

Virginia Polytechnic Institute and State University
College of Architecture and Urban Studies

Movement in Architecture I Community Pool

Lauren Coleen Mitchell

thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the masters of architecture degree in the college of architecture and urban studies.

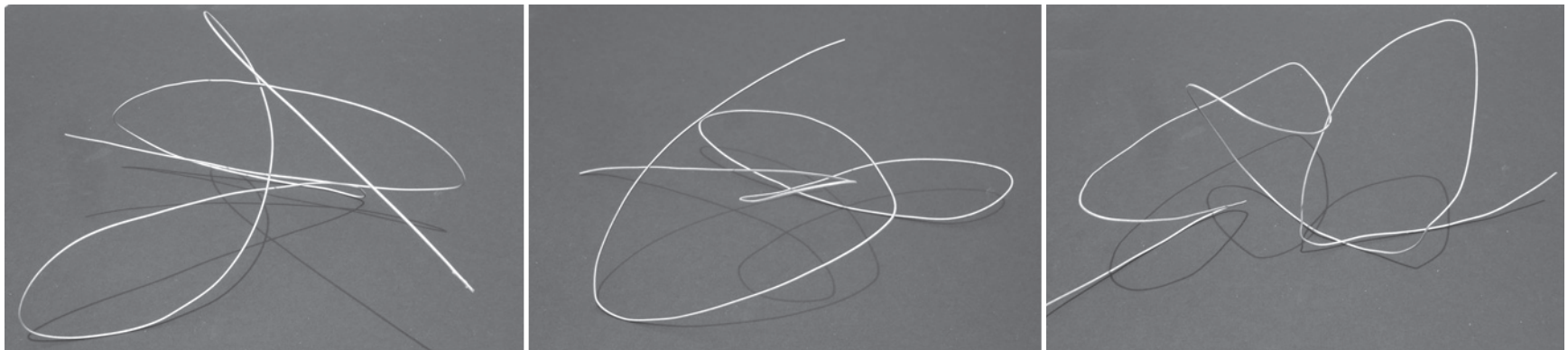
Marcia Feuerstein
Paul Emmons
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Washington Alexandria Architecture Center

keywords: movement, body, spacial, harmony, pool

ABSTRACT

As the body moves through space ephemeral lines of movement are created. These lines of movement are influenced by body tendencies. We learn from the body by watching the path and patterning of the movement. From the study of the movement of the body, theories of spacial movement were developed. The goal of my project is to draw from spatial movement theory to create an architectural expression that motivates movement of the body on my site and through my building. The focus of my thesis is the movement theory of Rudolph Laban (1879-1958), a modern dance pioneer and a spatial movement theorist.



lines of movement in space, drawn from Rudolph Laban's study of ideal movement inclinations of the body

MOVEMENT IN ARCHITECTURE:
SPACIAL MOVEMENT THEORY

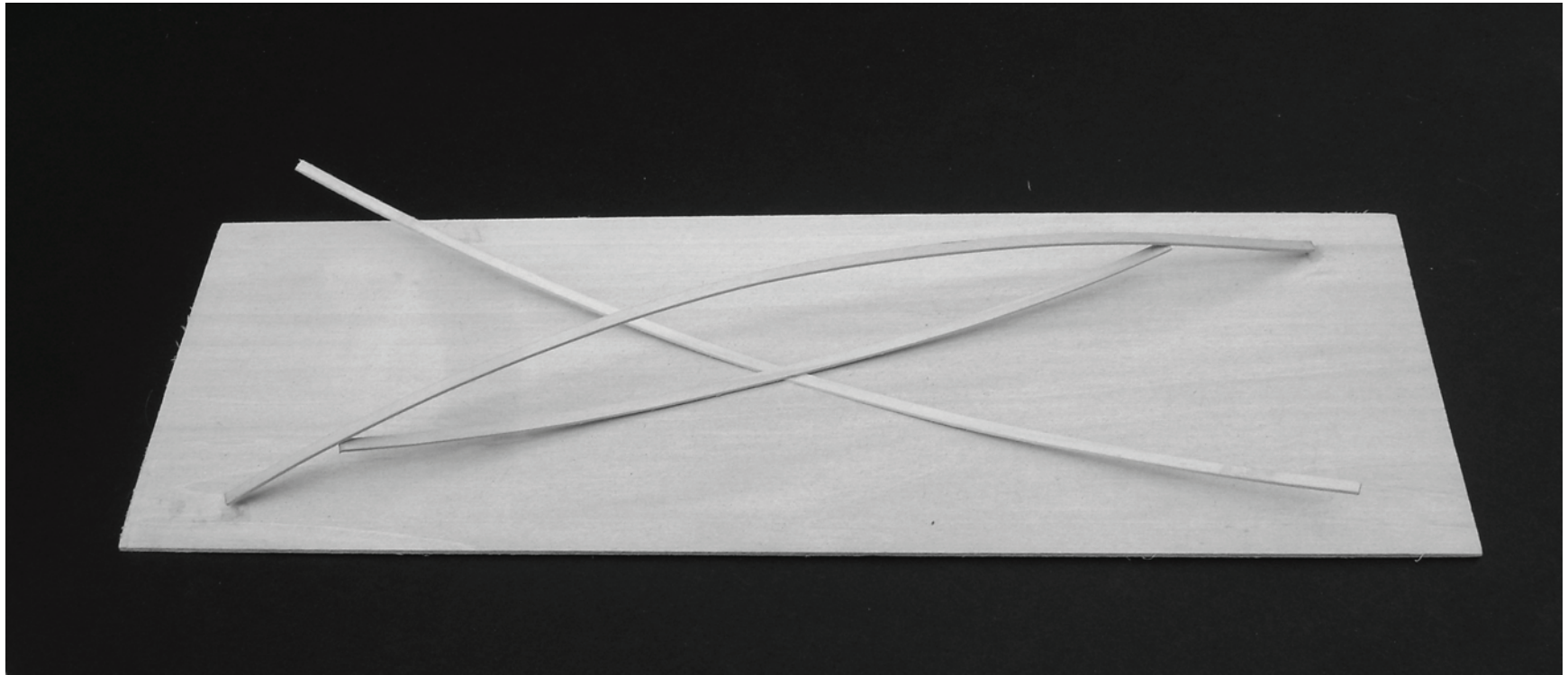
LAUREN MITCHELL



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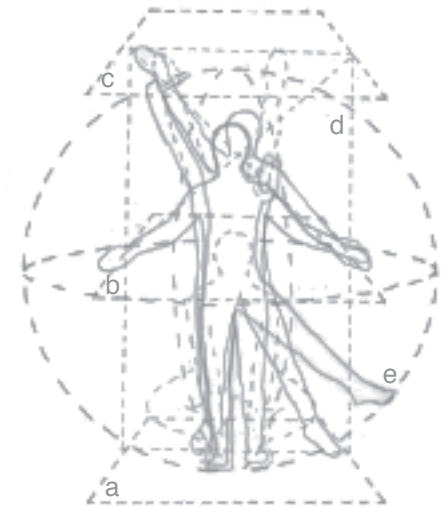


1 | THEORY
1

Our bodies and our movements are in constant dialogue with the architecture of our buildings. As we move, we rise and fall, advance and recede. Movement is my inspiration for architecture. The focus of my investigation in movement is dance, the art of movement. In particular, I have looked at the work of Rudolph Laban, who developed Laban Movement Analysis. Laban Movement Analysis is composed of body, effort, shape, and space. Rudolph Laban categorized four planes of movement: the earthly plane (a), communication plane (b), the sky plane (c) and the dynamic diagonal plane (d). These planes are within the kinosphere (e), Laban's term for the sphere of movement encircling the body.

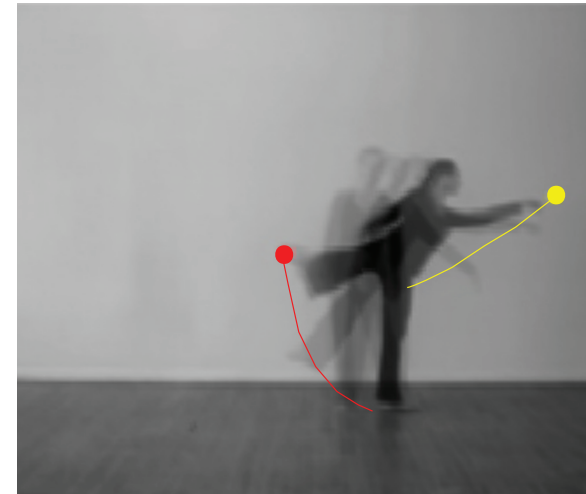


1.1 movement from horizontal to vertical



1.2 four planes of movement in the kinosphere

My concentration in Laban Movement Analysis is based on the study of space harmonies. As the body moves through space, it gains a greater understanding of the space surrounding it, the strength of the body and the body tendencies. Laban Spatial Harmony is a movement scale used by dancers to understand their bodies and the space surrounding their body. The sequencing of movement allows the body to rise to a point in space then fall to a contrasting reactive point. The movement creates convex and concave curves in space. This movement sequence enables the body to move in a diagonal plane, believed by Laban to be the most dynamic plane of movement. Often the arm and the leg counterbalance each other, which allows for the body to be extended in long lines reaching to the full extent of the spatial movement sphere. After performing a Laban Spatial Harmony, the body is made aware of actions and reactions of the body and the art of transition from point to point in space. The beauty of the contrast of high and low movements and sequencing of a composition enables the body to move in a harmonic way through space. Image 1.3-1.15 (pages 3-7) are the still images captured from of a video taped performance of a Laban Spacial Harmony. Layers were added to the video to enhance the impact and understanding of the lines of movement of the body through space. Note the transitions between movements and the patterning of movement, which will later influence my architectural decisions. As we rise, we fall, extend and contract. We elevate buildings, we sink buildings, we cantilever and compress space in an effort to reach a spacial harmony in our architecture.



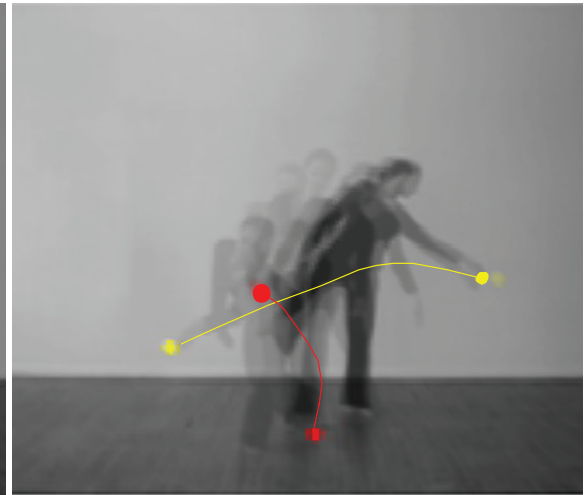
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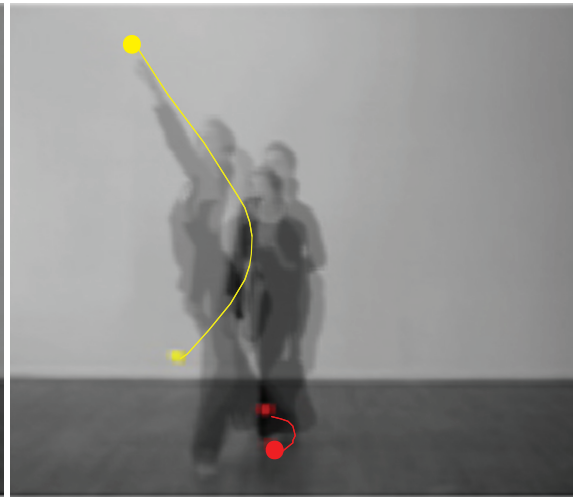
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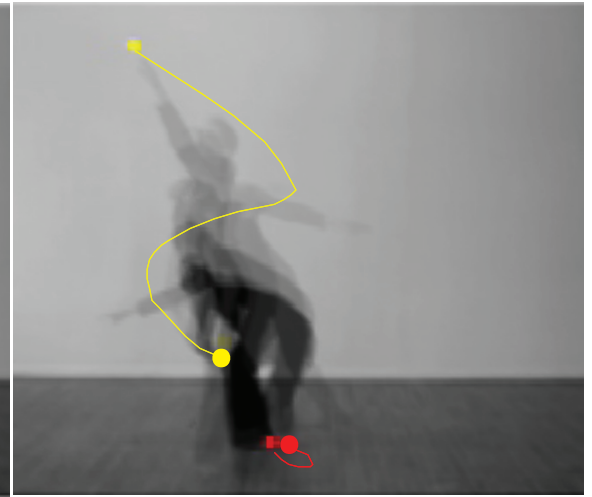
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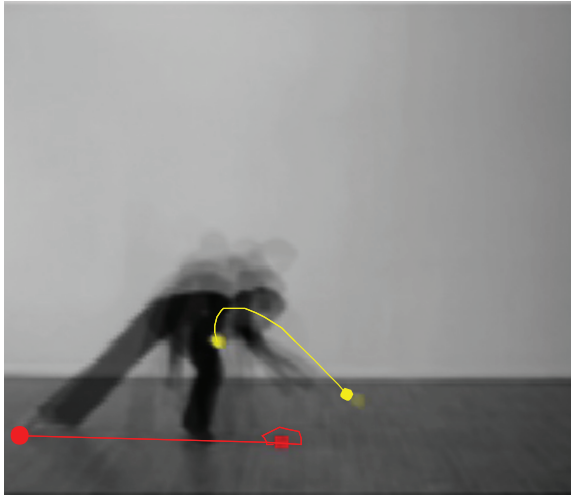
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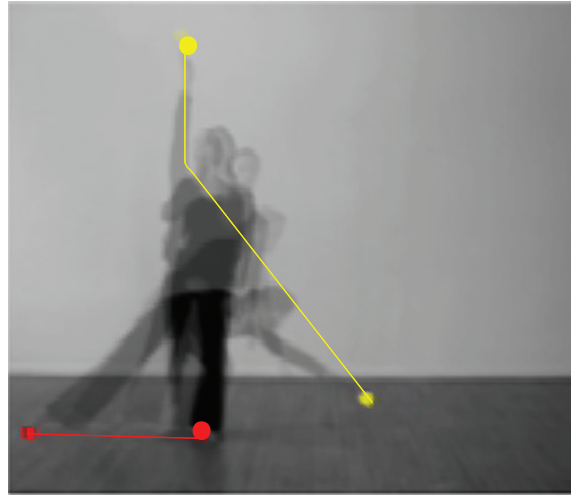
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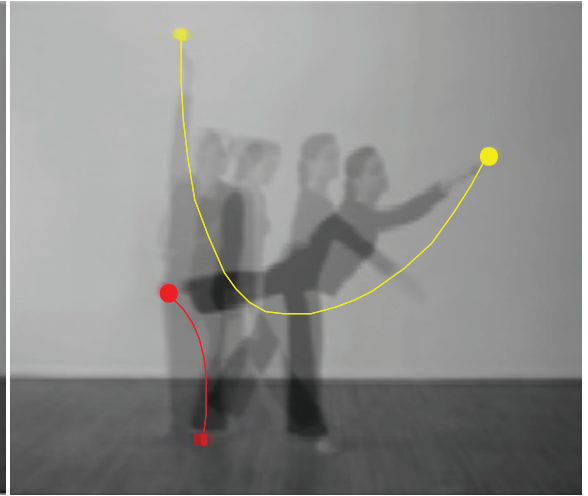
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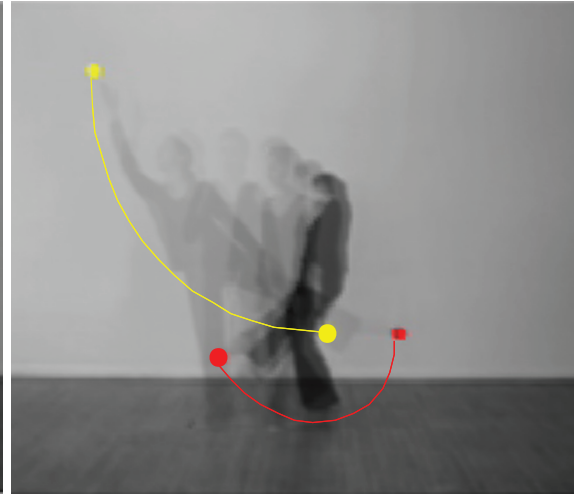
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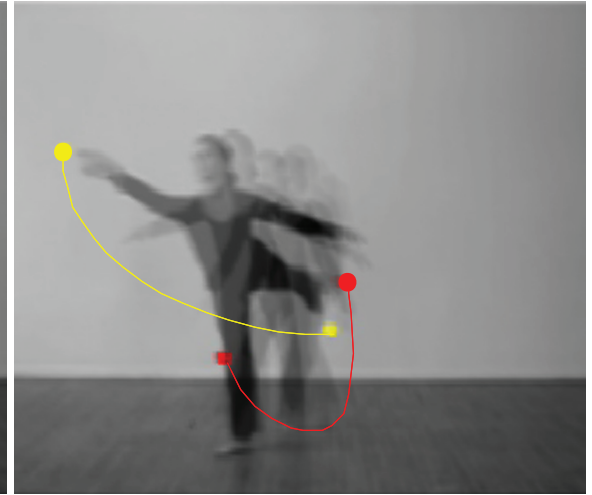
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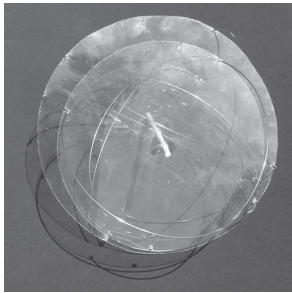


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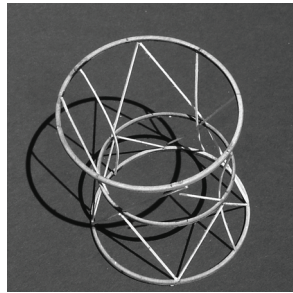


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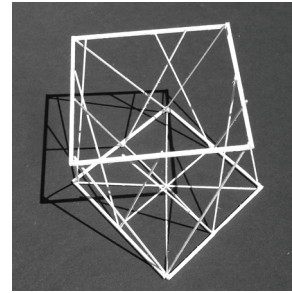
Inspired by theory, below are my conceptual models of movement in space, the meshing of architecture and theory.



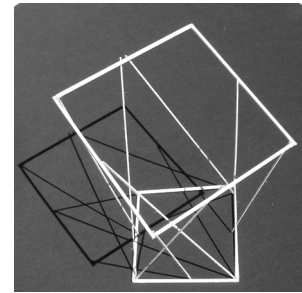
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1.19



2 | SITE₉

The site is in the northwest quadrant of the District of Columbia, a point in the city where N street ends and one must turn on to 25th Street. The city grid is composed of office and residential mid-rise buildings. The site transitions to a suburban typology with an elementary school to the east and a recreational field to the south. The west and north edges of the site border Rock Creek Park. Presently, there is a community pool on the site, which disregards the park to city connection. The site has a pivotal potential for movement, however the present solution does not acknowledge this potential. The image on page 9 represents one of my first diagrammatic moves on the site. The site typography is represented in yellow and the red represents my building rising and sinking to form a harmonic balance of earth and air on my site.



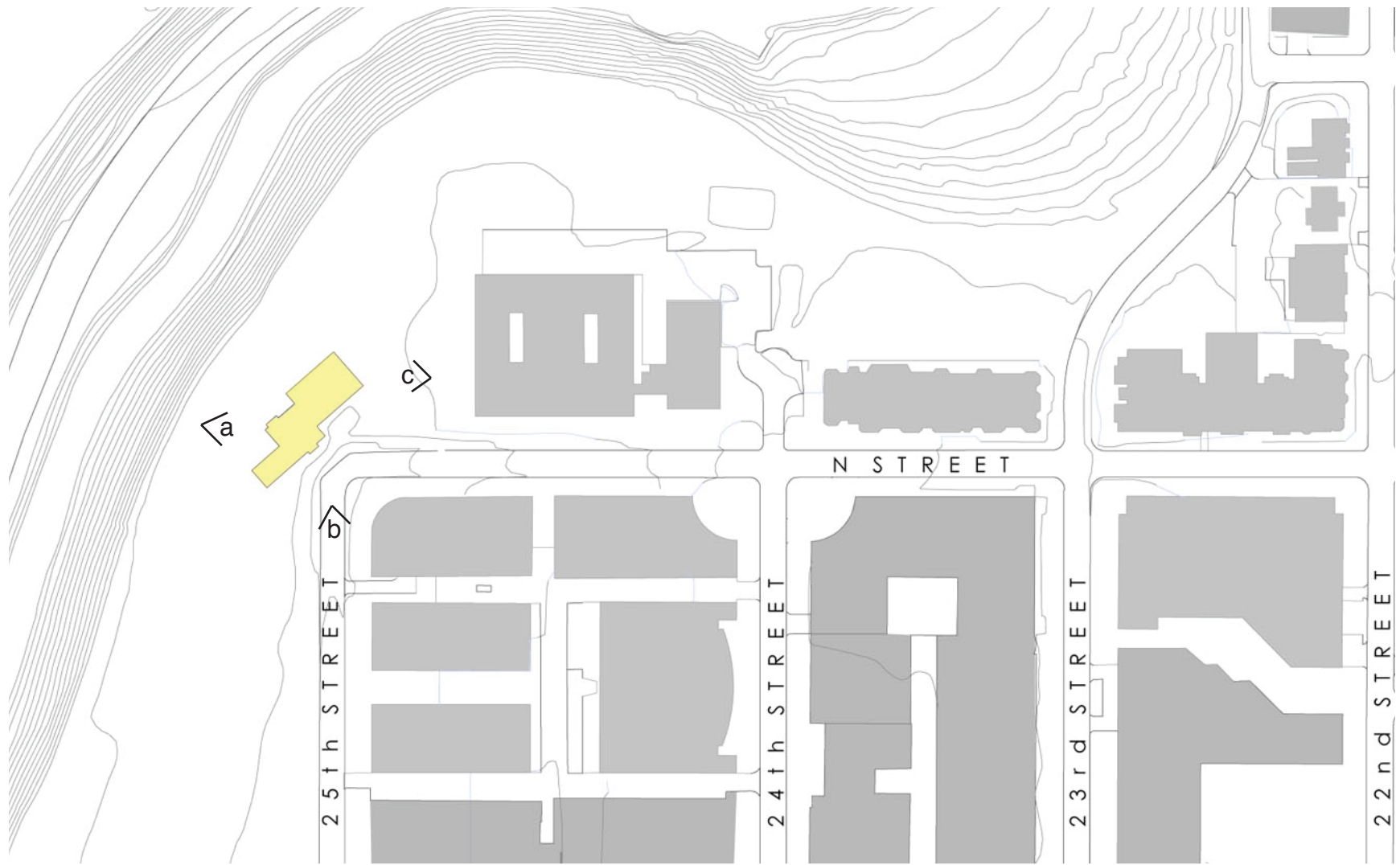
2.1 a. Rock Creek Park, to the west



b. Current site solution



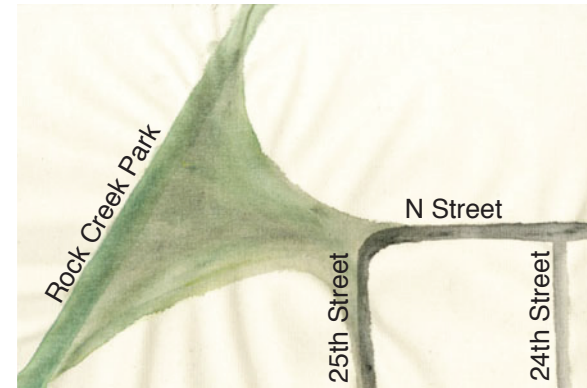
c. Elementary school, to the east



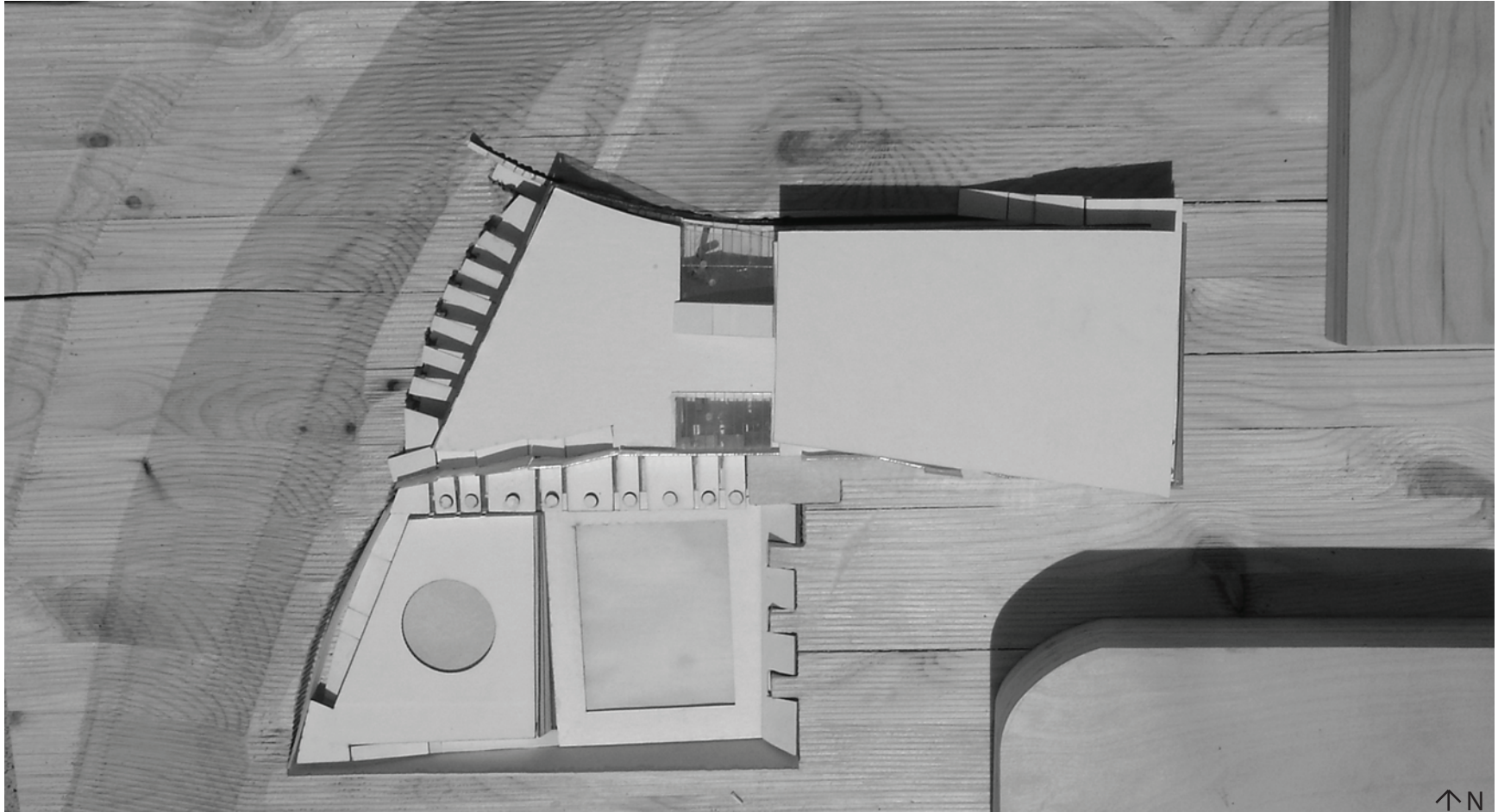
CURRENT SITE PLAN



The site is a broken connection where the city grid meets the city park. I redesigned the community pool and added a community multipurpose activity center. I believe that this program benefits my thesis because a community pool is a gathering place where one moves to and through. The act of swimming gives you great awareness of your body and the space surrounding the body.

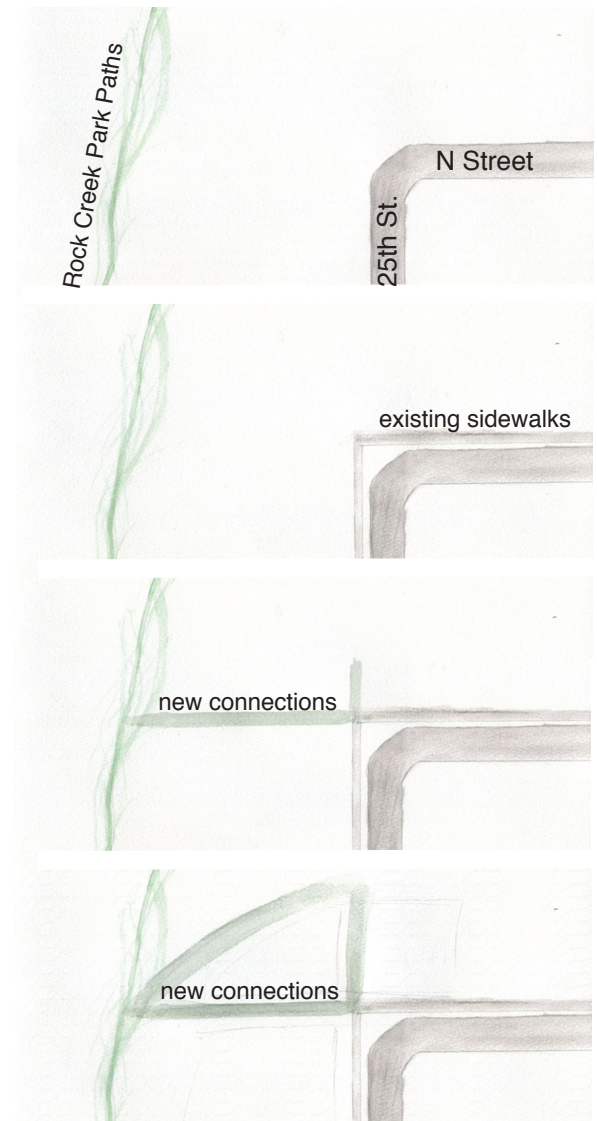


2.2 Site diagrams of the broken grid



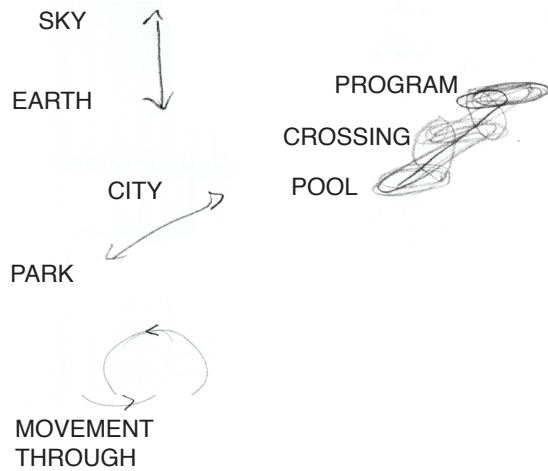
3 | BUILDING
13

Initially the design project addressed three architectural objectives. My first objective was to connect the city sidewalk and the park. The building acts as a bridge linking the city and park, thus enables people to move in and through the site even if they do not enter the building.



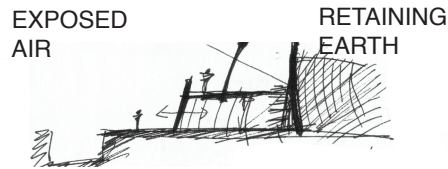
3.1 Site connections



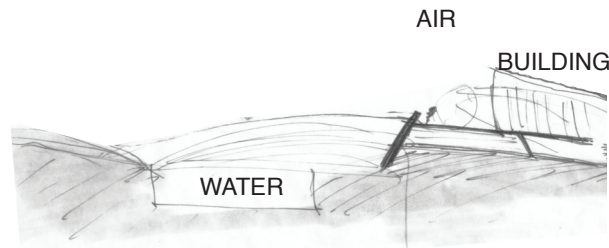


3.2 Theory and site

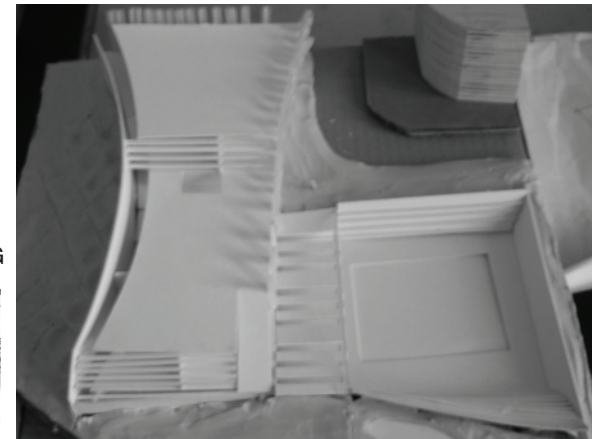
In my second decision, I placed the pool on southern part site for optimum light. There are sports fields on the southern edge of the site, thus allowing the pool to be without shadow. The pool is below grade to allow for the pedestrian bridge to cross above while still allowing a visual connection to remain between the park and city as well as between the building occupancies and the passers-by. The pool is pressed into the earth and the building rises from the sloped park edge. The earth taken from digging the sunken the pool was placed on the north part of the site. This was done to understand dynamic solid and void actions and reaction of moving earth. I was inspired by the actions and reactions of the body as we rise and fall in space, my building solution is an incubator for movement on the site and through my building with multiple points of entry and connection. The occupant is connected to: city, park, sky and earth, through harmonic lines of movement.



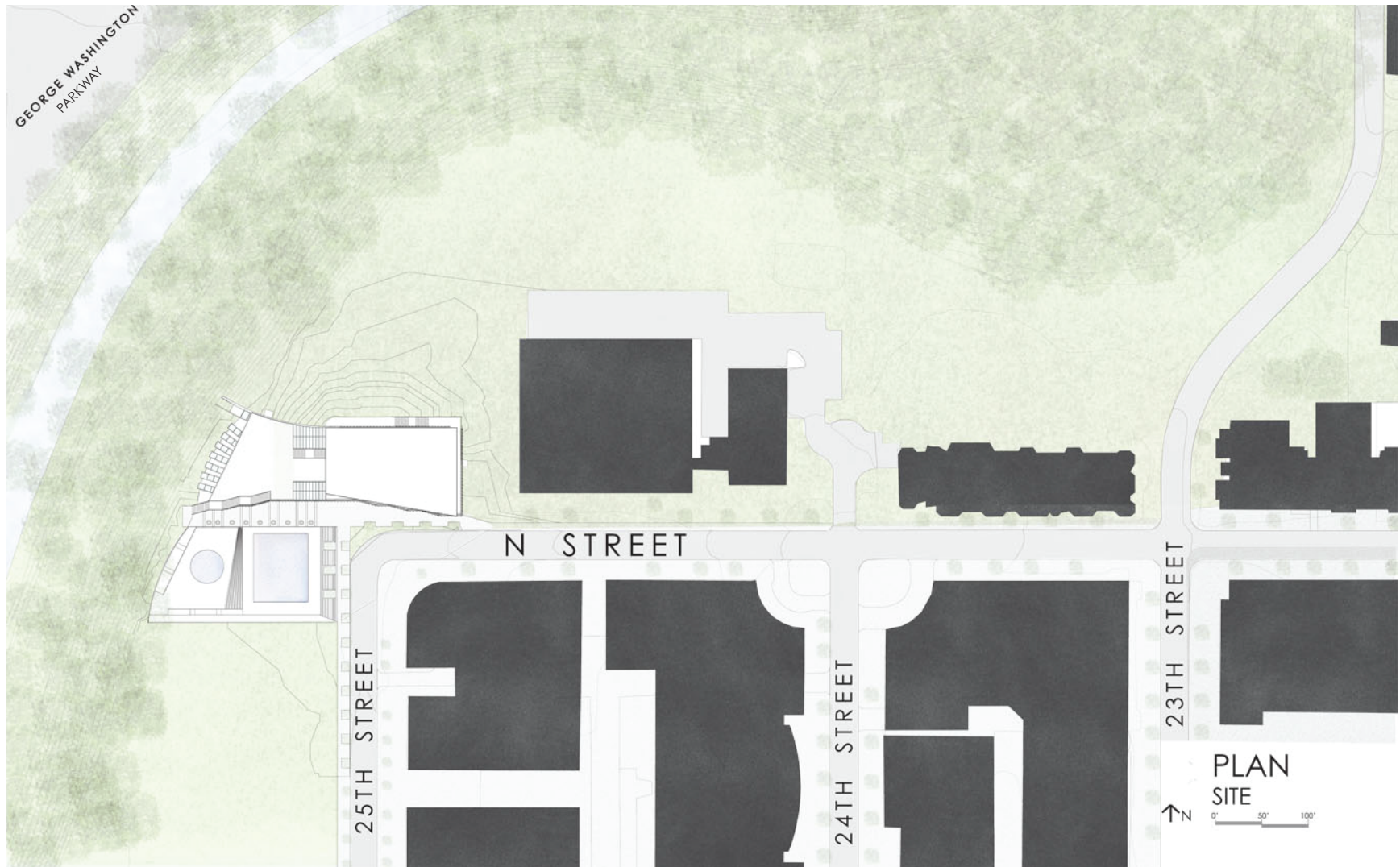
3.3 Site solid and void elements



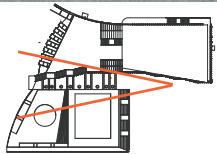
3.4 Programmatic elements



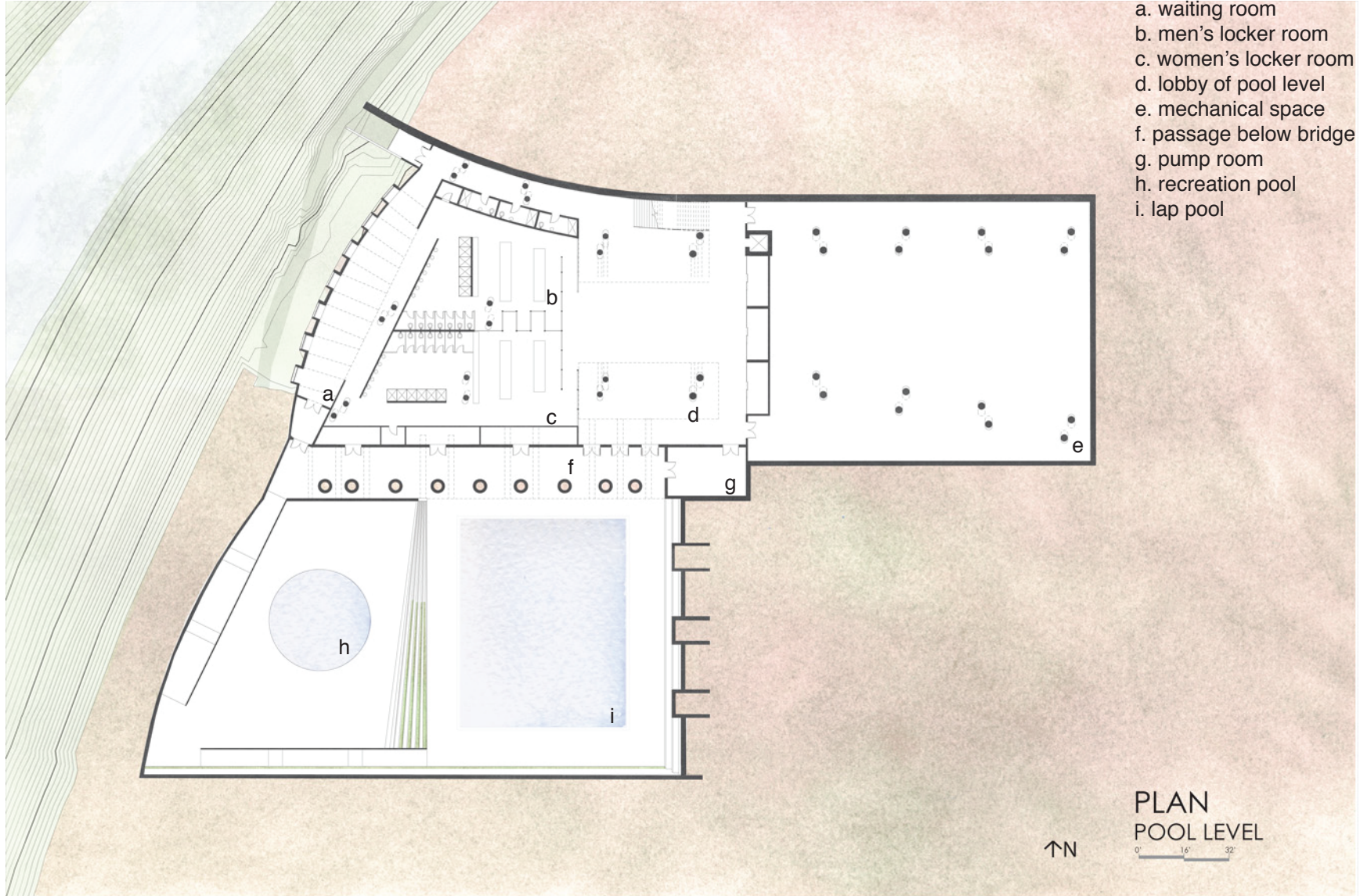
3.5 Model looking east to the city



The site plan illustrates the transition from the city sidewalks of N and 25th Streets to the expanded open space given to the pedestrian to transition into the park.



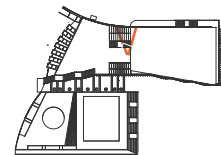
View: entering the site from the city looking towards Rock Creek Park
The building steps down to gradually transition from a taller city scale to a lower park scale mimicking the park hillside.

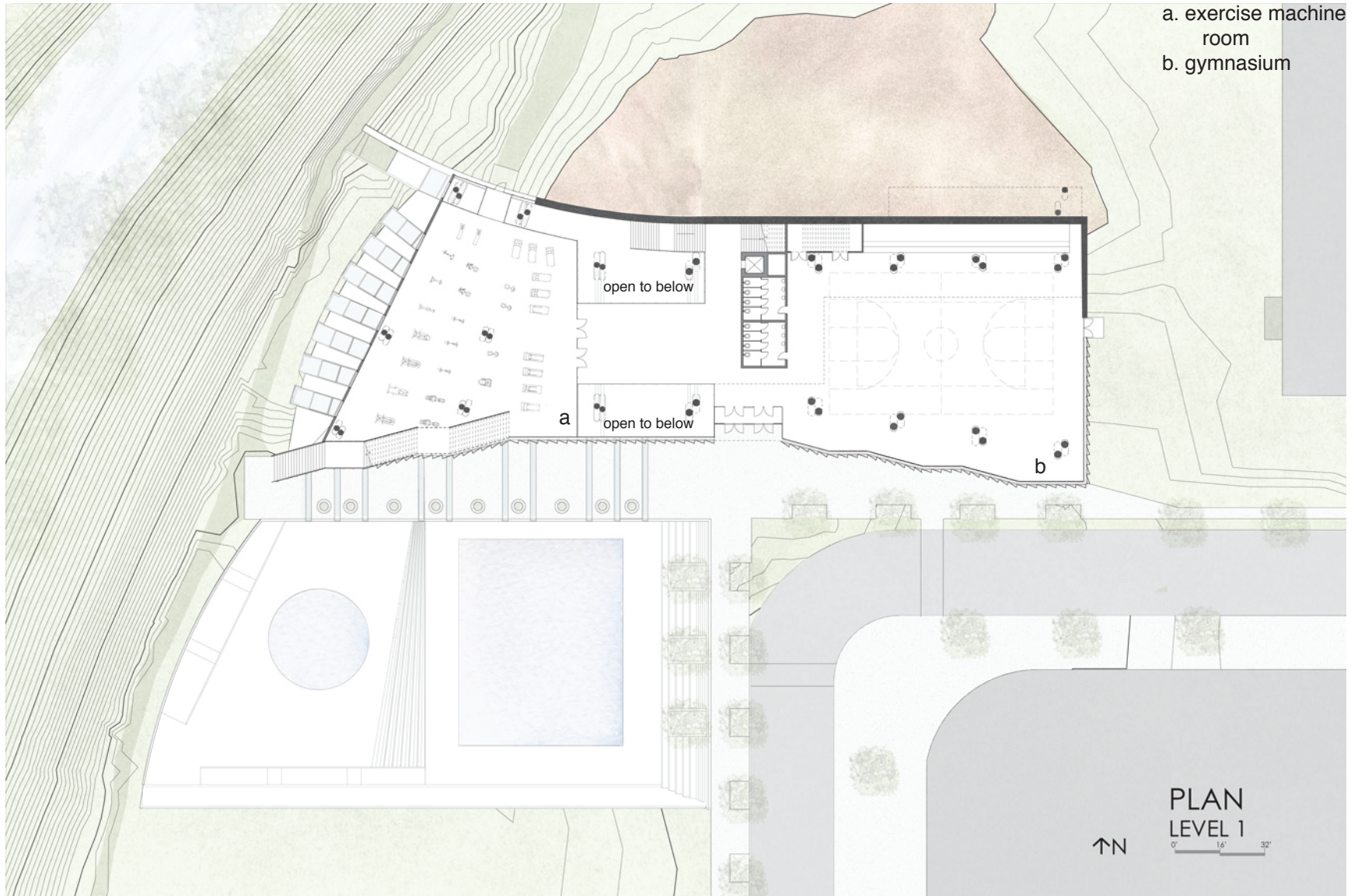




View: from level one lobby to retaining earth wall

The solid rock retaining wall is set in contrast to the open glass roof and windows above. The dynamic diagonal form is expressed in the balance of earth (wall) and air (glass). The stair along the retaining wall allows one to proceed into the earth to go to the pool level or up the stairs to the elevated exercise classrooms.

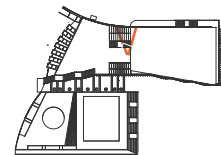


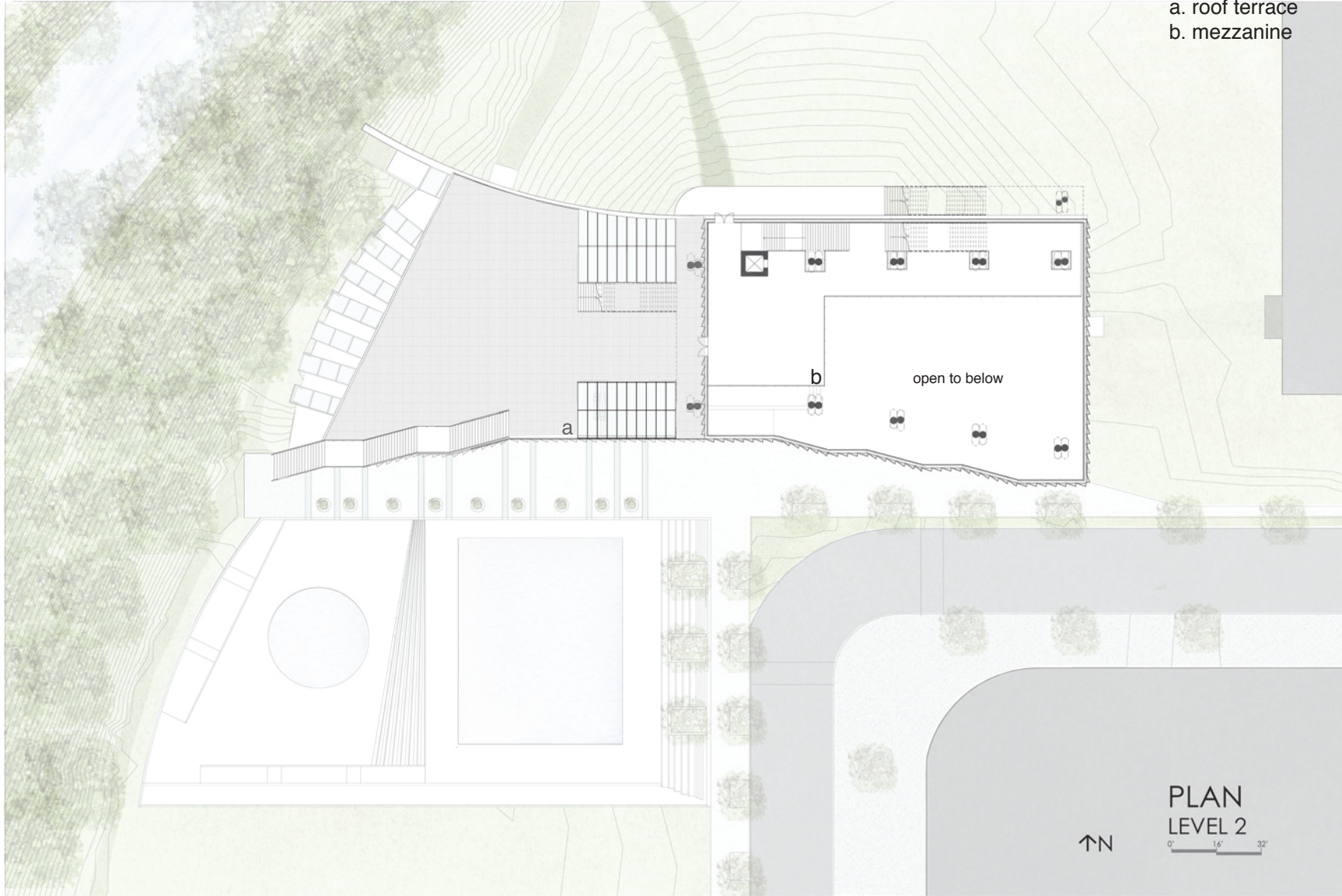


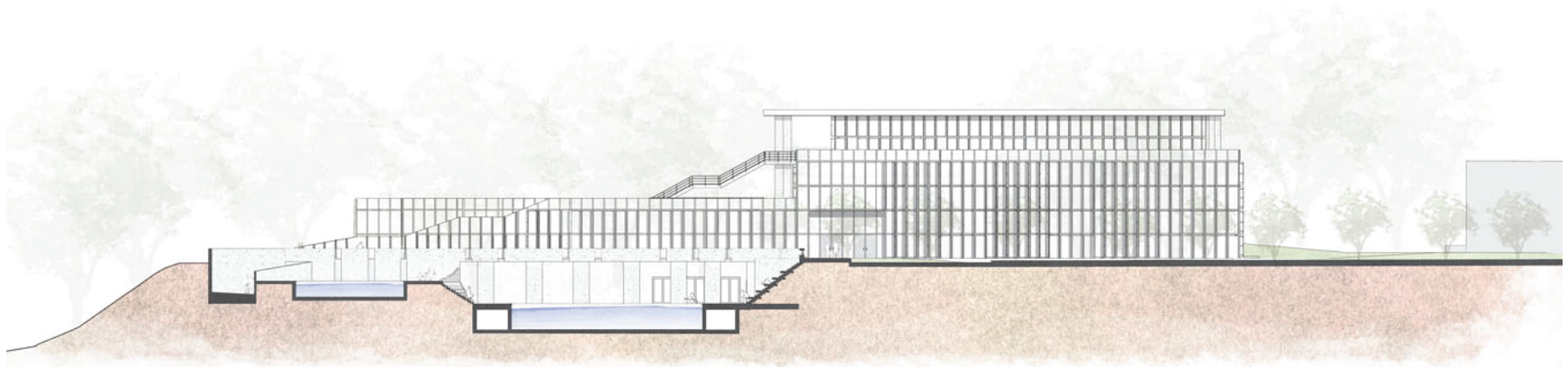


View: from level one lobby to retaining earth wall

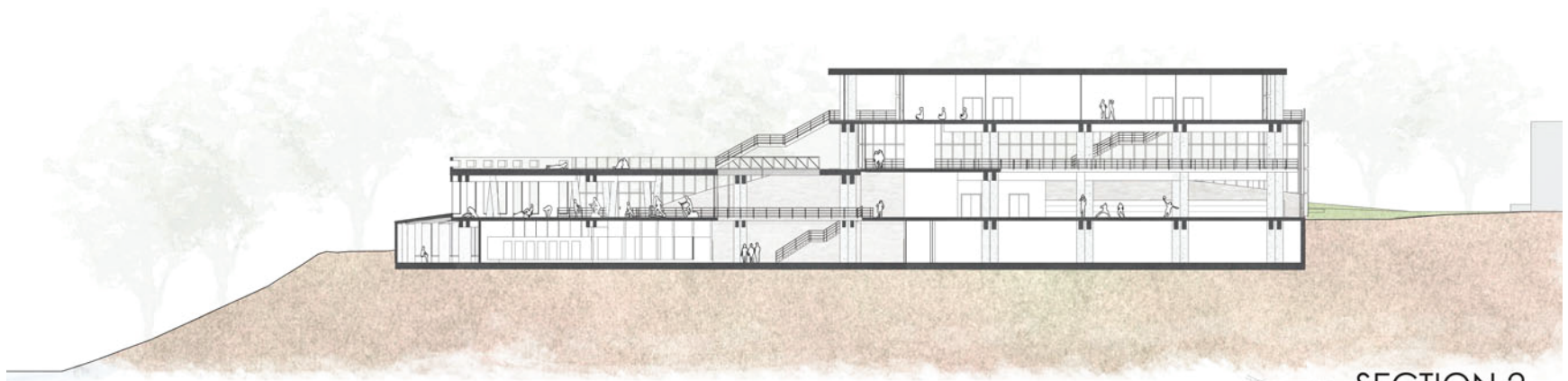
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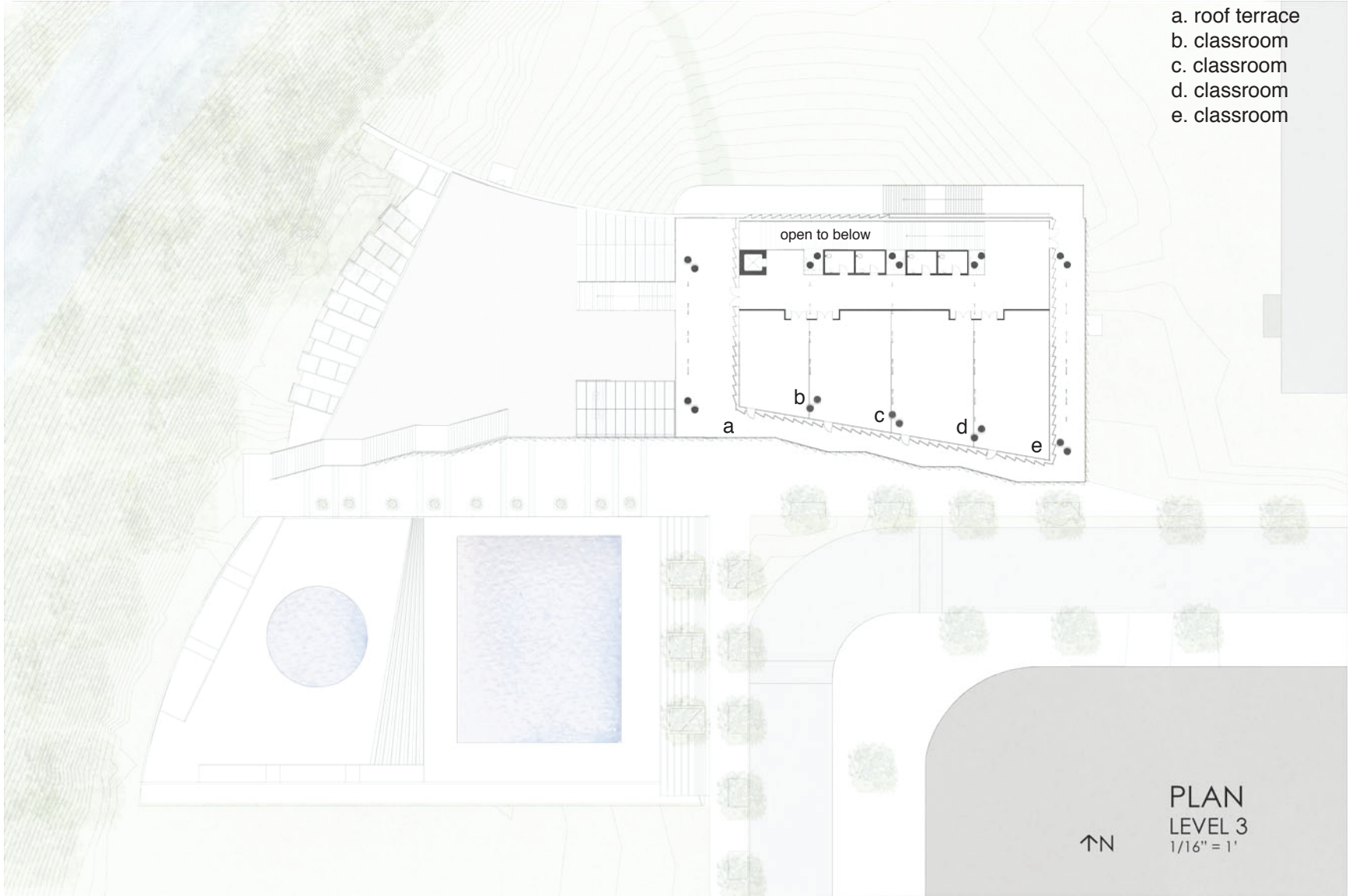


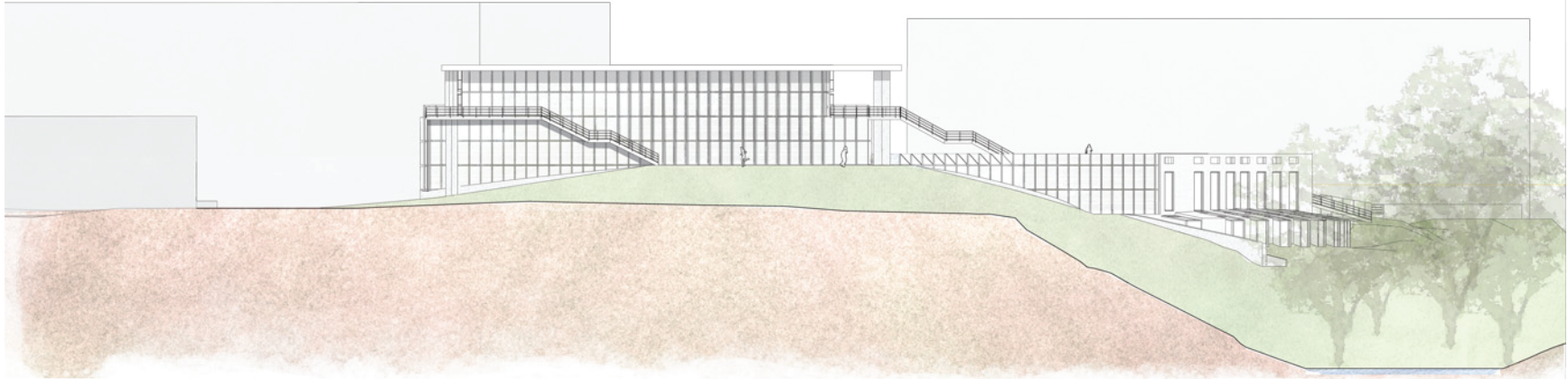


SECTION 1
WEST TO EAST
0' 16' 32'



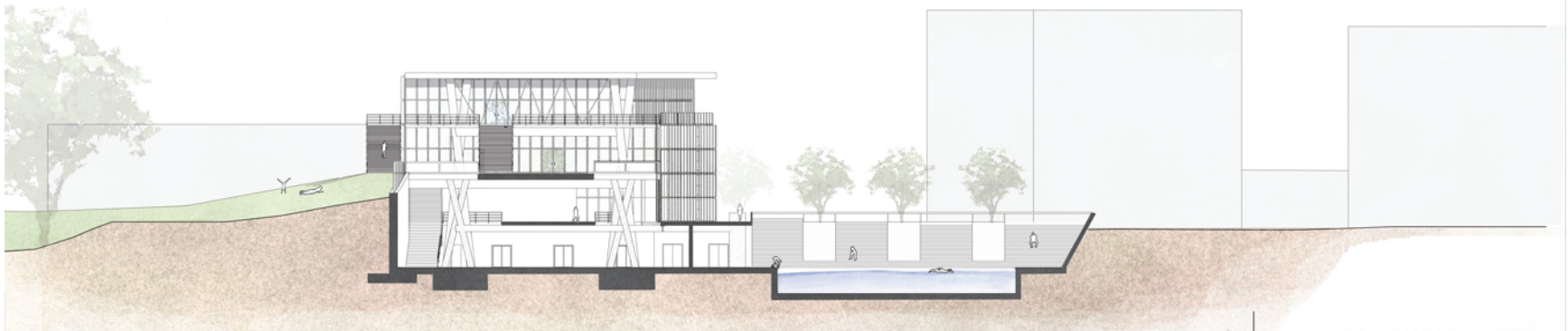
SECTION 2
WEST TO EAST
0' 16' 32'





ELEVATION
NORTH

0' 16' 32'

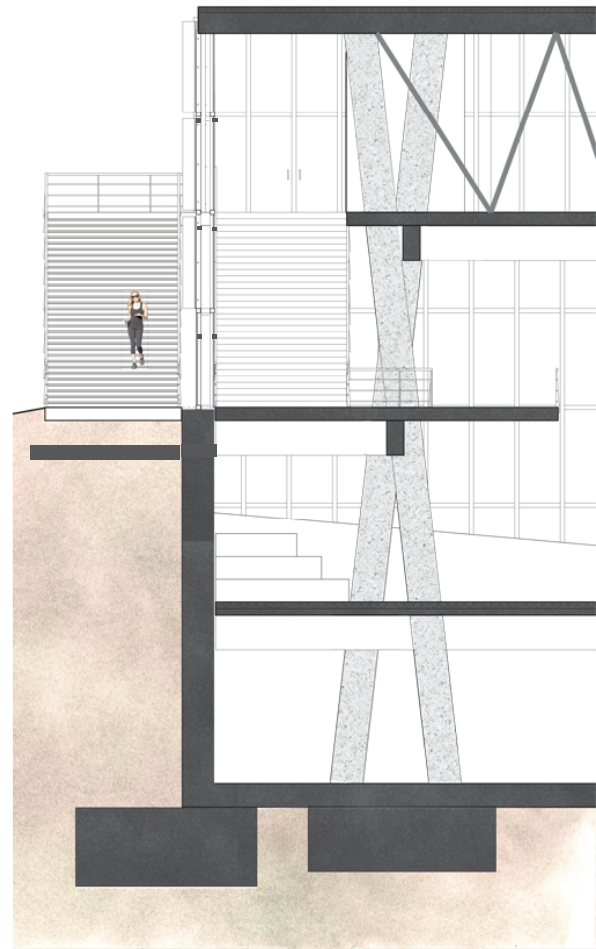
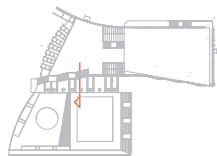


SECTION 3
NORTH TO SOUTH

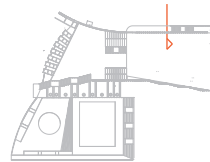
0' 16' 32'



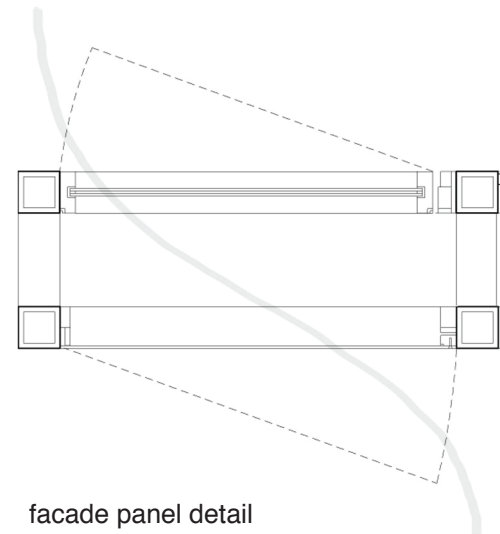
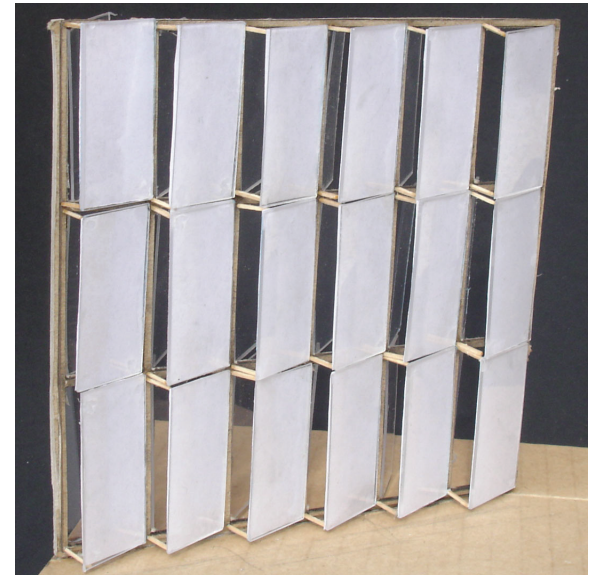
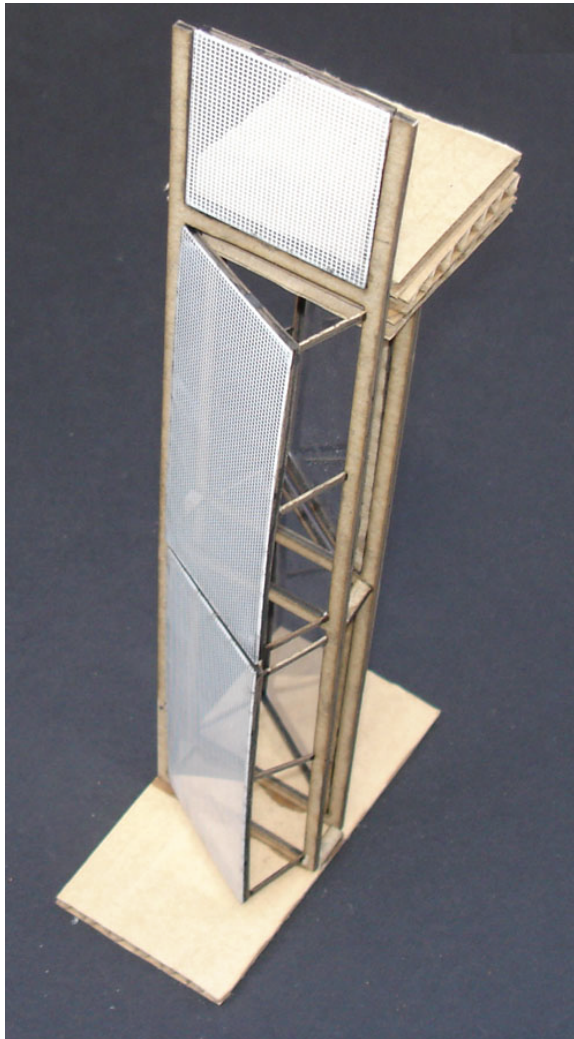
Section: through pedestrian bridge
 The view shows the circular earth columns suspending the pedestrian bridge. The bridge and stair from the level two roof terrace lead to the park.



Section: through north wall
 A pair of columns cross and extend through each level. On the third level a truss extends from floor to ceiling. An occupant is able to walk through the structure and continually understand the tension and compression of the building.



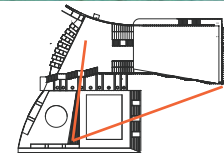
The facade allows for a greater connection of the exterior through the movement of air and light.



facade panel detail



View: from steps of recreation pool to the southern facade of the building
A harmonic balance is achieved through the balance of elements: earth and sky, solid and void, city and park. My community pool and activity center accepts movement through and motivates movement within through the study of architecture as a spacial movement harmony.



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Images

All images created by the author.