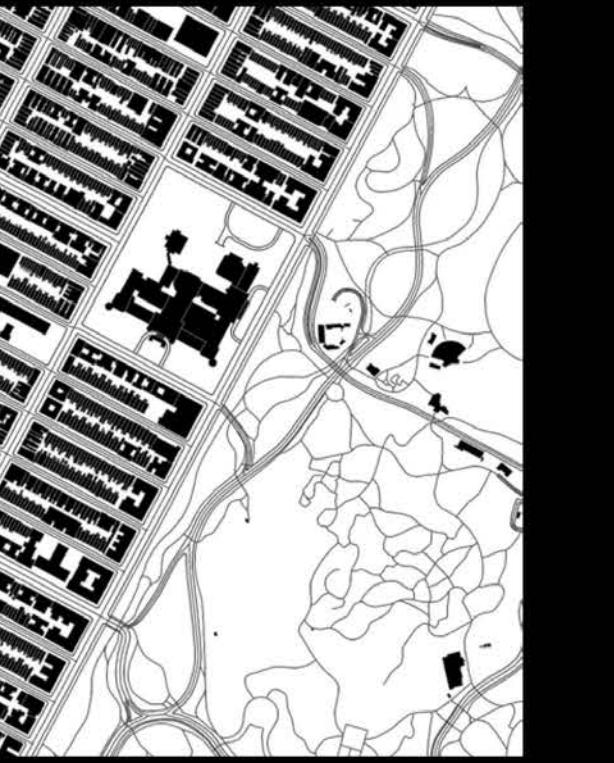
[Central Park West Culinary Institute]
Metropolitan Kitchen

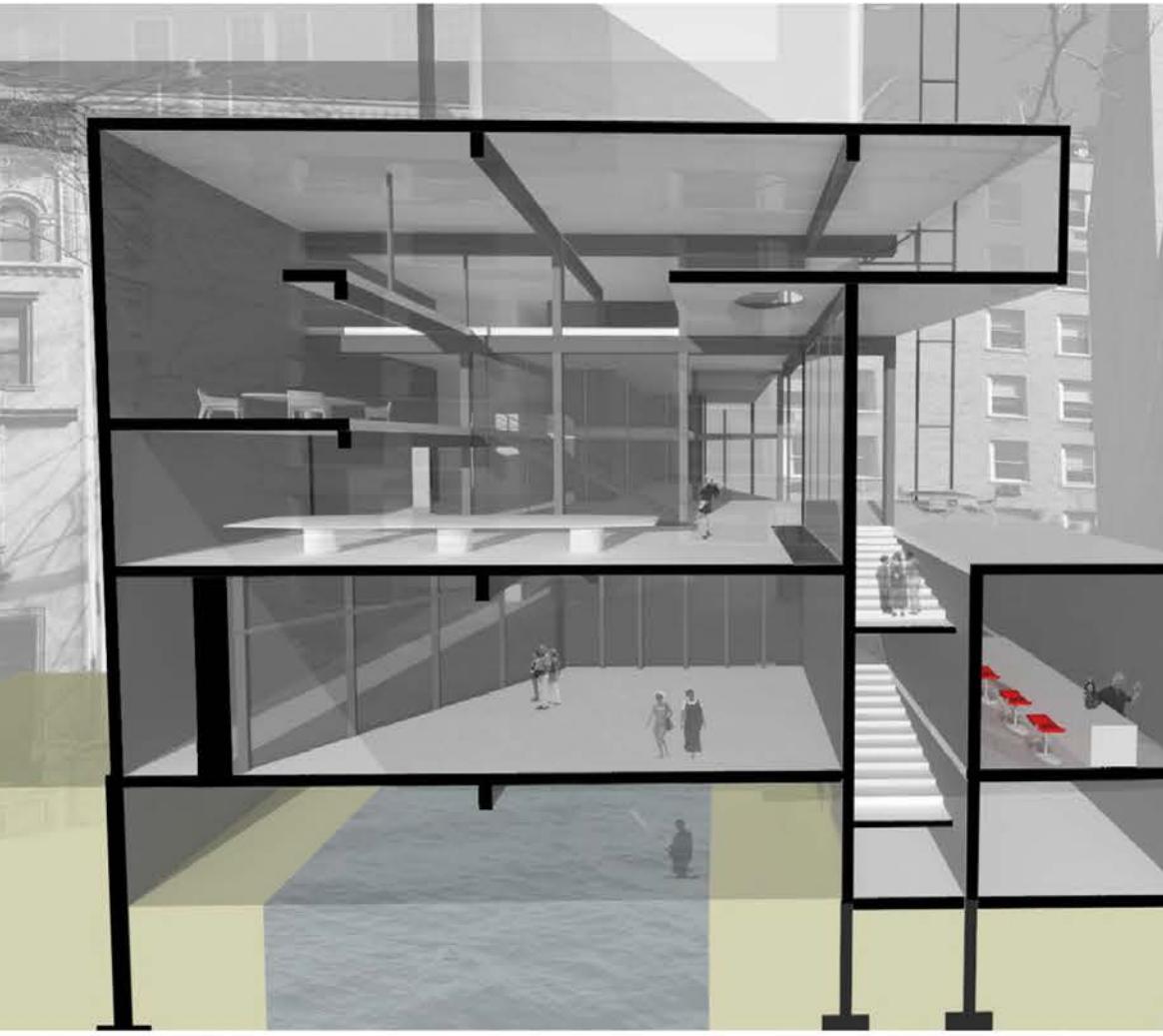
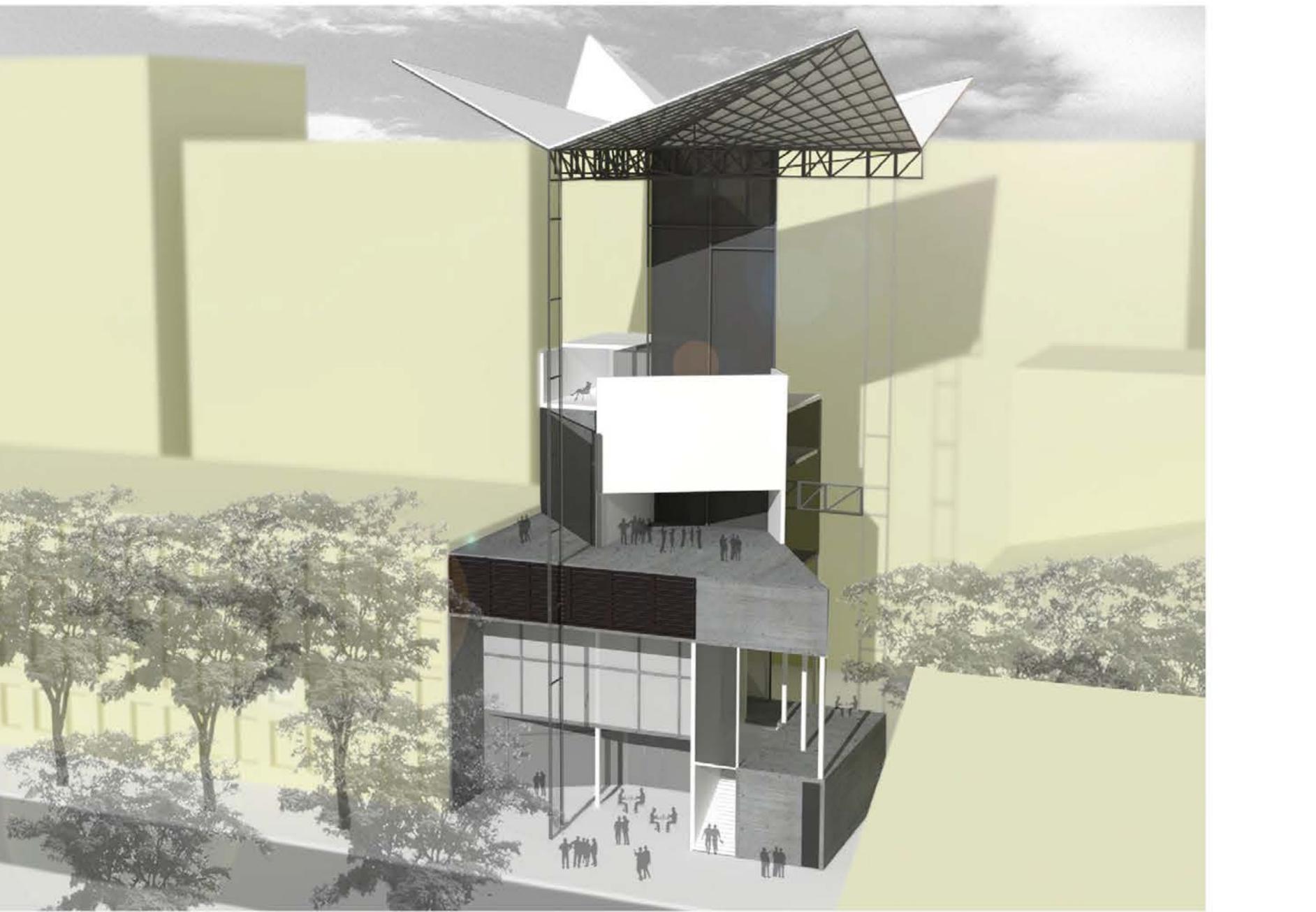
A dialogue between local community center
and Manhattan

Located at 76th Street , West Central Park, NYC, the culinary institute witnesses the unique ambition to make dialogue with both high-rise Manhattan up-town and adjacent area which is 76th Street Historical District filled with 19 century townhouse. Therefore, I try to make an urban collage using three separated segments to complete various functions systematically in different levels. The lower level is the main program of culinary institute which owns obvious yet independent relationship with the street sharing same regulating lines and same height with the town house. The upper roof is more about a symbolic attraction light tower to dialogue with New York History Society, Central Park, even the bigger scale of Manhattan. In between, a solar tower and residences for masters form an integrated space with support structure embedded with passive design.

In plan, ideally, two grid systems intersect with 60 degree between, which is just the same as what Broadway cuts the urban grid of Manhattan. The feasting hall is a triple stories high space dominating the whole building, with kitchen, office, library and café around. The figure of plan owns a rotation-up relationship to form plenty of grey spaces and up-floor terrace in the middle level.

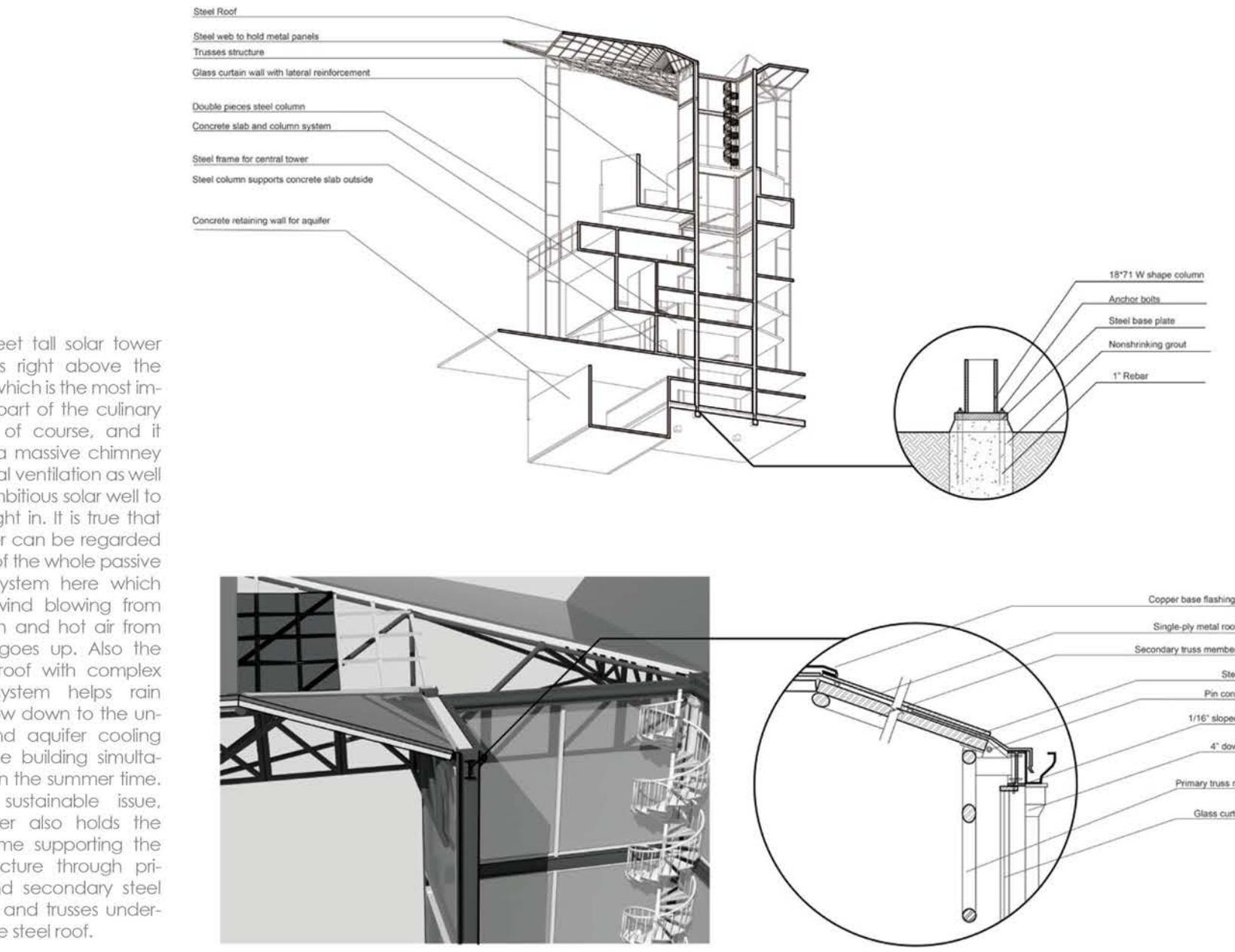
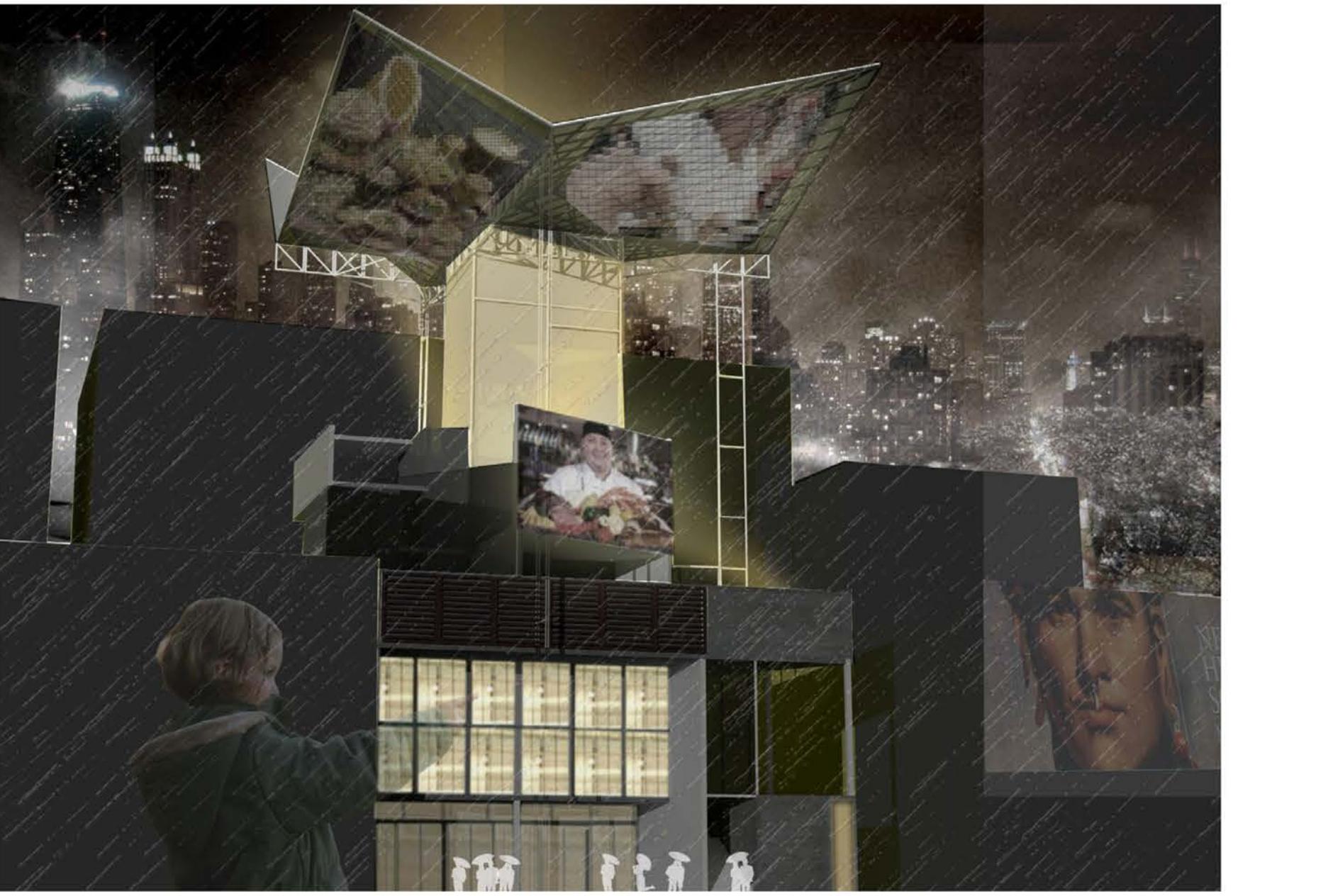


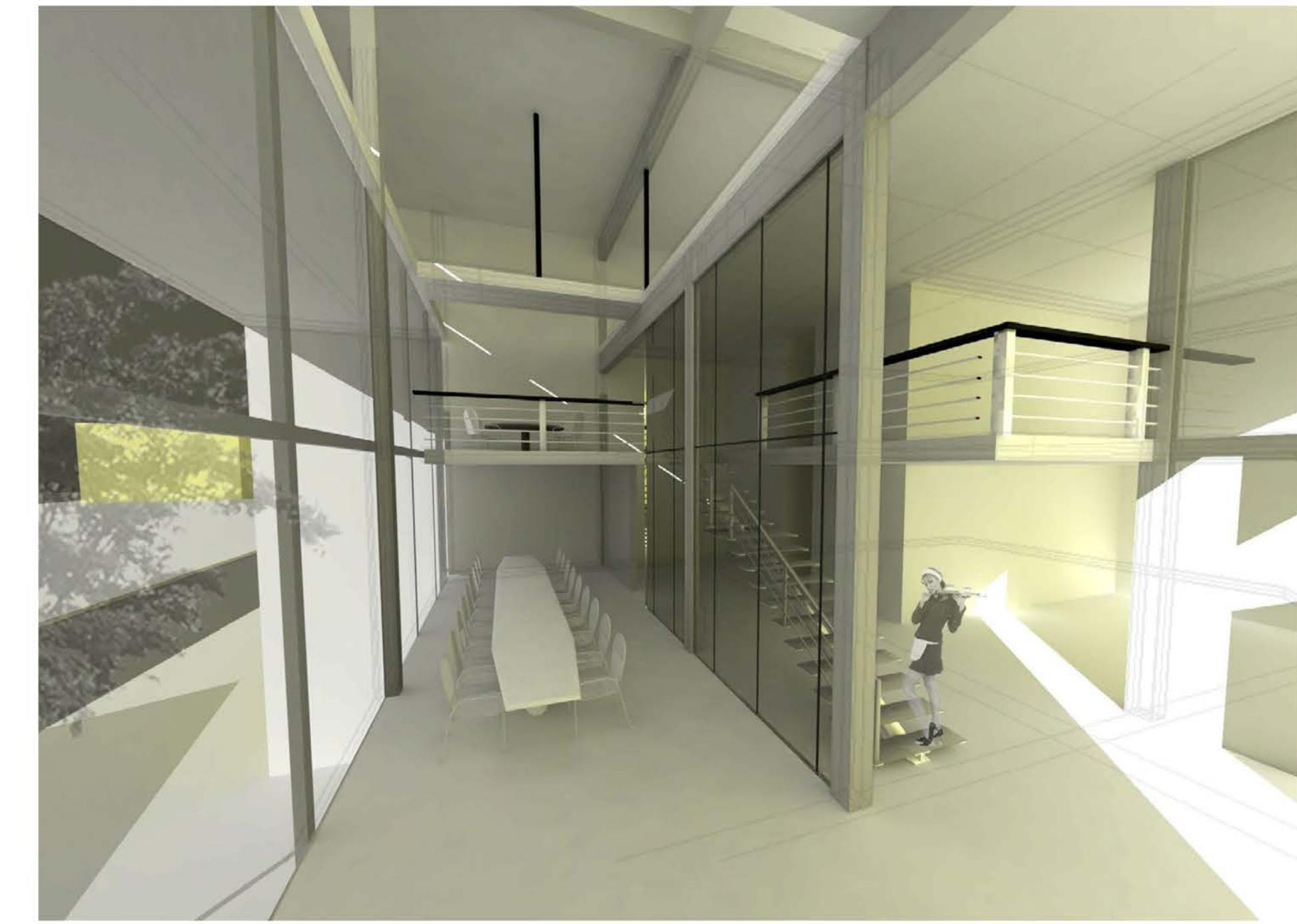
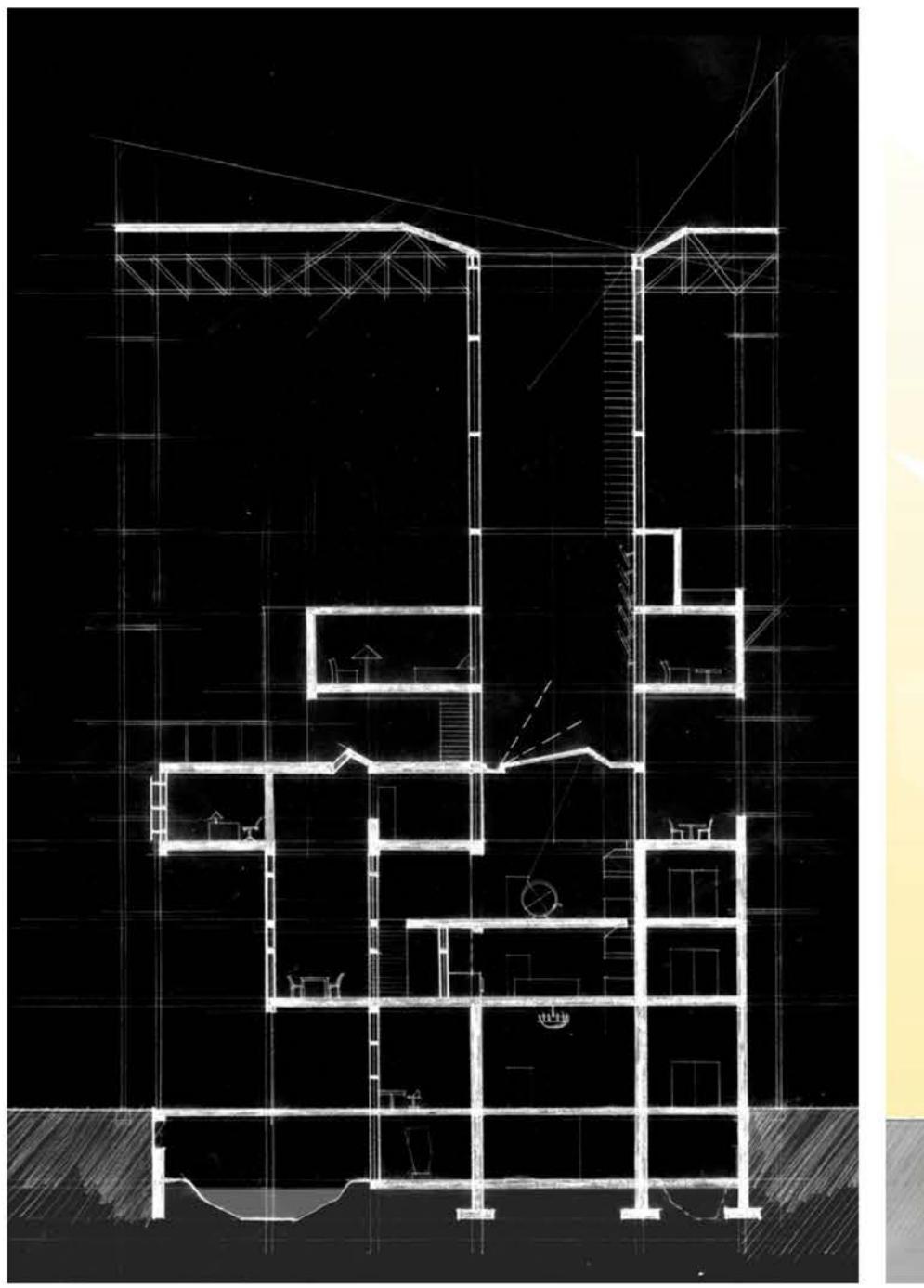


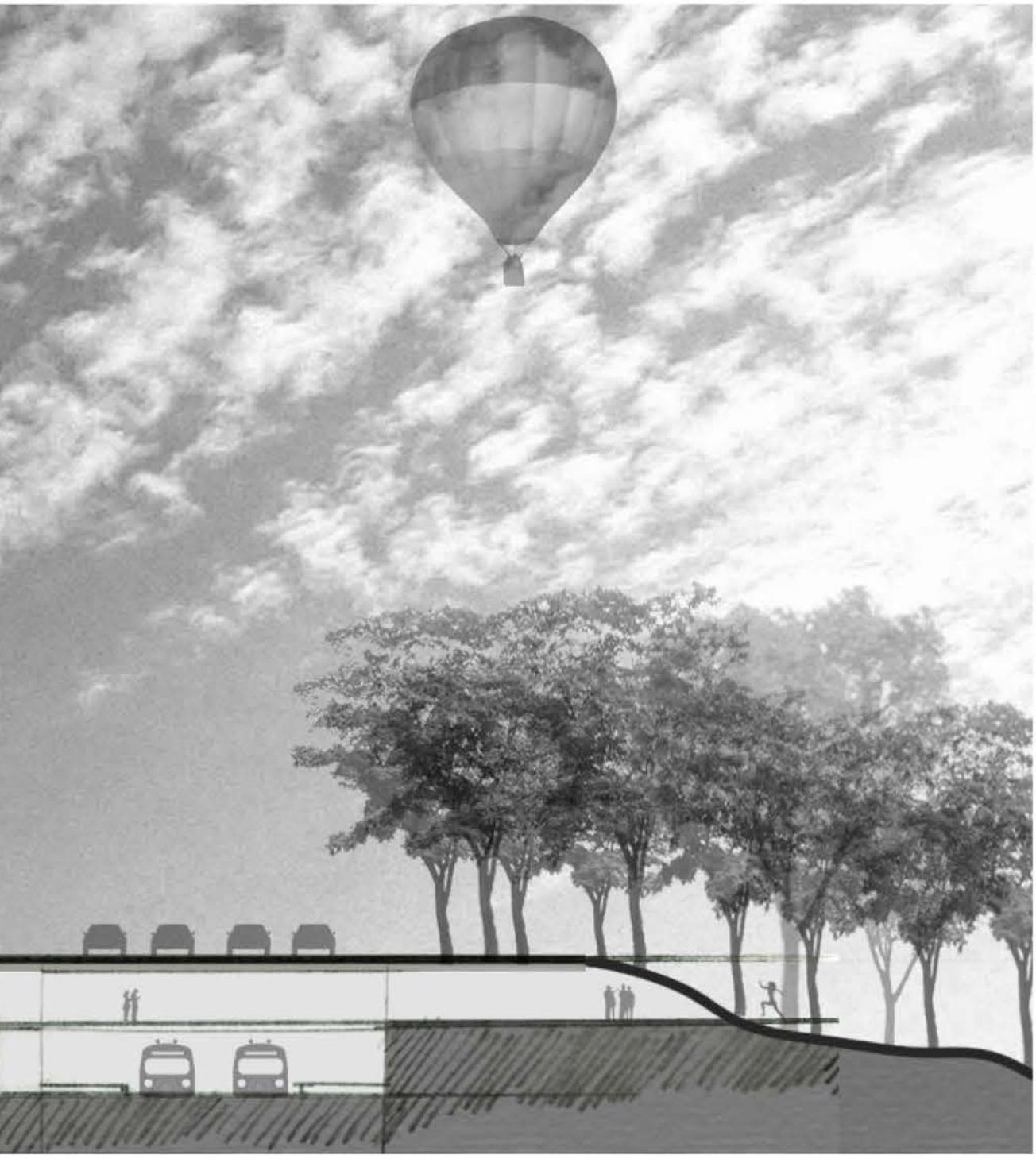
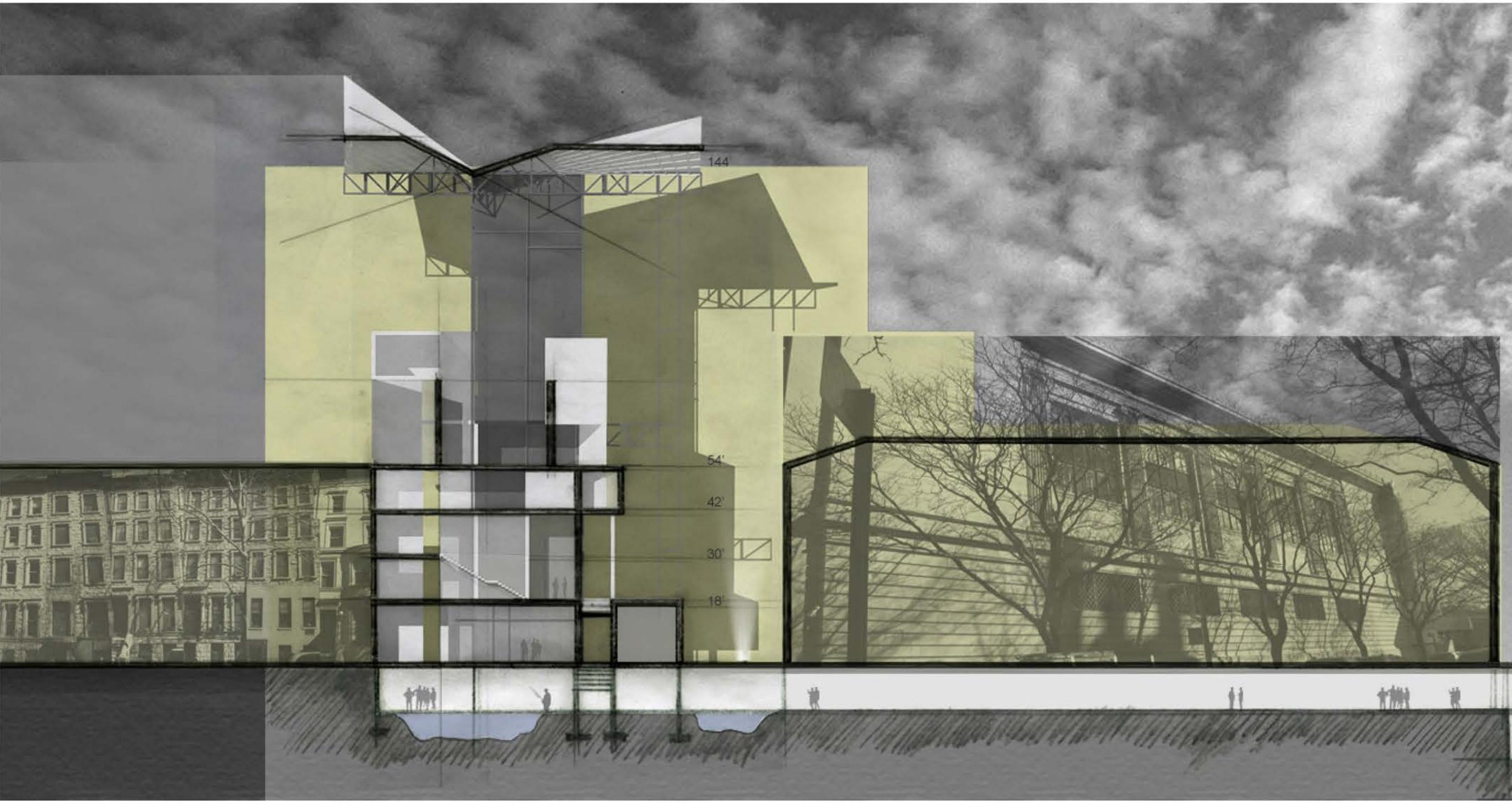


Process model aiming to figure out the followings:

1. Imaginary high-point in Manhattan Area
2. Highly recognizable about form and structure
3. Well organized program
4. Public interaction
5. Sustainable design



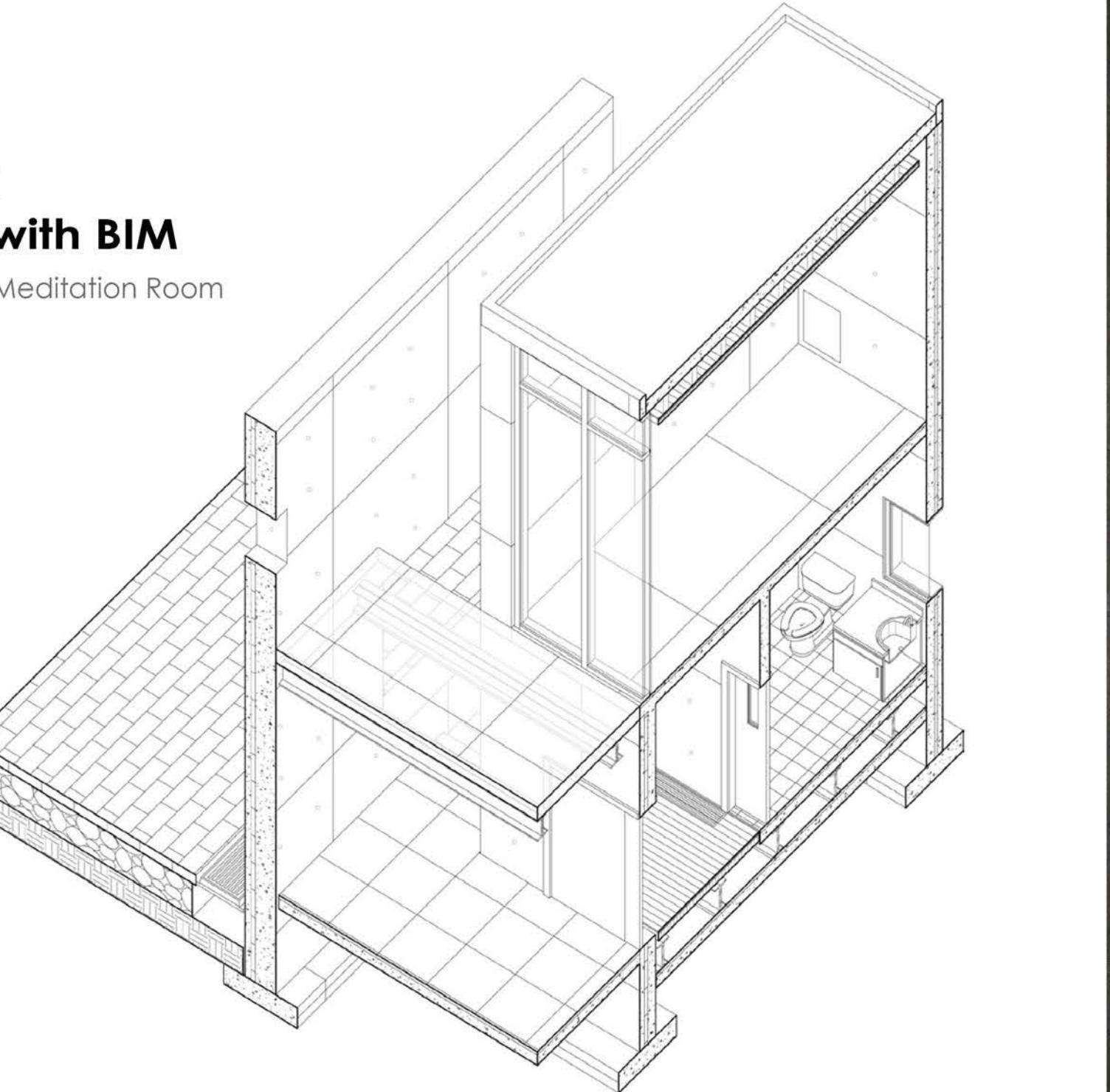


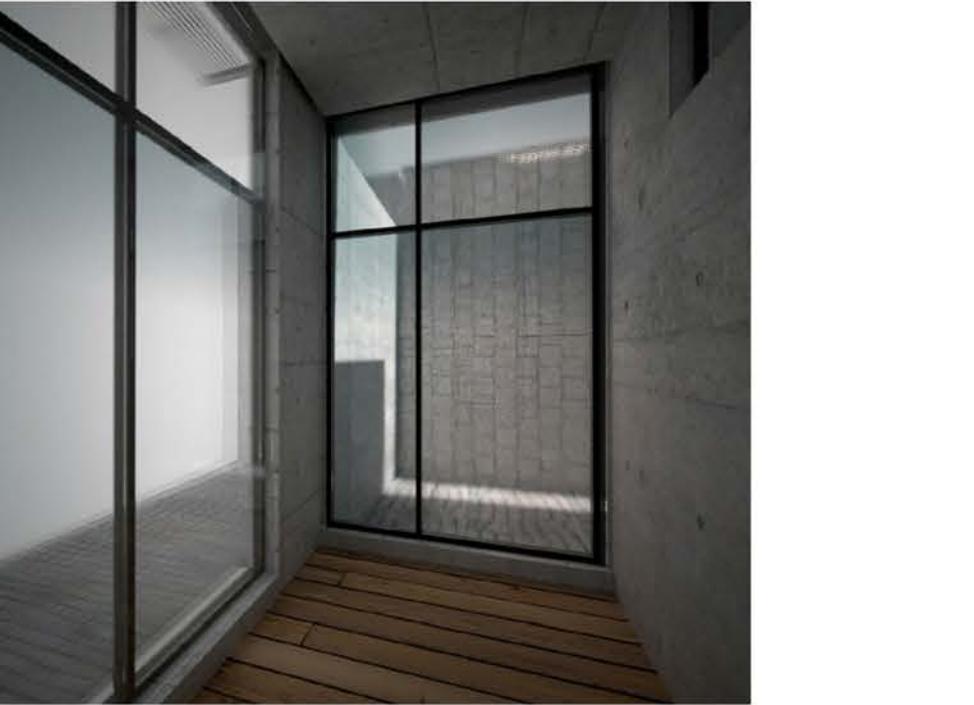


[Design Development]

Flow Integration with BIM

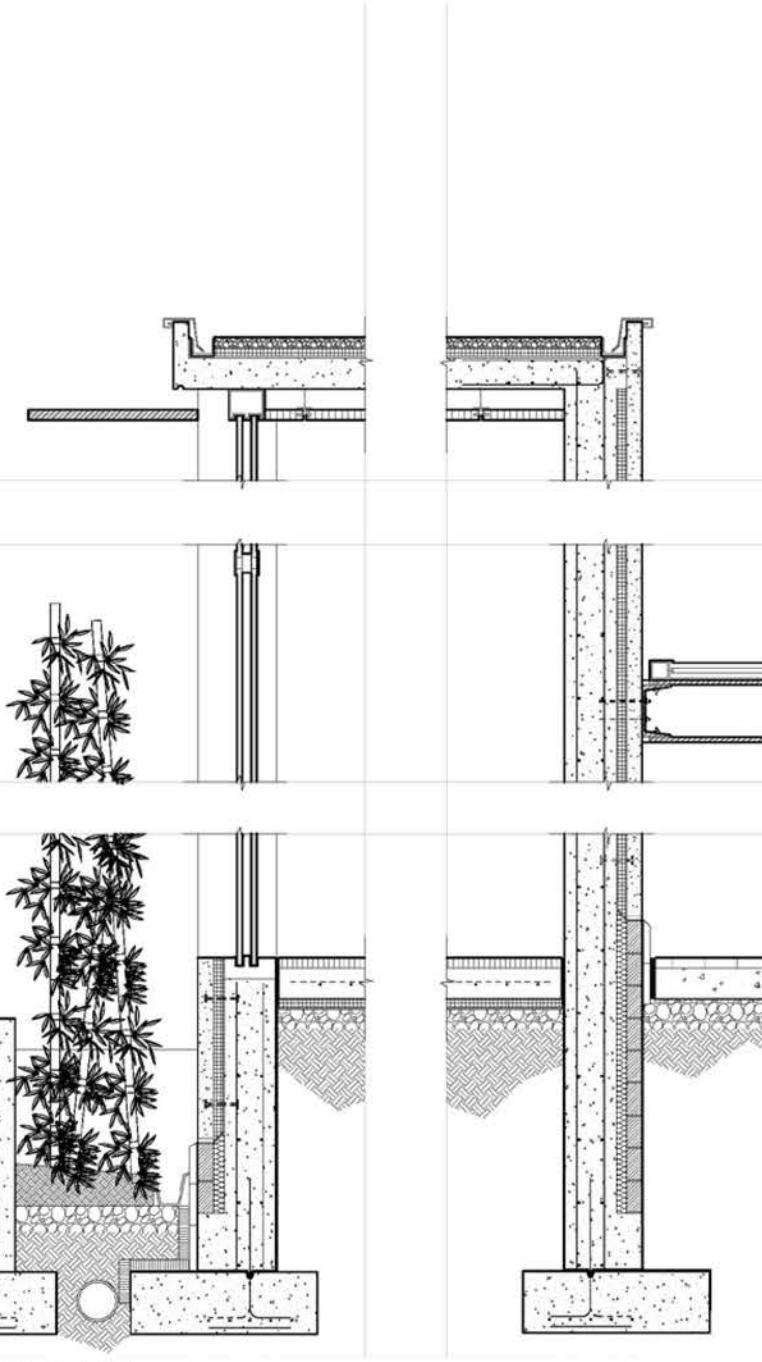
Comprehensive design of A Meditation Room
with Revit, Tas and Eco-tect



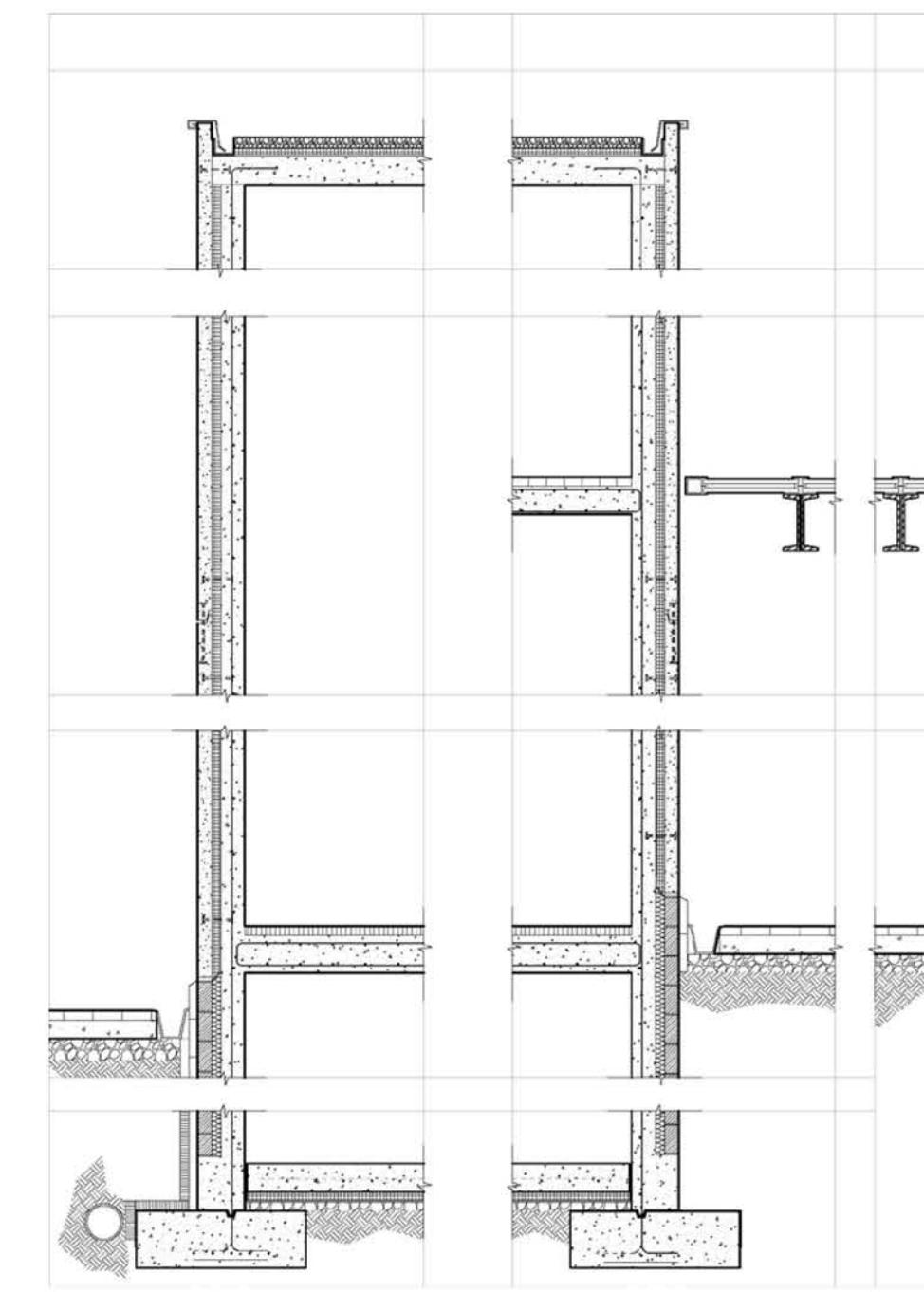


A building is not only a box, but it generates its own life from the integration of multiple flows. This is an advanced construction research of a single building with pre-cast concrete structure in terms of several issues with consideration:

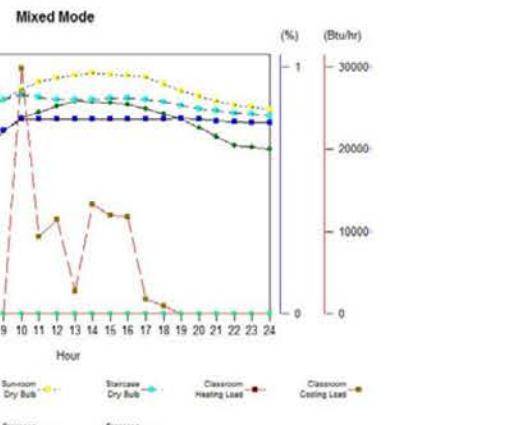
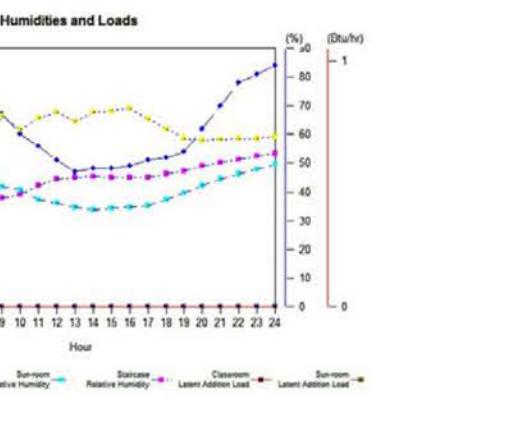
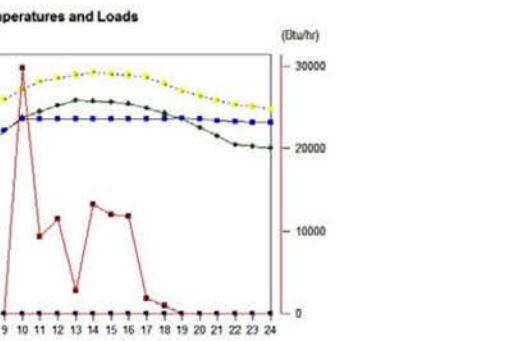
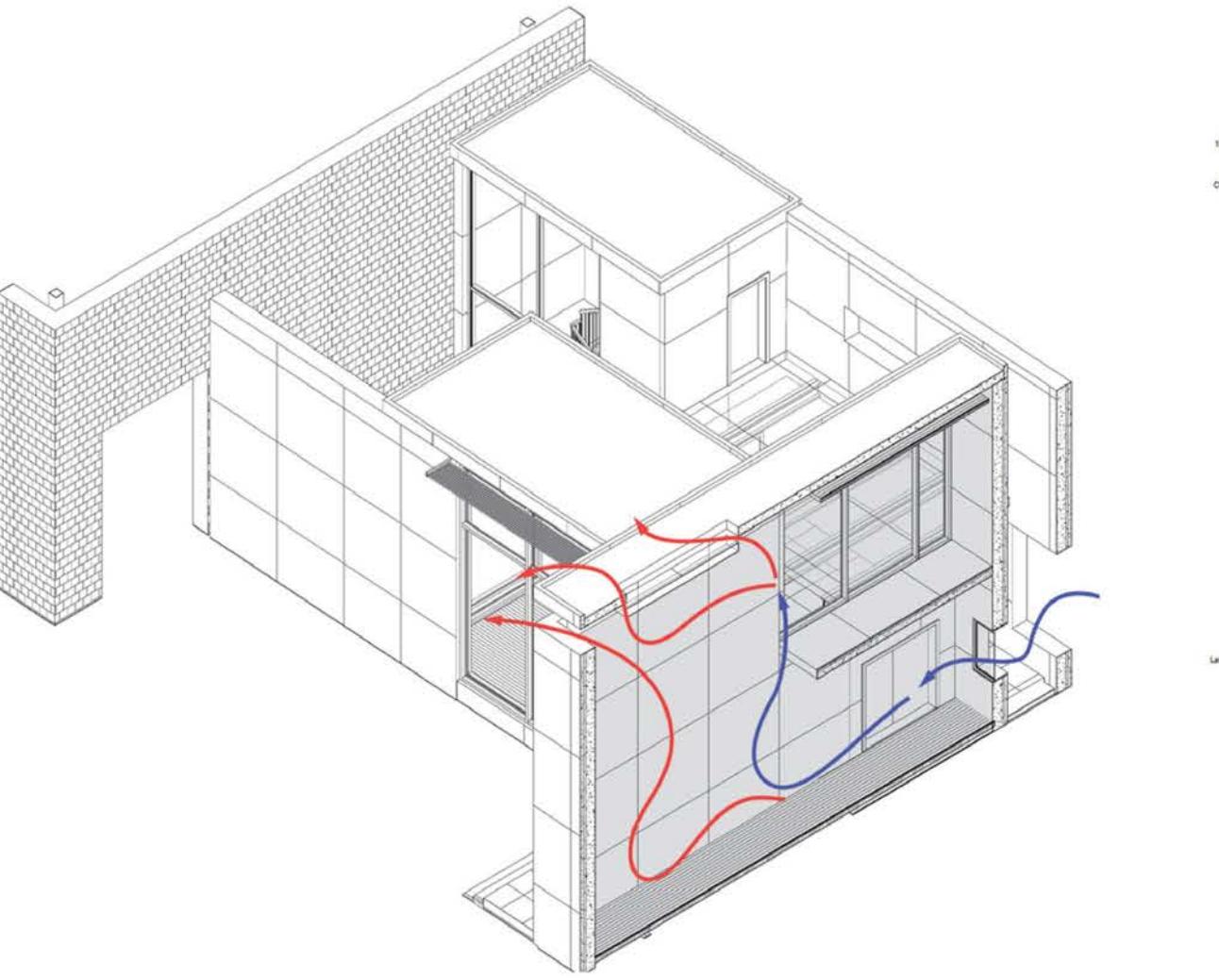
1. Program: Flow of People
2. Construction: Flow of Material
3. Enclosure: Flow of Water
4. Climate: Thermal Flow of Daylight
5. Meditation: Flow of Shadow



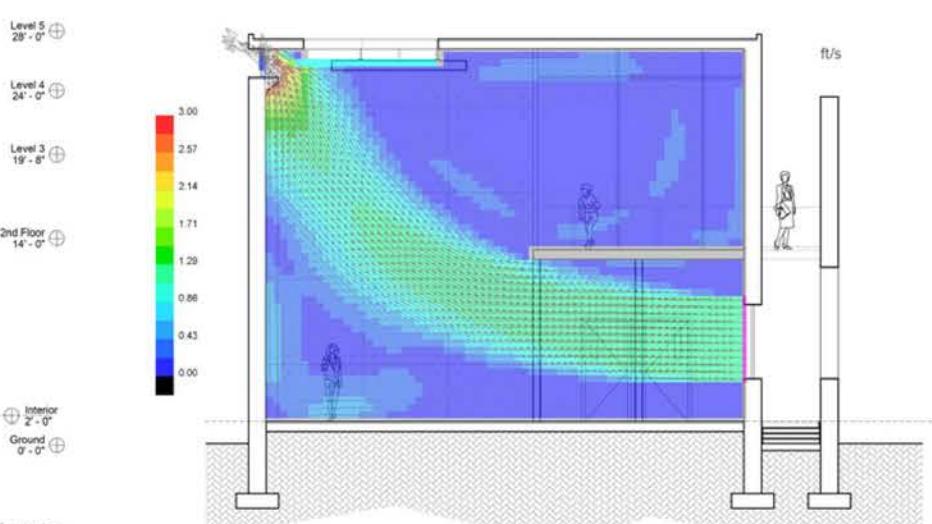
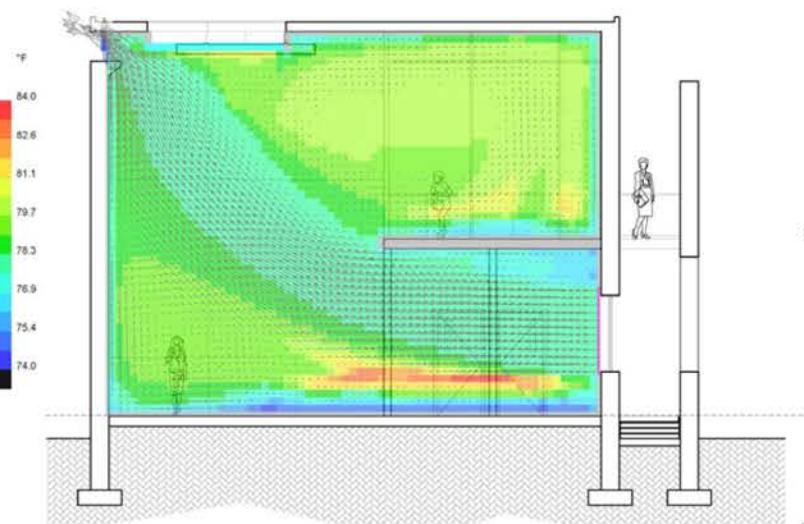
Construction Detail



Tas Modeling and Analysis

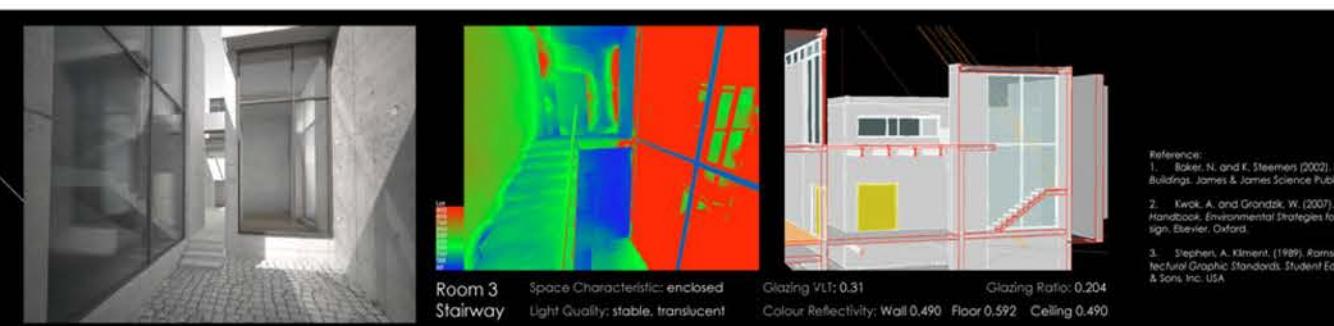
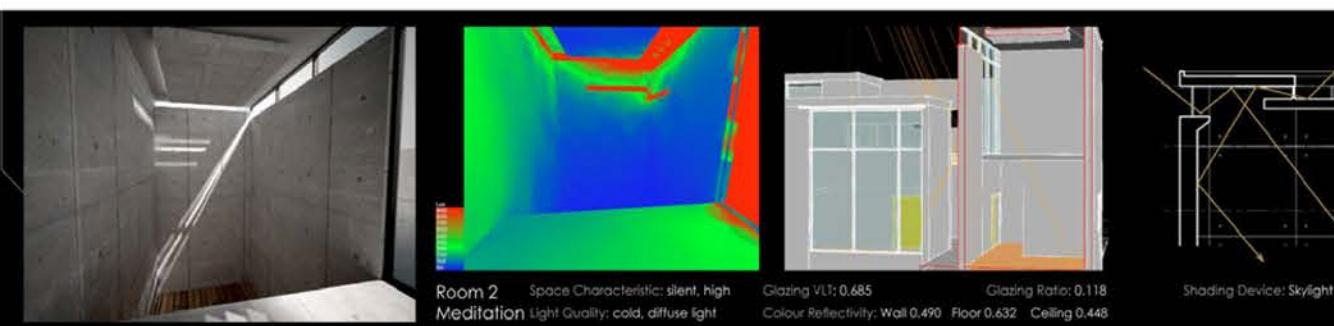
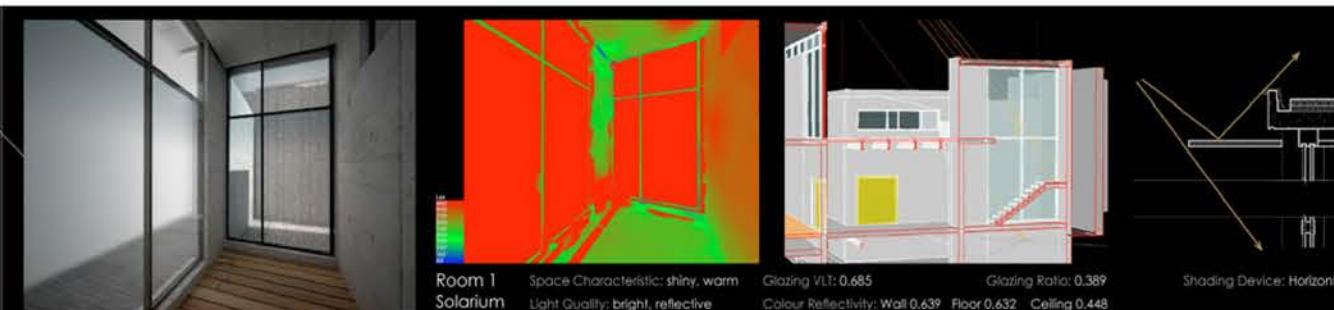
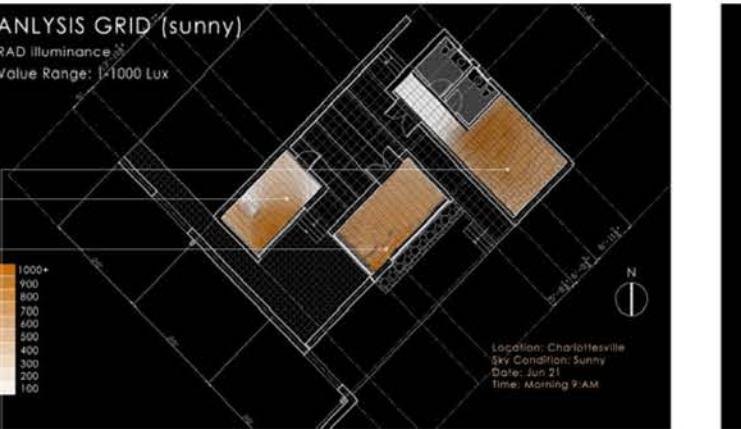
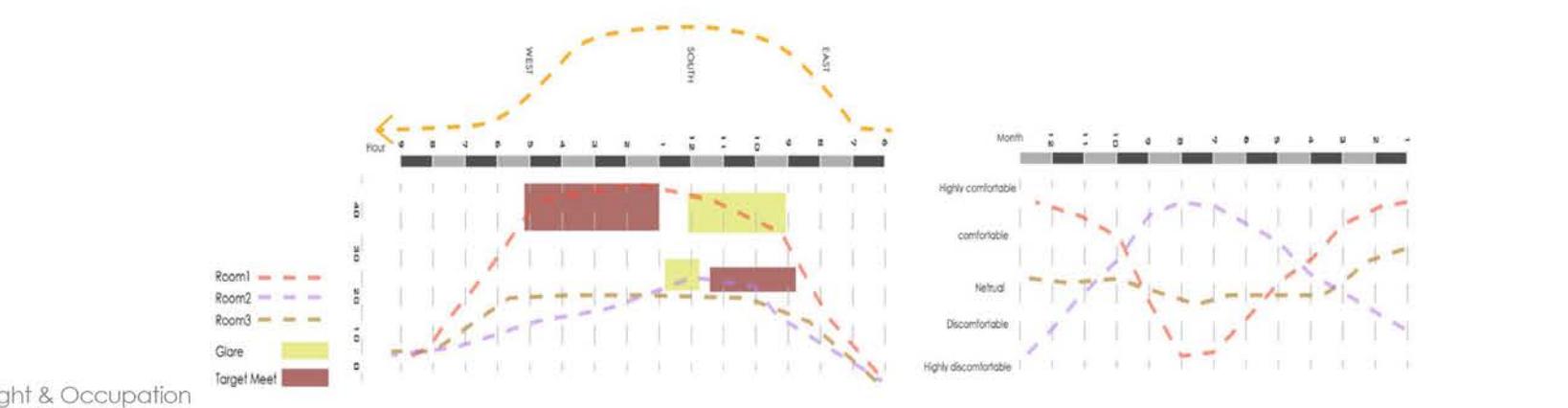
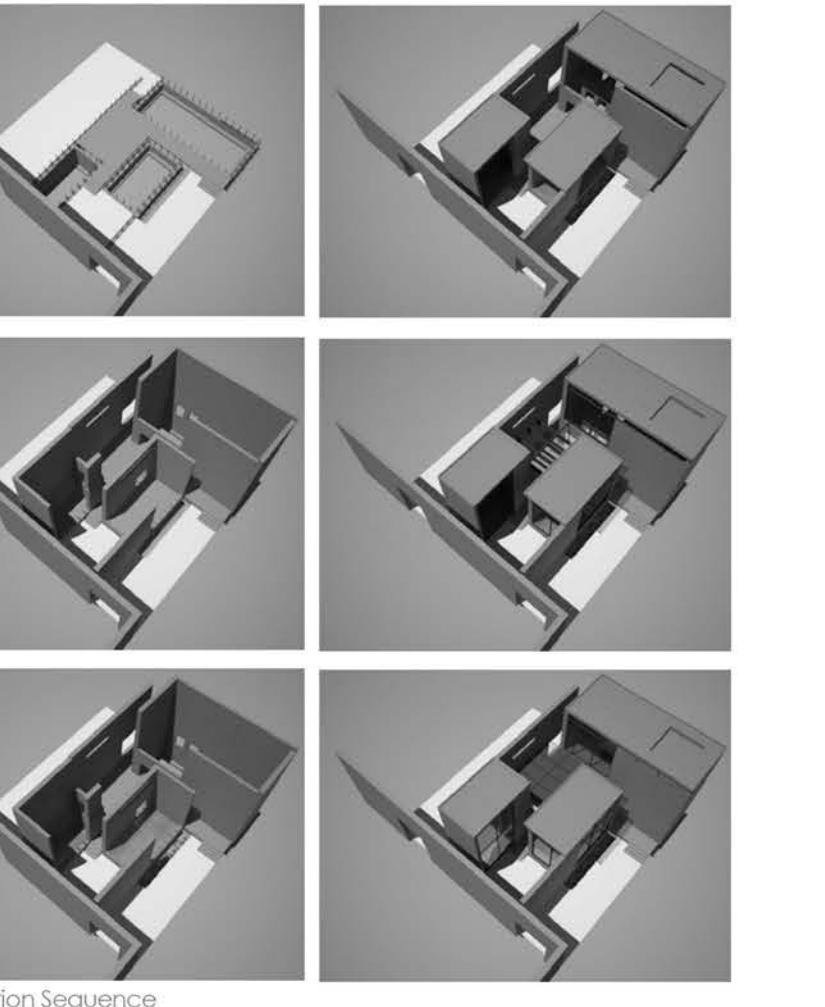
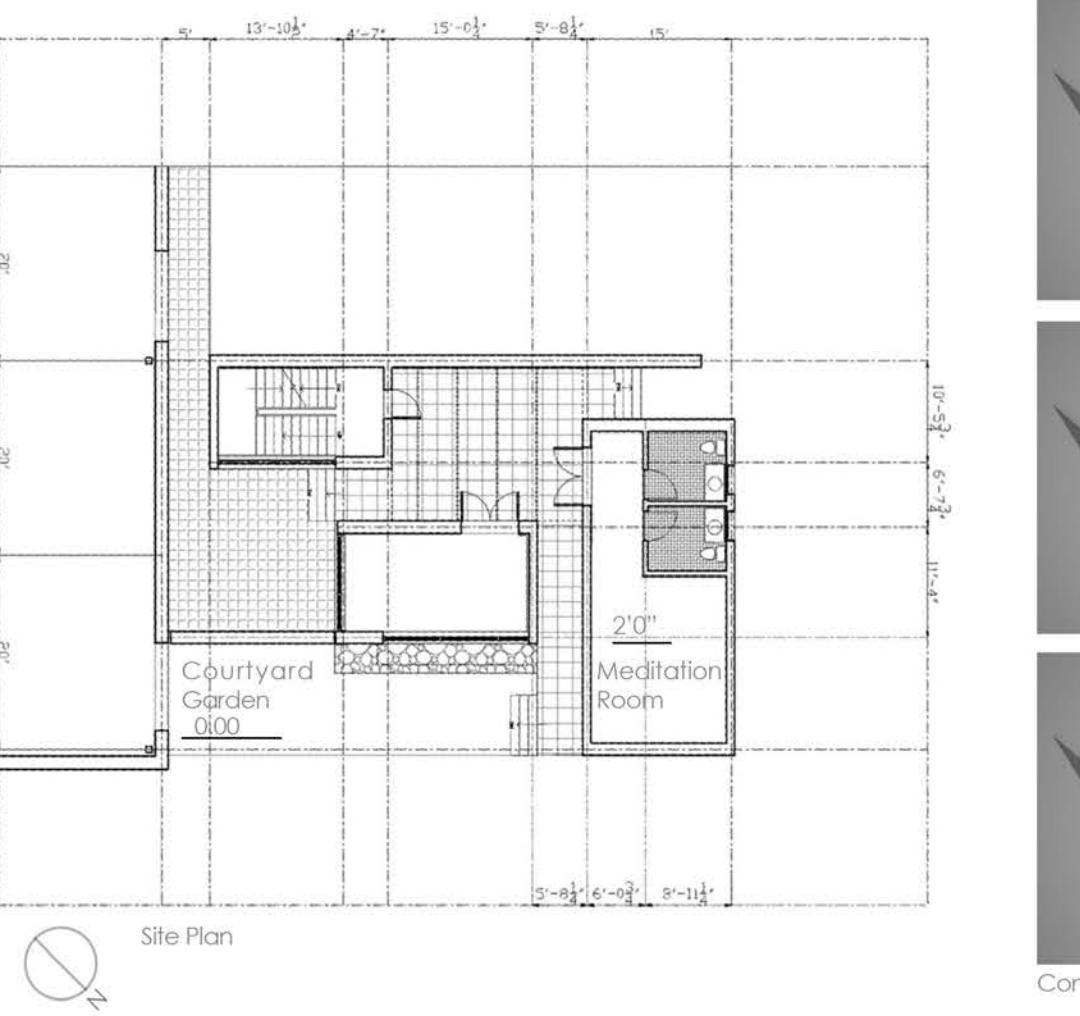


Ventilation Analysis-Humidity



Ventilation Analysis-Wind Speed

03 [Design Development]: Flow Integration with BIM



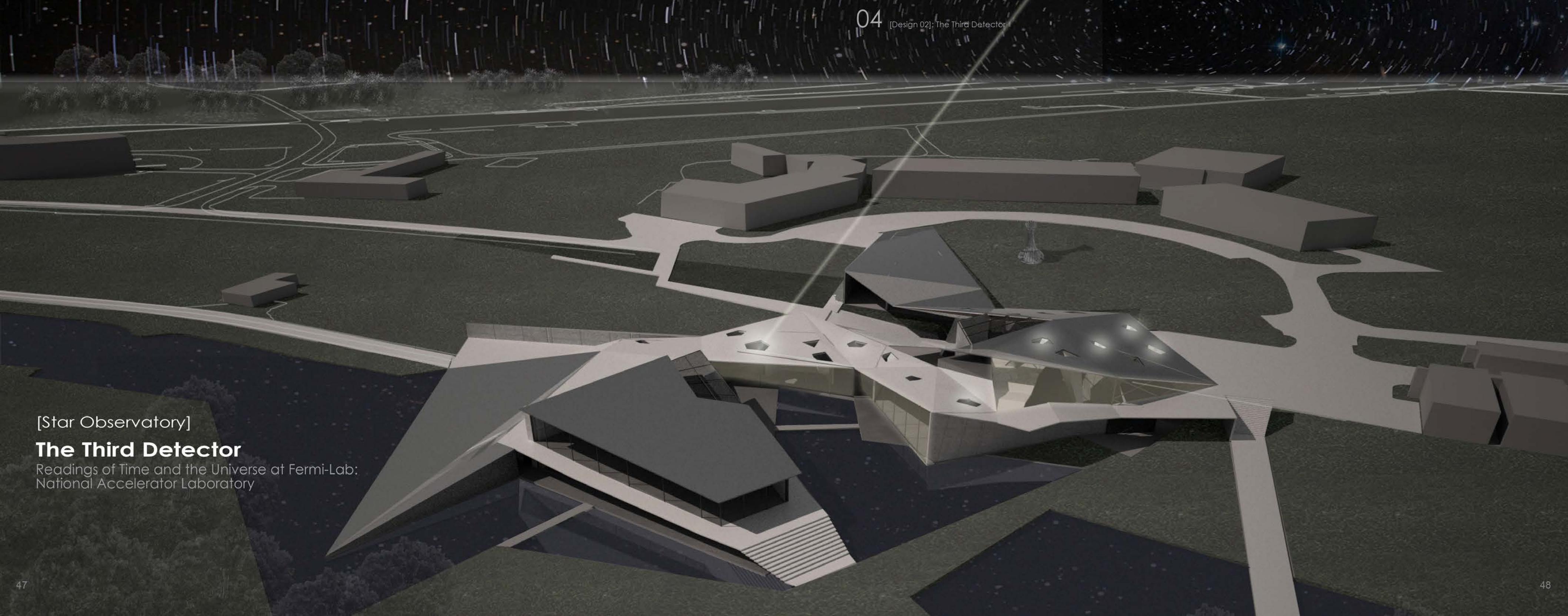
Daylight performance analysis with Eco-tect of three rooms

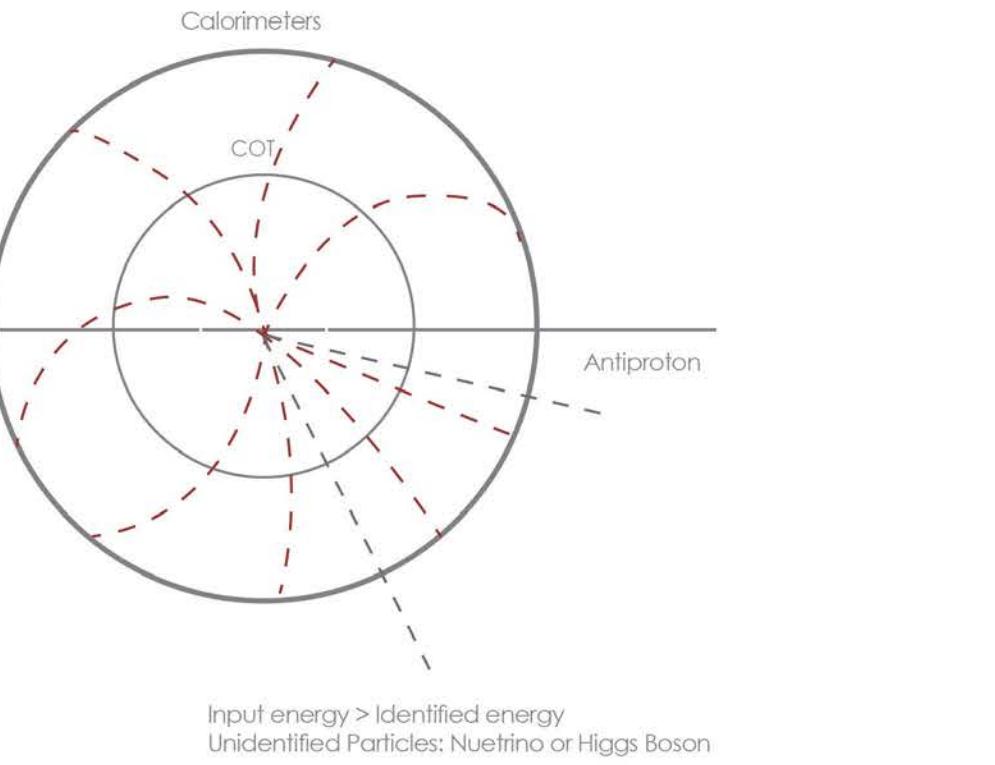
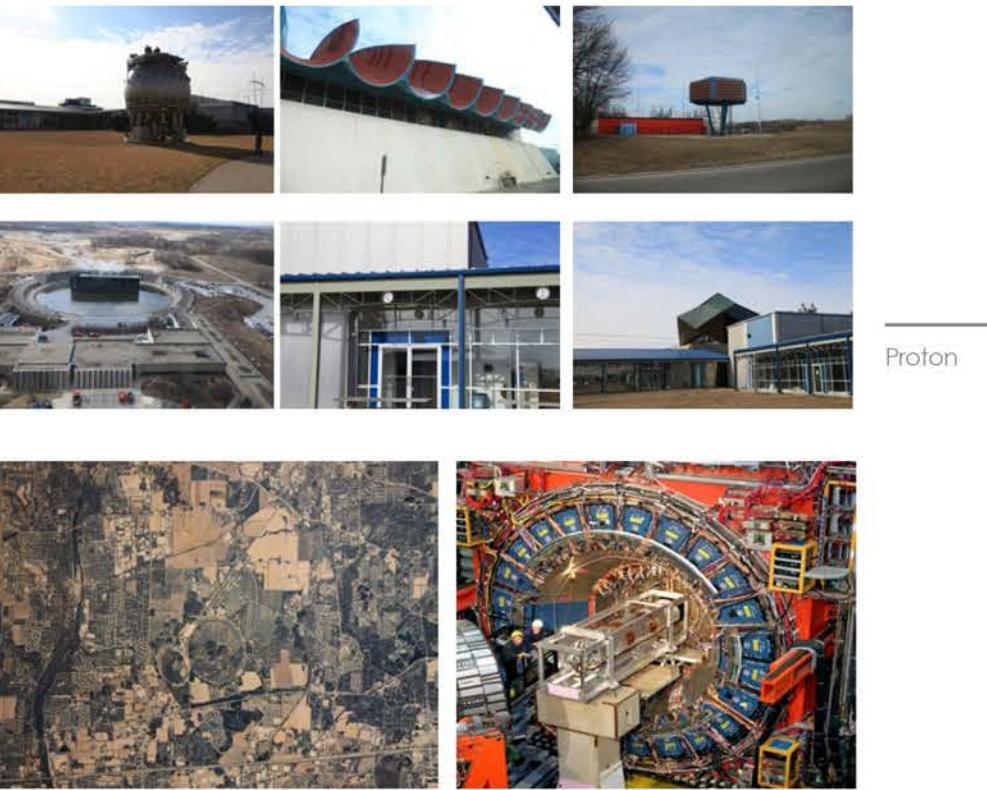
1. Illuminance
2. Glazing VLT and Glazing Ratio
3. Color Reflectivity
4. Shading Device

[Star Observatory]

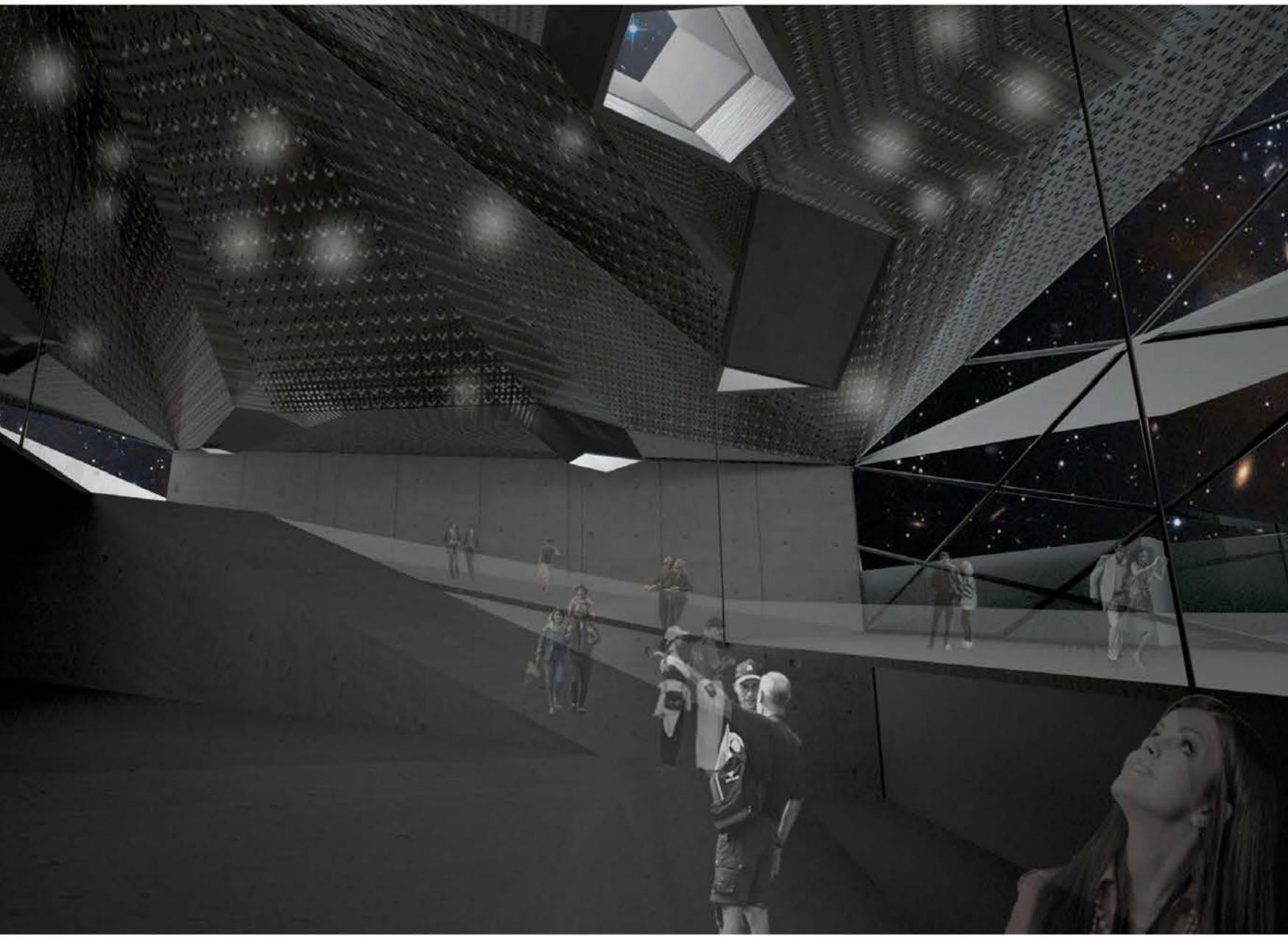
The Third Detector

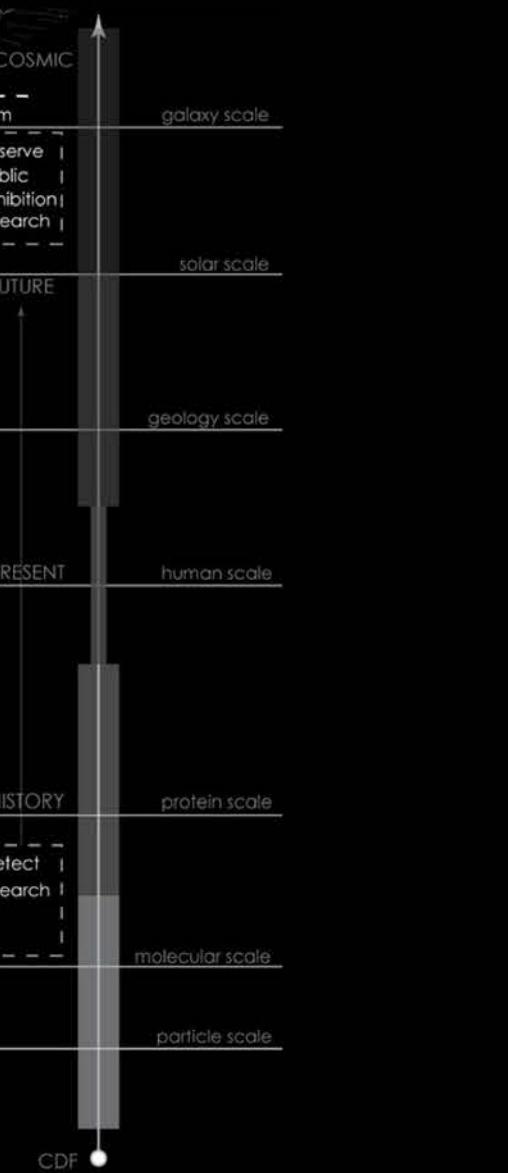
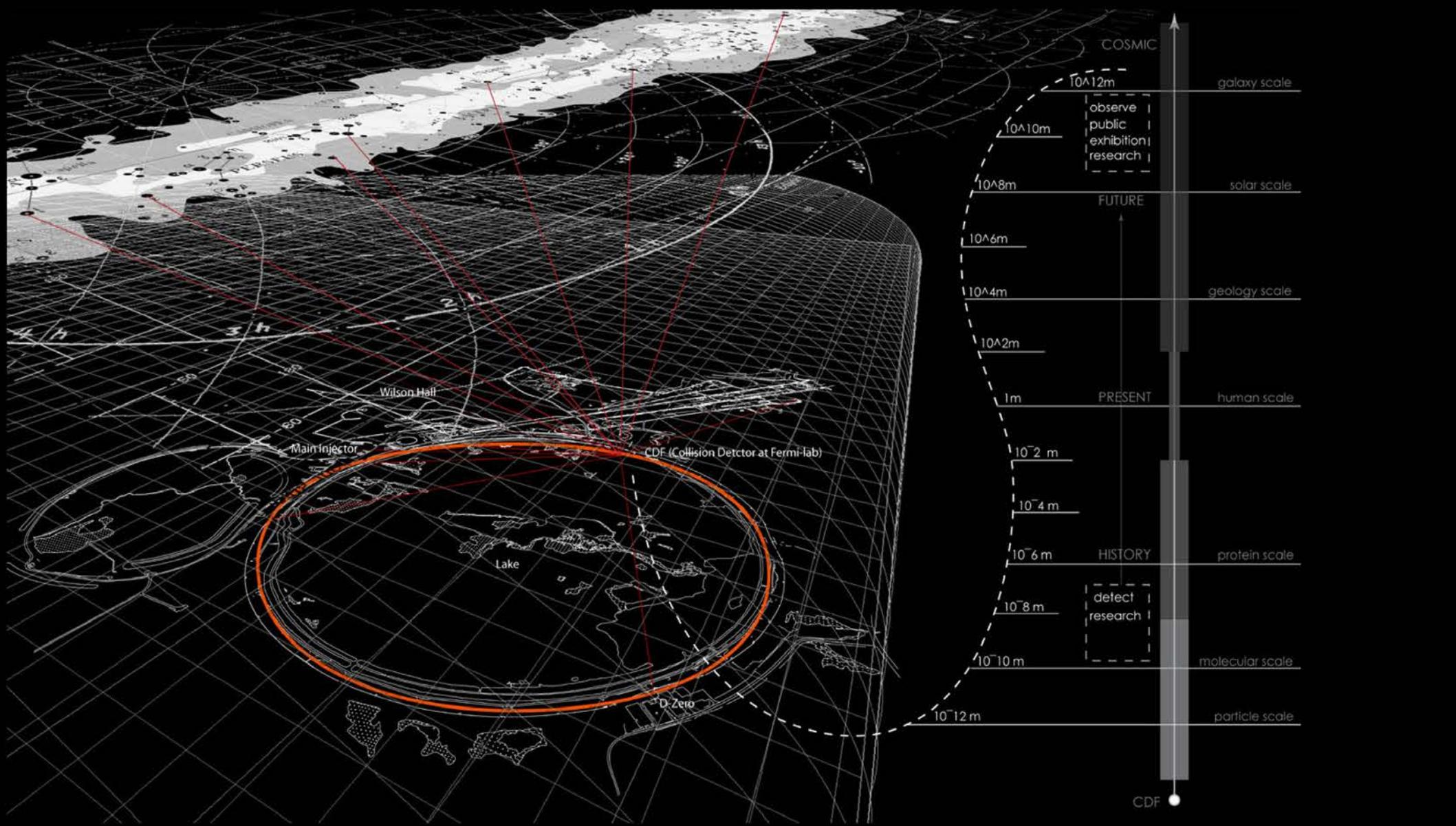
Readings of Time and the Universe at Fermi-Lab:
National Accelerator Laboratory



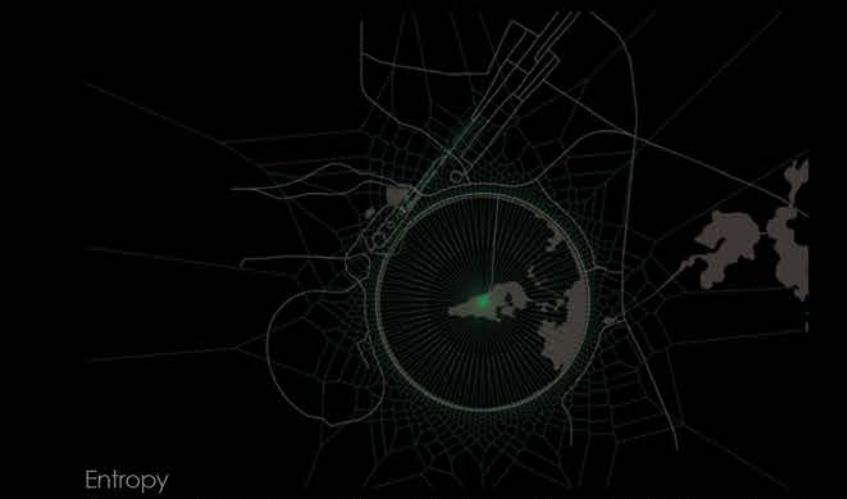
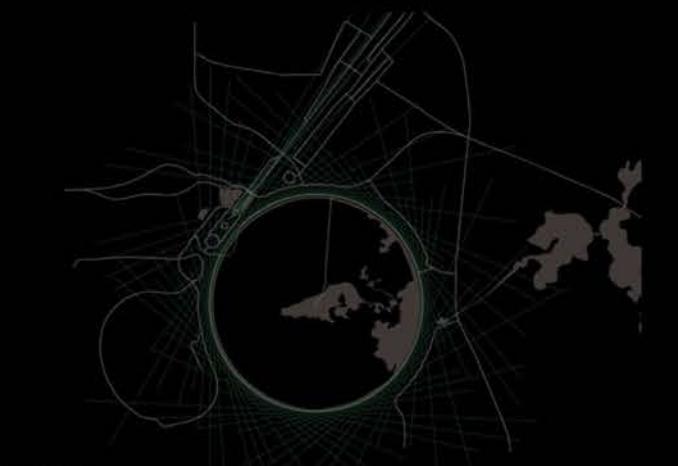


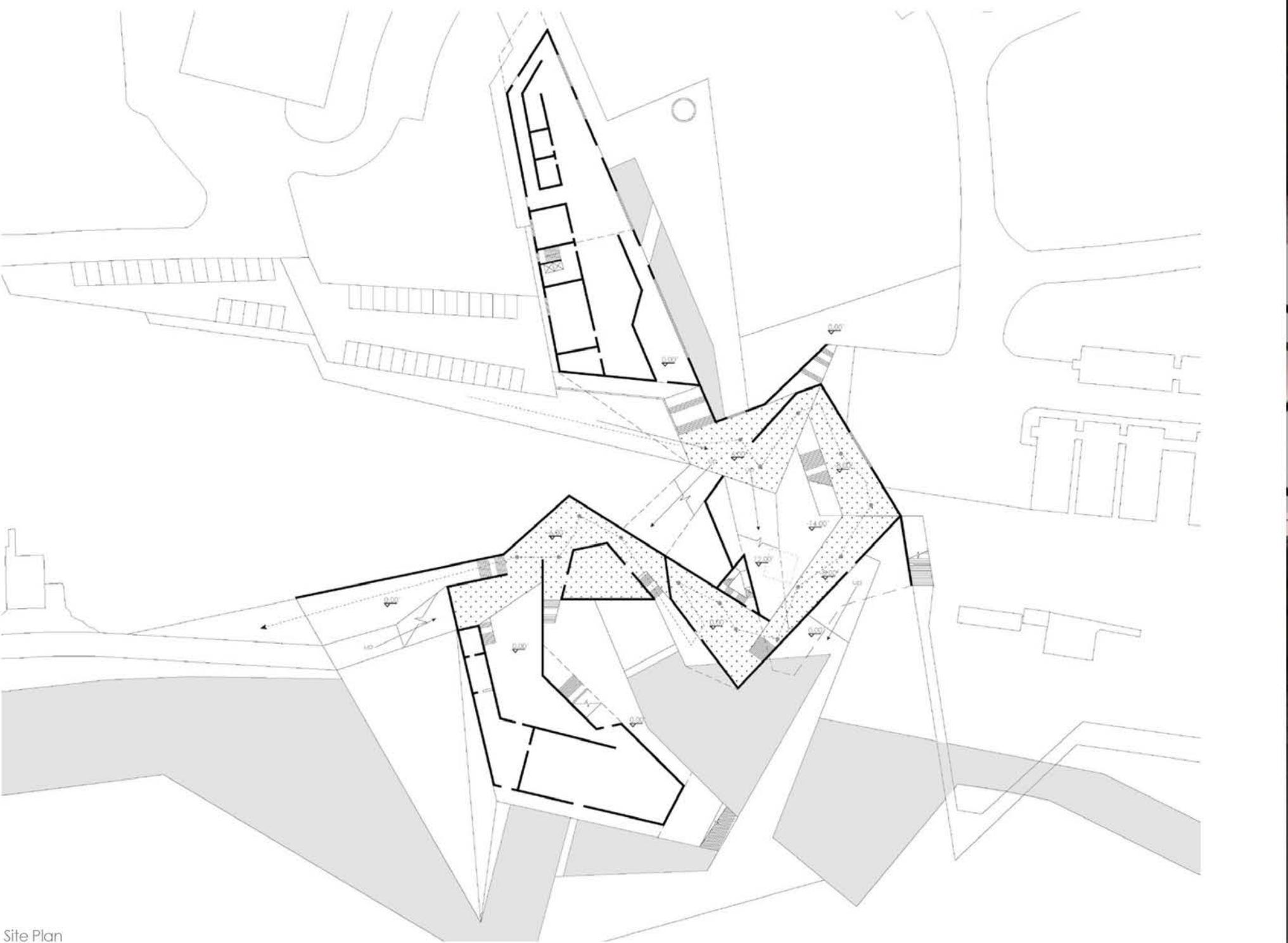
It is true that systematic strategy is the crucial thing that architecture learns from science which means new order is able to be generated from the integration of multiple systems. The integration works because of the existence of certain rigid rules or logics behind, and keeps unpredictable at the same time. Conventionally architects always find themselves be organized by pre-decided image or intuition. Therefore, another approach, a non-linear one, is provided focusing on producing a new world with existing hierarchy. With the new system, cosmic system, CDF (Collision Detector in Fermi-lab) which has been already shut down gets regenerated to act as a public space for star observation, gathering and research. Considering the internal connection between particle world and cosmic universe, the new observatory becomes another detector. Instead of going downward in history, it goes up towards certain stars at specific time on specific day, just as a LAND-FORM CALENDAR.





Decomposition
Site analysis begins from Tevatron mechanism with particles moving out from the ring



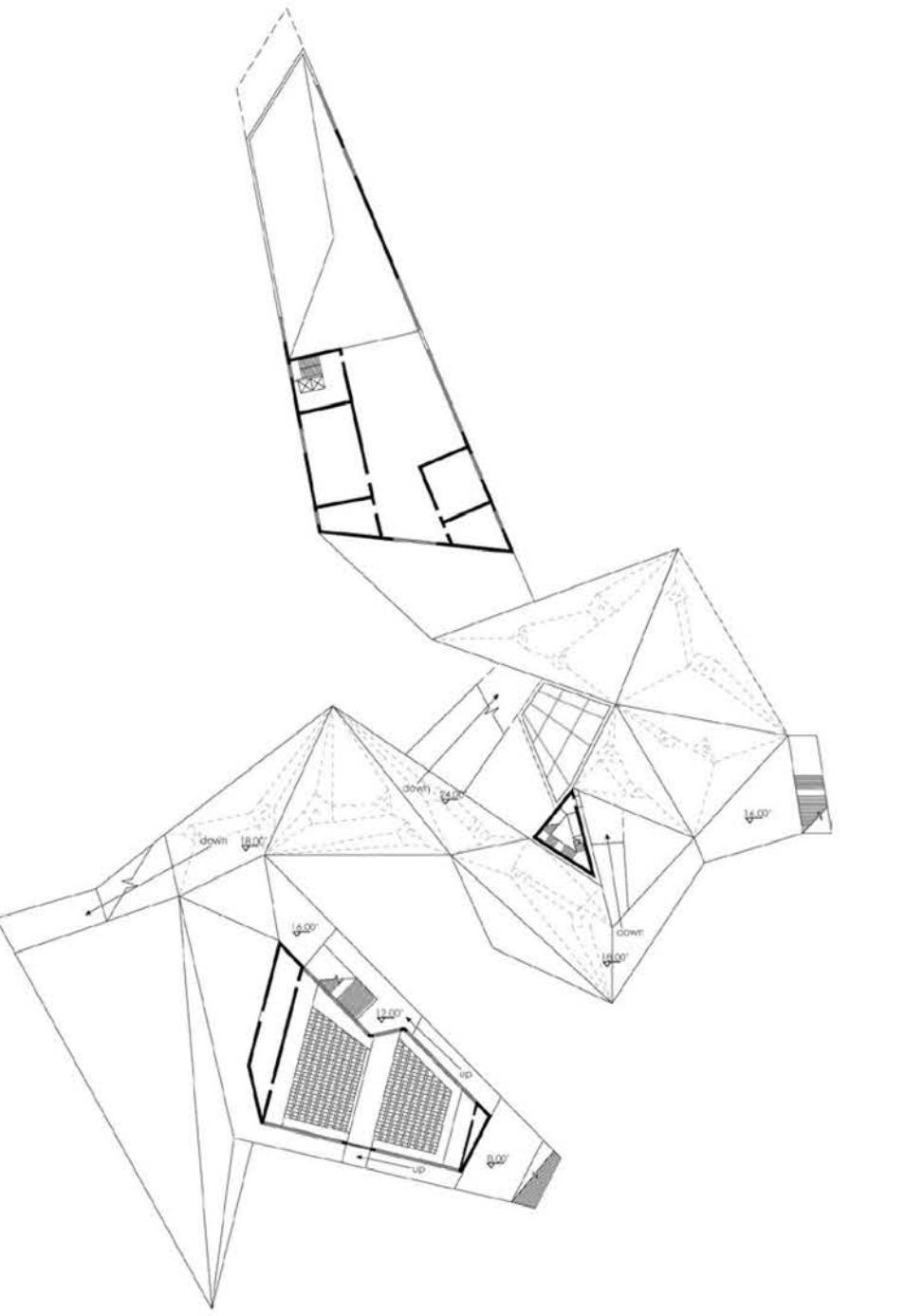


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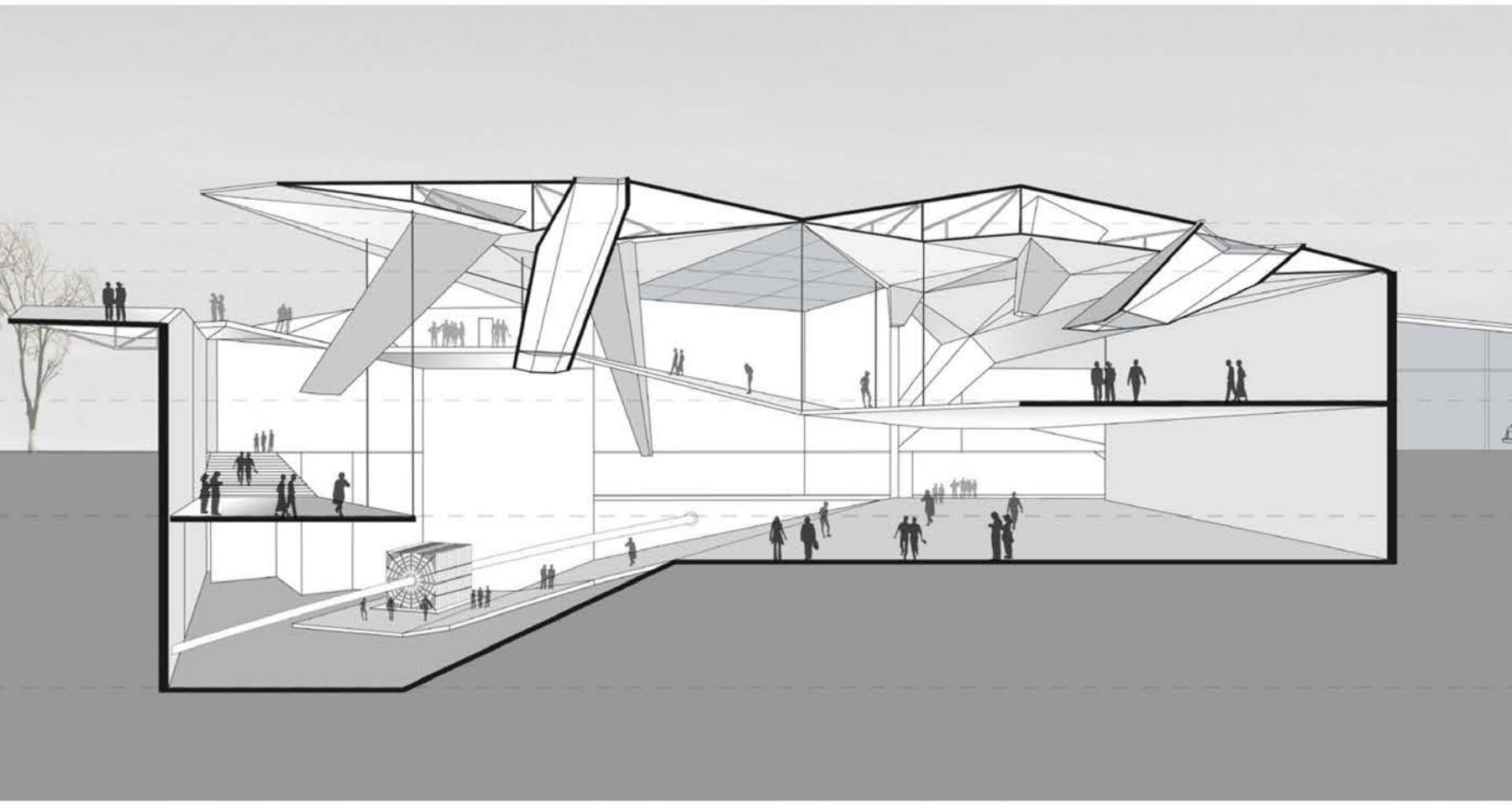
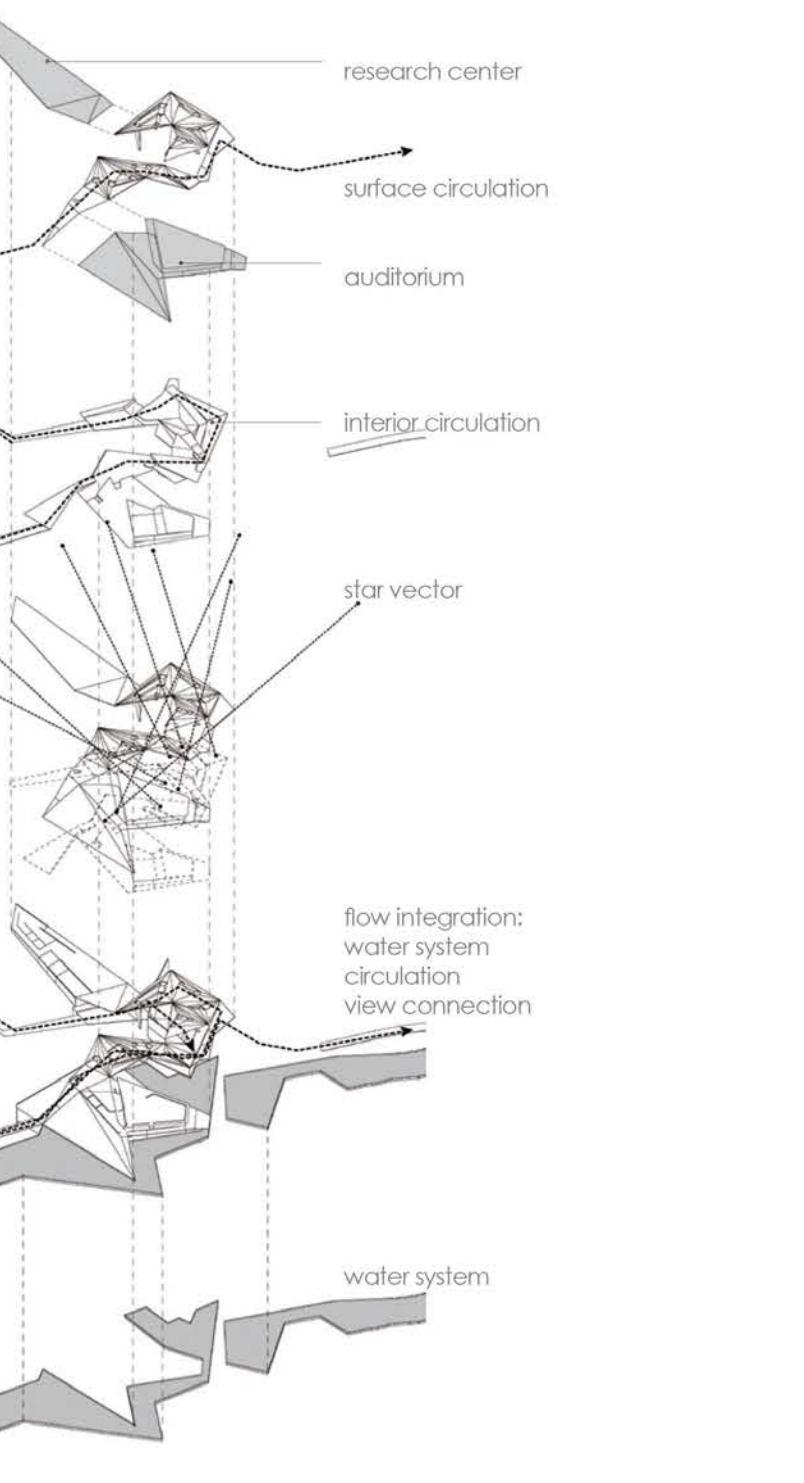
[Design 02]: The Third Detector



04 [Design 02]: The Third Detector

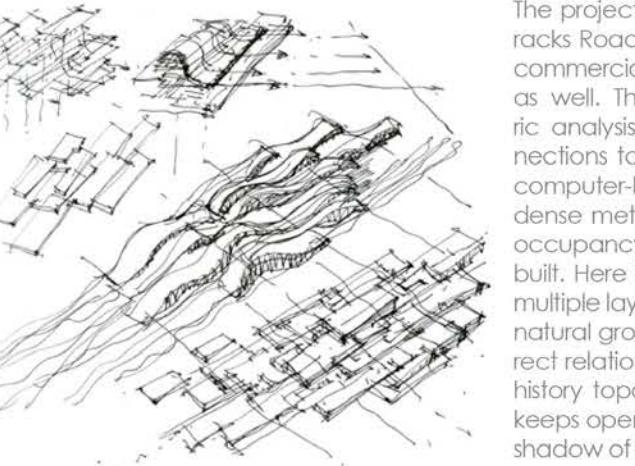
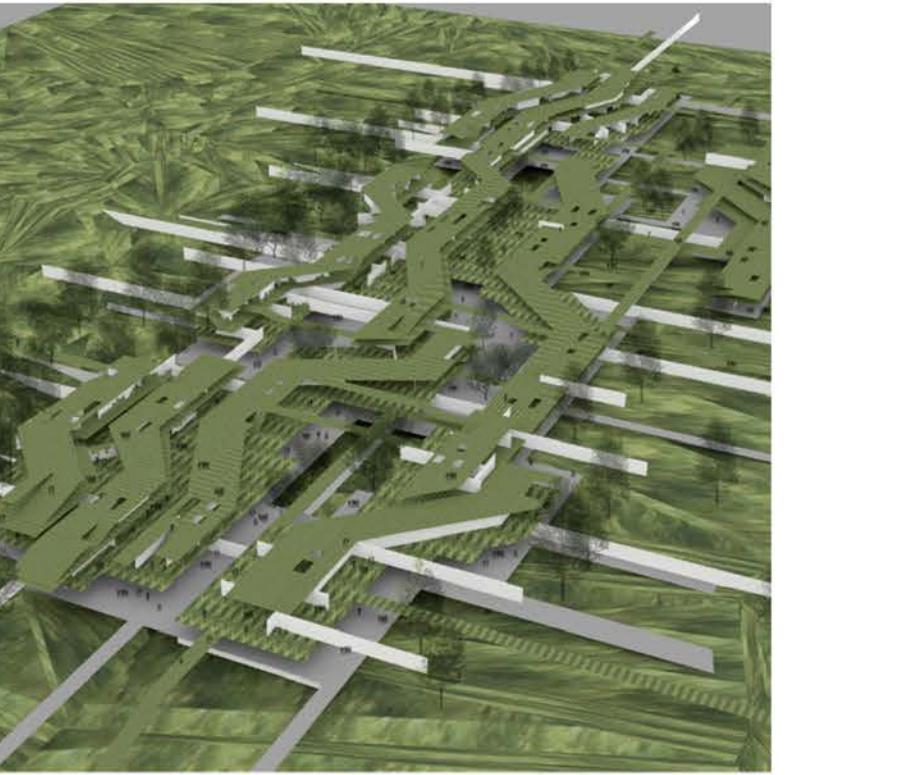
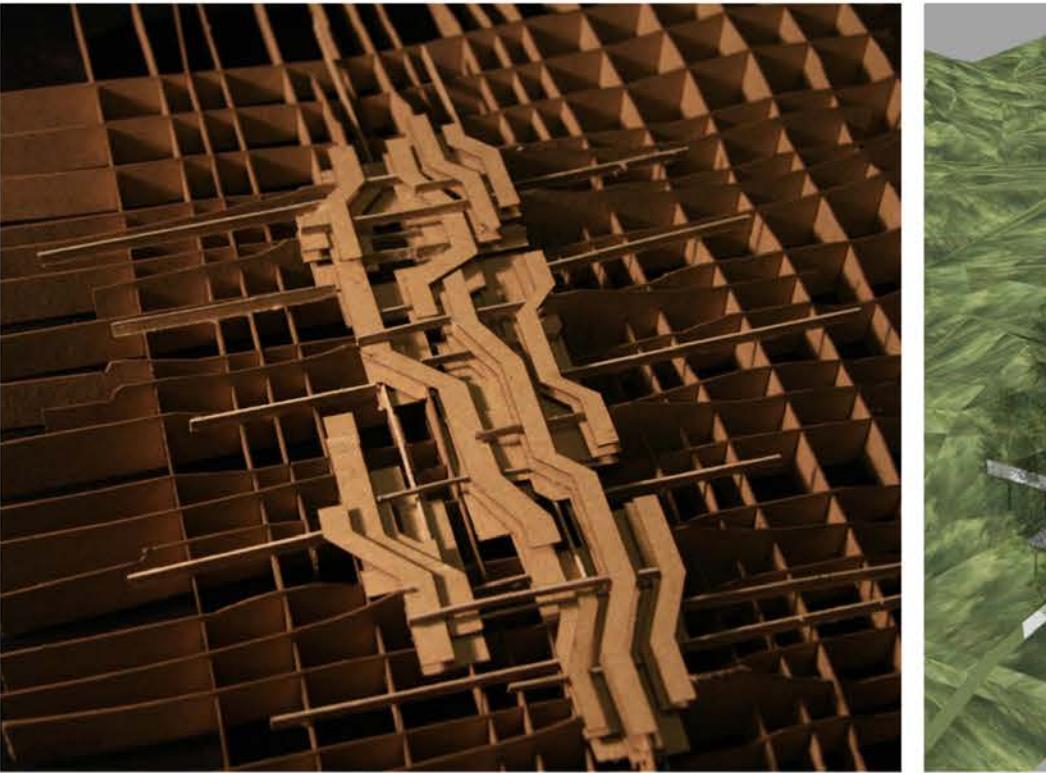


Second Floor Plan

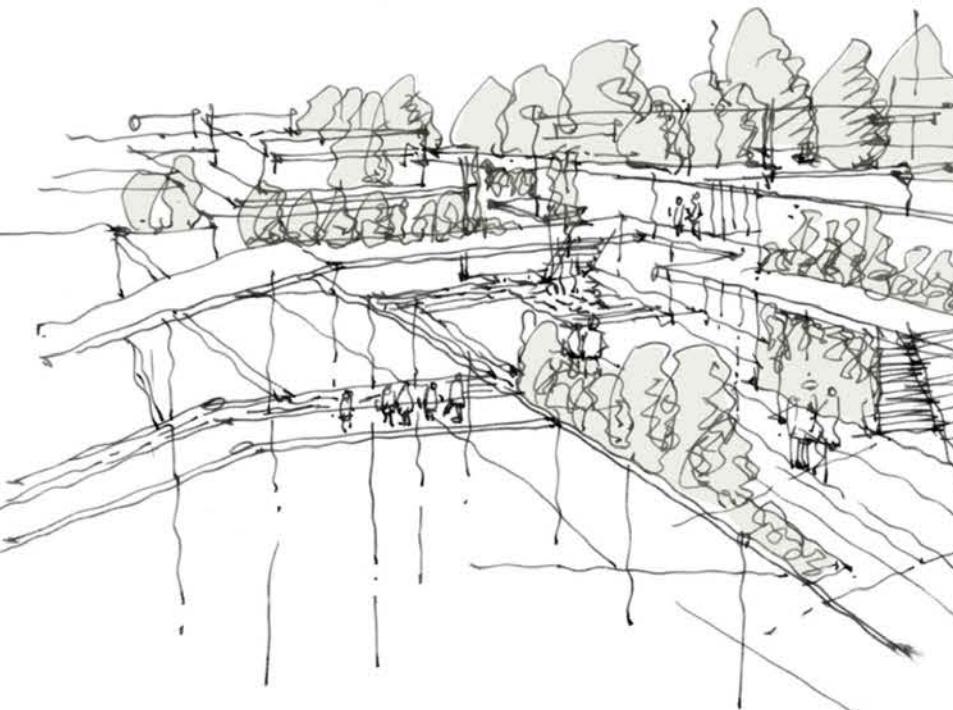
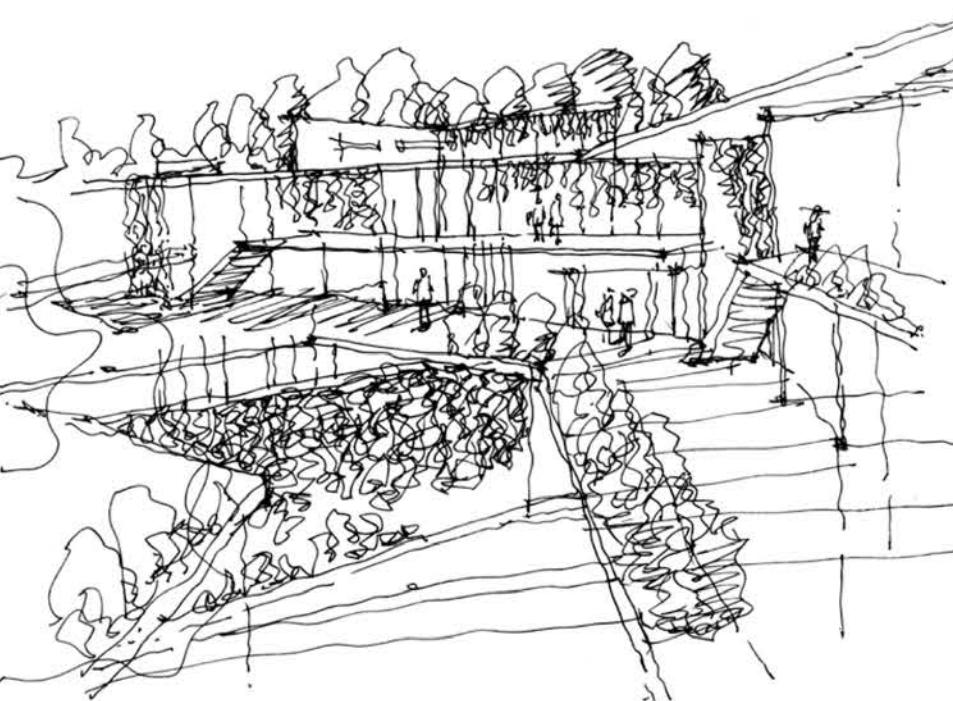


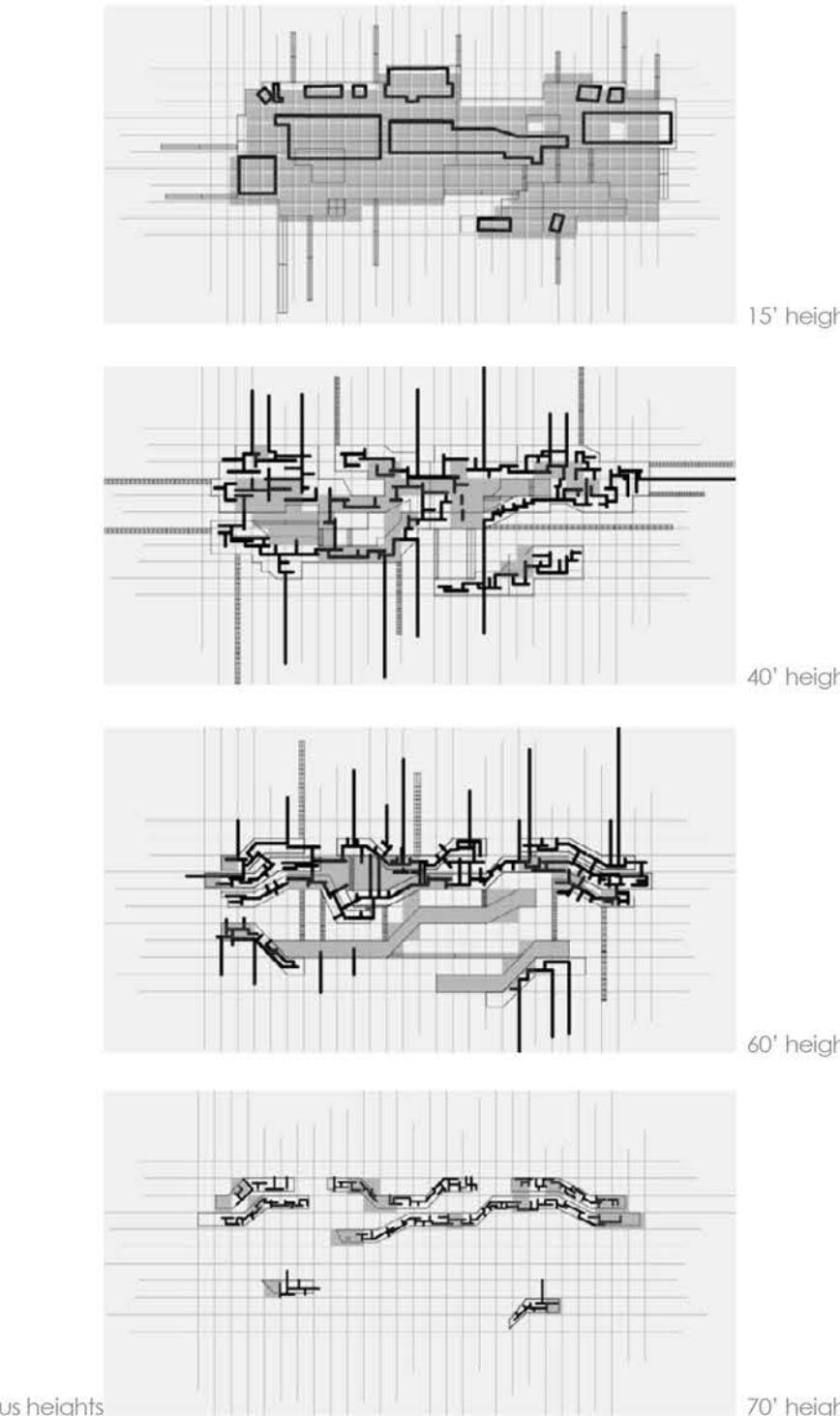
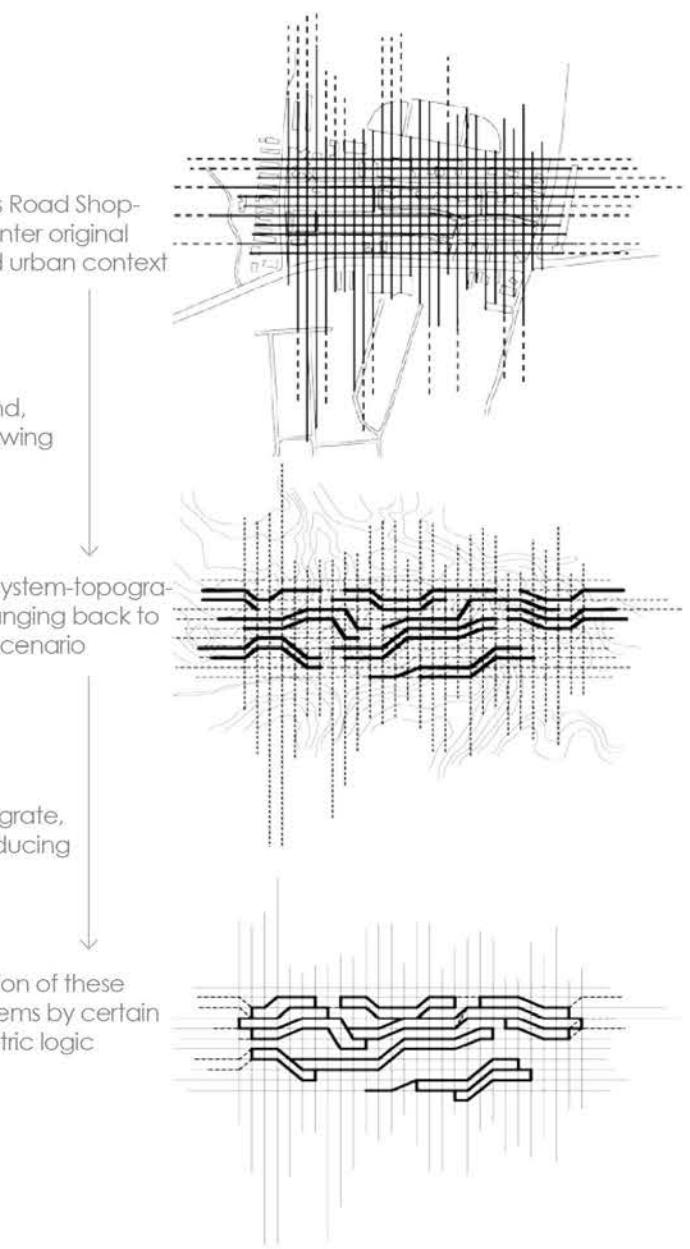
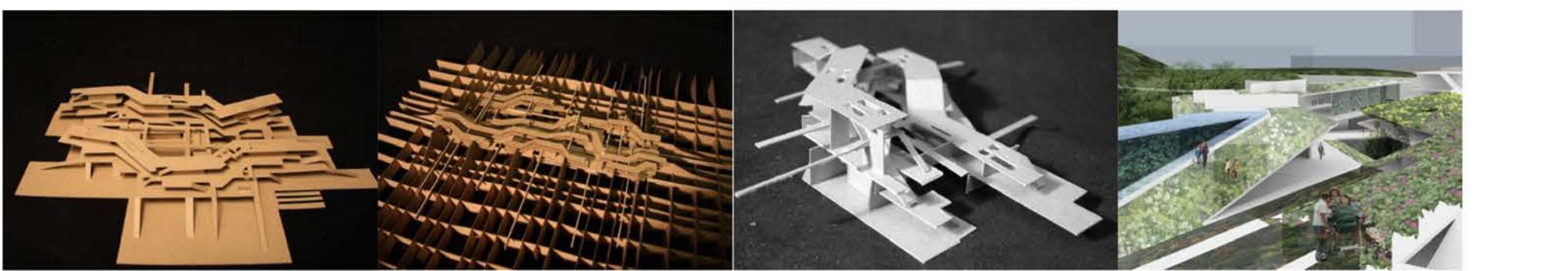
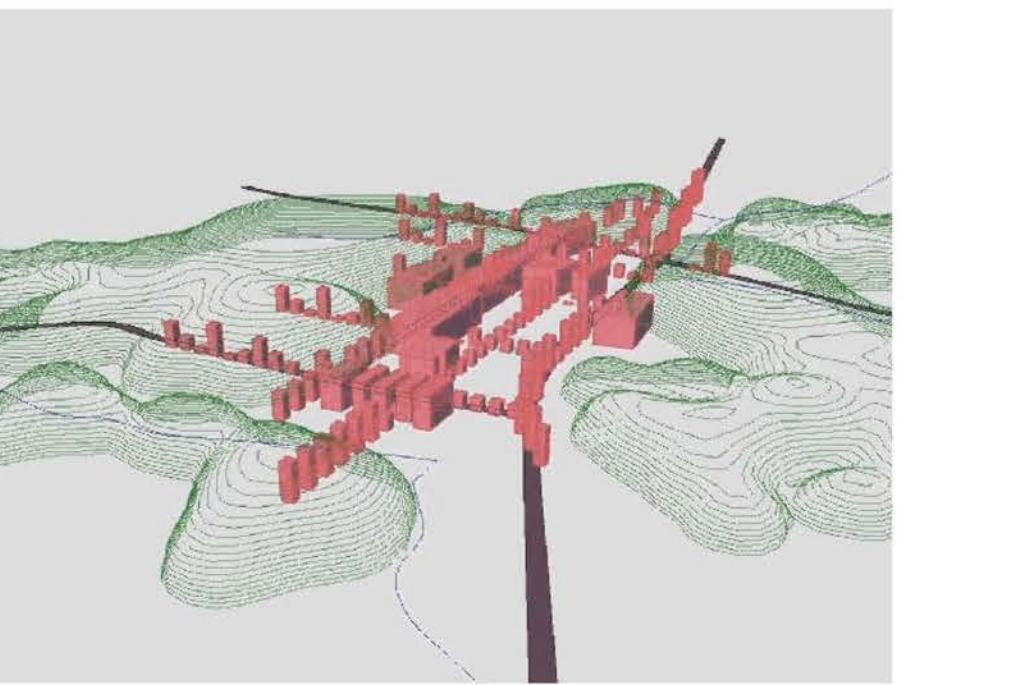
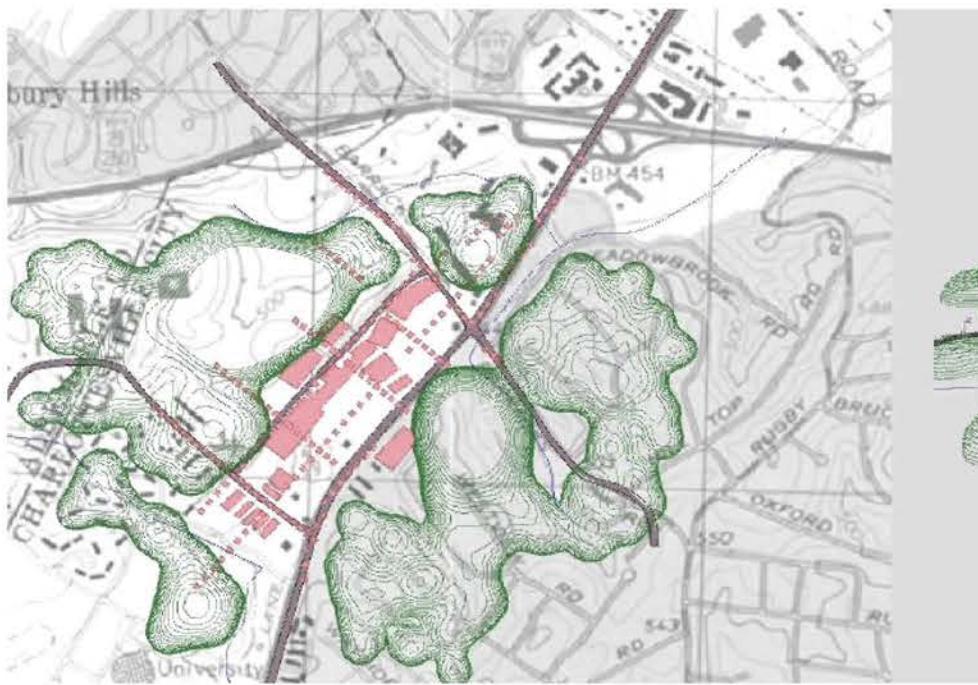
Section through the Main Observatory Hall

[Barracks Road Residential Community]
Parametric Hill Town



The project deals with the revitalization of Barracks Road Residential Community containing commercial and public gathering function as well. The concept is driven by parametric analysis that tries to make intensive connections to the proximity and the nature in a computer-based system, and an efficient and dense method to mix the nature and human occupancy as well as public/private issue is built. Here it reaches a some-how balance of multiple layers considering the human lives and natural growing up. The structure claims the direct relation to the ground and finds back the history topography. What is more, this system keeps open and transparent enough to let the shadow of outside world in.



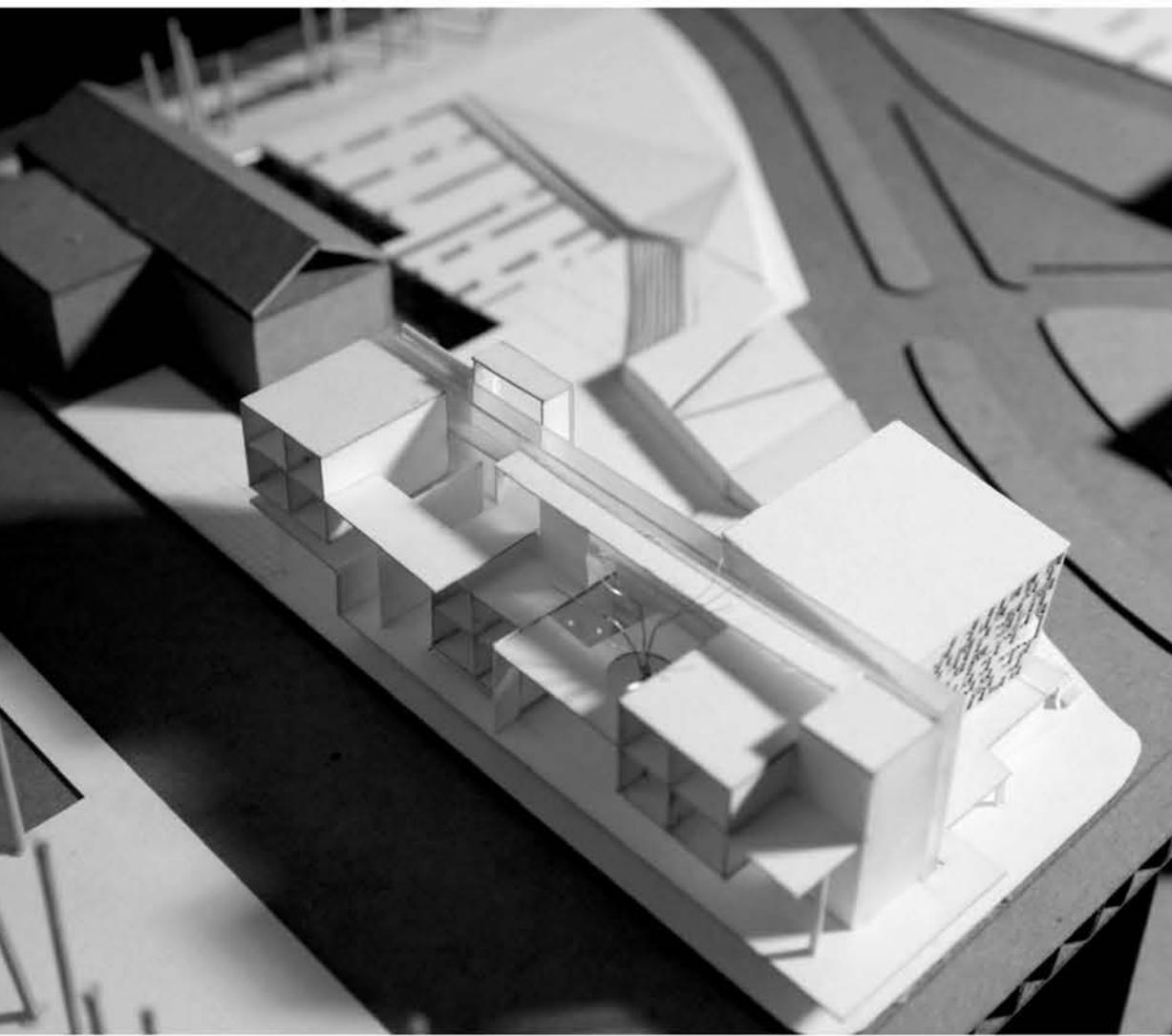


[Roots of Music: Marching Band School in New Orleans]

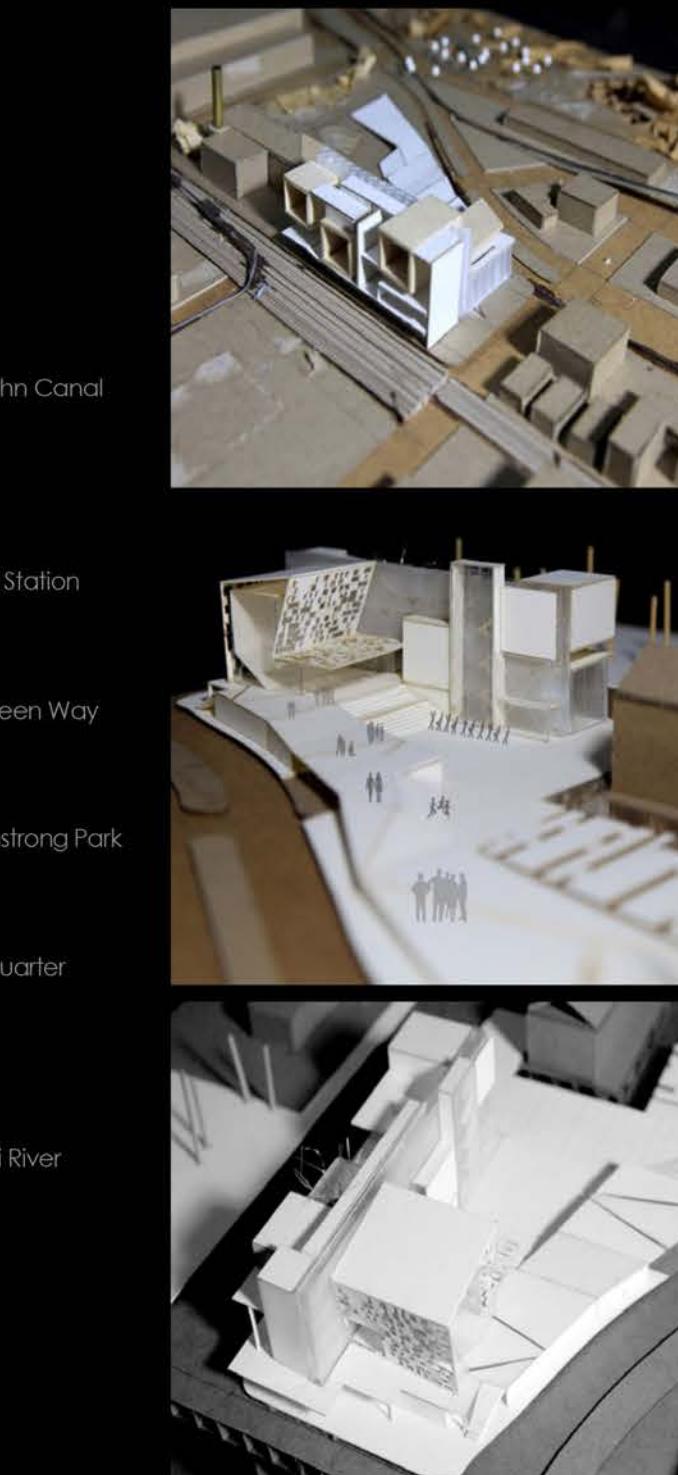
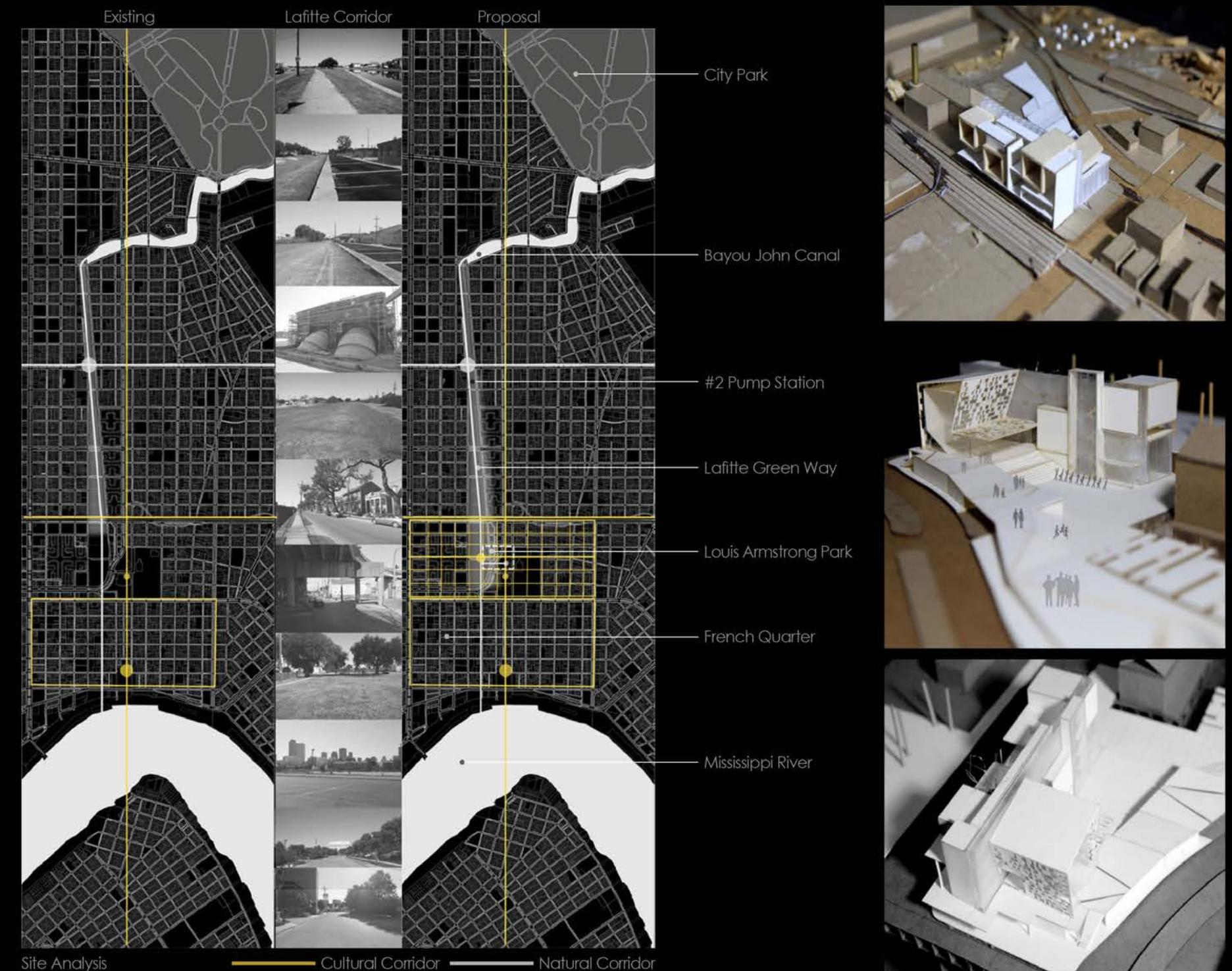
Weaving

Based on conversation with New Orleans' local cultural and ethnical scenario, the roots of music school is looking for a unique spot with intensive connections to the public as well as the urban context. Therefore, this triangle shape site is served as an anchor to hook up or "weave" urban axis and natural axis which is Laffite Green way running all the way down from the North, trying to redefine the relationships between natural and human activity, landscape and infrastructure, public and private, all historically and systematically.

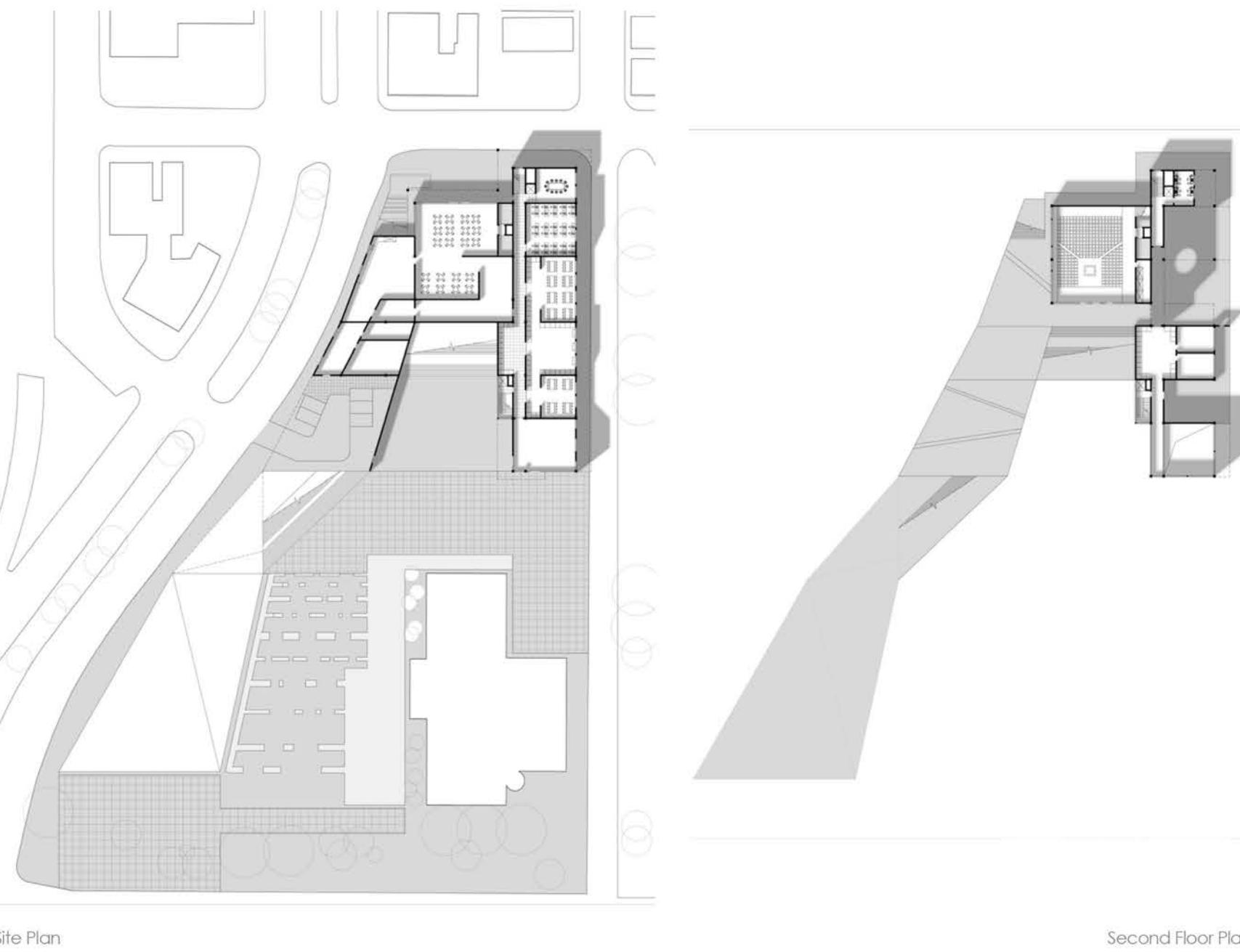
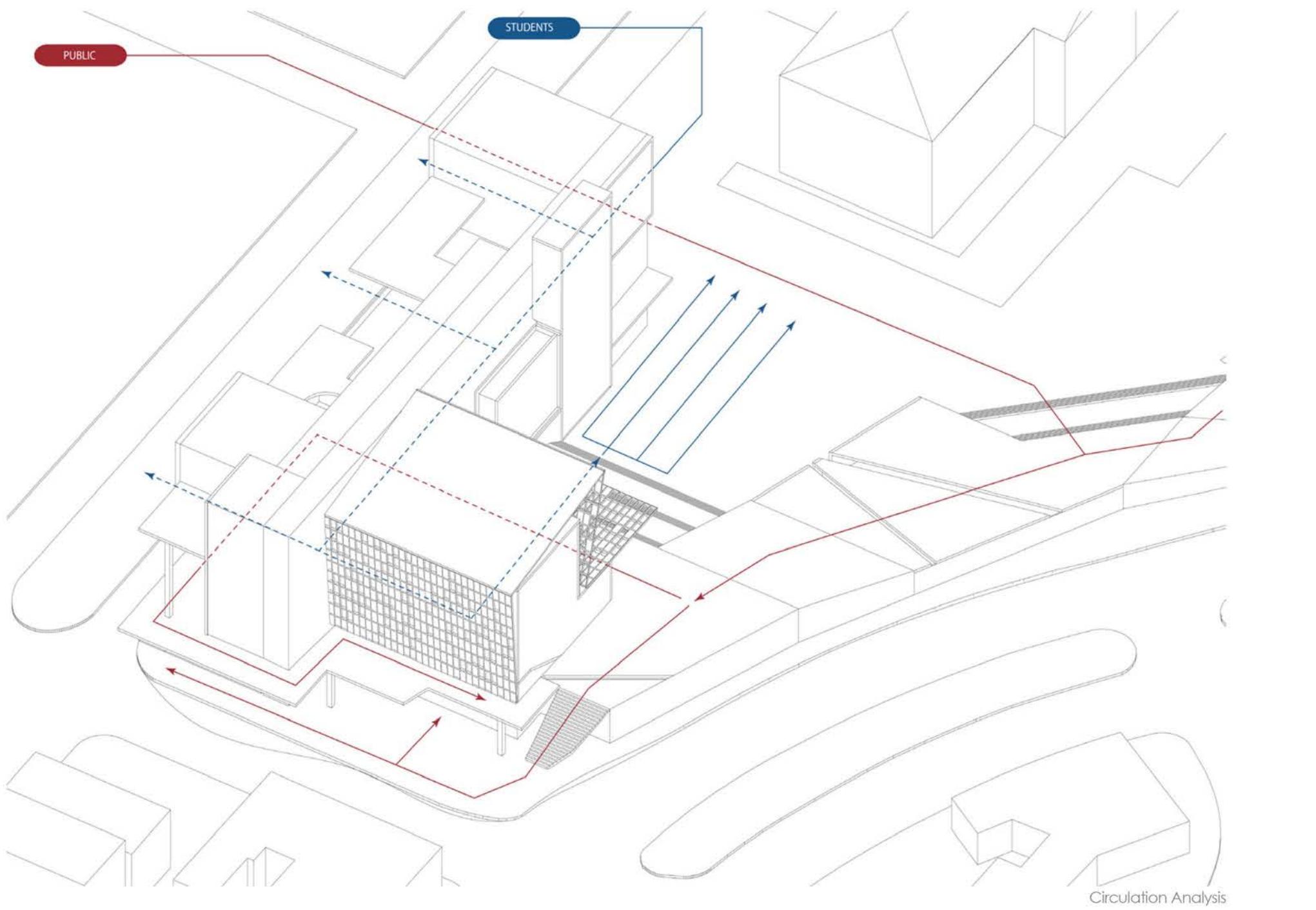
I see the opportunity here to weave those elements together in an organic way, which means the program itself is introduced by circulations to convey the see and seen relationship between public and the school in a hierarchy. The two flows, private and public, are twined together to create new spaces which can be effectively used as marching band track and informal practice places.

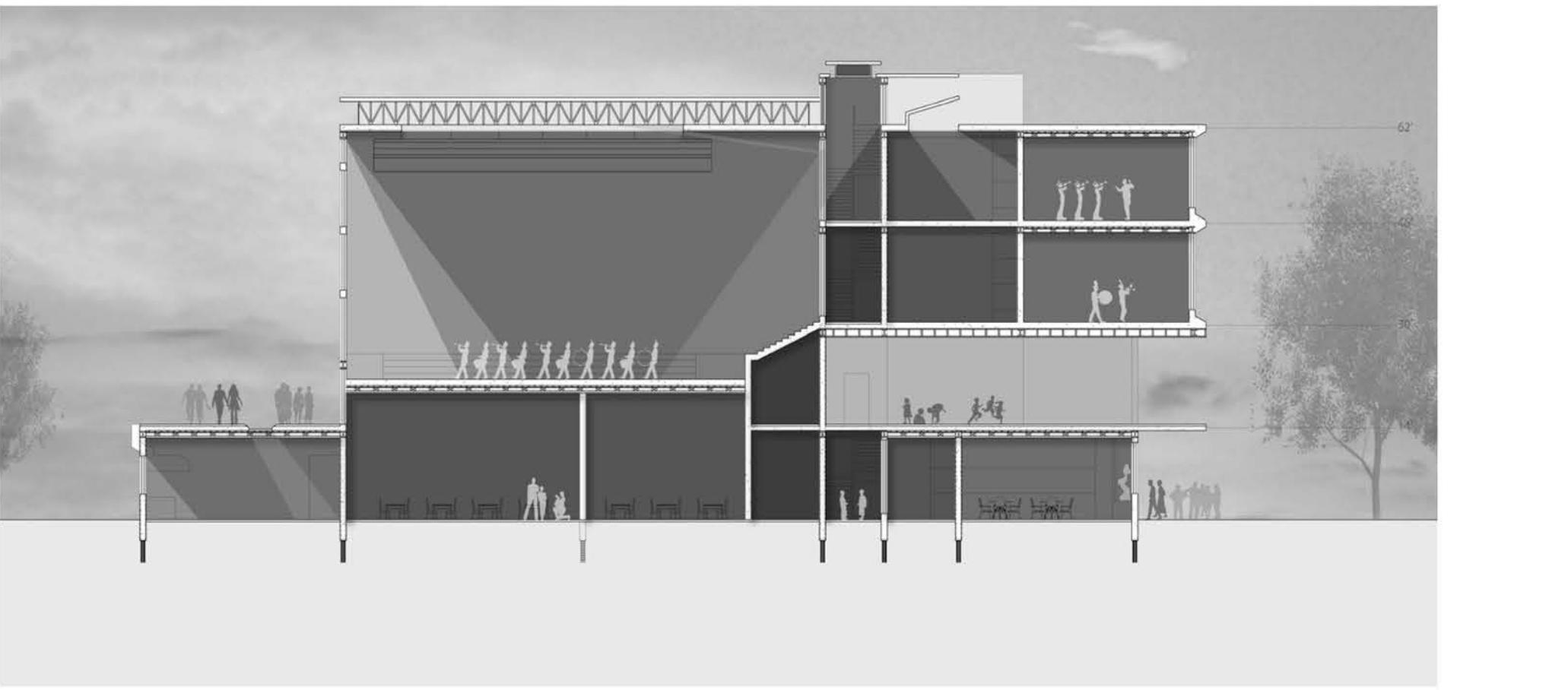


06 [Design 04]: Weaving

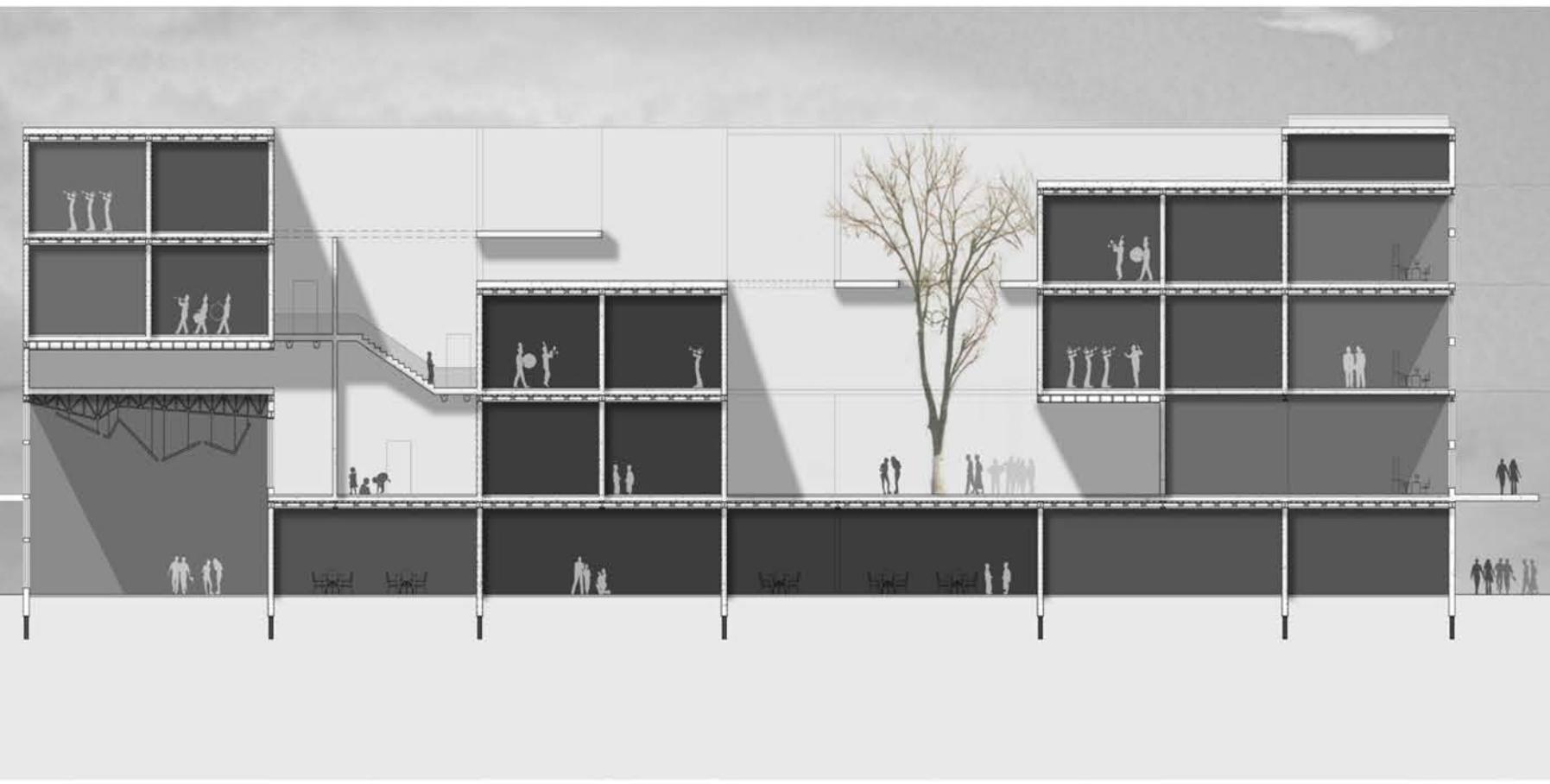


06 [Design 04]: Weaving



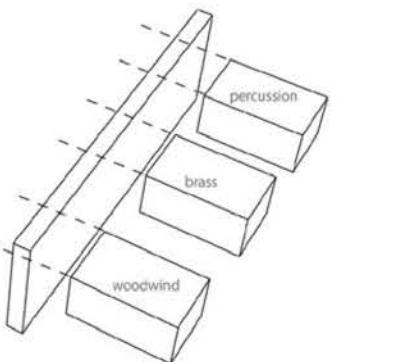


Section A

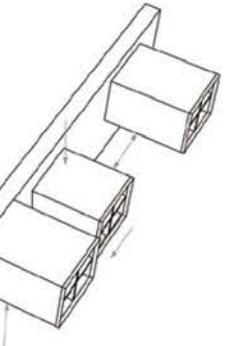


Section B

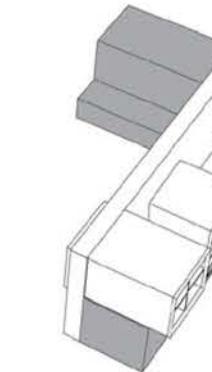
Architecture deals with various conditions of boundaries or edges, which provide the pre-existence of space as well as circulation in either positive or negative way. I believe that these edge conditions complete the most architectural tasks in terms of making connections to urban and community, differentiating the circulations according to programs, concentrating on certain symbolic elements through comparison, so on and so forth. Therefore, in this design of kids school in New Orleans, I play with multiple boundary conditions along the triangle shape site within hierarchy in order to mix the activities of marching band and the public as much as possible while still keep them separated respectively.



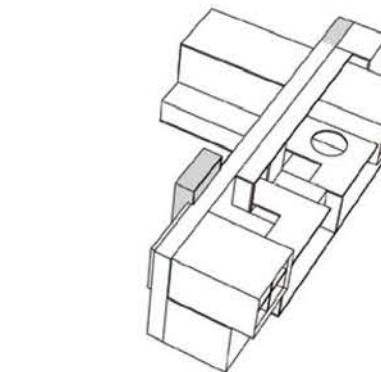
corridor+classrooms



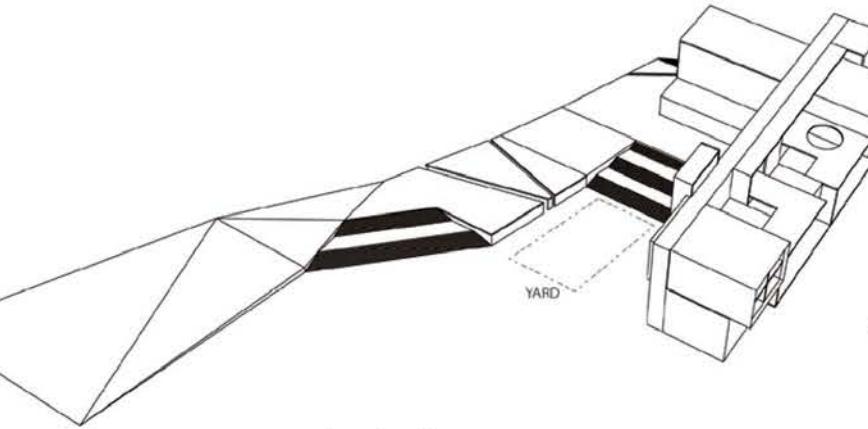
shift



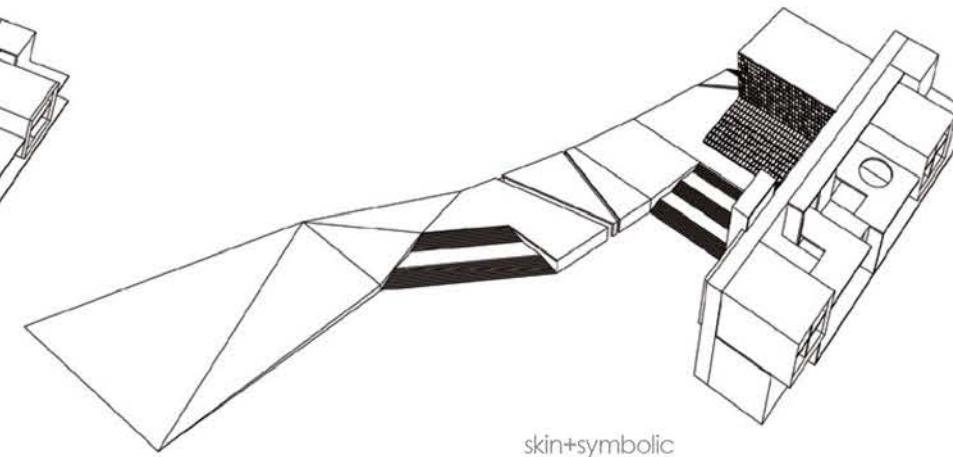
auditorium+entrance+library



stair-tower+grey spaces



micro-landform



skin+symbolic