Urban Architecture : Differentiation from Street to Sky

Urban Architecture: Differentiation from Street to Sky

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Master of Architecture

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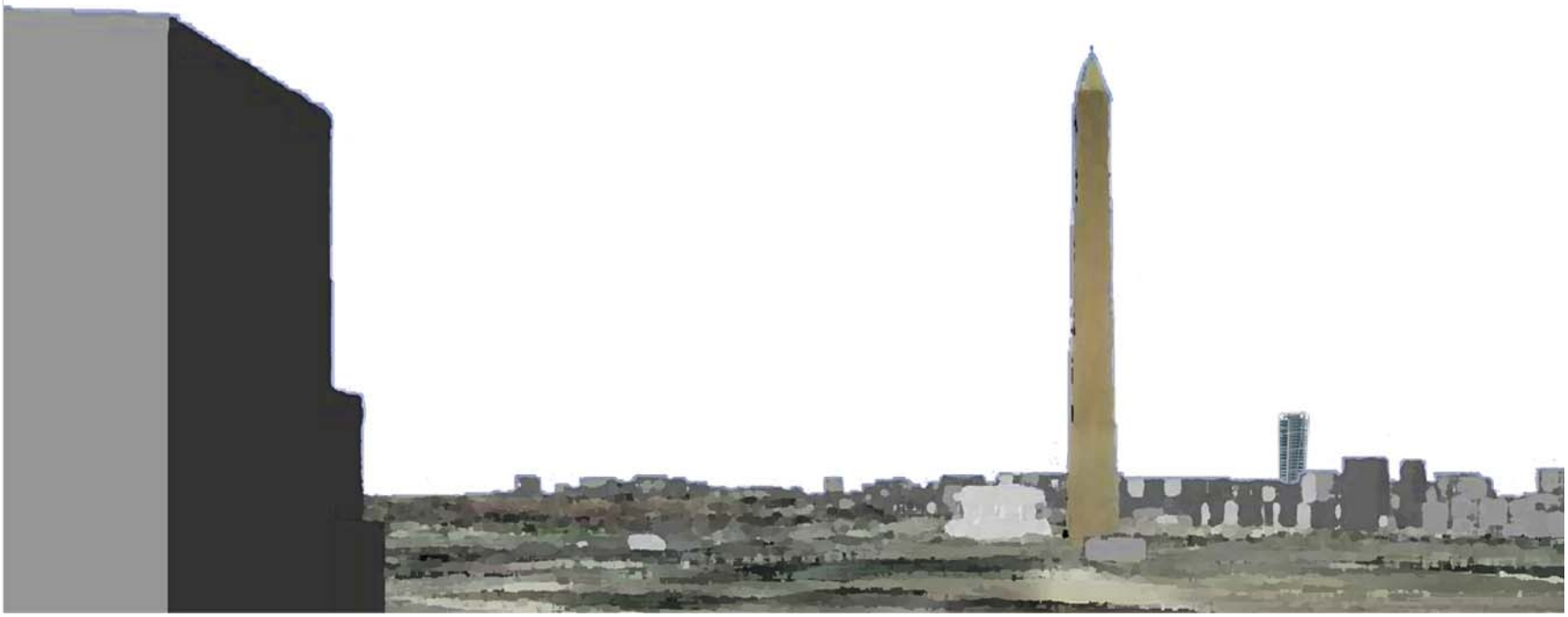

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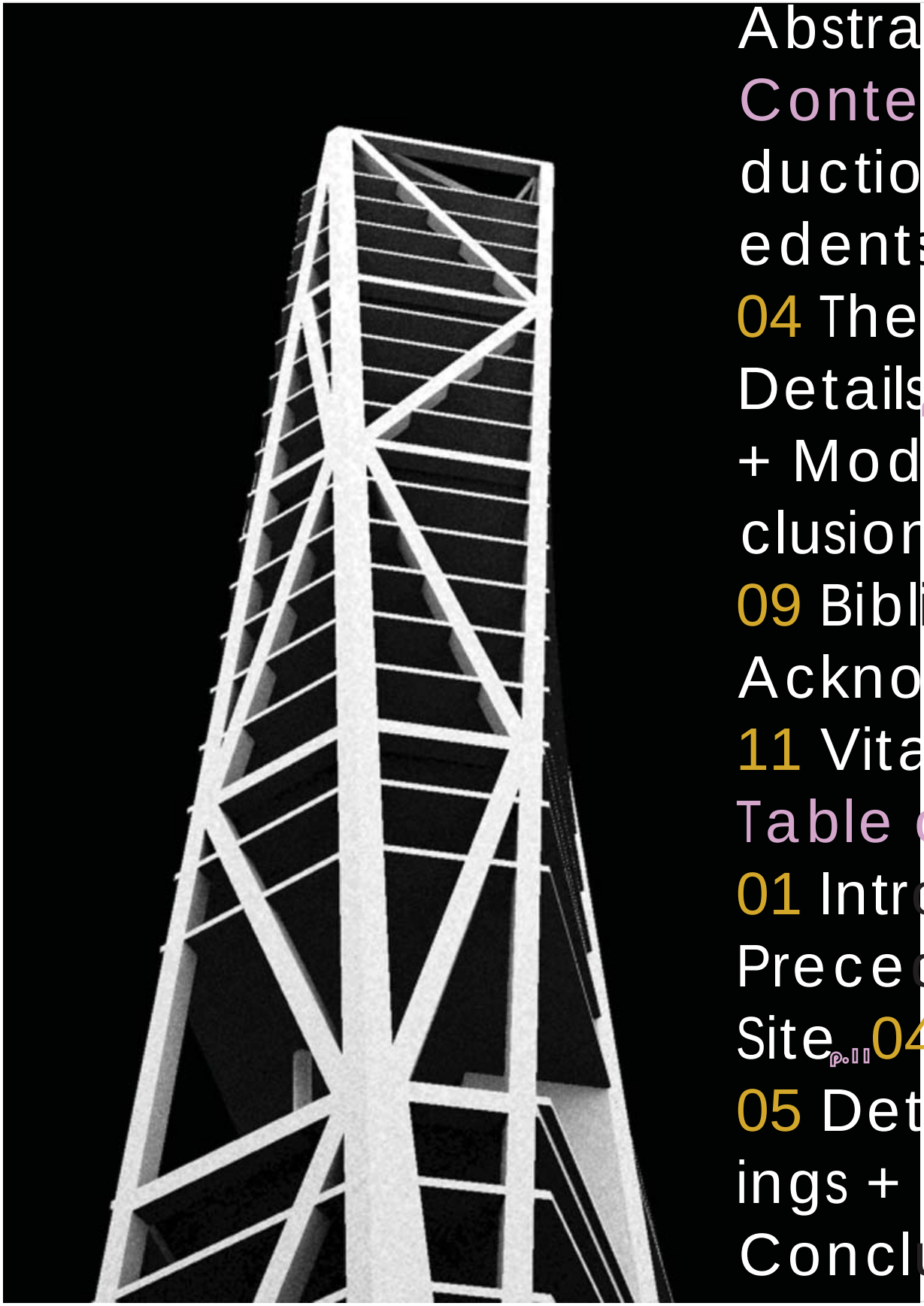
Abstract

Compared to making a city solely out of one building, it is rather important for people to understand what roles a building can play in a city; especially within urban condition. How a building could actually react and respond to certain human perceptions and functions as an element of a city has become a significant issue. From place to place, the city mutates in several different phases, such as usage, terrain, orientation and material. Therefore, to embrace the urban situation and to optimize the space emerged as the main element of the whole thesis.

The particular character of the site starts this program as a mix-usage building from the beginning. Whether it is the usage or orientation that mutates along the city, they should finally come to a concord of optimization and solution that represents the city either on the street or in the sky.



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“But it is the city’s business to make itself permanent; and this depends on considerations other than those of calculations. And it is only Architecture which can give all the things which go beyond calculation,” --- Le Corbusier.

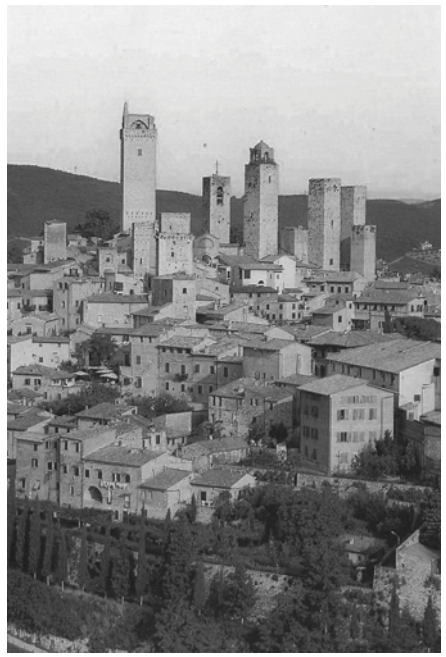
The site, which stands between residential and commercial boundary, has great opportunities to study and examine the relationships between different kinds of urban texture. Not merely is it the consideration on aesthetics or surroundings, the most important part is to have the insight and observation on human activities and perceptions. In the long run, the site forms something meaningful and friendly to the space.

Intro

"Sense depends on spatial form and quality, but also on the culture, temperament, status, experience, and current purpose of the observer.....Identity is the extent to which an person can recognize or recall a place as being distinct from other places—as having a vivid, or unique, or at least a particular, character of its own." --Kevin Lynch.

Precedents

Top: 2-1, Bottom 2-2, Pictures of San Gimignano

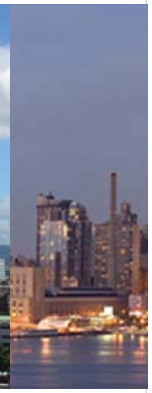


San Gimignano, Italy. City of Beautiful towers.

San Gimignano is a medieval small hilltown in Tuscany, Italy. It is well known for its beautiful towers which can be seen from miles away. The towers together define the images of the town and create a beautiful scene for the region.

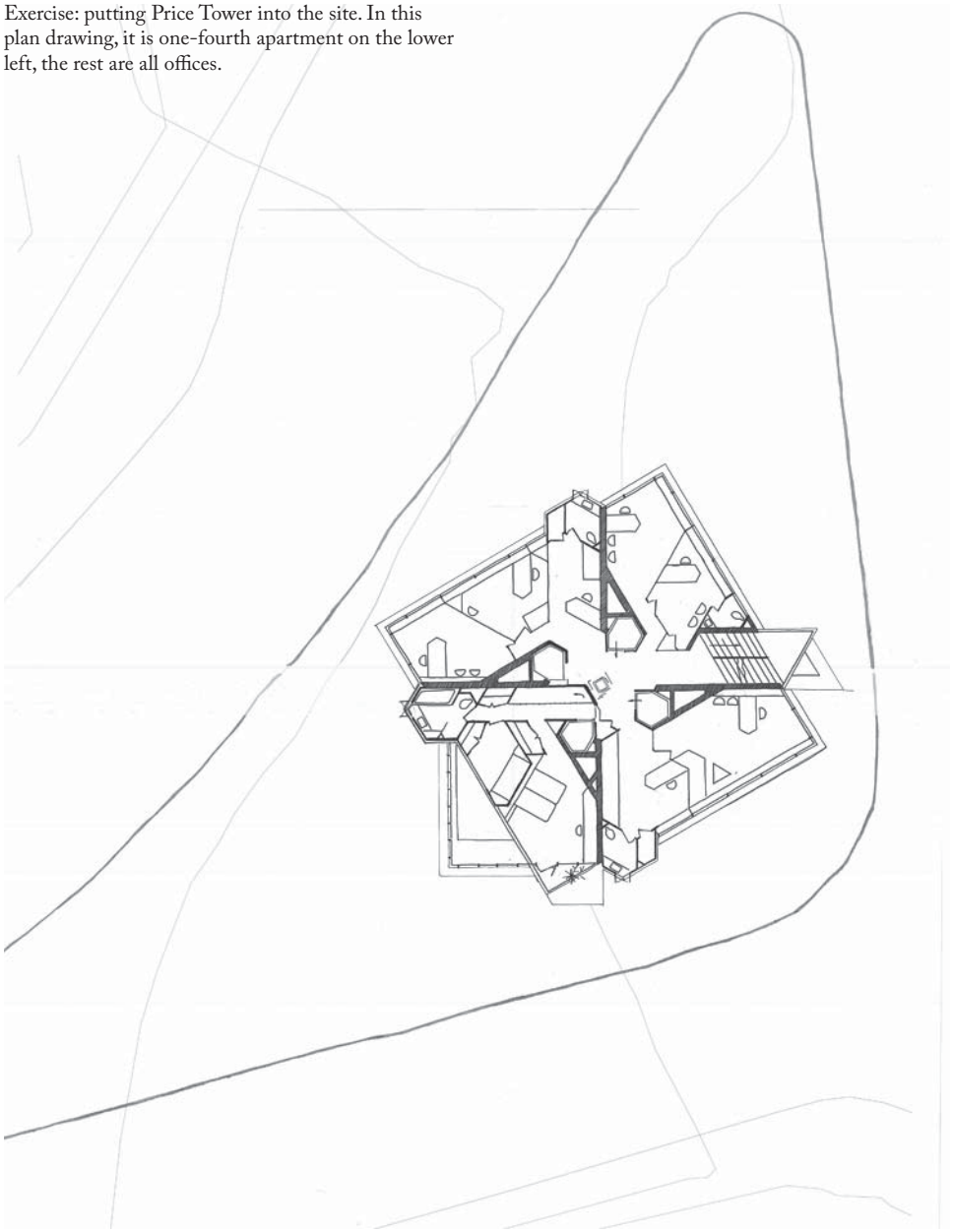
Urban pattern

Within some metropolitan areas, the density of population is in fact forcing space optimization to be an important issue. Needless to say, in order to increase the land value in the city, it is the best to reasonably use every inch of the space. Yet at the same time, it would be crucial for the designer to develop what they have into something efficient.



From left to right: 2-3 Tokyo City, 2-4 Taipei City and 2-5 New York City

Exercise: putting Price Tower into the site. In this plan drawing, it is one-fourth apartment on the lower left, the rest are all offices.



Price tower

Frank Lloyd Wright nicknamed his work, the Price Tower, “the tree that escaped the crowded forest. The structure of the Price Tower is like a giant tree that spreads its wings from the trunk. Based on that, the tower developed into multi-usage building including apartments, business offices, and shops.

Hearst Corporation

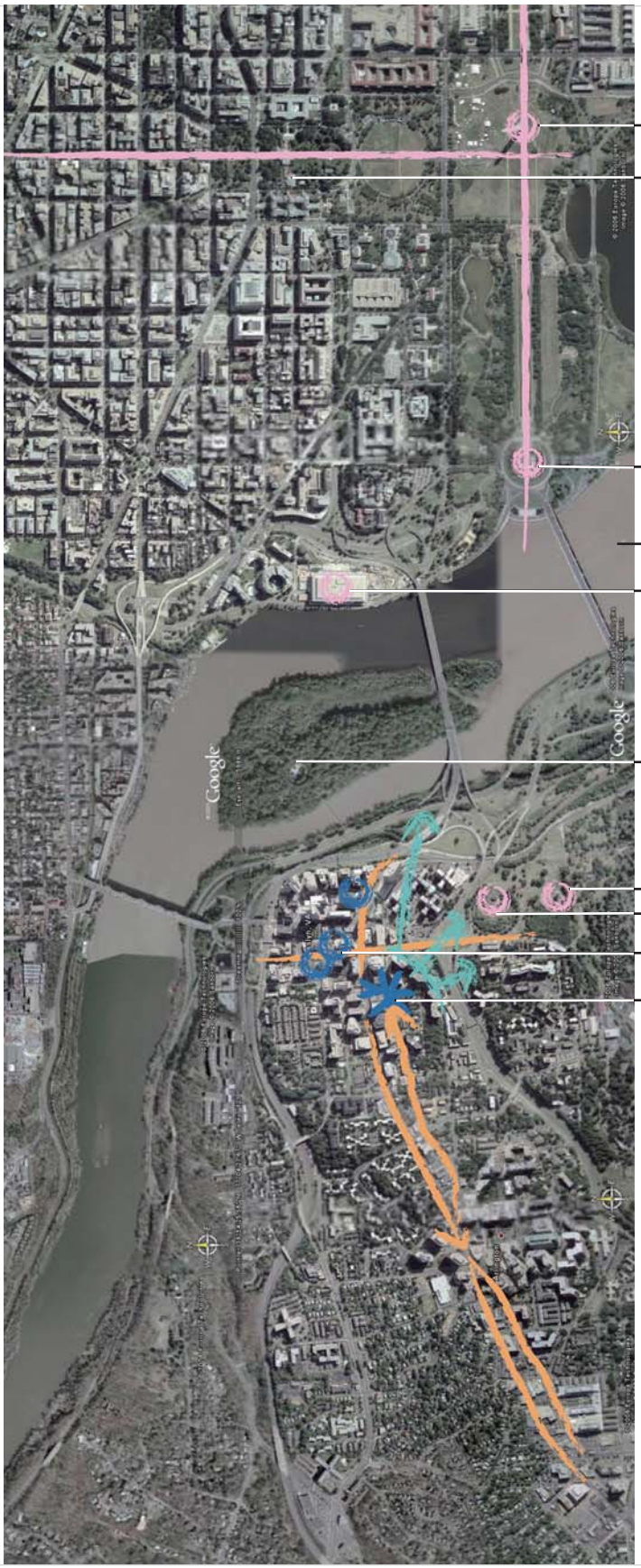
Hearst tower built upon a six-story historic building, and it is the first tower to receive Gold LEED certified ratings for “core and shell and interiors” in New York City. However, the street level of Hearst Tower kept its original language with the limestone, columns and allegorical figures, which act as a symbol of art, music, commerce and industry. And it is within the scale that could be detected when walking by. On the contrary, the faraway scene of the tower is identical with the “diagrid” frame, which also eventually became something recognizable out of the New York City skyline.

Hearst Corporation . View from 8th Avenue.

COLONIAL
VILLAGE
Wilso
Clarend
Court House
Metro Station
M
COURTHOUSE
Arlington
Government
Center
Courthouse

Rosslyn
Metro
Station
Exit 7S
Freedom
Park
66
Iwo Jima
Memorial
Netherlands
Carillon

The Site


Washington Monument
White House
Lincoln Memorial
Potomac River
John F. Kennedy Center
Theodore Roosevelt Island
Arlington National Cemetery
Netherlands Carillon
Iwo Jima Memorial
Rosslyn Metro Station
The Site

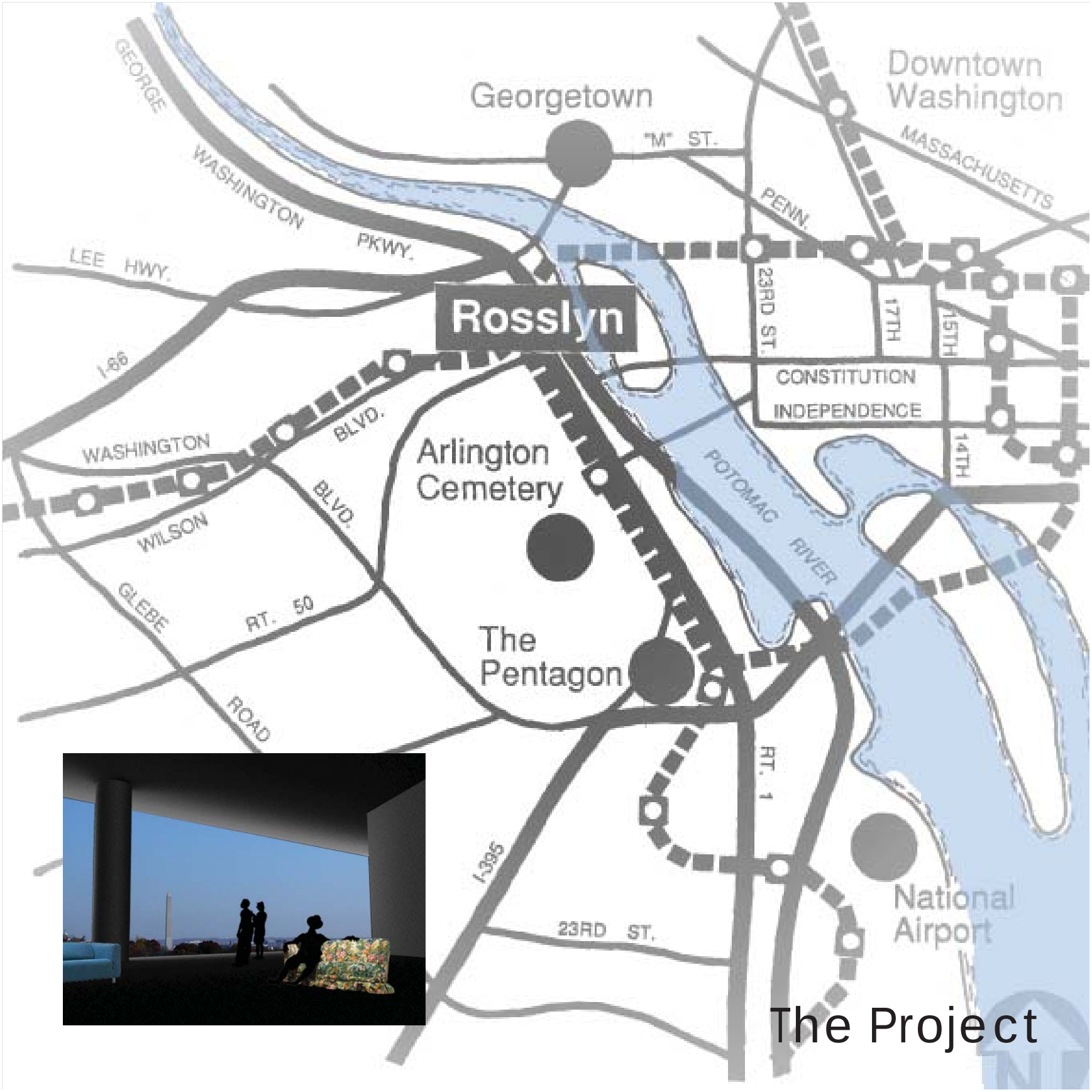
The site resides in almost the topmost terrain of Rosslyn, VA. It is a site in between commercial area and residential area and within a 5 minutes walk to the metro station. Currently, it is pretty much an urban residue which stands right in the middle of traffic flow with not much available floor area. Besides, the landuse plan of Rosslyn classified it under the high density development category. The site also acts as an entrance of Rosslyn. Otherwise, the traffic coming from western Arlington toward DC must enter Rosslyn by Clarendon Blvd through this site. It goes all the way down to the Potomac River along Wilson Blvd afterward. Rosslyn is also the only place around the DC area that doesn't have building height limitations. All in all, the site should at best reflects the characteristic of Rosslyn.

Following the map, it should be right next to where Clarendon Blvd merged into Wilson Blvd. This island sits between Clarendon Blvd, 17th st N and N Oak st, which makes it almost shaped as a triangle.

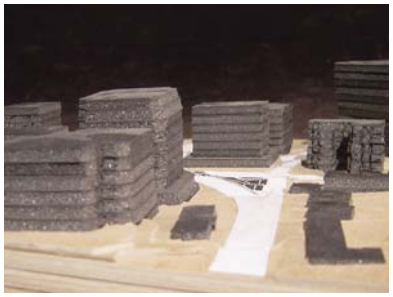
The vision of human beings forces them to perceive just within certain extents. While walking in a city, people hardly notice the skyline and how the building is shaped. They receive no information beyond human perception. However, the walking experience actually relates to the building façade, the traffic, the dynamics and the occurrences along the way. The elevated terrain combined with skywalks in this city, creates a map that allows people to be able to participate at different elevations.

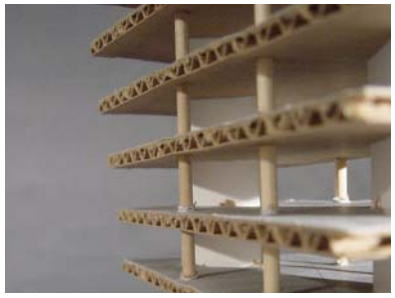
The role of the site can also be a buffering zone between residential and commercial areas. The scale, material and building type convert right across the street. In terms of optimizing usage of the limited territory, it is much more meaningful to offer an identical node for people to stay, to meet up, to take a rest and to enjoy some moments.

Through the skyline, people can easily identify or define the building as a symbol or a sculpture or just as parts of the background of the city. It is not likely every building can make a stroke on the skyline, but certainly it reflects some nature of the city. However, the representation of the Rosslyn skyline has its own position to DC area. Those high-rise buildings stand across the Potomac River, looking down toward the whole DC area. In contrast, when you stand on the other side of the banks, looking back to the Rosslyn, the tall building springing from the hill will differentiate elevation, pretty much telling the story of Rosslyn.

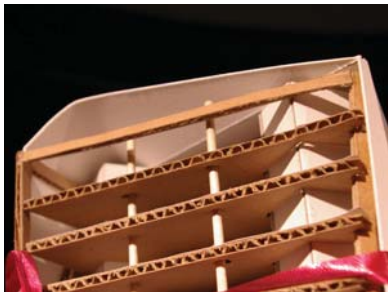

Georgetown
Downtown
Washington
"M" ST.
MASSACHUSETTS
PENN.
GEORGE
WASHINGTON
PKWY.
LEE HWY.
Rosslyn
23RD ST.
17TH
15TH
CONSTITUTION
INDEPENDENCE
14TH
I-66
WASHINGTON
BLVD.
Arlington
Cemetery
POTOMAC
RIVER
WILSON
BLVD.
GLEBE
RT. 50
The
Pentagon
ROAD
RT. 1
I-395
23RD ST.
National
Airport

The Project

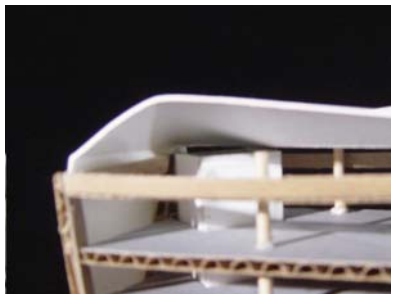


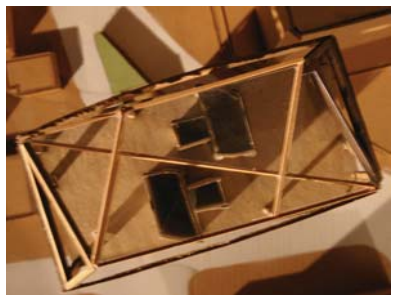


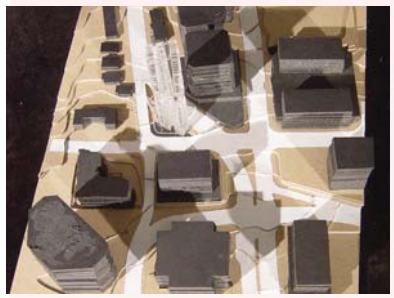
The design process follows three most important axis of the city. First of all, the street, poses the questions such as how the road is oriented and how people approach the site and several important nodes, such as the metro station. Second the river, which the city runs toward, asks how the city and river are related to each other. This will eventually form the whole scene of Rosslyn. Third, the monument, which is the the significant edifice people could project out from, makes the space valuable and gives it a definition.

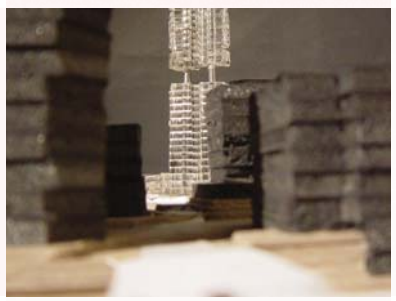


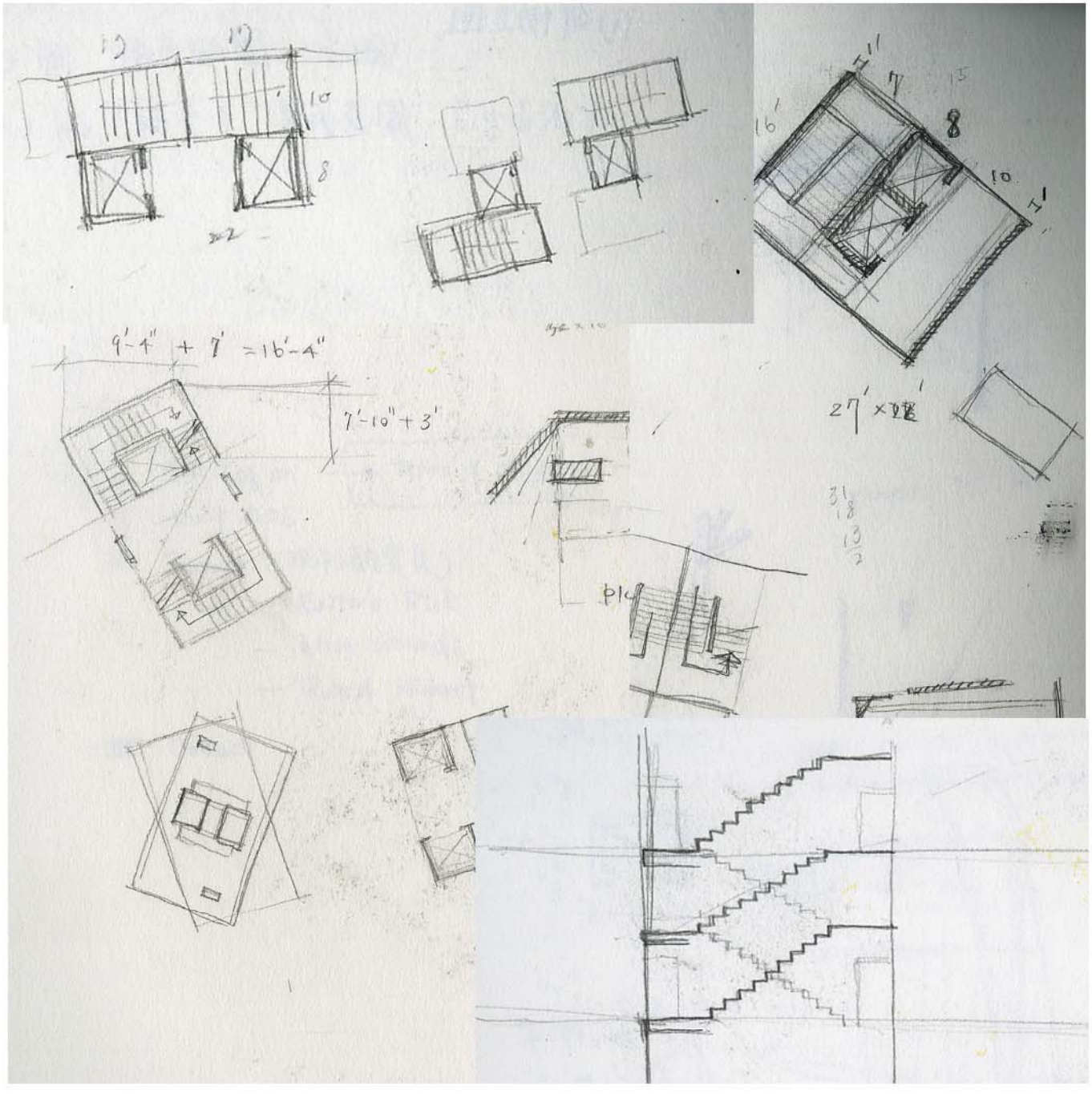
The building mass twists through the elevation toward the sky. At the end, it fits in the city grid and corresponds to the surroundings from bottom to top.







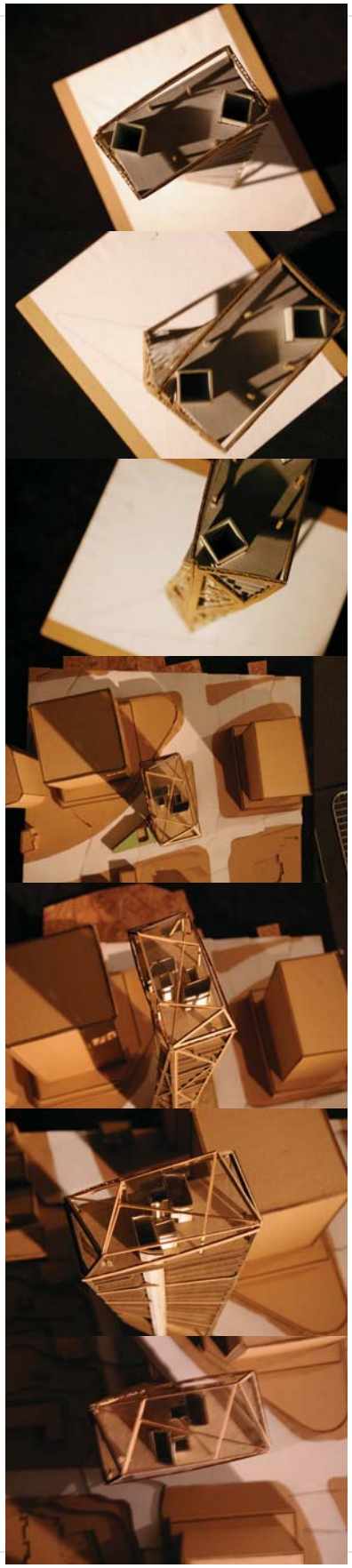


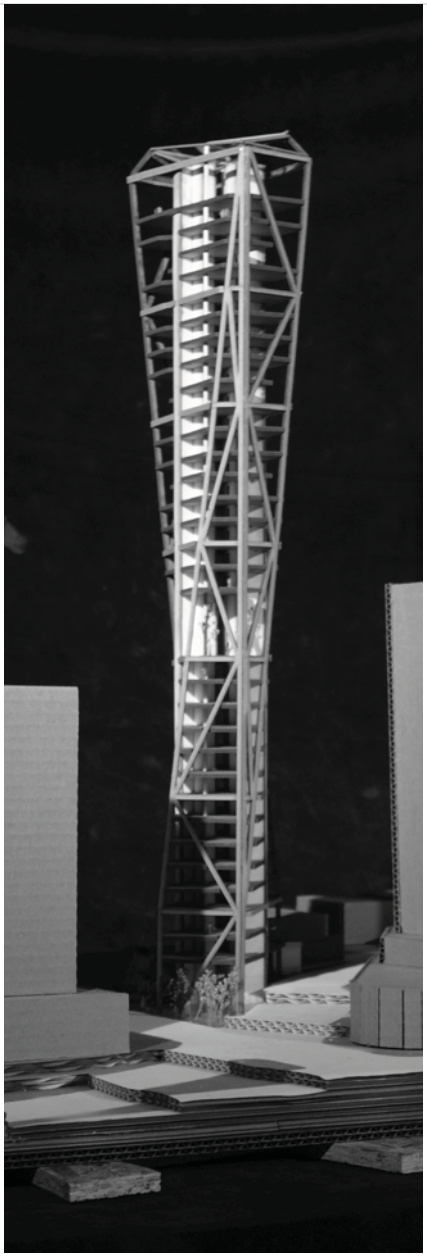

9'-4" + 7' = 16'-4"
7'-10" + 3'
27'

Most modern high-rise building has a concrete core which rigidly secure the structure and mechanic functions. Within such a small site, the very first issue here might be how we could generate something strong and at the same time keep the space open enough to make it more manageable since it is going to bear different usage.

The first phase of the design has two separate cores at both ends of the building. At the same time, not only does it define the destination of the twist, but directly tries to carry the cantilever of several top levels. On the other hand, in order to create access to the egress on both cores, the design generates lots of corner and excessive space within.

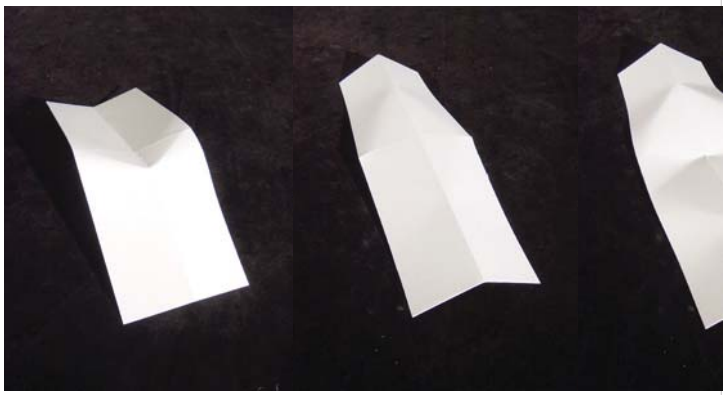
The second iteration moves the cores into center of the building. Using the space between the cores, it defines a corridor and lobby for the units on both ends. And the cores will eventually integrate with the column as a strong rigid member for the building loads.

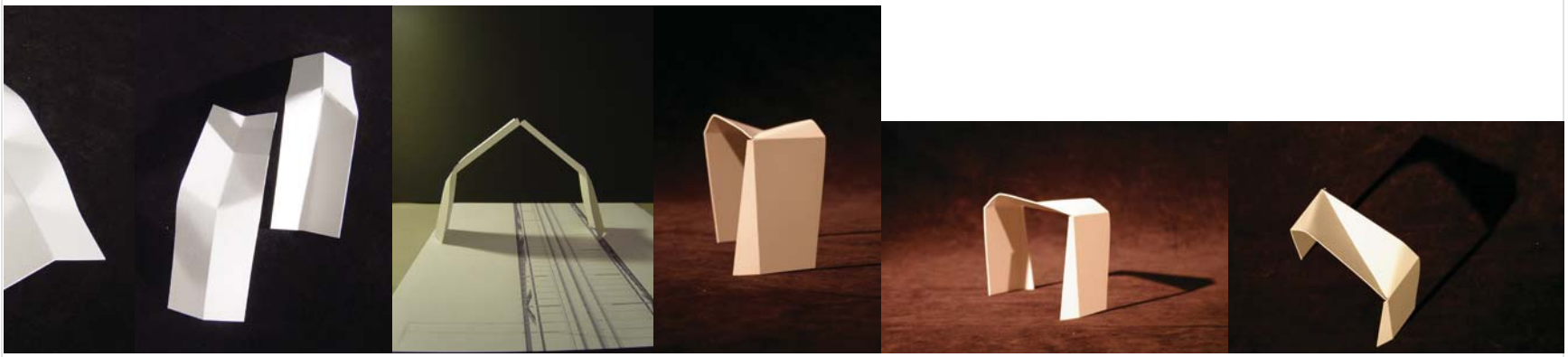


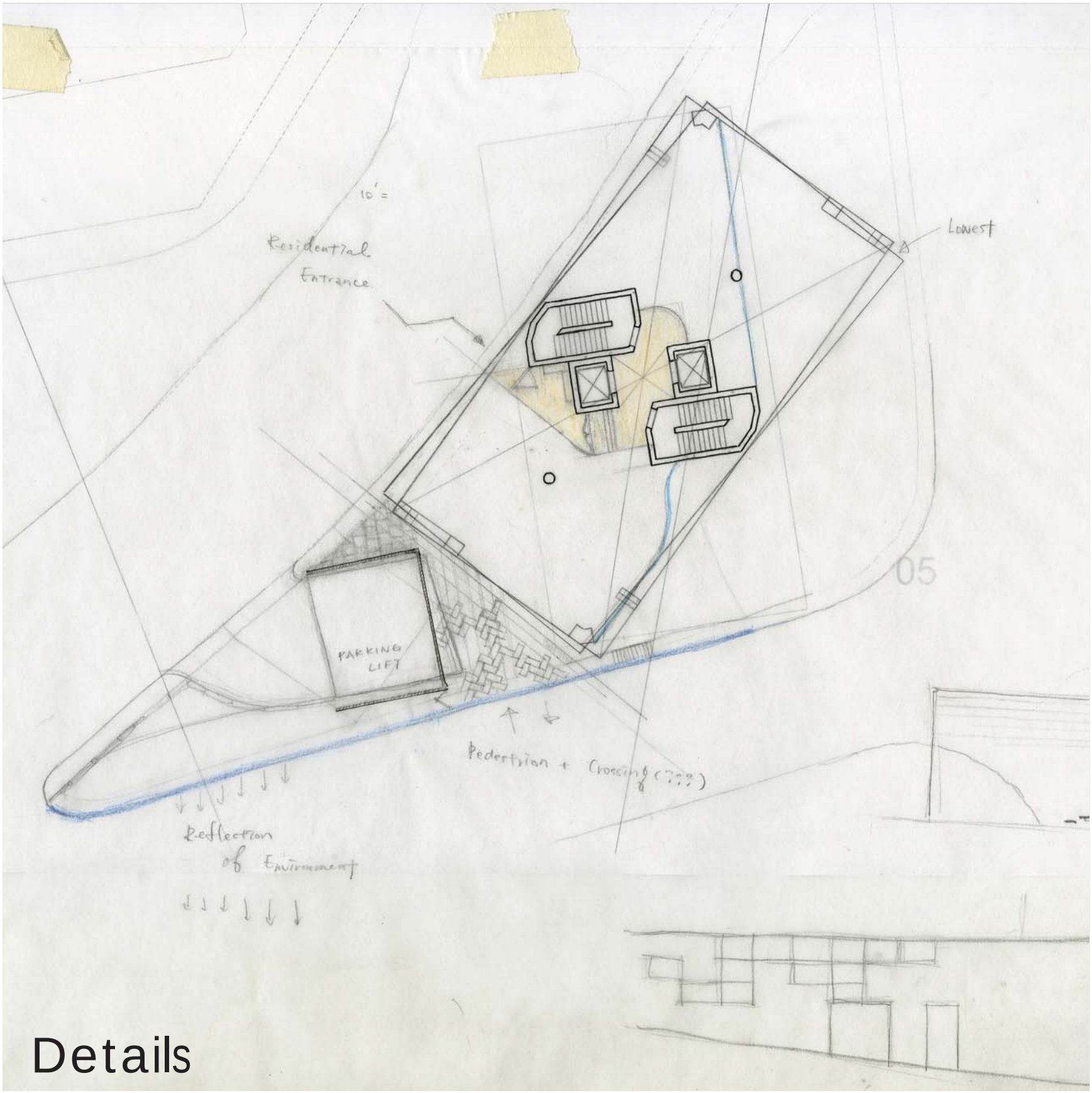


As the building grows, the floors gradually cantilever out of the site from both ends. However, to create a structural frame not only helps by supporting the whole cantilevered parts, but by showing a tendency and how the building grows into sky.

The roof is regarded as continuation of the whole structural frame. With consideration of wind patterns, the roof canopy bears with certain angle and direction that could eventually create a stack effect from the center cores.

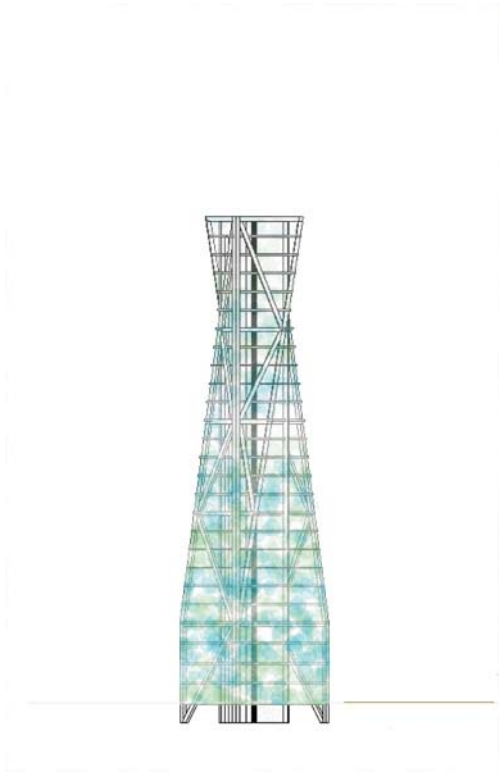


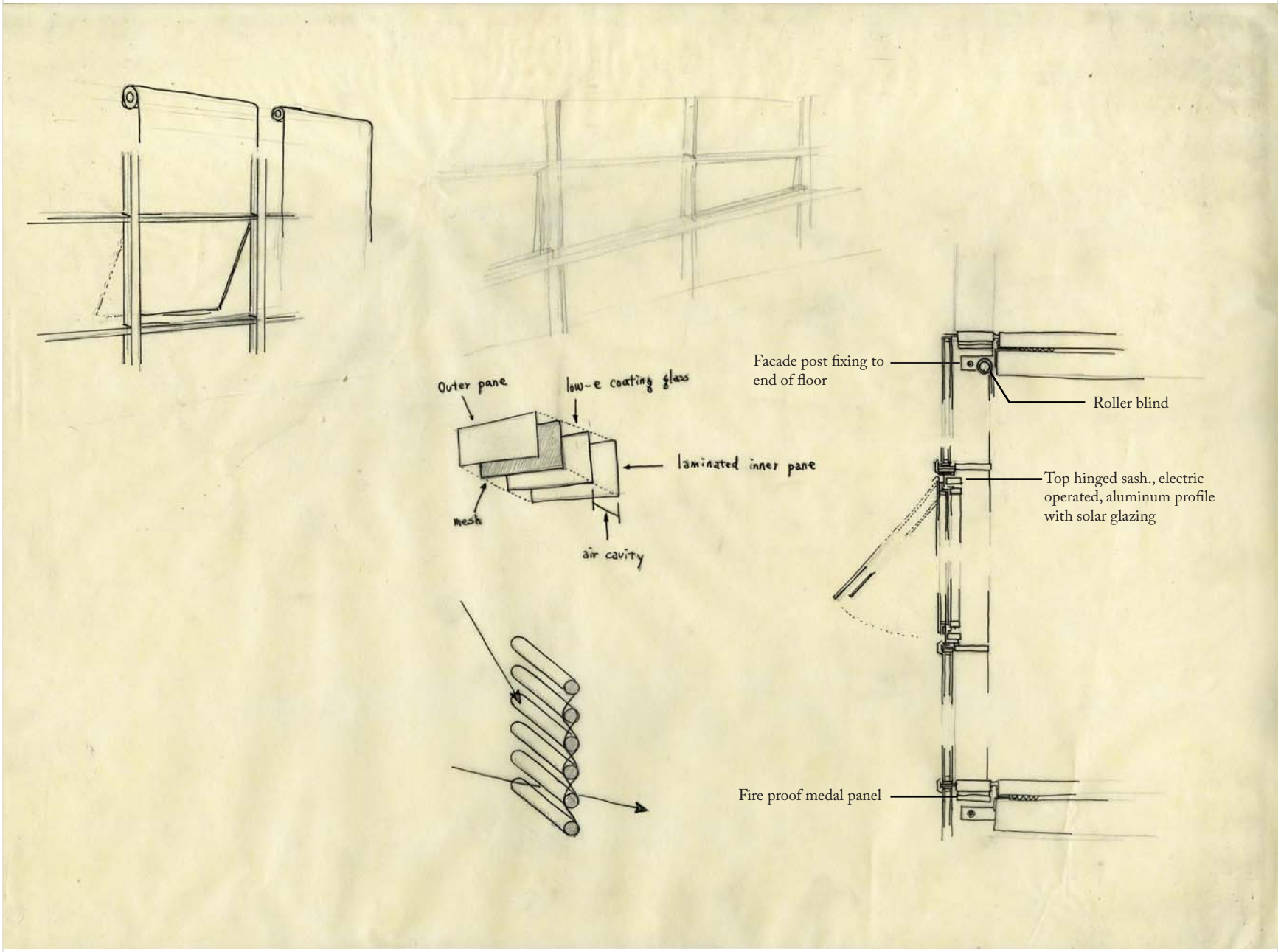



10' =
Residential
Entrance
Lowest
PARKING
LIFT
Pedestrian + Crossing (???)
Reflection
of Environment

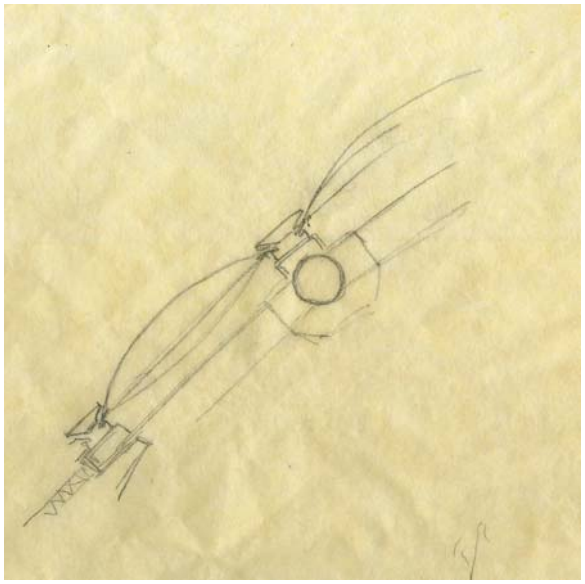
Details

The concept begins with the existing tree on the site. People elevating up the building is a representation of metabolism. The roots, trunks, branches, twigs, and then the leaves are in the order as a passage way bringing people to the garden, the observation deck, and their shelters. However, human beings will be receivers under the shadow. Underneath the tree, people see the natural light infiltrating through the leaves and it arrives as a heavenly gift. Along with the source of light, the color actually fades away gradually. The façade of the building is a resemblance of the whole experience through the exterior until it vanishes in the sky.

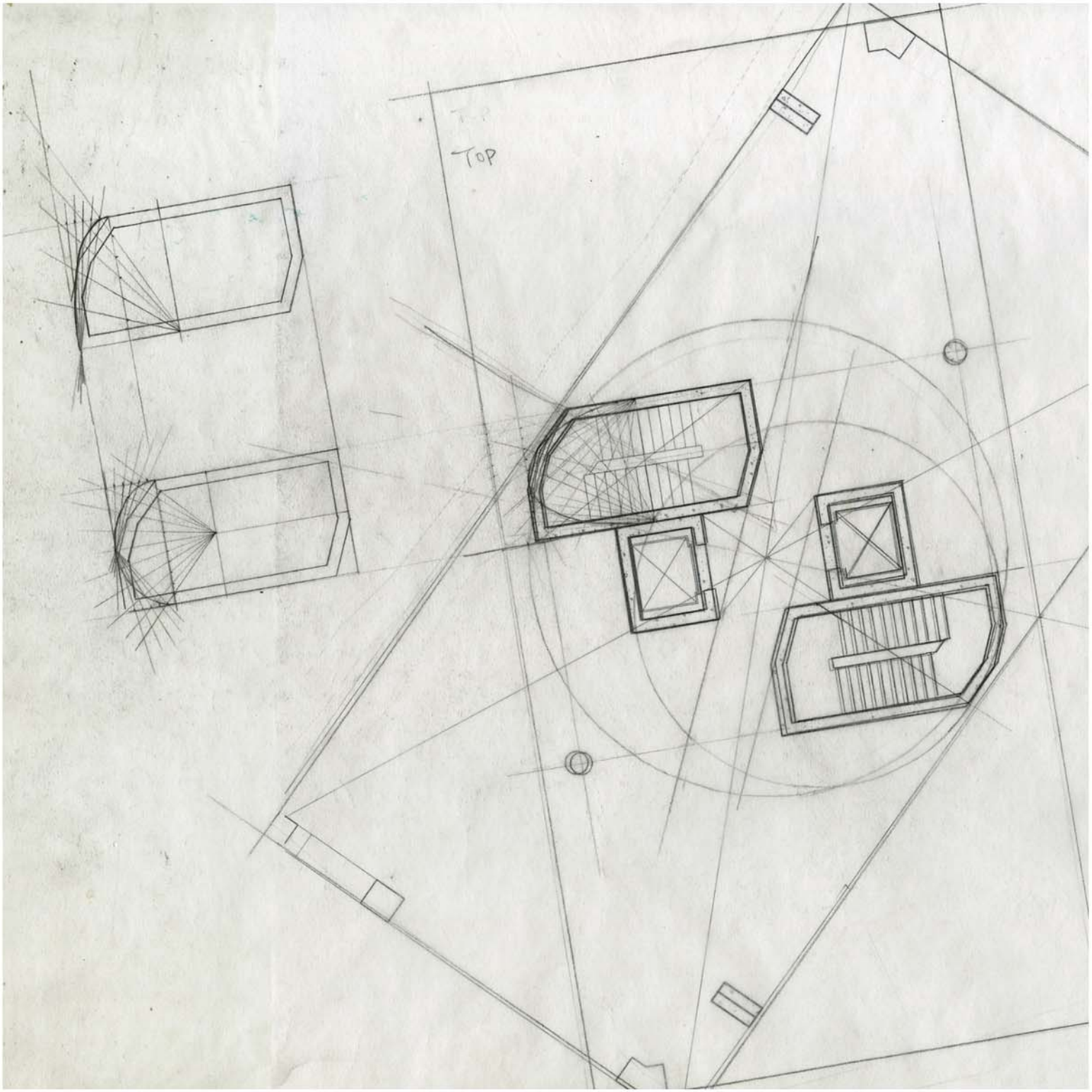




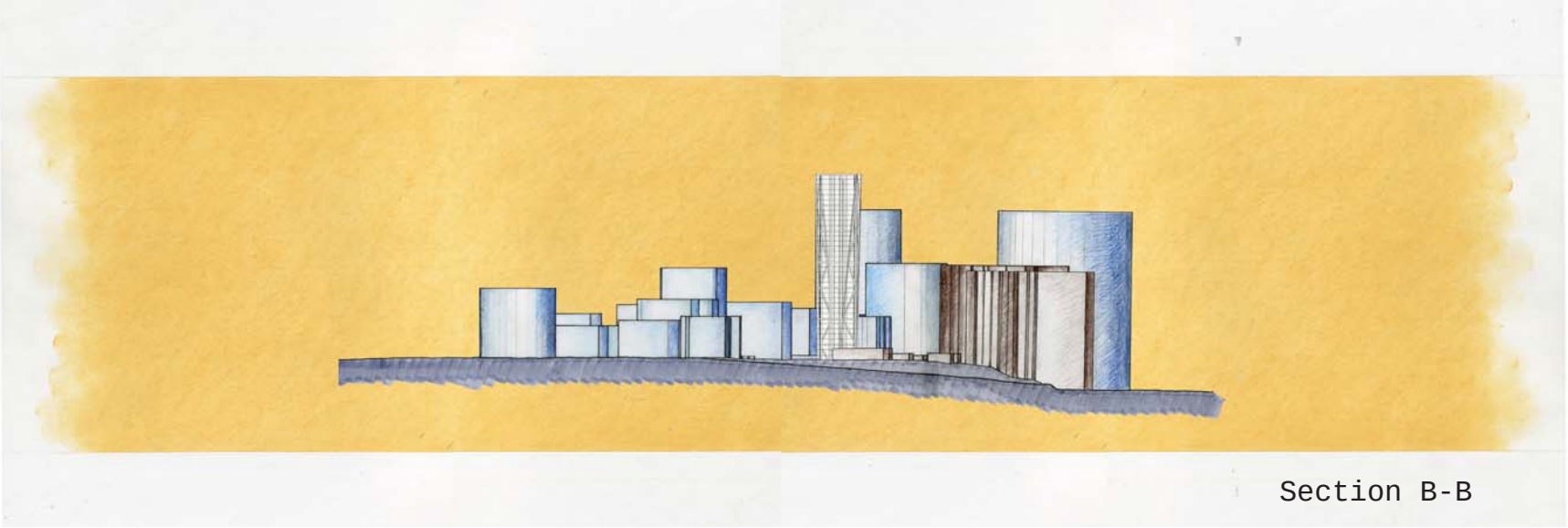
Except the fritted glass patterns on the façade, which used on reflecting light and reducing glare, the curtain wall itself has roller blinds behind as a shading mechanism in order to provide certain privacy. Otherwise, the façade is made of insulating glass with metal inter-layer. However, the perforated metal layer in between functions as a louvre system. Not only does it block the high angle sunlight, but it also offers quality transparency only from inside out.



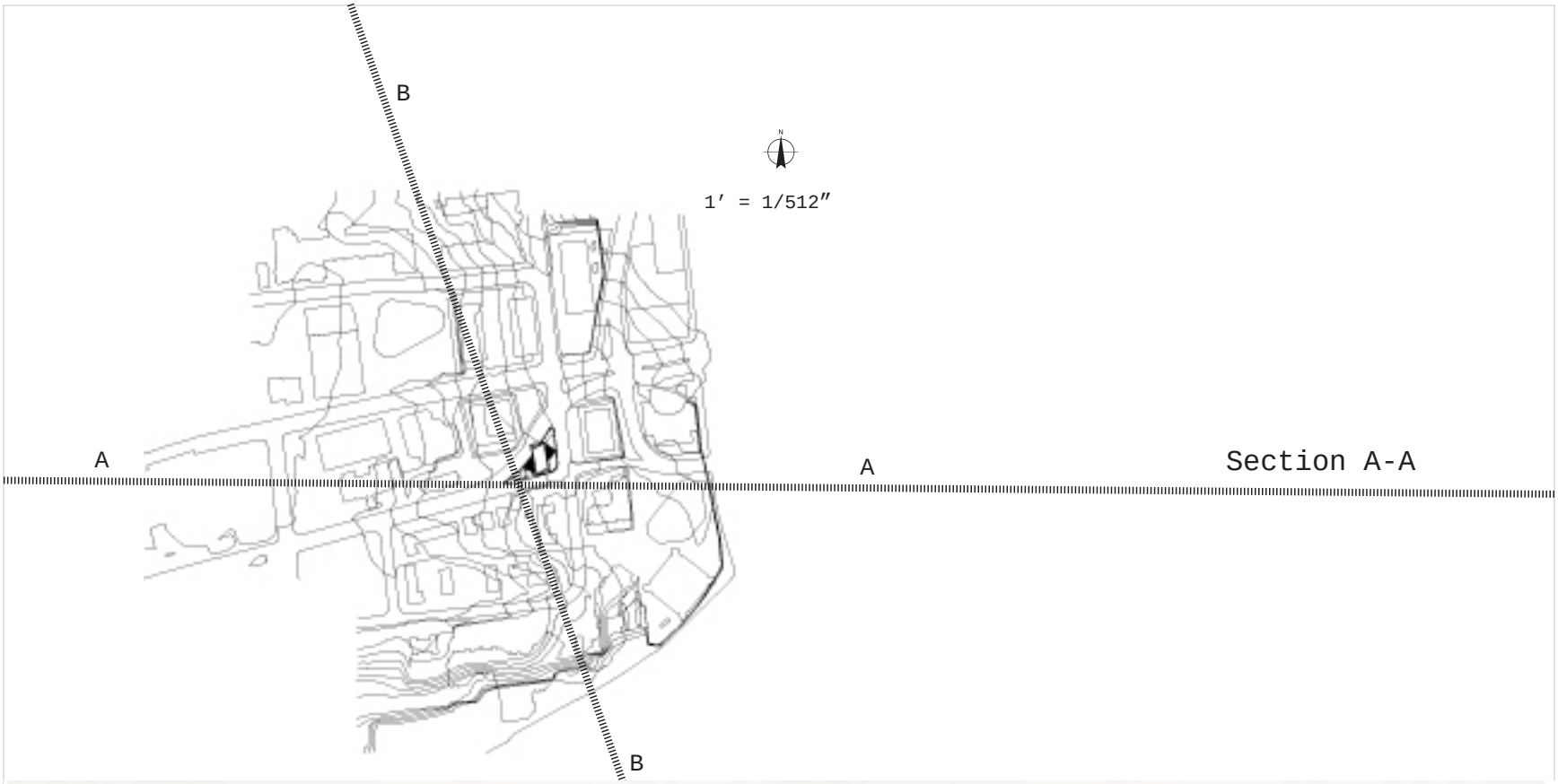
The roof canopy will be made out of ETFE (Ethylene TetrafluoroEthylene) membrane. This thin, transparent element needs to be pre-tensioned; it can minimize the weight and load-bearing system. Moreover, the ETFE sheeting is recyclable. This makes it a more preferable material.

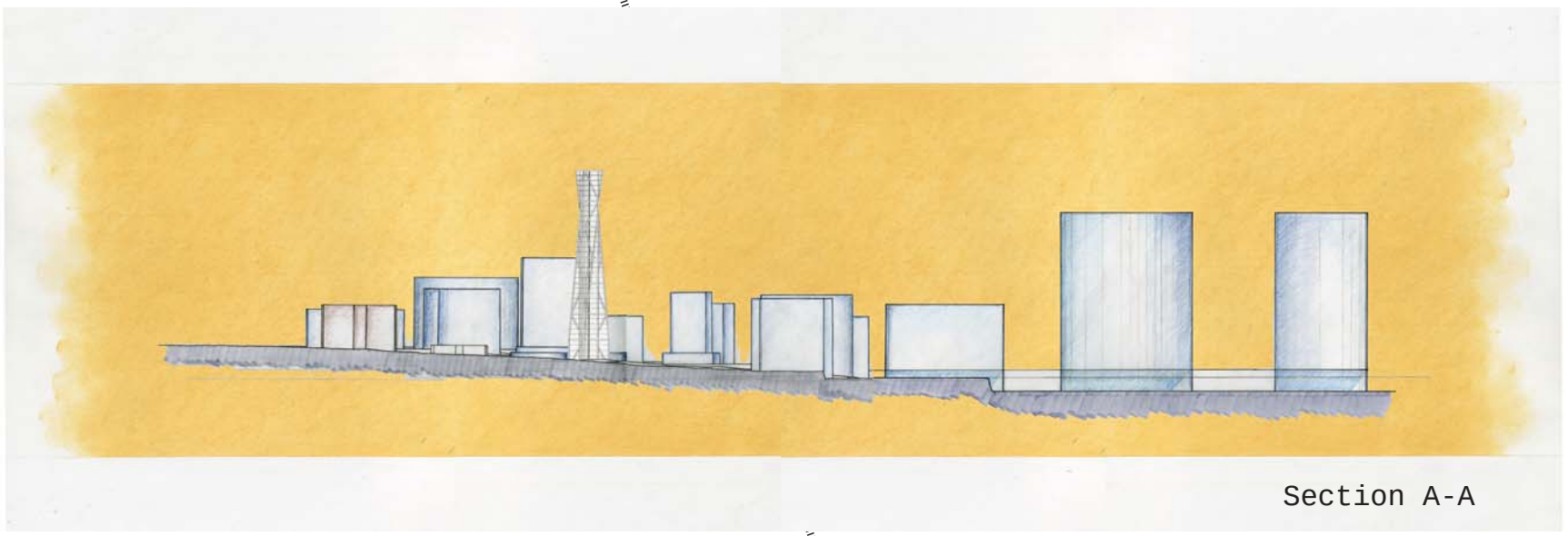


Drawings + Models



Section B-B

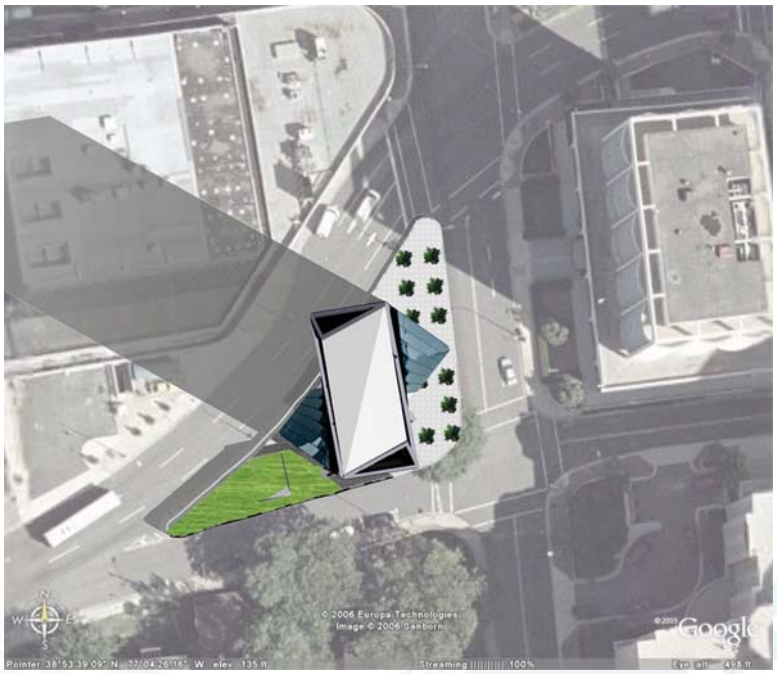


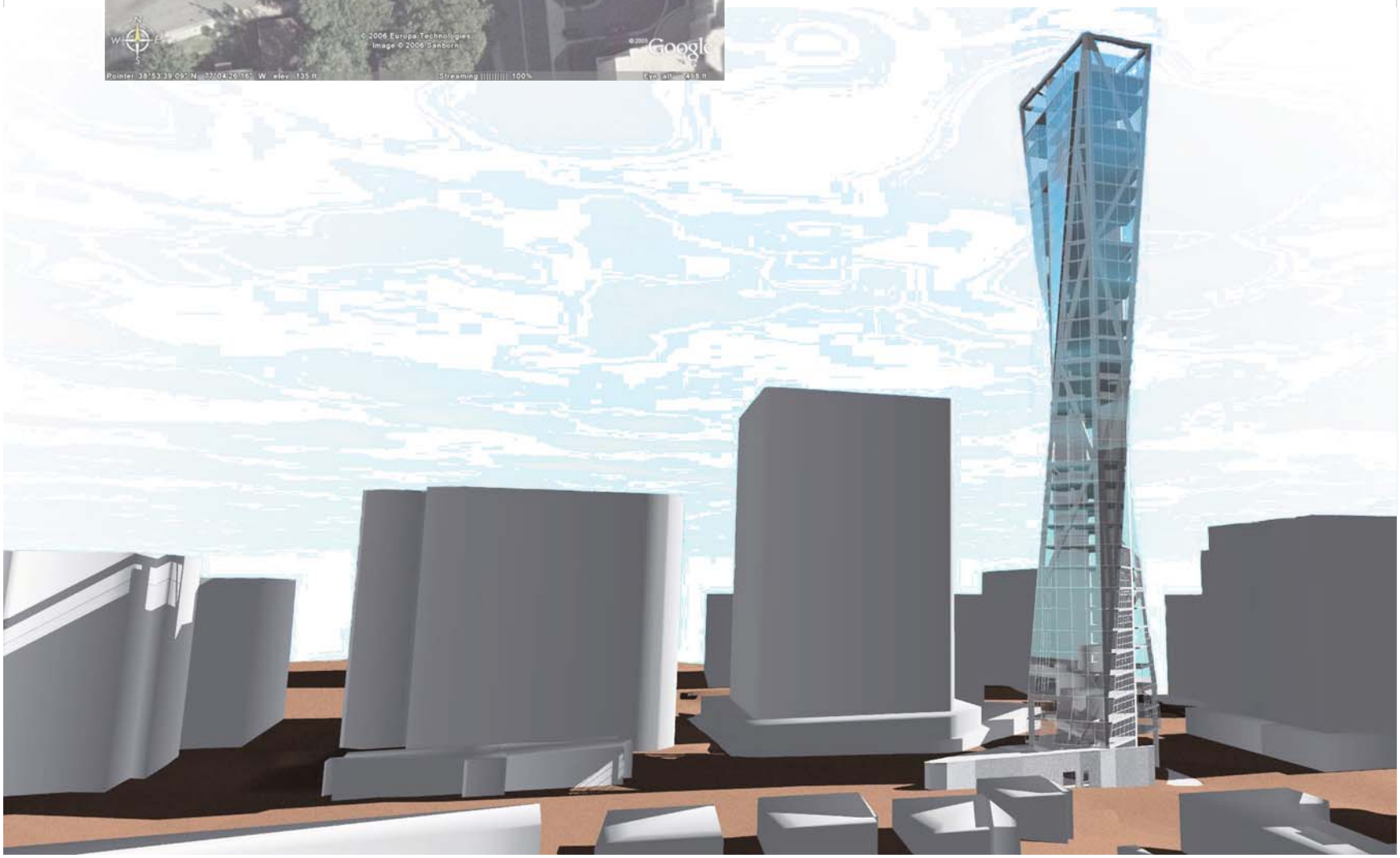


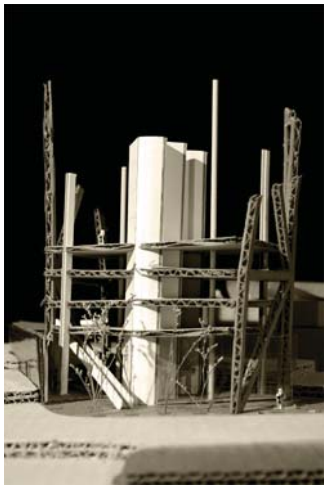
Section A-A

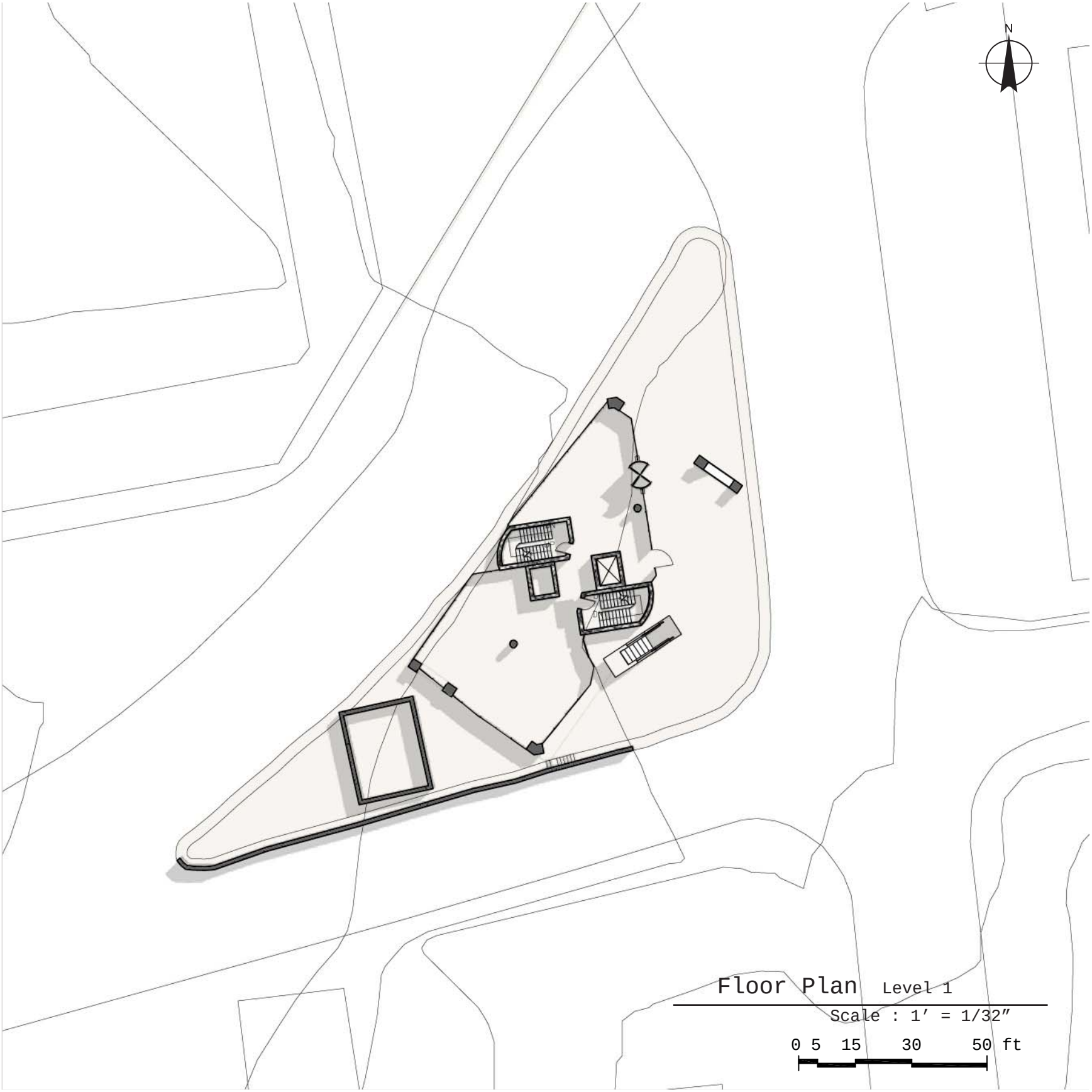
Section B-B

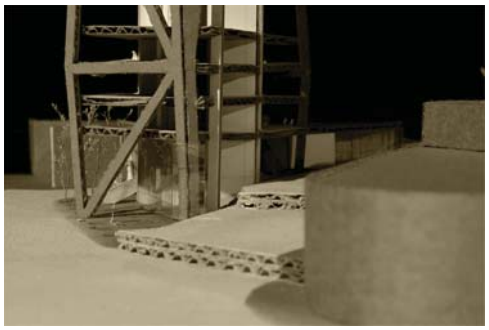
Below: Aerial view of the site



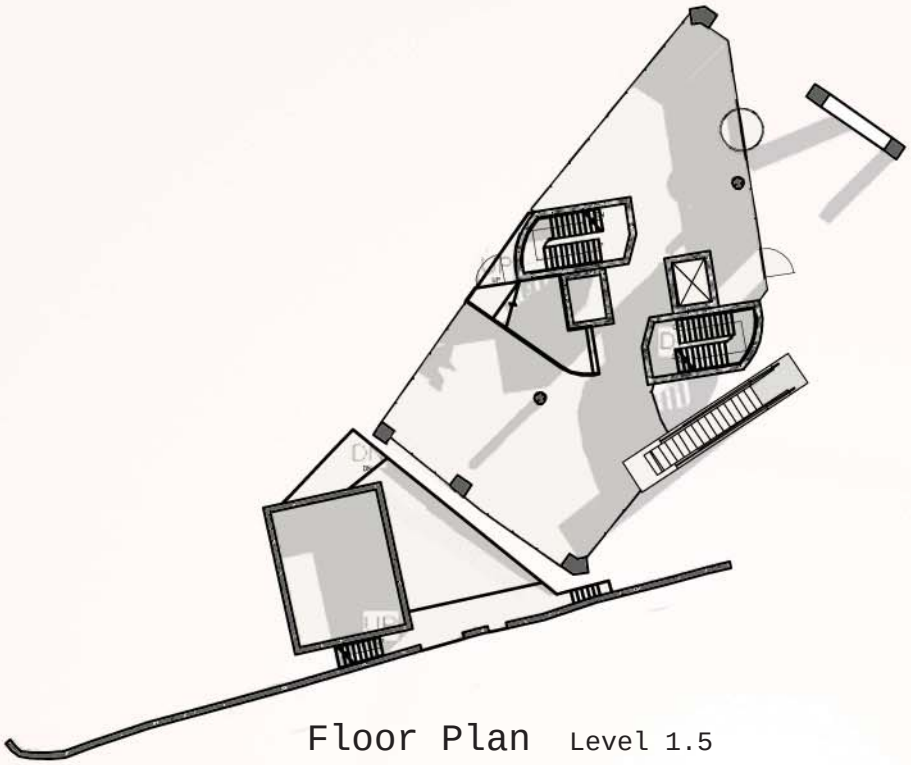





N
Floor Plan Level 1
Scale : 1′ = 1/32″
0 5 15 30 50 ft

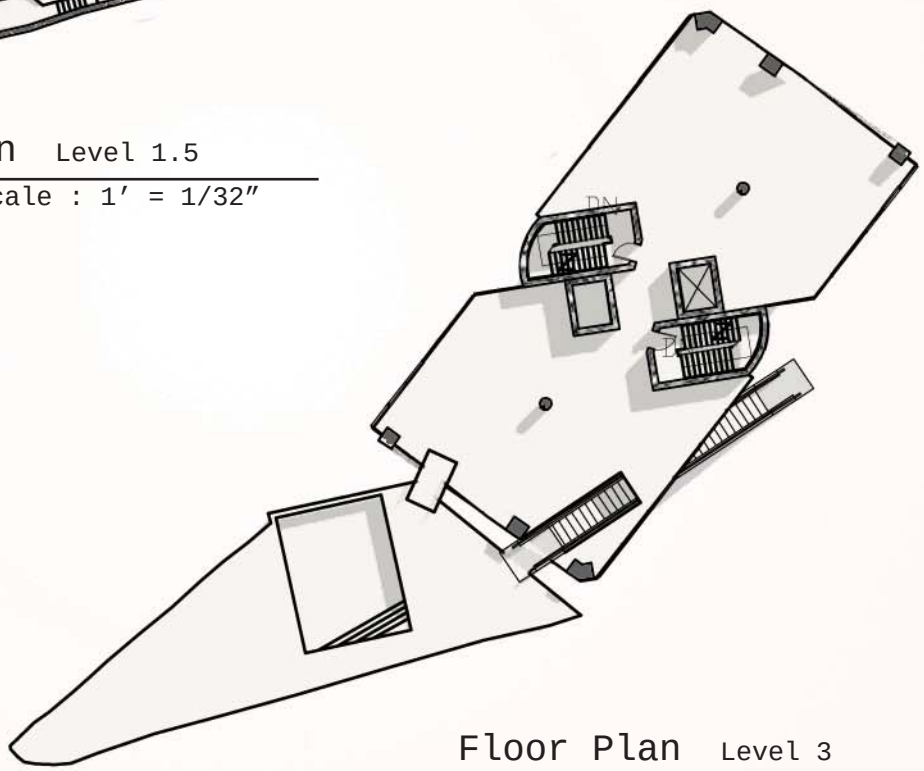


N
Floor Plan Level 2
Scale : 1’ = 1/32”
0 5 15 30 50 ft



Floor Plan Level 1.5

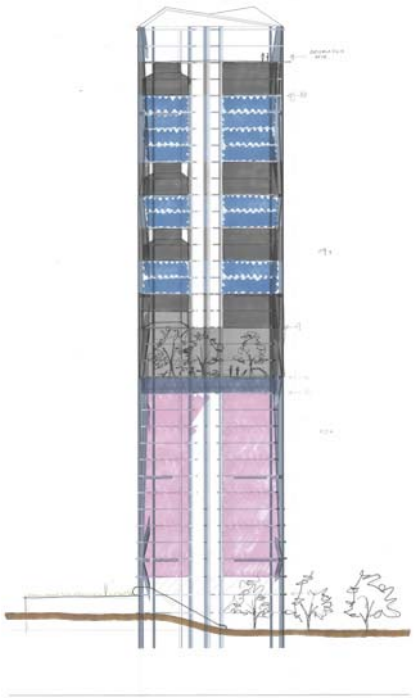
Scale : 1′ = 1/32″

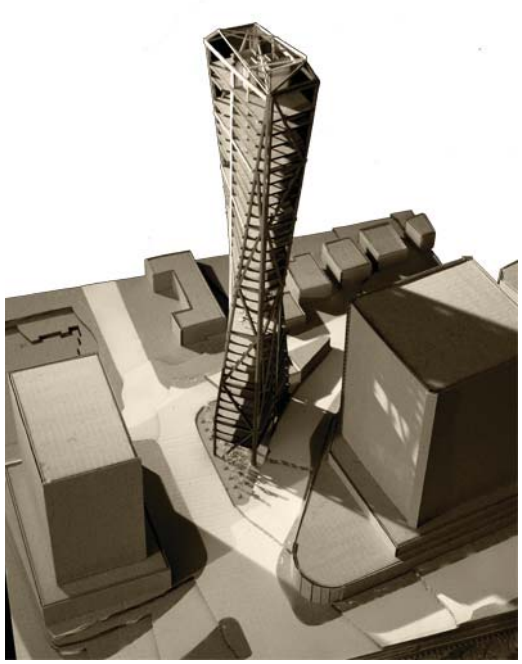


Floor Plan Level 3

Scale : 1′ = 1/32″

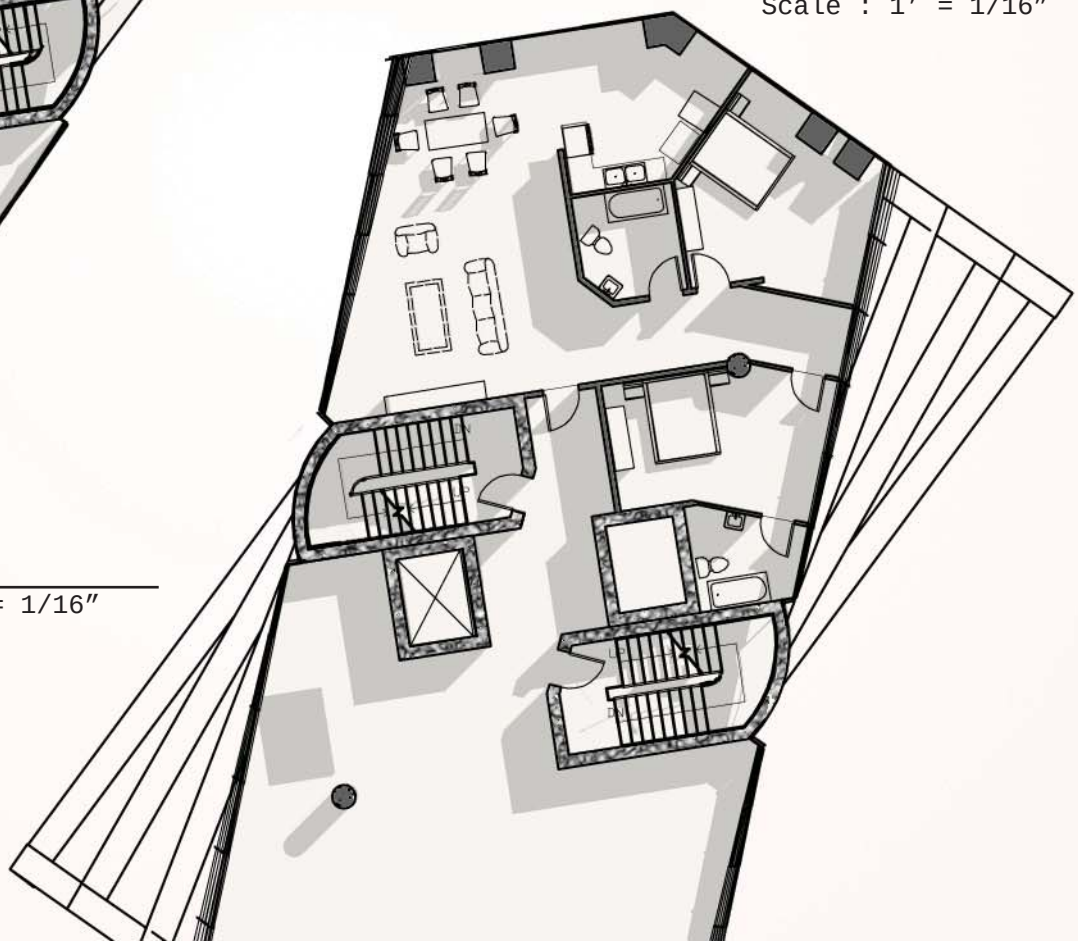
0 5 15 30 50 ft





Floor Plan Cubical Office

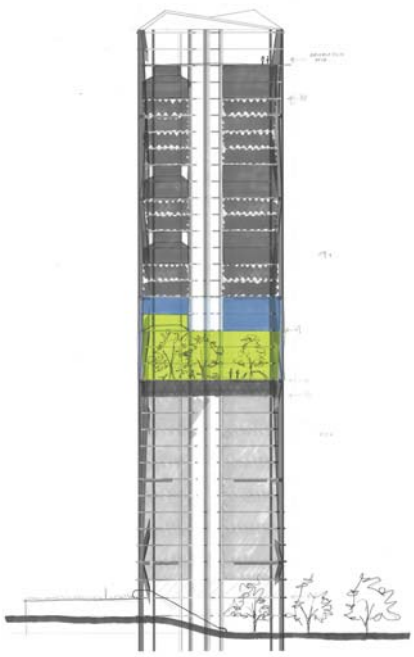
Scale : 1′ = 1/16″



Floor Plan Typical Apartment

Scale : 1′ = 1/16″

0 2 6 12 15 ft



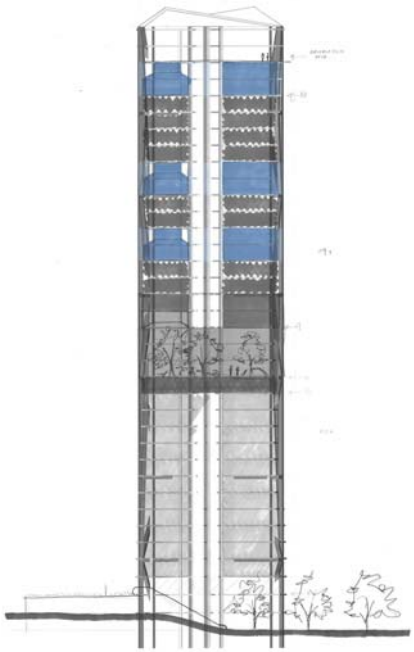
Floor Plan Multi-floor Apartment I

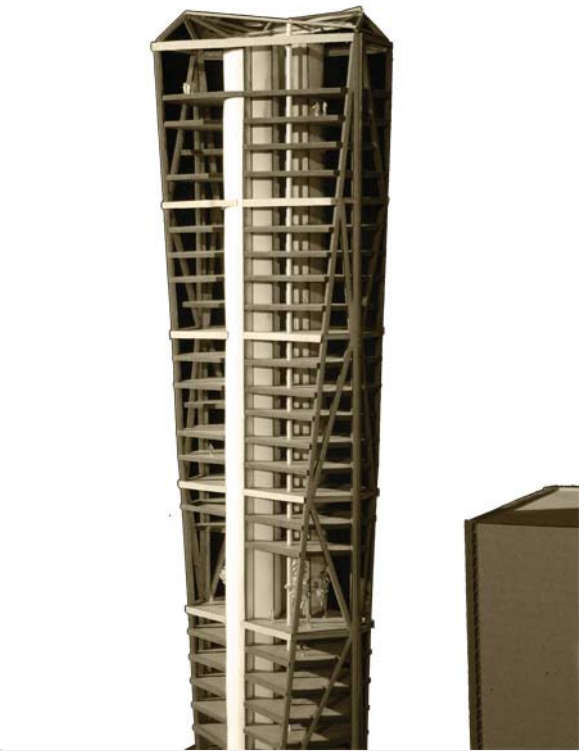
Lower Level Scale : 1′ = 1/16″

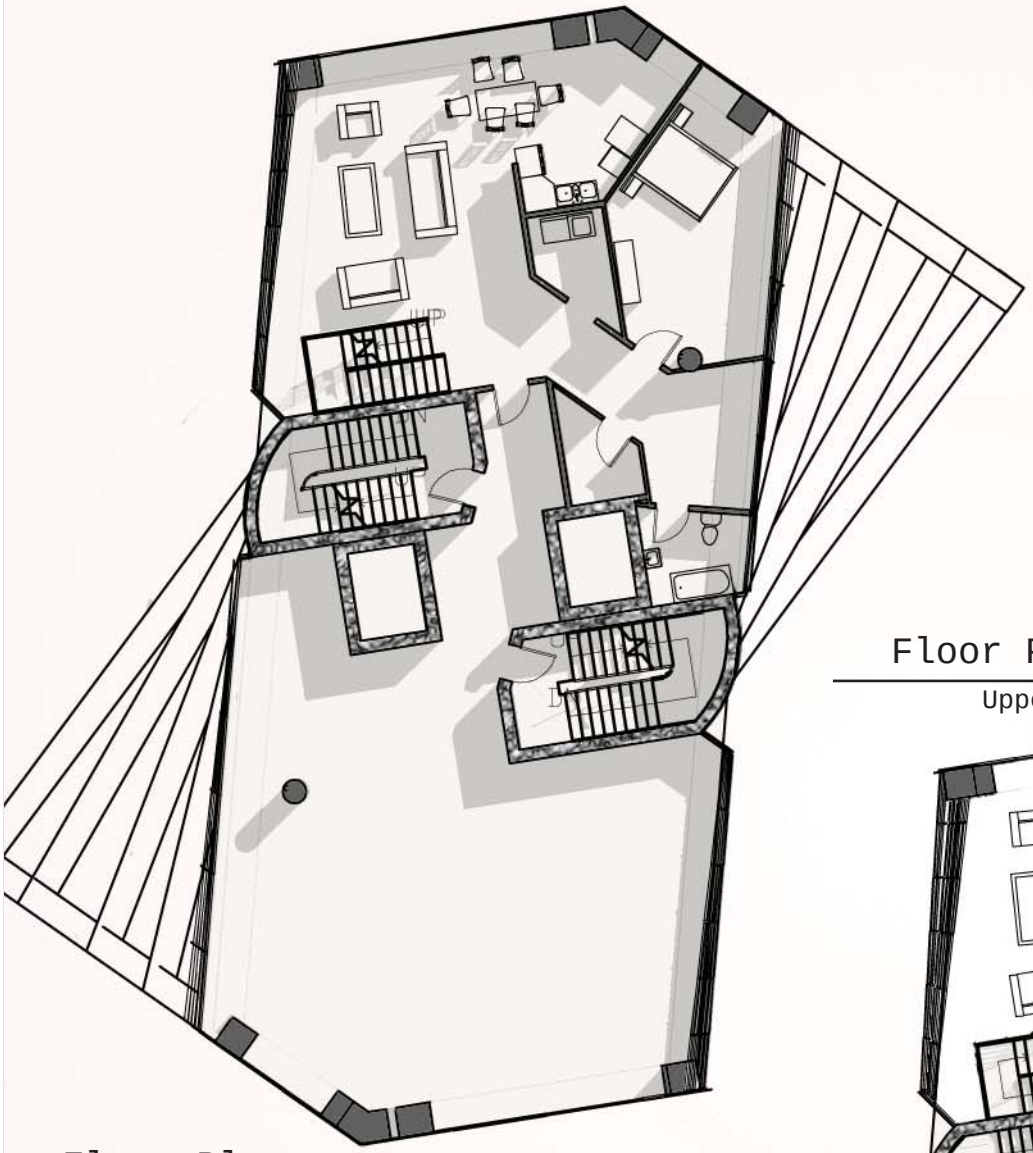
Floor Plan Multi-floor Apartment I

Upper Level Scale : 1′ = 1/16″

0 2 6 12 15 ft

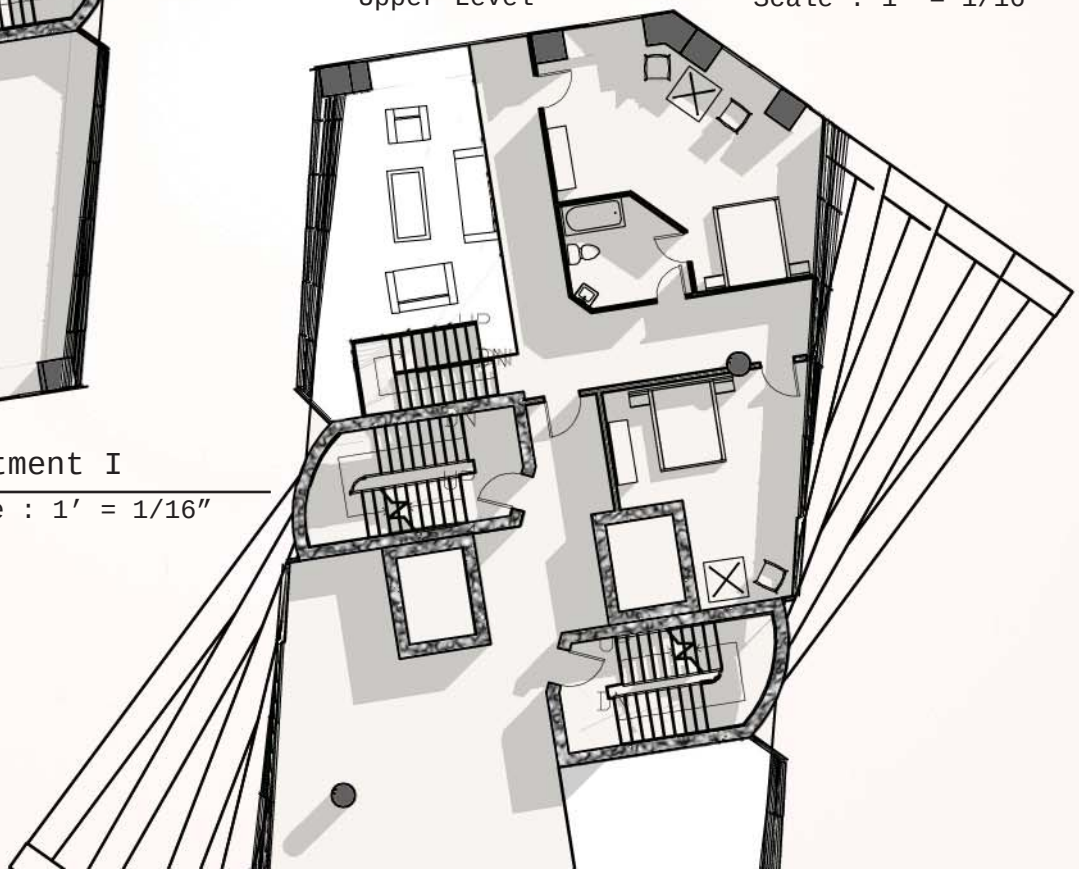






Floor Plan Multi-floor Apartment I

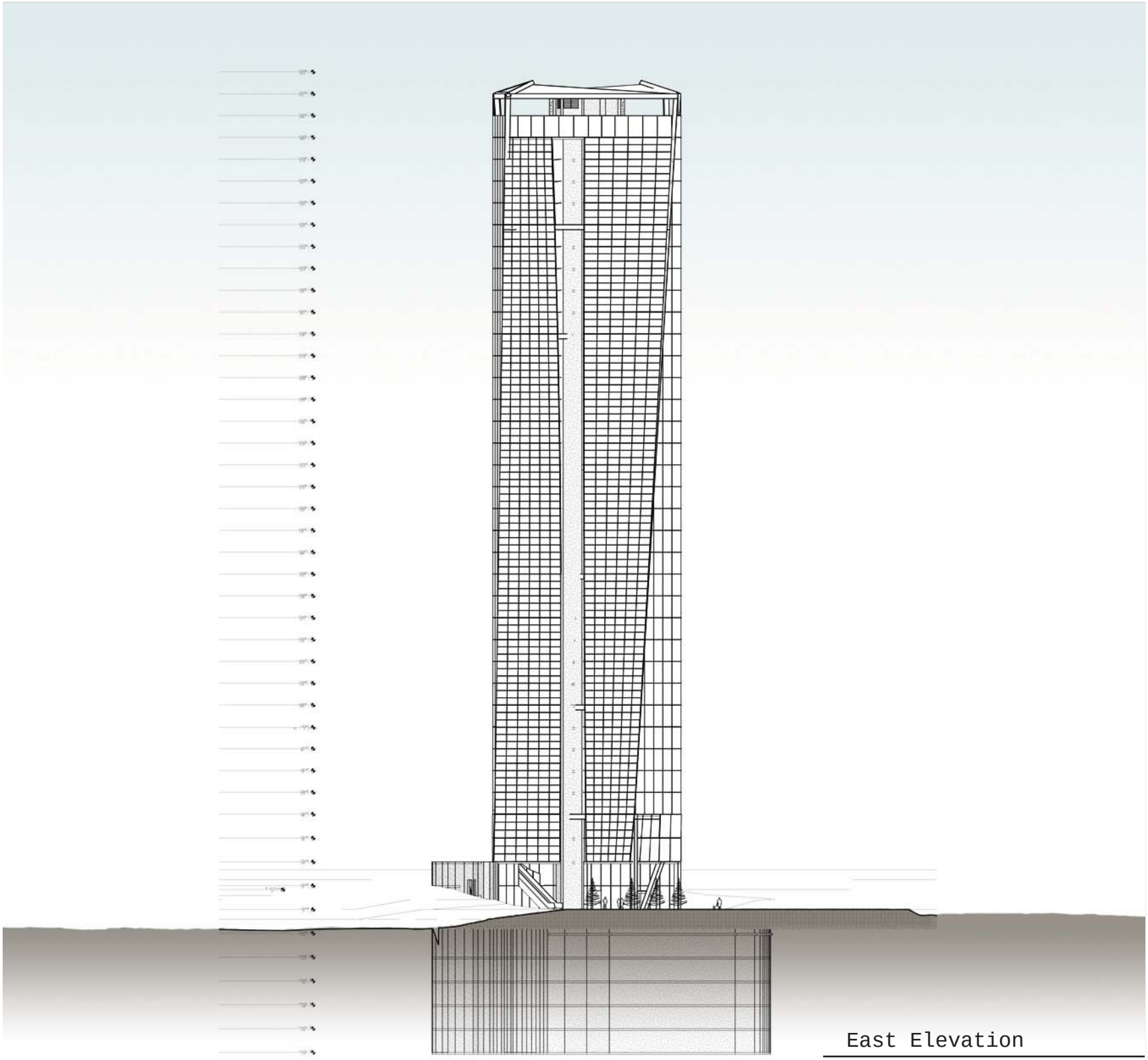
Lower Level Scale : 1′ = 1/16″



Floor Plan Multi-floor Apartment I

Upper Level Scale : 1′ = 1/16″

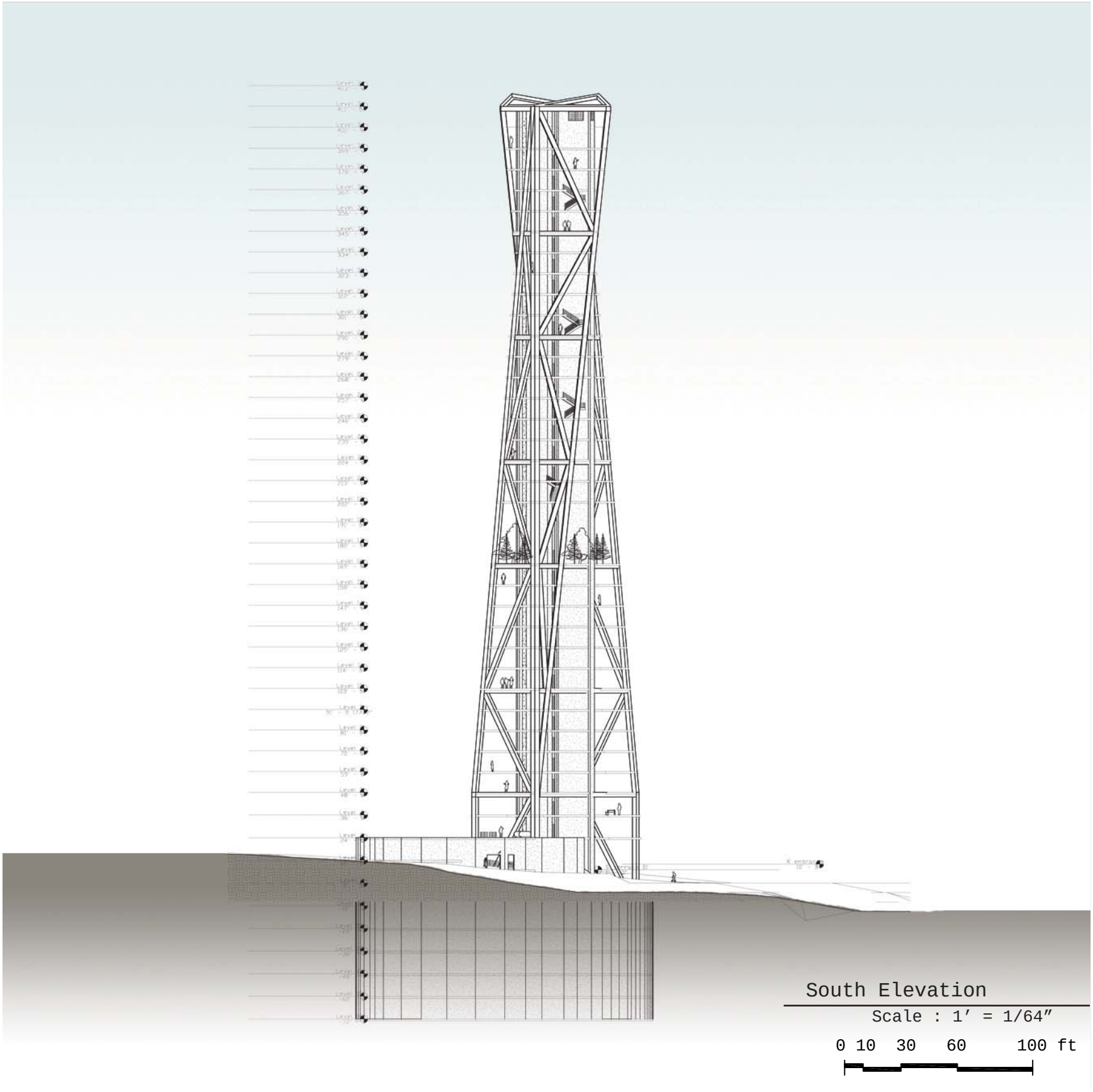
0 2 6 12 15 ft



East Elevation

Scale : 1′ = 1/64″

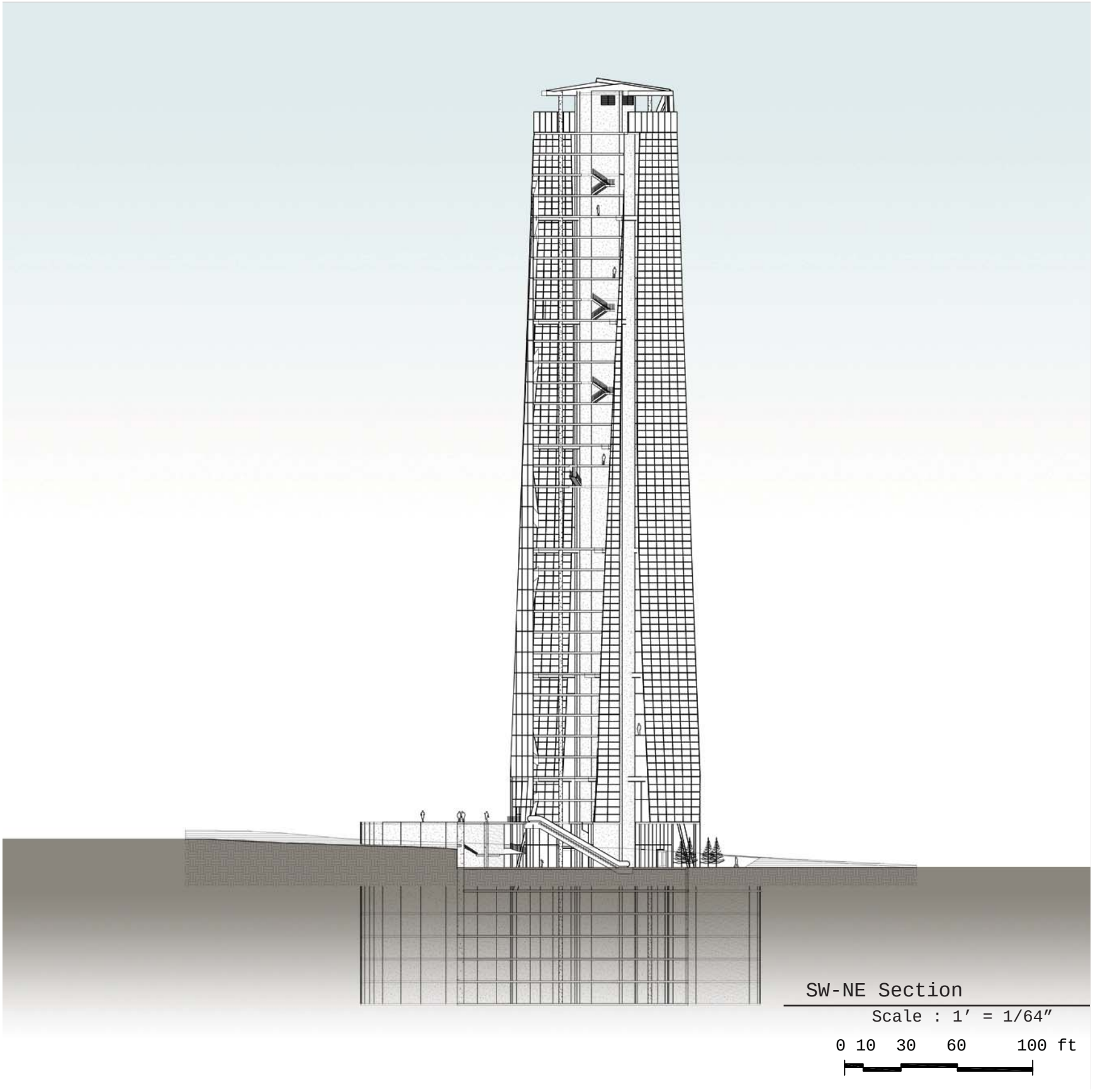
0 10 30 60 100 ft

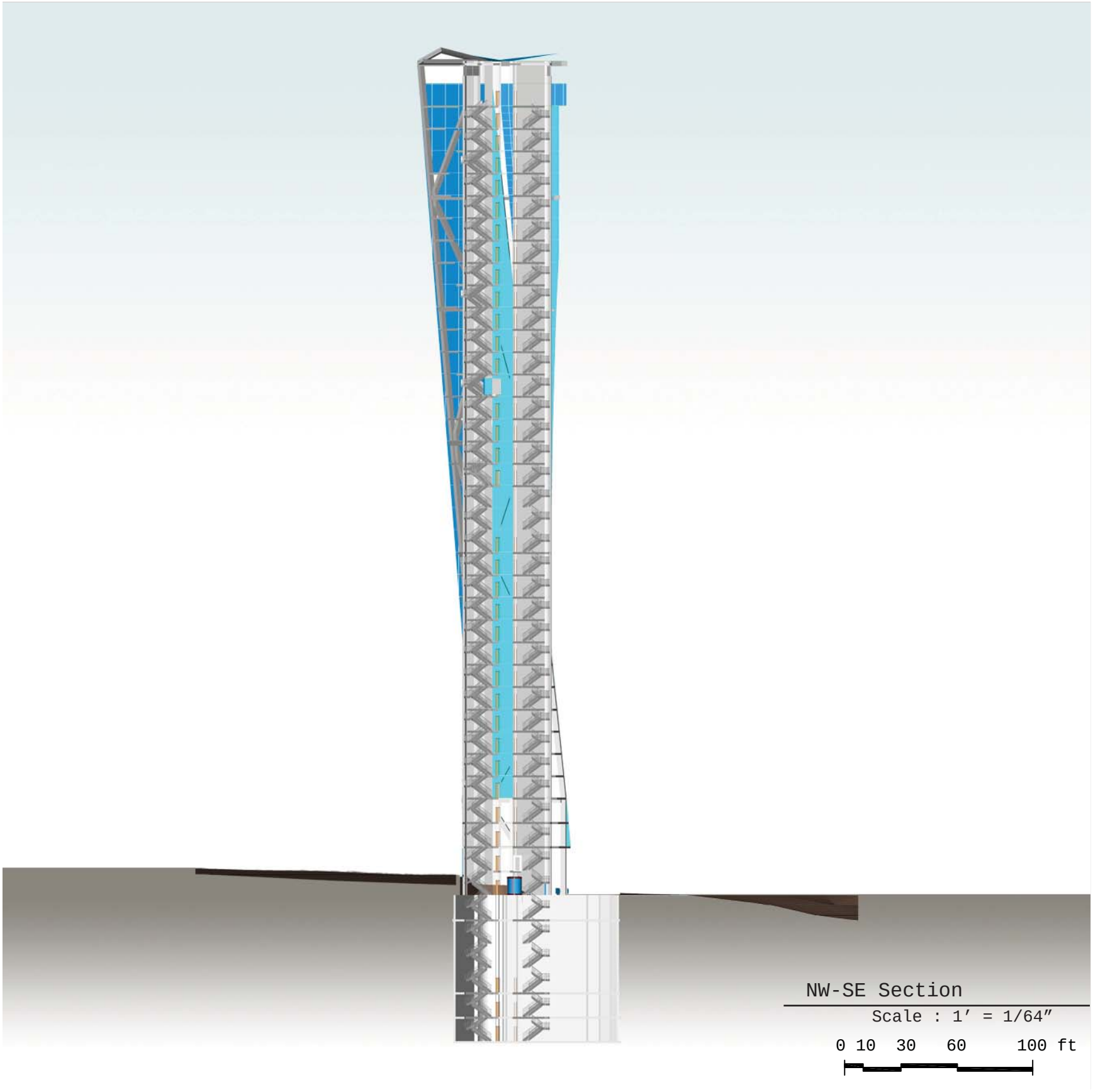


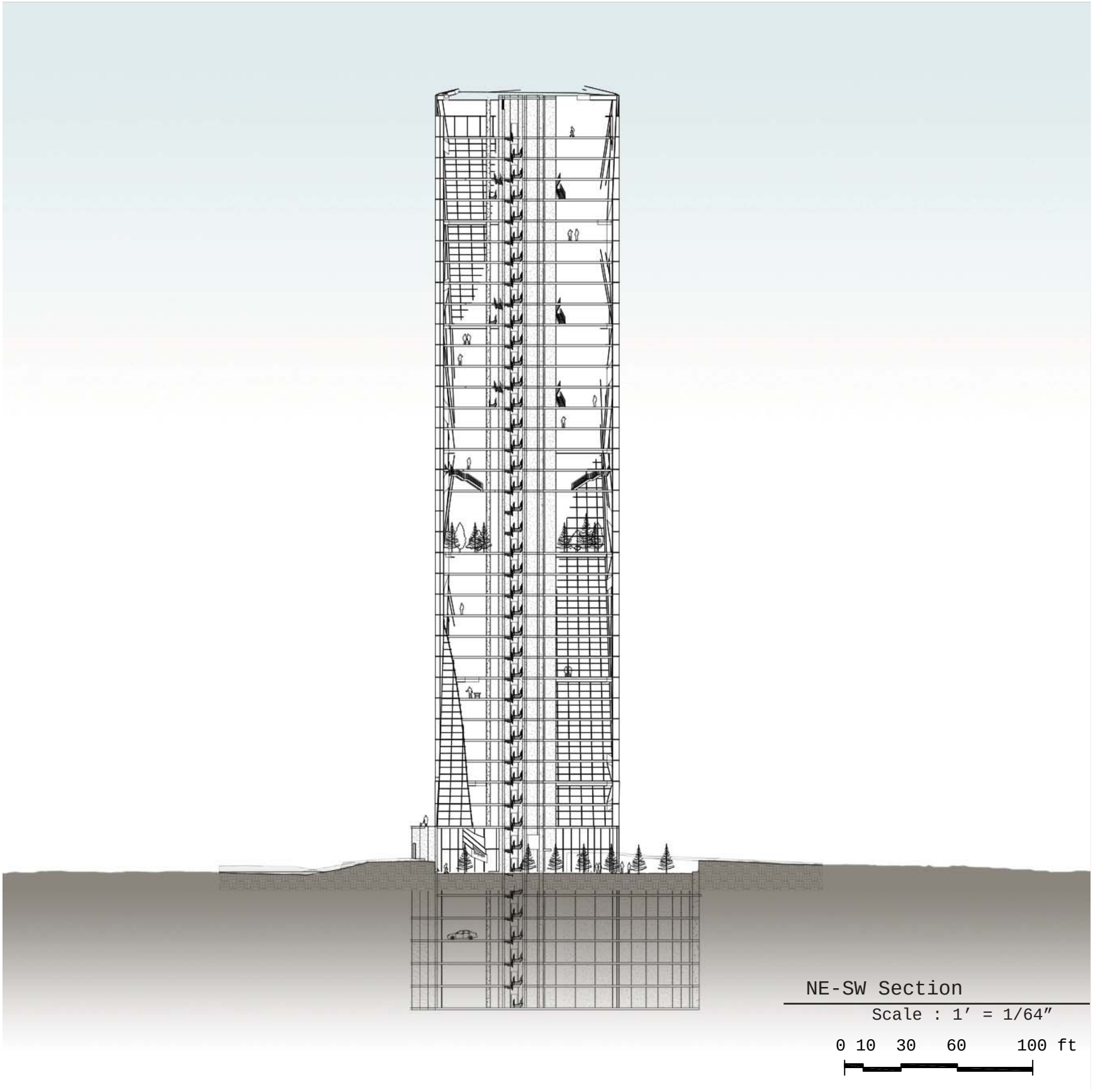
South Elevation

Scale : 1′ = 1/64″

0 10 30 60 100 ft


SW-NE Section
Scale : 1′ = 1/64″
0 10 30 60 100 ft


NW-SE Section
Scale : 1′ = 1/64″
0 10 30 60 100 ft


NE-SW Section
Scale : 1′ = 1/64″
0 10 30 60 100 ft

"I think architecture exists for human being not only of practical, physical needs, but also for their spiritual existence.....and I conceived my buildings in their environment in a kind of psychological space, and not merely within the real physical space." – Tadao Ando

There are several moments in life that actually shift from one end to another. So does building and city. As I see, I want to find something that stretches it instead of sprawls it; to embrace it instead of confronting it; to find a gesture harmonious enough to deal with different issues under difficult circumstances. Life is always the activities and interactions that we usually neglect because we only observe within a certain distance or scale. The duty of an Architect will thus be bringing those elements of living into realization.

Conclusion

Unless otherwise noted, photos and works are by the author.

Images:

P.5 2-1 http://www.learn-italian-in-italy.info/learn_italian_SanGimignano.jpg
2-2 http://www.x-jet.net/USERIMAGES/San%20Gimignano.JPG

P.6 2-3 http://upload.wikimedia.org/wikipedia/commons/9/99/Tokyo_odaiba.jpg
2-4 http://english.taipei.gov.tw/web/upload/111284469042708.jpg

P.7 2-5 http://upload.wikimedia.org/wikipedia/en/7/75/NYC_skyline_from_New_Jersey.jpg

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