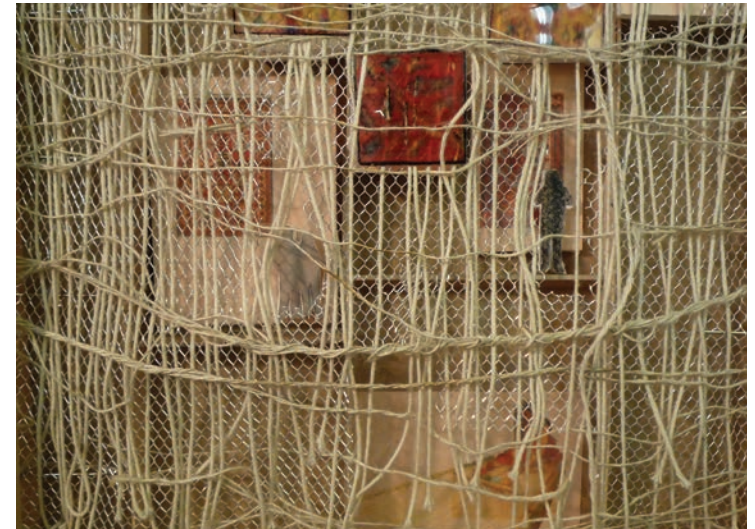


A Study of Translating the Weaving Art into Architecture :

Carpet Museum in Washington DC

Sepideh Bazrafshan



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Sepideh Bazrafshan

Thesis submitted to the faculty of the Virginia Polytechnic
Institute and State University in partial fulfillment of
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Washington DC



Closing and Leaving | Knot Series by Jalal Sepehr | Yazd, Iran | 2011 (1,page 76)



Two Windows | Knot Series by Jalal Sepehr | Yazd, Iran | 2011 (2, page 76)



Hands | Knot series by Jalal Sepehr | Yazd, Iran | 2011 (3,page 76)



Jalal Sepehr Photography (4, page 76)

CARPET is a mystery ...
 It's not just woven one knot after the other
 It's a POEM, written one word after the other
 A SONG, composed one note after the other
 A PAINTING, done one color after the other
 A WALL, stacked one brick after (on) another.

My architectural thesis began with the question of the relationship between the realm of the world's most ancient craft and craft of building: The textile art and architecture. Two branches of art which are said their inventions coincide with each other and both came from the same origin:
 a pen (fence),an interwoven partition

"It is certain that a kind of crude weaving began with pen,as a means of dividing the "home",the inner life from the outer life,as a formal construct of the spatial idea."¹

The question of thesis led me to start my research on textile arts and weaving in particular which first became a

A B S T R A C T

A Study of Translating the Weaving Art into Architecture: Carpet Museum in Washington DC

by Sepideh Bazrafshan

problematic quest ,since the remnants of the textile products, which are still to be found diffuse almost everywhere,have only very recently started to attract attention and the existing information pertained to their history or complex technical aspects of this branch will not suffice the profound need of surveying on textiles.

The Carpet Museum will become a shelter for the preservation of this ephemeral craft, protecting this forgotten branch of art. The art of weaving has always been presented within art collections that include other decorative/ technical arts, without having a well-deserved position for itself.

I began the thesis by weaving : I wove a small piece of rug to explore architecture through the structure of carpets, textiles and weaving. In the design of the carpet museum,each building element such as bearing wall,window,stair, ceiling or sitting area became an architectural manifestation of a woven craft .

¹ Semper,Gottfried, Style in the Technical and Tectonic Arts; or Practical Aesthetics (Texts and Documents),Page 248.(Page 74)

| D E D I C A T I O N

To my committee, for all the influential suggestions in my thesis procedure and design approach. Without your guidance I could never perceive architecture in a way I have not imagined before starting graduate school.

Thank you for believing in my ideas and all the details from the initial proposal to final design. I learned so much from each of you.

To my family, especially my parents for their endless love and support. Without having you by my side, I could have not reached my dreams. I really appreciate your encouragements which led me to accomplish my goals.

To my friends in WAAC, who have spent countless hours in studio, working on projects and motivating me. I will not forget any of those memorable moments you made.

To my friends outside the WAAC, for getting me out of the studio while focusing on my thesis made me forget the real world beyond architecture.

TABLE OF CONTENTS

ABSTRACT.....	V
DEDICATION.....	IX
TABLE OF CONTENTS.....	XI
LIST OF IMAGES.....	XIII
01 SITE.....	1
CONTEXT.....	5
CIRCULATION.....	11
02 BUILDING PROGRAM.....	15
03 DESIGN APPROACH.....	19
CITY AS A RUG.....	20
JOSEPH AND ANNI ALBERS.....	23
ARCHITECTONIC WARPS.....	25
ARCHITECTONIC KNOT.....	27
MATERIAL/STRUCTURE.....	31
04 BUILDING DESIGN.....	35
05 FINAL PRESENTATION.....	39
BIBLIOGRAPHY.....	73
IMAGE CREDITS.....	75

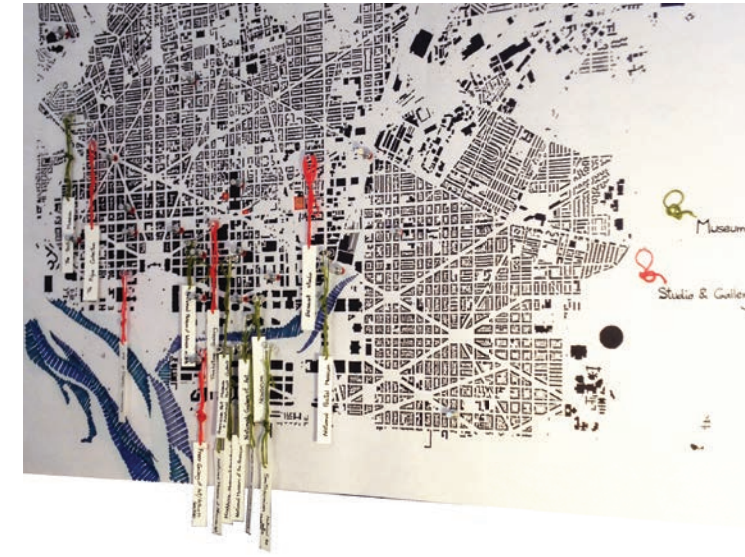
L I S T O F I M A G E S

XII

DC Analysis Map Showing the Location of Museums and Galleries	2	Drawing Showing Proposed Location of Entrances for Visitors,Employees, Cars and Trucks	12
First Proposed Site Analysis	2	Diagram,Structure and Elements of Persian Carpets	12
Second Proposed Site Analysis	3	Site and Roof Top Plan	13
Third Proposed Site Analysis	3	Parking Level	14
Location of Fourth Proposed Site and Its Orientation to the New Convention Center	3	Case Study I : Carpet Museum of Iran,Tehran ,Iran,Summer 2012	15
Map Analysis Showing the Defined Area of Proposed Sites in relation to object building (Textile Museum) and object space (National Mall)	4	Case Study II : Textile Museum,Washington DC,Fall 2012	17
DC Analysis Map Showing the location of 4 Proposed Sites	4	Picture of Conceptual Models I and II	17
3DDiagramShowingtheLocationoftheOldandNewConventionCenters in Downtown DC	5	Sketches for Concept of City as a Rug	19
Fourth Proposed Site Analysis	5	City as a Rug Conceptual Model	20
Diagram Showing the Orientation of the Site in Relation to the Old and New Convention Centers in Downtown DC	6	Curvilinear Paisley Pattern drawn to Scale on a Crossed Paper	20
Diagram of New Residential Development and Their Relationship to the Site Based on DC Planning	6	My Monoprints (Printmaking) ; City as a Rug I,II,III and IIII ; How Streets Represent Fabrics	21
Site Model Showing Land Topography and Buildings Heights	7	Brainstorming Sketch,How to Apply Weaving Concepts to Architecture	22
Diagram showing the Proximity of Closest Single Use Civic Buildings to the Site	7	My Little Rug Woven on a Four Shaft Table Loom	23
GIS Map Showing the Neighborhood Blocks,Properties and Trees	7	Table Loom and Weaving Tools	23
Analysis of Building Heights,Street Access and Vehicular View to The Site	8	Joseph Albers Painting,Color Study, Homage to Square Series	23
Site Panorama Photography,East View	9	Weaving Workshop at the Dessau Bauhaus. 1927	23
North-South Route Runs along the Eastern Edge of the Site, Map of Proposed Routes of the DC Circulator,District of Columbia Office of Planning	10	Anni and Joseph Albers in Black Mountain College, NC,1949 -Photo by Ted Dreie	24
Site Panorama Photography,South View	11	Joseph Albers, Two Structural Constellations, 1959. Incised Gold Leaf on White Vermont marble, 488 x 1,859 cm. New York: Corning Glass Building, 717 Fifth Avenue	24
		Diagram of Translating the Warps to Architectonic Continuous Lines	25
		Conceptual Model,Continuous Architectonic Warps	26

Persian Knot Being Tied on a Vertical Loom	27
Conceptual Diagram Representing a Tied Asymmetrical Knot	27
How to Make a Persian Knot (Verticals:Warp, Horizontal:Weft)	28
Conceptual Diagram Representing a Tied Asymmetrical Knot	28
Process of Model Making,How Fabrics and Knot Creates a Building	29
First Level Sketch Drawing	30
Collage Composition ,Brick Wall Representing Adobe Carpet	32
Finalized 3D Drawing showing the Structure of Building,Bearing Walls from Parking Level Going All the Way Up to Roof	33
Sketch Drawing of Masonry Bearing Walls ,Entry Level,Orange Areas = Corridors	33
Drawing Showing the Use of Cavities inside of Bearing Walls for Sitting Area in Corridors	34
Drawing Showing the Use of Cavities inside of Bearing Walls for Sitting Area in Corridors,Locating a Desk in Administration Offices or a Setback Embracing a Carpet in Exhibition Area	34
Main Entrance Facade	35
View into Lobby,Looking toward the entrance area	35
Elevation Idea ,Inspired by Structure of the Carpet and Paisley Patterns	36
Penultimate Model	37

01 | SITE



DC Analysis Map Showing the Location of Museums and Galleries

Before making any architectural decisions and determining a specific location as a museum site, due to cultural and social aspect of project subject, I located all other similar activities throughout the Washington DC context in order to :

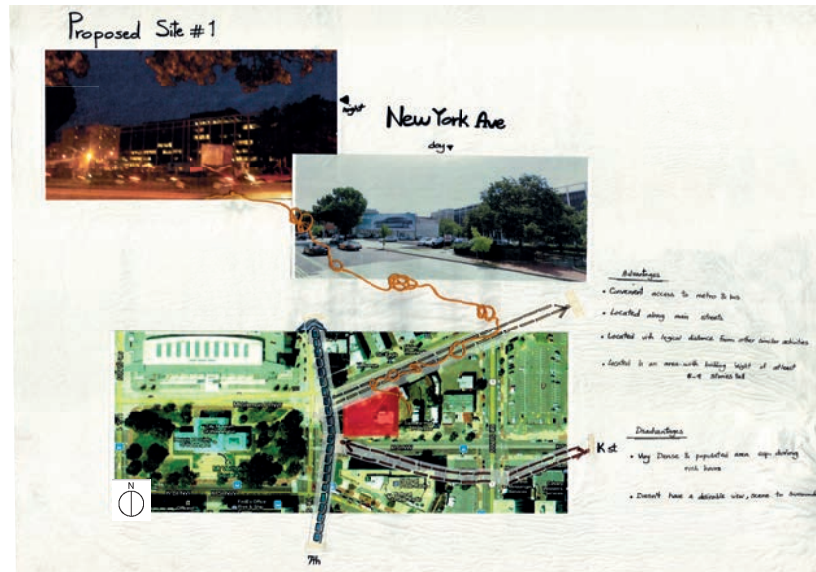
- 1- Define an approximate equal distance between existing museums/exhibitions/art galleries and the proposed location of Carpet museum.
- 2- Examine the accessibility of the proposed site itself in regard with the closest surrounding public transportation services.

Through elaborate research all the major visitor attractions were specified on a map showing most of the major museums identified by pink threads and art galleries identified by green.

The location of related metro stops were indicated by variety of pins.

The map to the left depicts a visual connection between the Textile museum and the National Mall, hosting the Smithsonian Museums.

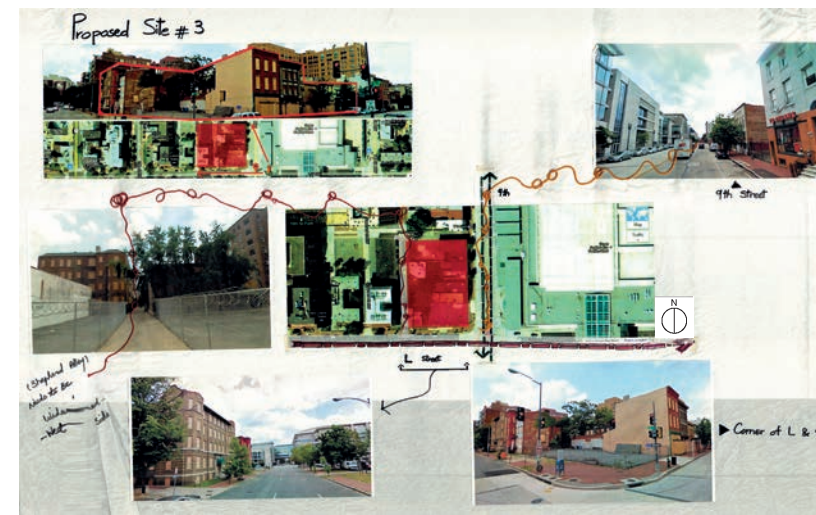
“The Smithsonian Institution was established with funds from James Smithson (1765-1829), a British scientist who left his estate to the United States to found at Washington, under the name of the Smithsonian Institution, ‘an establishment for the increase and diffusion of knowledge’. Smithson had traveled much during his life, but had never once set foot on American soil. Why, would he decide to found entirety of his sizable estate — which totaled half a million dollars, or 1/66 of the States’ entire federal budget at the time—to a country that was foreign to him. The Smithsonian Institution is now the world’s largest Museum complex, composed of a



First Proposed Site Analysis



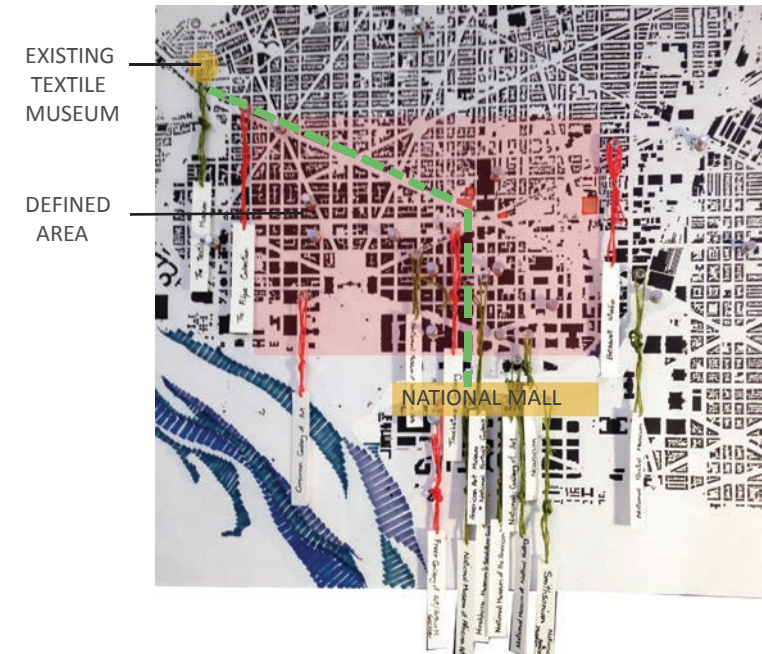
Second Proposed Site Analysis



Third Proposed Site Analysis



Location of Fourth Proposed Site and Its Orientation to the New Convention Center



Map Analysis Showing the Defined Area of Proposed Sites in relation to object building (Textile Museum) and object space (National Mall)



DC Analysis Map Showing the location of 4 Proposed Sites

group of national museums and research centers. The Institution includes 16 museums, four research centers, the National Zoo, the Smithsonian Institution Libraries, a research library system, the Smithsonian magazine, the Smithsonian Institution Press, a traveling exhibition Service, an office of education, and a number of other offices and activities.”²

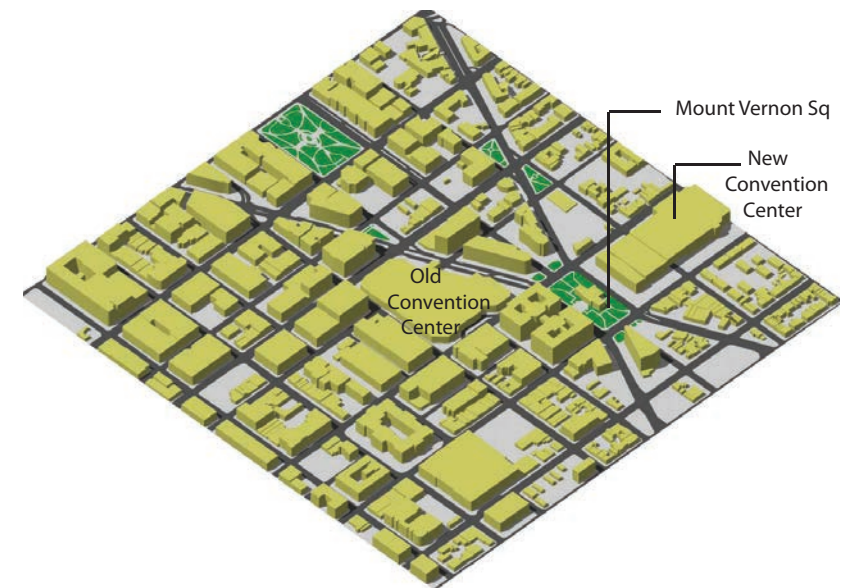
I intended to define the red area, showed on map, through the relationship between the building and space. The Textile Museum building was identified as a focal point and National Mall identified as a space hosting Smithsonian museums. Proximity of a proposed site for Carpet Museum within this area links the object building-the existing Textile Museum to an object space-the National Mall.

The defined area contains four potential sites that were investigated one by one in order to select the most convenient site for the Carpet Museum.

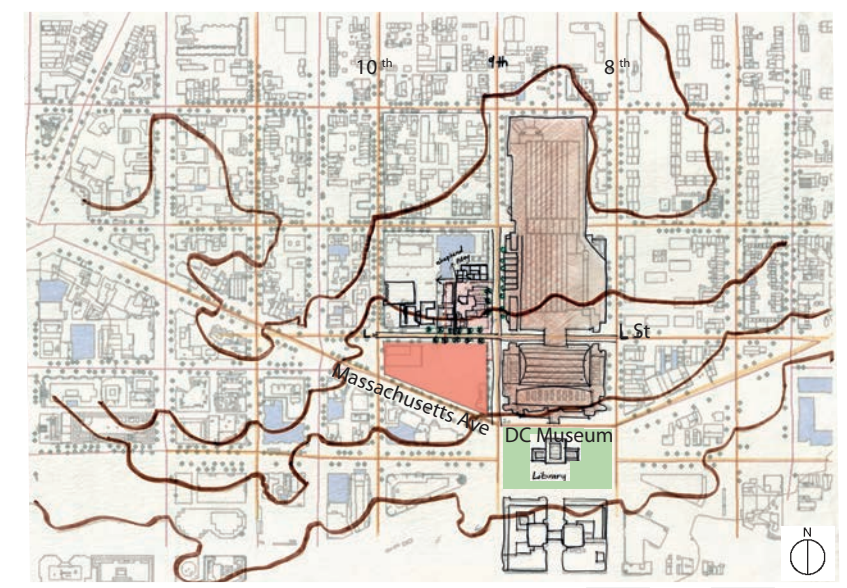
The site ultimately chosen out of four studied/alternative sites is located on the corner of 10th and Massachusetts Ave, along the west side of the new convention center - In 2003, a new 2.3 million sqft Washington Convention Center replaced the much smaller convention center due to the increased population and need for larger modern assembly spaces. On the site of the now demolished old Convention Center, is new housing and hotels under construction. (Page 6, Top Left Diagram)

The new convention center sits within the Mount Vernon District of Washington-DC.

² Smithsonian Libraries, www.sil.si.edu/ Exhibitions/Smithson-to-Smithsonian intro.html



3D Diagram Showing the Location of the Old and New Convention Centers in Downtown DC. (5, Page 76)



Fourth Proposed Site Analysis



Diagram Showing the Orientation of the site in Relation to the Old and New Convention Centers in Downtown DC. (6, Page 76)

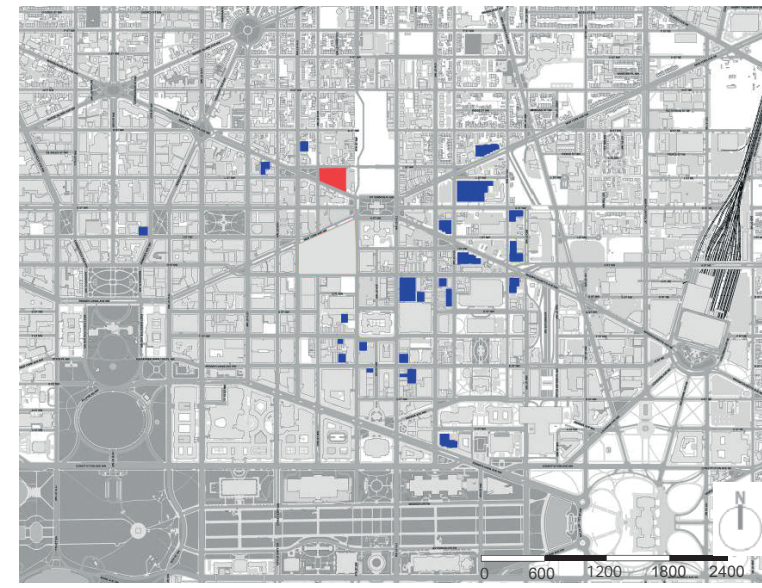


Diagram of New Residential Development and Their Relationship to the Site Based on DC Planning

CONTEXT

Mount Vernon Square is a large public green located at the intersection of New York and Massachusetts Avenues. This area is at the center of the city and can be seen as the nexus of existing historic development to the north, and the newer expansion to the west and east. Mount Vernon Square is like many other green spaces within the city—they are viewed as formalized open spaces, not informal places of recreation.

There is a great amount of urban potential for the proposed site. The site is bounded by L Street to the north, 9th Street to the east, 10th street to the west and Massachusetts Avenue NW to the south. Massachusetts Avenue is the primary street near the site, connecting downtown D.C. to suburban Maryland, creating a gateway to downtown D.C. . With the recent revitalization of downtown D.C, an increase in demand for urban housing has resulted in the construction of many new residential developments, bringing new residents to the heart of the District .(Bottom Left)

Extending the Legacy,The National Capital Planning Association’s view for the future of the district foresees 8th street, located half a block south east of the site, as “*the spine of a growing downtown arts and entertainment district.*”³

8th street terminates on Mount Vernon Square, the site of the DC Museum, a museum dedicated specifically to the history of the city.(Page 5,Bottom)

³ Extending the Legacy. National Capital Planning Association. 1996

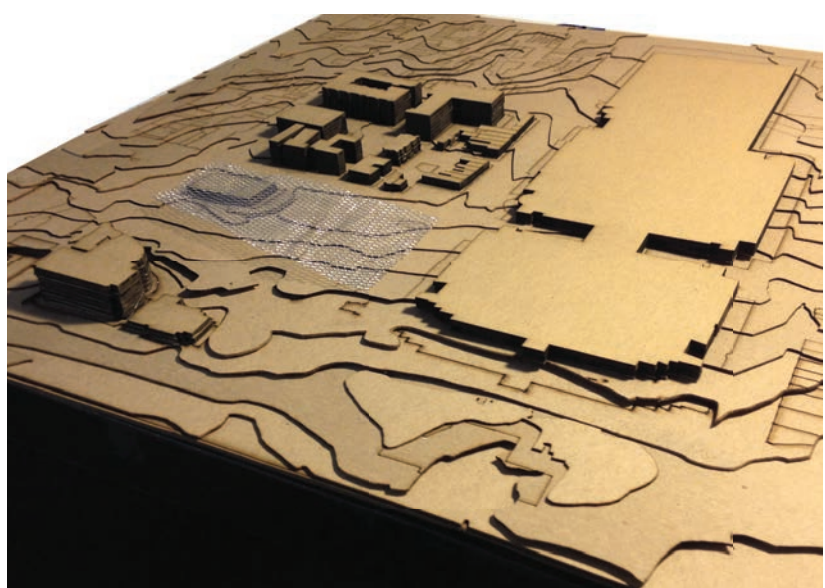
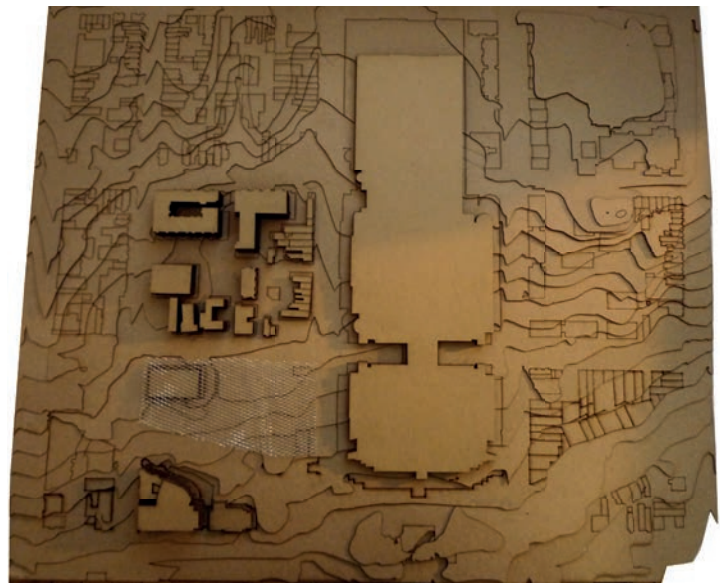
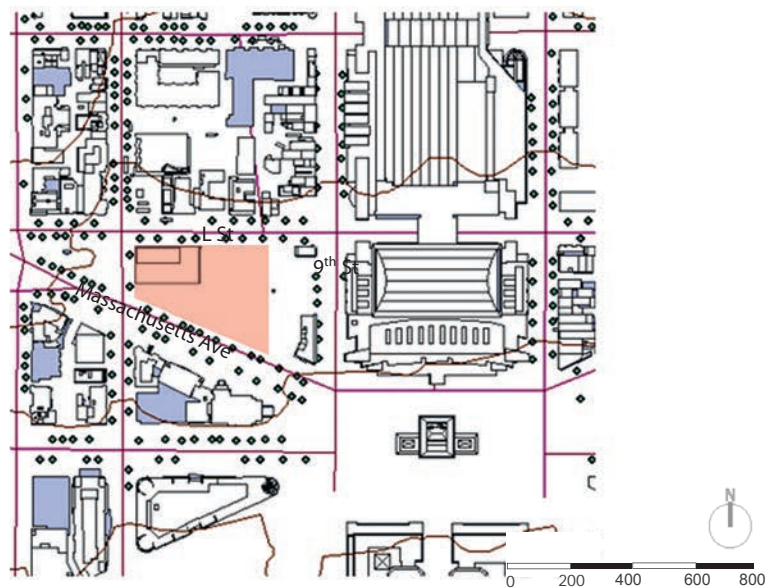


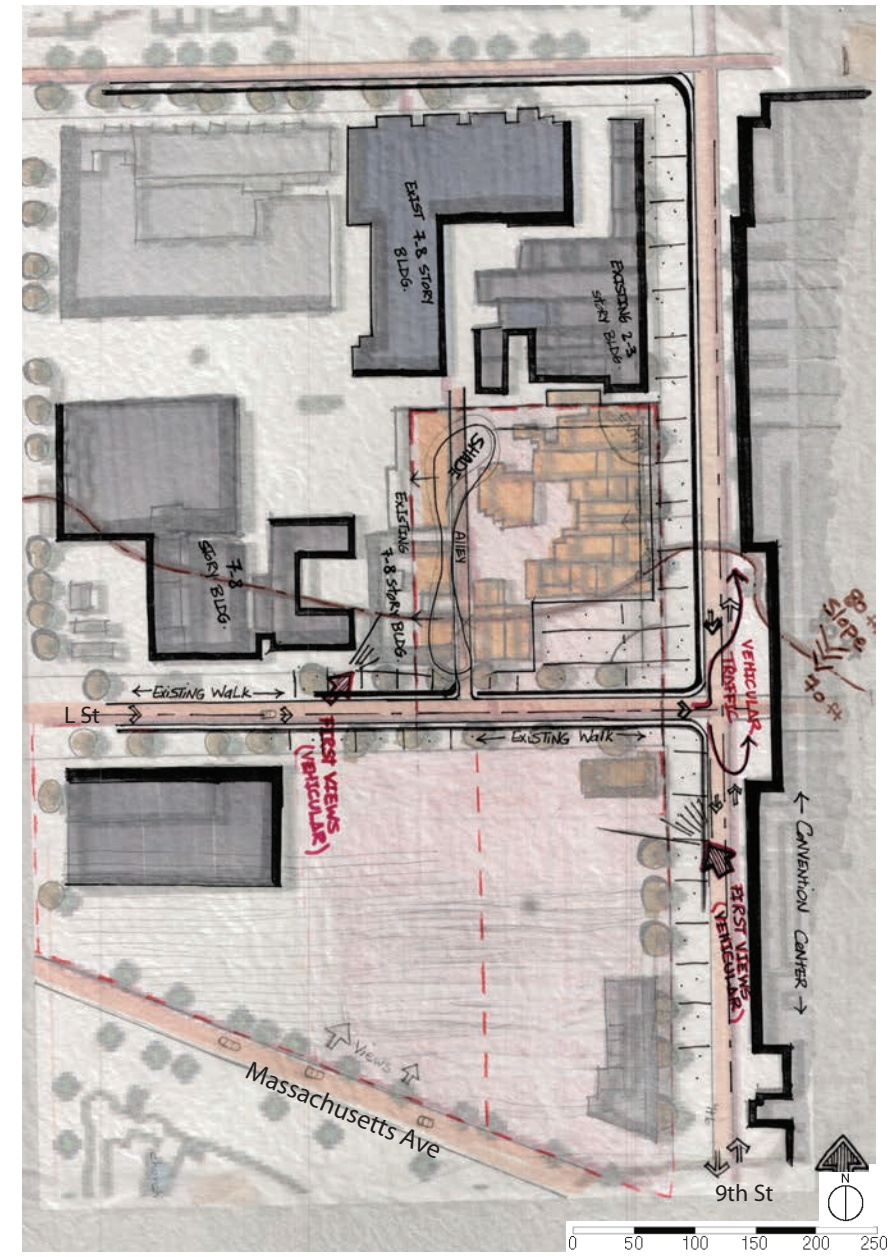
Diagram showing the Proximity of Closest Single Use Civic Buildings to the Site



Site Model Showing Land Topography and Buildings Heights



GIS Map showing the Neighborhood Blocks, Properties and Trees



Analysis of Building Heights, Street Access and Vehicular View to The Site (Abandoned site is identified by orange color)

This formal green space unifies and centers several urban neighborhoods; serving as a focus and landmark for residents.

In addition to the DC Museum there are some prominent single-use civic buildings ringing the site, including the National Portrait Gallery, The National Museum of Women in Arts and Touchstone Gallery. (Page 7, Top right)

The area surrounding the site has many mixed-use buildings with varying degrees of pedestrian quality. Several buildings to the south house office spaces with their heights range in size from 8 to 12 floors. The eastern edge of one of the office buildings meets the low walls of a small church on the green corner of Massachusetts Avenue and 9th street.

There are Some 3-to-4 story residential buildings aligned with the Convention Center along the 9th street with shop-oriented retail or restaurant on the ground floor.

There is an abandoned site with the size of almost a quarter of block in the intersection of L street and 9th. This site is contained with several existing 3-to-4 story high residential buildings which was also one of the proposed alternatives for the location of Carpet Museum in the beginning of research process.

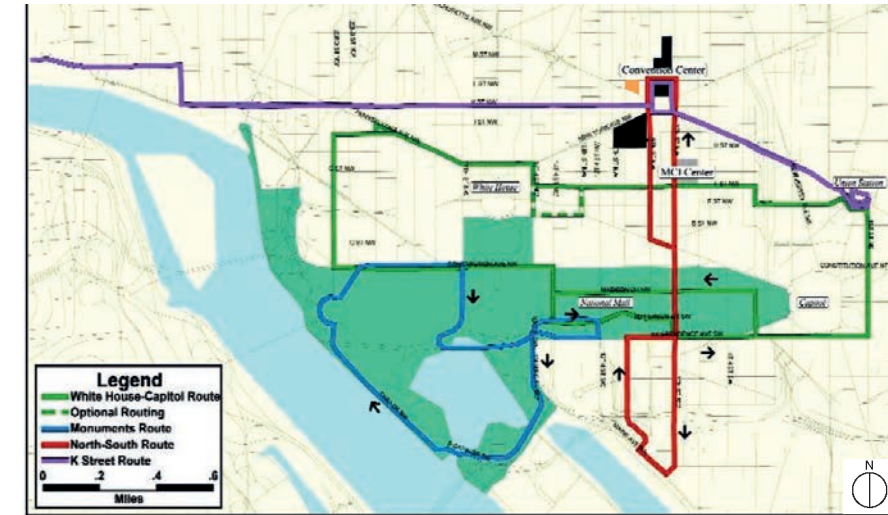
As you pass the intersection and head towards onto the L street the building heights increases from 4 stories to 9.

These 8- to- 9 stories high residential buildings form the northern frontage of L street across the Carpet Museum site.



Massachusetts Avenue

Site Panorama Photography, East View (Pink area is the location of the site)



North-South Route Runs along the Eastern Edge of the Site, (Site is identified by orange color)
 Map of Proposed Routes of the DC Circulator, District of Columbia Office of Planning (7, Page 76)

One of the main factors in choosing of the fourth proposed site, besides locating within the defined conjunction area between the Textile Museum and National Mall, was the close access to Metro. The site is within one block of the Red Metro line and is also close to the proposed routes of downtown Circulator transit system.

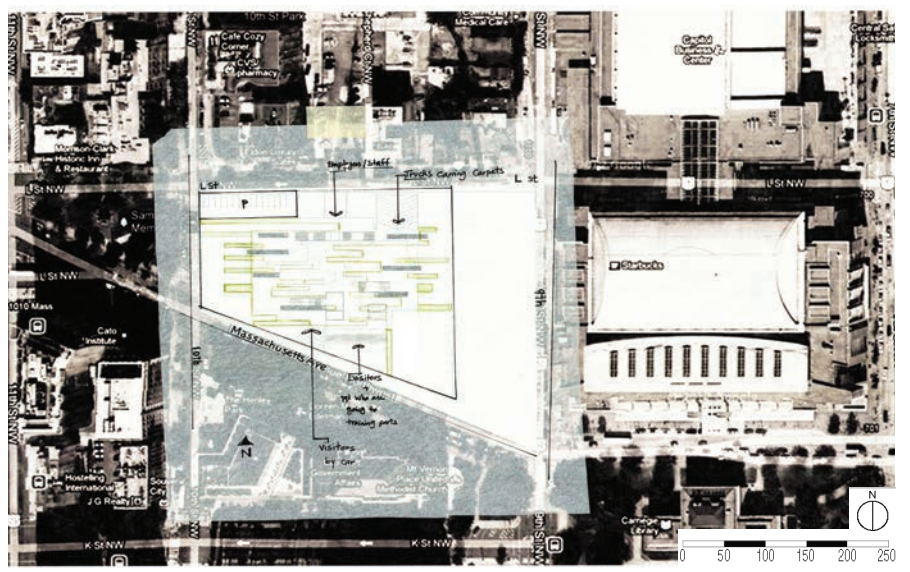
The North-South route serves the new Convention Center, the downtown area, the National Mall, L'Enfant Plaza, the Southwest Waterfront, and connects to the White House-Capitol route. This route passes to the east of the site along 9th street, providing access from the Mall and the waterfront to the site. With the K Street circulator route passing also to the east of the site, providing service from Union Station to the convention center and extending into Virginia, the site accessibility becomes even more significant for visitors coming from another states or commuting from Virginia.

Most of two-way vehicular traffic travels to the site via Massachusetts Avenue, which consequently would likely be a strong indicator for the main entrance to the museum if located here. Massachusetts Avenue N.W extends into Maryland, connecting visitors from out of state to the center of D.C.

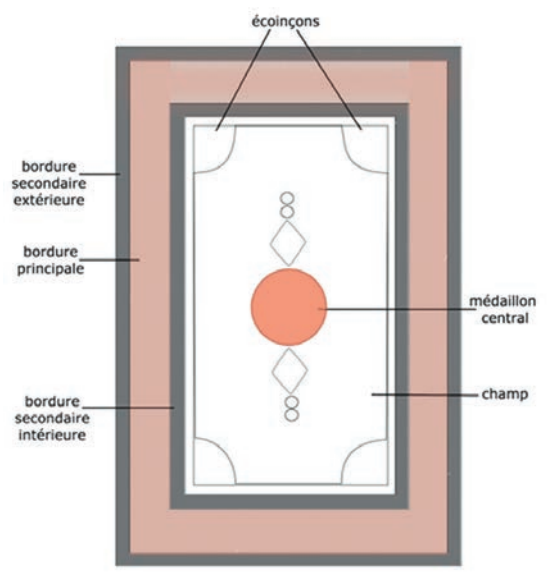
The two-way traffic exists on most of the streets surrounding the site except 10th street, which runs towards south. 9th street separates the convention center from the eastern side of trapezoidal block, which the carpet museum would occupy the 2/3 of its area and the other 1/3 part decided to remain unbuilt for another property. Since the eastern edge of



Site Panorama Photography, South View



Drawing Showing Proposed Location of Entrances for Visitors, Employees, Cars and Trucks



Diagram, Structure and Elements of Persian Carpets

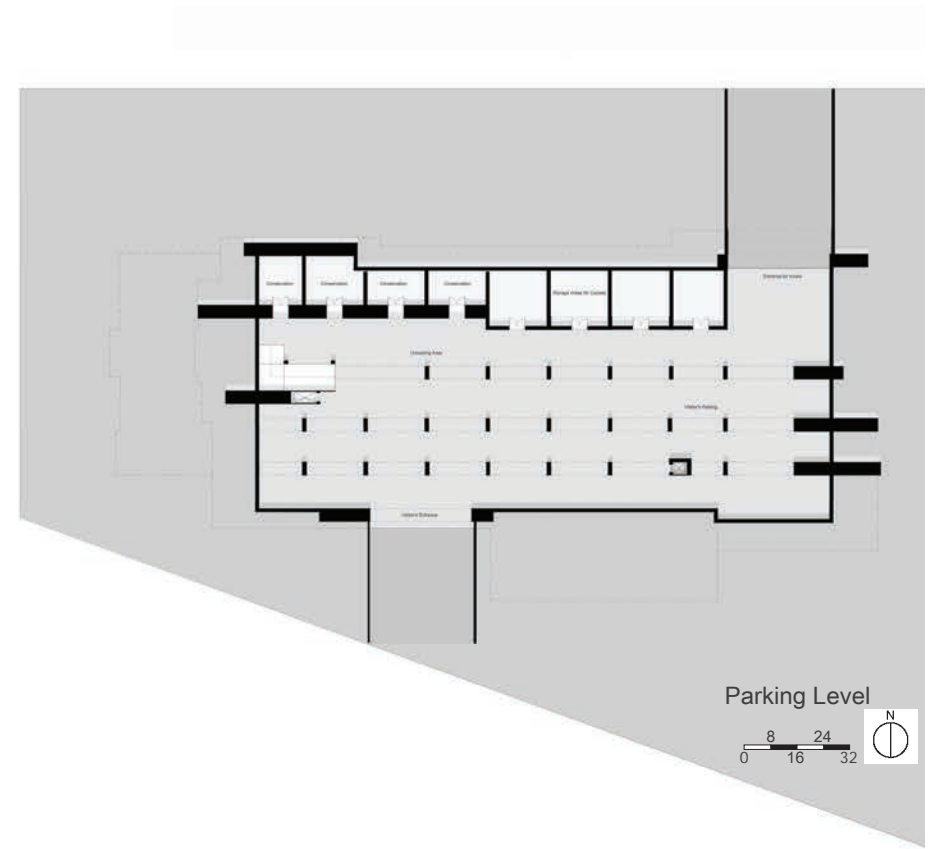
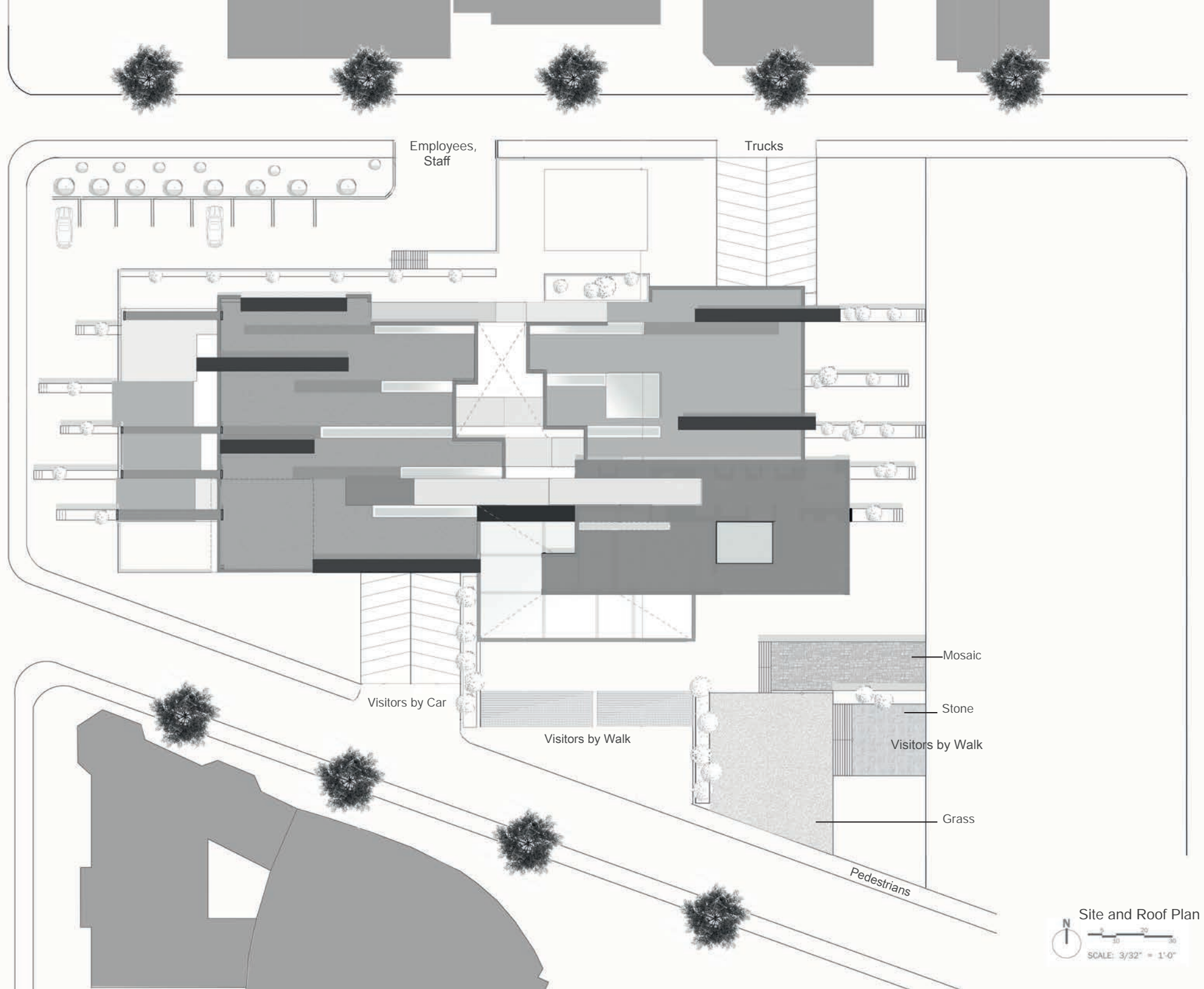
the site is confined with a property, in order to support public interaction from this side and on the other hand, mark the entrance to the museum conspicuously, several steps along with a pedestrian path were defined within the southern portion of the property.

SITE CIRCULATION

Circulation through the site was a very important part of design because of its significance in maintaining the security of the museum. Another important part was its leading role in directing the visitors correctly throughout their journey; from their initial draw of attention to enter the site, until finishing their visit from various galleries.

Most of the site except its west and north western boundaries considered to fall about 9ft lower than the street level. This consideration in design derived from the idea of enclosure and framing the site which can be interpreted as margins in the structure of the rug framing the background.

The advantage of considering the main floor lower than the sidewalk level is maintaining the security of the museum as it was always sought during the design process. The museum is not enclosed from all side and is open at the center to serve as a courtyard and gathering area in between the east and west museum wings. Sitting the site lower than the street level not only constraints museum access to the specific stairways and ramps, but also gives the opportunity of having openings from the central courtyard towards the site. It also provides a flexible situation in which we can define various entries to the building which are not fully equipped with security.



At Massachusetts Avenue there is the main entry into the building as well as access around the east side of museum.

Visitors coming to the museum by car, would take the ramp located at Massachusetts Avenue which leads down to the parking level.

Museum visitors and Metro riders who walk toward the site can use both stairways located along Massachusetts Avenue depending on the angle they approach to site. There is one on the right corner of the site with each landing being different, because each is created by varying material. (Mosaic, Stone, grass). (Page 13, Site Plan)

Another stairway lines up with the center of the museum and is parallel to the vehicular ramp on left, connecting the street level to the museum entry level.

Employees and staff have a separate entrance on the opposite side on L-street as well as a designated outdoor parking space particularly for them next to the administration offices.

Trucks carrying carpets also enter the site from L street, using a different ramp which links the street level to the parking level beneath the first floor. There is an area specifically for trucks to park directly in front of the storage rooms in order to load or unload the carpets.

Case Study I : Carpet Museum of Iran,Tehran ,Iran,Summer 2012



Interior

Way of Displaying Carpets



Tools & Type of Yarns

- The museum founded in 1978 to display a limited number of Persian carpets and kilims, to develop the art of carpet - weaving in the country and to provide a source to satisfy the need for research on historical background, as well as evolution of this art.⁴
- The exterior facade resembles a carpet-weaving loom.
- Way of displaying carpets: Carpets are either hung from plastic frames attached to a wooden panel,or laid down on an elevated rectangle frame. The rectangle frame is embedded 2 ft lower down the exhibition floor and is surrounded by couple of steps and other 4 vertical wooden panels,displaying carpets.
- The museum consists of two exhibition galleries,one located on the main floor and the other on the second floor. The ground floor galleries are considered for the permanent exhibitions and the upper level galleries host the temporary collection of carpets, rugs and kilims.

⁴ About Museum, <http://www.carpetmuseum.ir/about.htm> (Page 74)

02 | BUILDING PROGRAM

The Carpet Museum is intended to become a shelter for preservation of a type of artwork which is ephemeral, to protect a forgotten branch of art that always had no choice except presenting itself within some mixed collections alongside the other decorative/technical arts without having a well-deserved position for itself.

The existing DC Textile Museum would never suffice the need for display and introduction of the woven objects and particularly carpets. The building hasn't been exclusively designed to conform with this function and initially was a house (Top Left Pictures). All the exhibition areas usually host a collection confined to a specific time period throughout the history from a determinate location, for instance: Textiles of the Ottoman Empire(1300-1923) The need for designing a museum for displaying carpets became even more tangible for me by reading Gottfried Semper's introduction on Textiles in his book titled: "Style": "I believe to be one of the first to have indicated the value of textile museums arranged according to technical and historical principles and to have noted their usefulness for the study of art and for this industry in particular."⁵ He also mentions that the remnants of textile products, which are still to be found diffuse almost everywhere, have

only very recently started to attract attention.

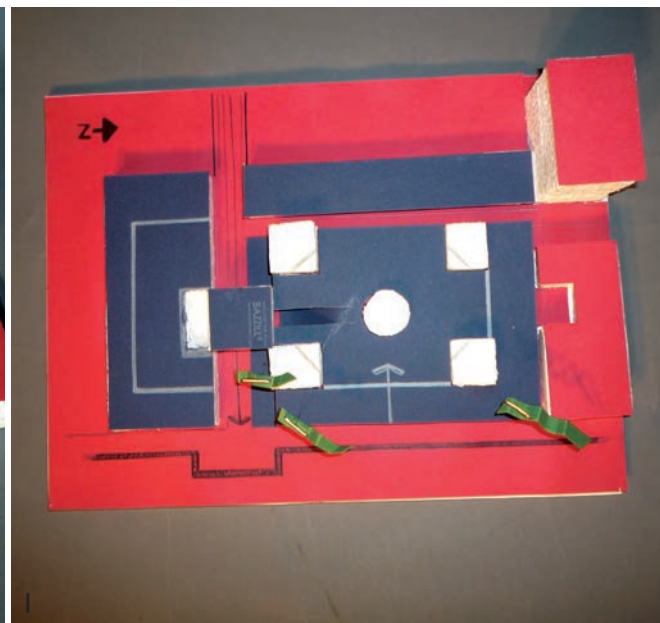
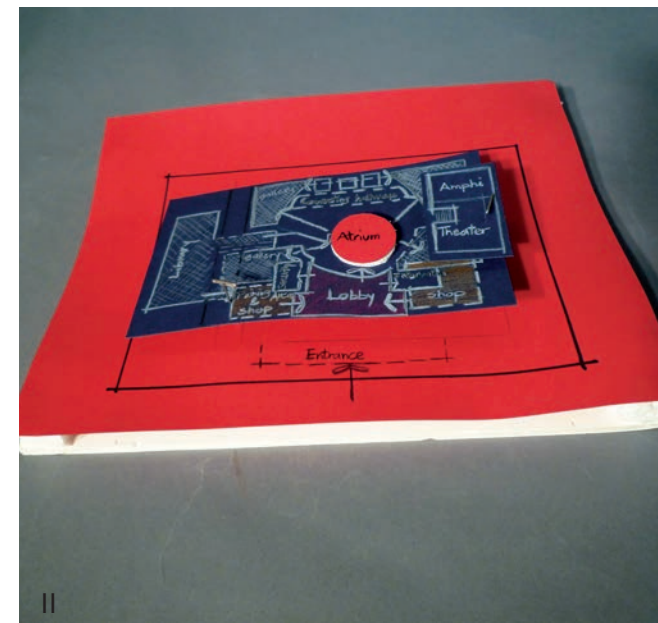
Although part of these materials are scattered among other art objects but much others are still buried in the inventories at churches and monasteries. (Page 74)

The proposed Carpet Museum not only aims to respond to aforementioned needs that the existing textile museum isn't capable of, but also traces a path for collecting the antique carpets along with their technical and historical information from all over the world. Once curators provide an almost complete series arranged by time period and technique, They would be able to help with development of this extremely broad branch of art which preceded the architecture.

As the research further developed, the program expanded into several different parts. First part includes four separate exhibition areas for displaying carpets and rugs. Each exhibition area hosts a collection from one part of the world carrying their specific weaving style and design development throughout the history. The defined space for each exhibition then fragmented into several galleries which are embedded within the visitor paths. It was necessary to understand the scale and size of carpets in order to accommodate them properly within each gallery.

The second part of the project is the central courtyard, a place for socializing and relaxing before or after exploring the exhibitions. The courtyard, one of the first design decisions of the thesis, represents the medallion located at the center of the carpet field emphasizing the symmetry by indicating

⁵ Semper, Gottfried, Style in the Technical and Tectonic Arts; or Practical Aesthetics (Texts and Documents), Page 167, Chapter Four : Textiles . (Page 74)

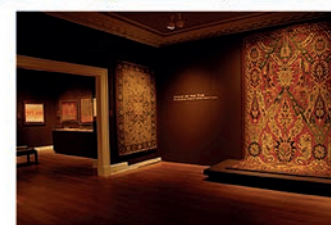


Picture of conceptual Models I and II



Case Study II : Textile Museum, Washington DC, Fall 2012

- The Textile Museum building hasn't been exclusively designed to conform with its function and initially was a house.
- Way of displaying carpets: Carpets are usually hung on colored panels attached to wall.
- Textile/gift shop is located on the main floor.
- Library consists of a small reading area and several vertical looms showing different techniques of weaving .



Interior Exhibition



Shop

Library & Training Space



same distance to the decorative borders around it. In an architectural language, the courtyard became an atrium open to sky, where the other activities would be arranged around or on two opposite sides of it. (Opposite, Top Left, Idea Model II)

Third part is the training areas which tends to increase the community involvement in teaching and learning various textile techniques. The other intention was attracting the museum visitors' attention to see the carpets being woven by masters to get a better understanding of the amount of time and hard work needed for creation of a textile art work.

Programmatically a museum serves various other functions as well. These functions in the Carpet Museum consist of a cafe for inexpensive food or drink and a restaurant for more expensive dining options. Textile and gift shops are located near these gathering spaces, serving a source for additional income.

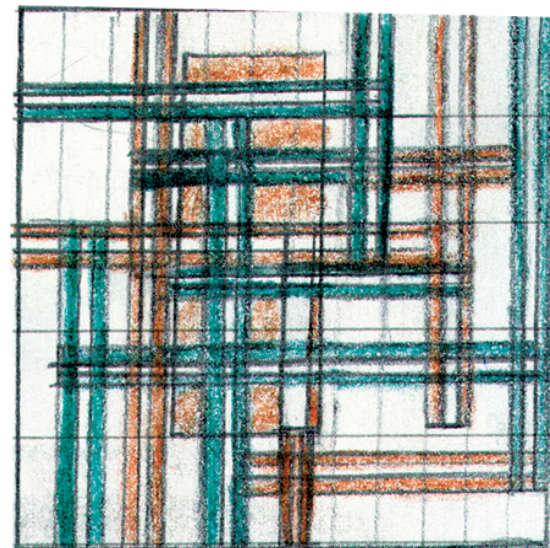
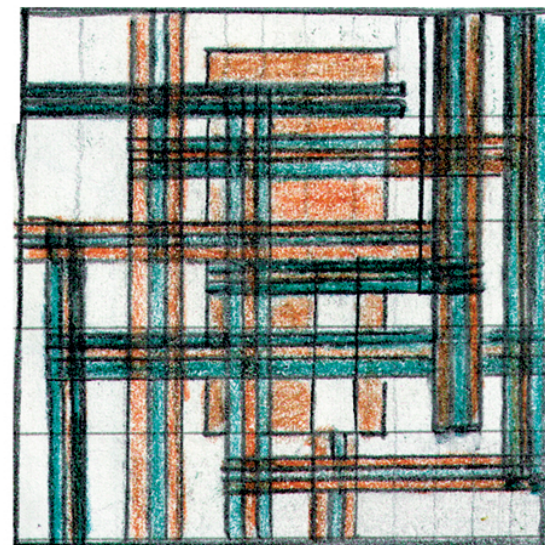
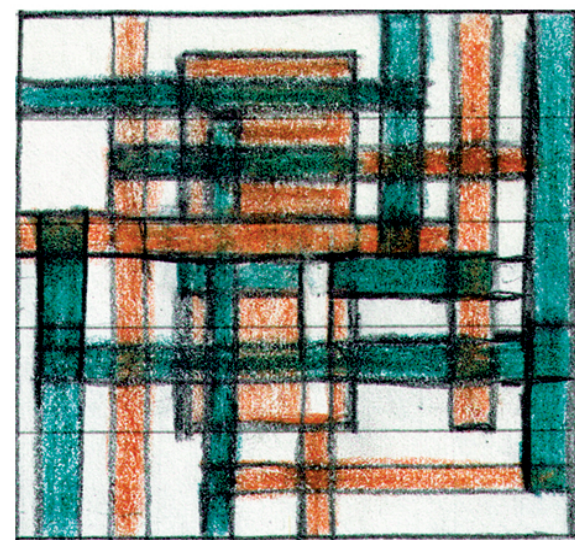
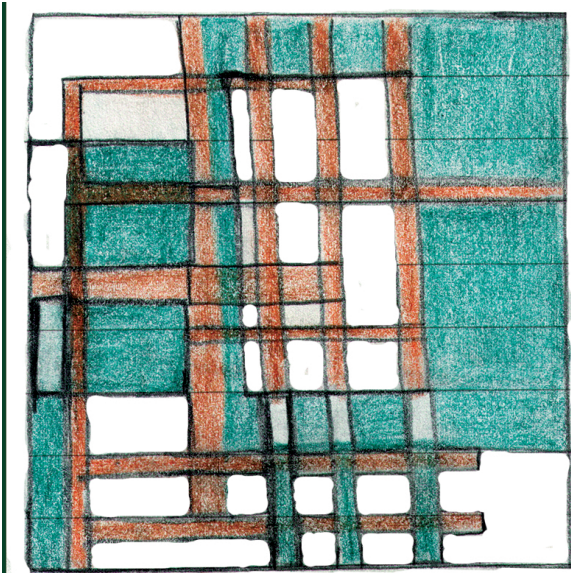
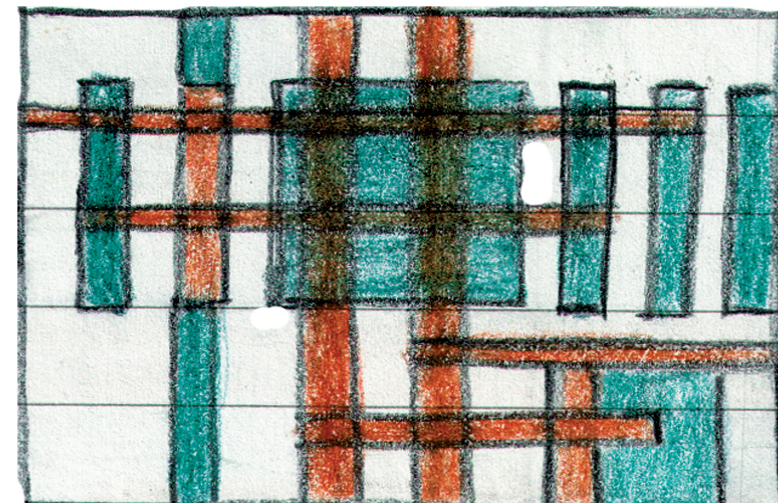
The administration area as well as conservation and carpet repair studios are located near major entrances of the building to provide quick access for employees to various parts of the museum.

Additionally, the library is a place for academia, curators and visitors to study and research various weaving techniques and history of the textile art. The amphitheater provides an opportunity for seminars to be held within the museum and also will be a place for projecting the short documentary movies .

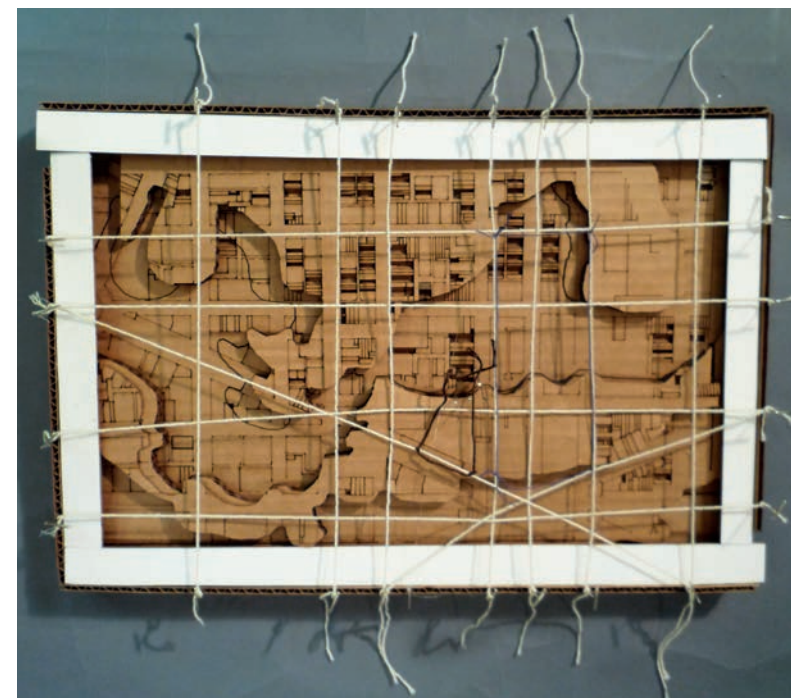
My intention for the thesis was to explore and reveal a connection between weaving and architecture. Therefore in the design of the carpet museum each building element such as bearing wall, window, stair, ceiling or sitting area became an architectural manifestation of a woven craft .

Proximity of some architectural spaces such as lounges, corridors and expansive stairs within the carpet museum helped me to make decision regarding the design intentions that I wanted to explore. These subordinate spaces inspired me to view the architecture through movement. Long stairs, cinematic in nature, would take the visitors from grand spaces (Lobby, Exhibition area) to small scale spaces (Corridors, Hallways).

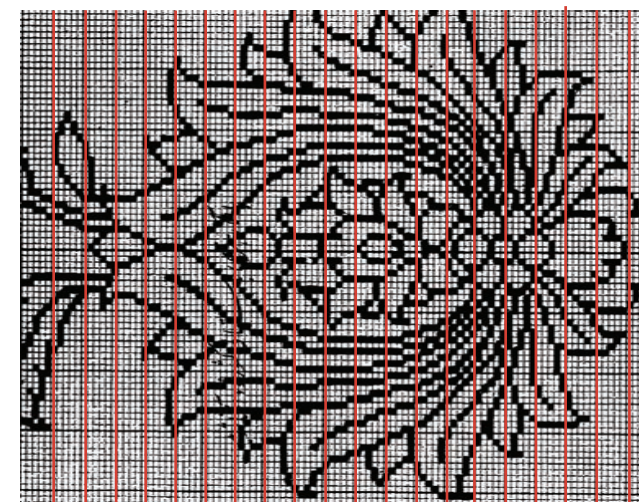
The aforementioned concept of movement also came from the idea of going back and forth like a cross stitching in textiles as well as the technique which the weavers execute on the looms.



Sketches for Concept of City as a Rug



City as a Rug Conceptual Model



Curvilinear Paisley Pattern drawn to Scale on a Crossed Paper

03 | DESIGN APPROACH

CITY AS A RUG

“The use of grid system implies the will to systematize, to clarify
 The will to penetrate to the essentials, to concentrate
 The will to rationalize the creative and technical production processes
 The will to integrate elements of color, form and material
 The will to achieve architectural dominion over surface and space.”

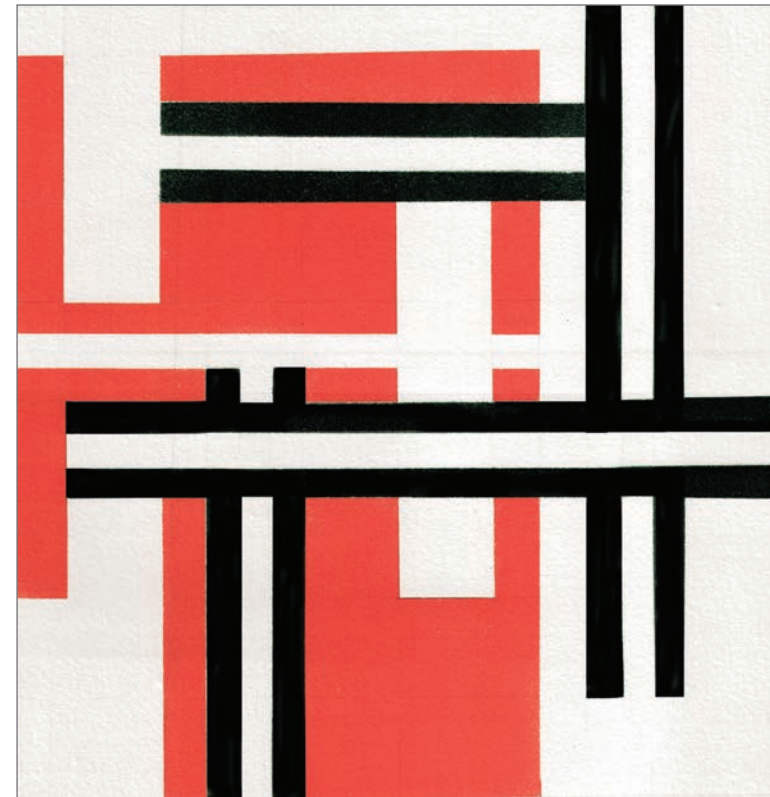
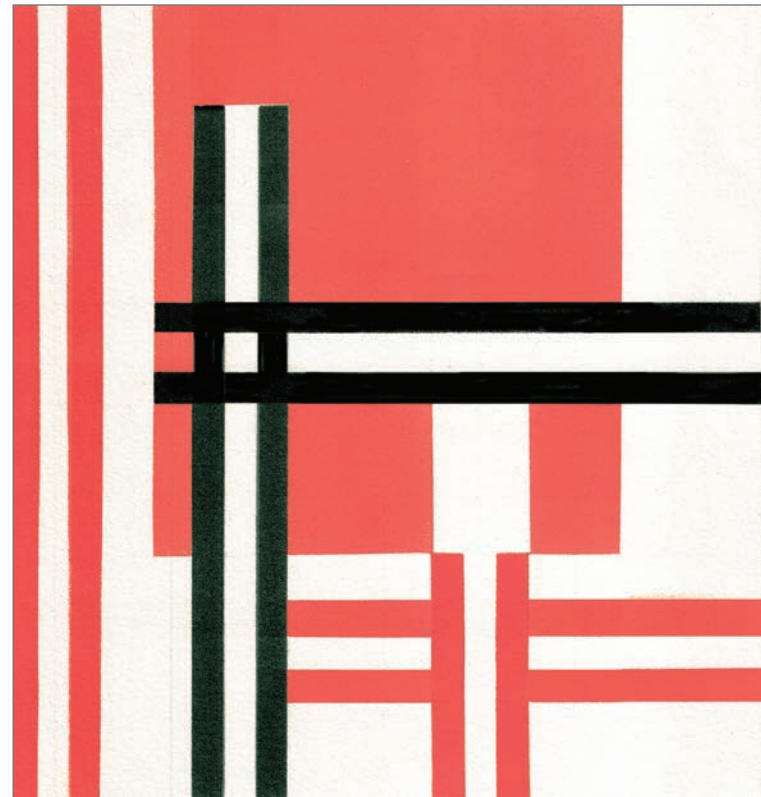
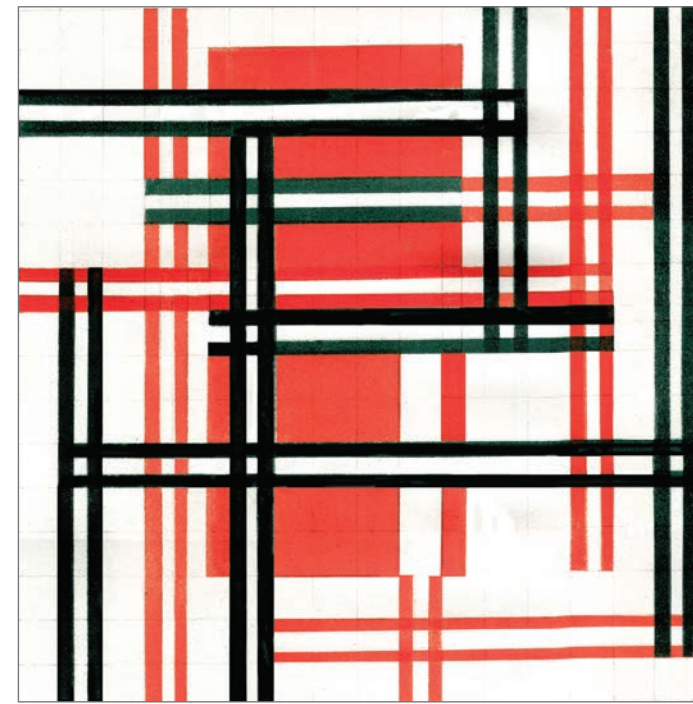
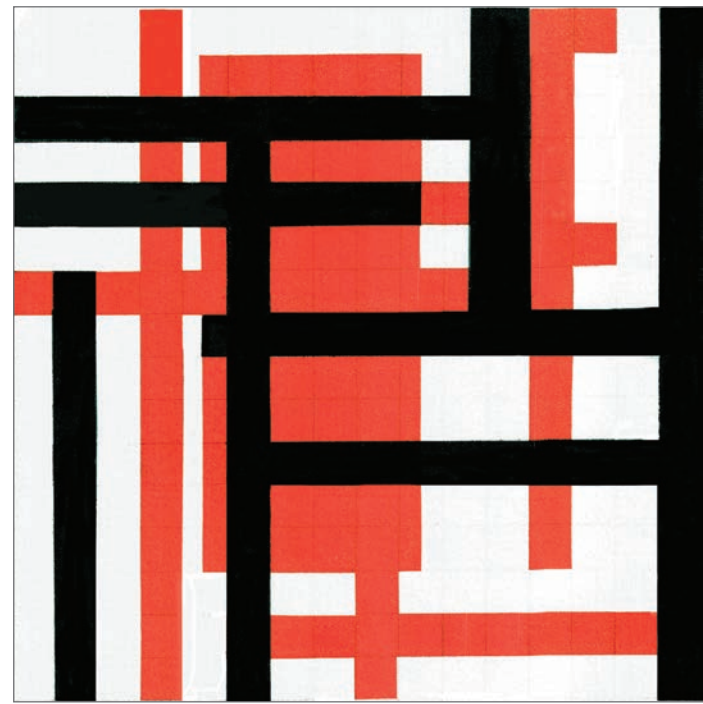
-Joseph Muller, Graphic Designer/Architect, 1981 (Page 74)

In architecture and ceramics-in fact, in all the arts netting is used for surface decoration and is often applied structurally and symbolically as an ornament. The weavers usually take advantage of the netting system both for their initial brain storming and also setting up the essential part of carpet, “the warp”, on the loom.

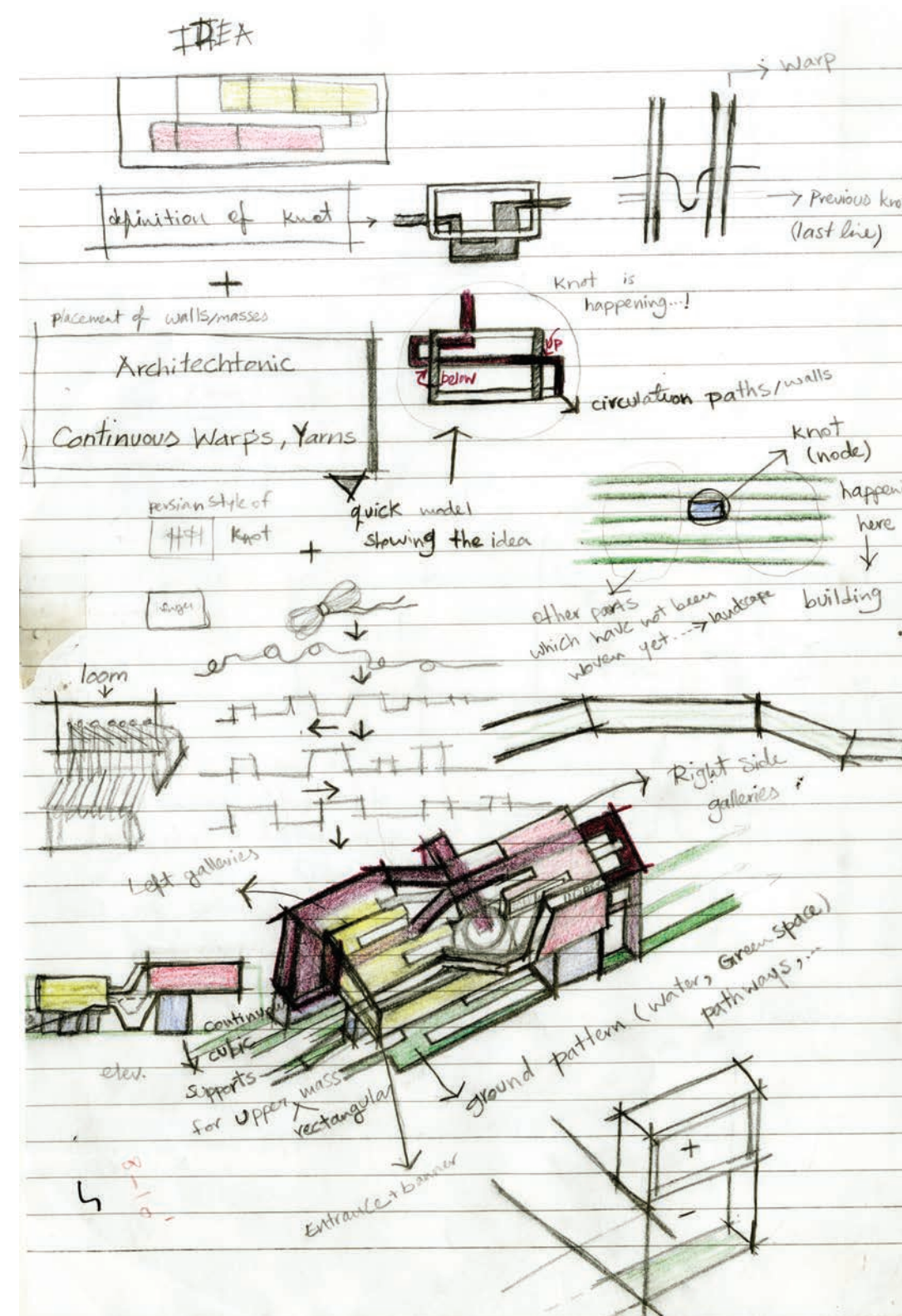
First, a weaver draws the patterns and her desired decorative motifs on a piece of gridded paper.

Vertical lines passing through the objects represent the location of the warp fibers and horizontal lines represent the colored woofs, which should pass through the verticals. As a result, each small square on the paper would become a knot on a loom. In other words, the weft fibers construct the floral design while in the warp is barely visible as a structural support.

My initial inspiration came from this technique of weaving. It informed the way I studied, analyzed, and chose the site as well as the final design of the building.



My Monoprints (Printmaking) ; City as a Rug I,II,III and IIII ; How Streets Represent Fabrics



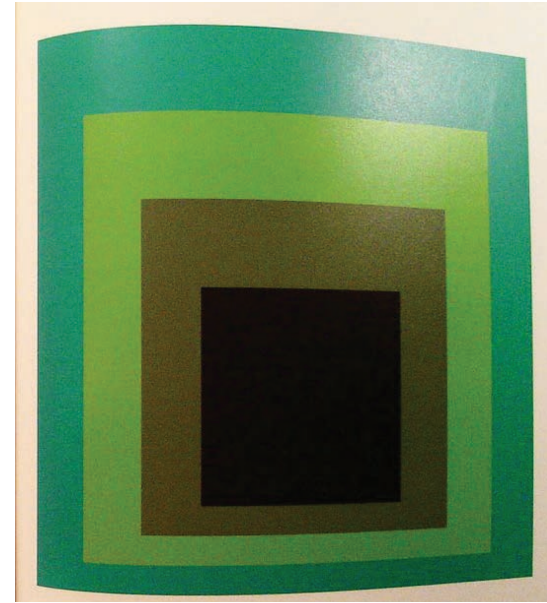
We can Imagine the gridded city of Washington DC as a carpet which consists of both horizontal and vertical streets. Each block existing on a grid is a manifestation of a pattern in a carpet and in a very detailed scale, a building can be read as a knot.(Top Picture,Page 20)

The initial concept for the thesis was designing a pattern, creating a knot,woven within a continuous fabric. In order to visualize the aforementioned concept,I started to sketch a sequence of drawings which are the systematic presentation of lines, representing streets. In the design of each drawing, I intended to arrange the continuous lines in a harmonious way so that the overall composition of design becomes aesthetically pleasing. Use of two different colors in drawings, resembles two types of fibers forming the structure of rug : Weft and Warp.(Sketches and Prints on Page 19 and 21)

Left : Brainstorming Sketch,How to Apply Weaving Concepts to Architecture



My Little Rug Woven on a Four Shaft Table Loom



Joseph Albers Painting, Color Study, Homage to Square Series (8, Page 76)



Table Loom and Weaving Tools



Weaving Workshop at the Dessau Bauhaus. 1927 (9, Page 76)



Anni and Joseph Albers
Black Mountain College, NC, 1949 -Photo by Ted Dreier^(10, Page 76)

JOSEPH AND ANNI ALBERS

During my research in the relationship between weaving and architecture, I discovered the work of Joseph and Anni Albers. The Albers, who studied at the Bauhaus, worked in both weaving and painting.

Joseph Albers was an architect, printmaker and abstract painter who explored the power of color through his "Homage to the Square" series. "His wife Annie Albers was a prolific artist who came to the United States from the Bauhaus Weaving Workshop after the Bauhaus closed in 1933. She eventually became one of the most famous and influential weavers in the US."⁶

Although Joseph and Annie had generated their paintings specifically for their field of study, by comparing their works with each other, one can recognize the relation and similarity of their pattern designs. This quest led me to determine how an architect and a weaver can create similar geometrical paintings and consider them to become an architectural ornament or a pattern woven by fabrics. (Bottom left picture, Joseph Albers' pattern, Incised gold leaf on white marble)

My first experience of weaving started by replicating one of Joseph Albers' famous square designs on a 4 shaft table loom. (Opposite Page, Image 8) Weaving a small rug with making conceptual models for the carpet museum simultaneously helped me to come up with new ideas for applying the weaving techniques and carpet structure to architectural forms.



Joseph Albers, Two Structural Constellations, 1959. Incised Gold Leaf on White Vermont marble, 488 x 1,859 cm. New York: Corning Glass Building, 717 Fifth Avenue. ^(11, Page 76)

⁶ Suzanne Aron, Jamie, Woven Images: From the Bauhaus Weaving Workshop shop to the Knoll Textile Division. ^(Page 74)

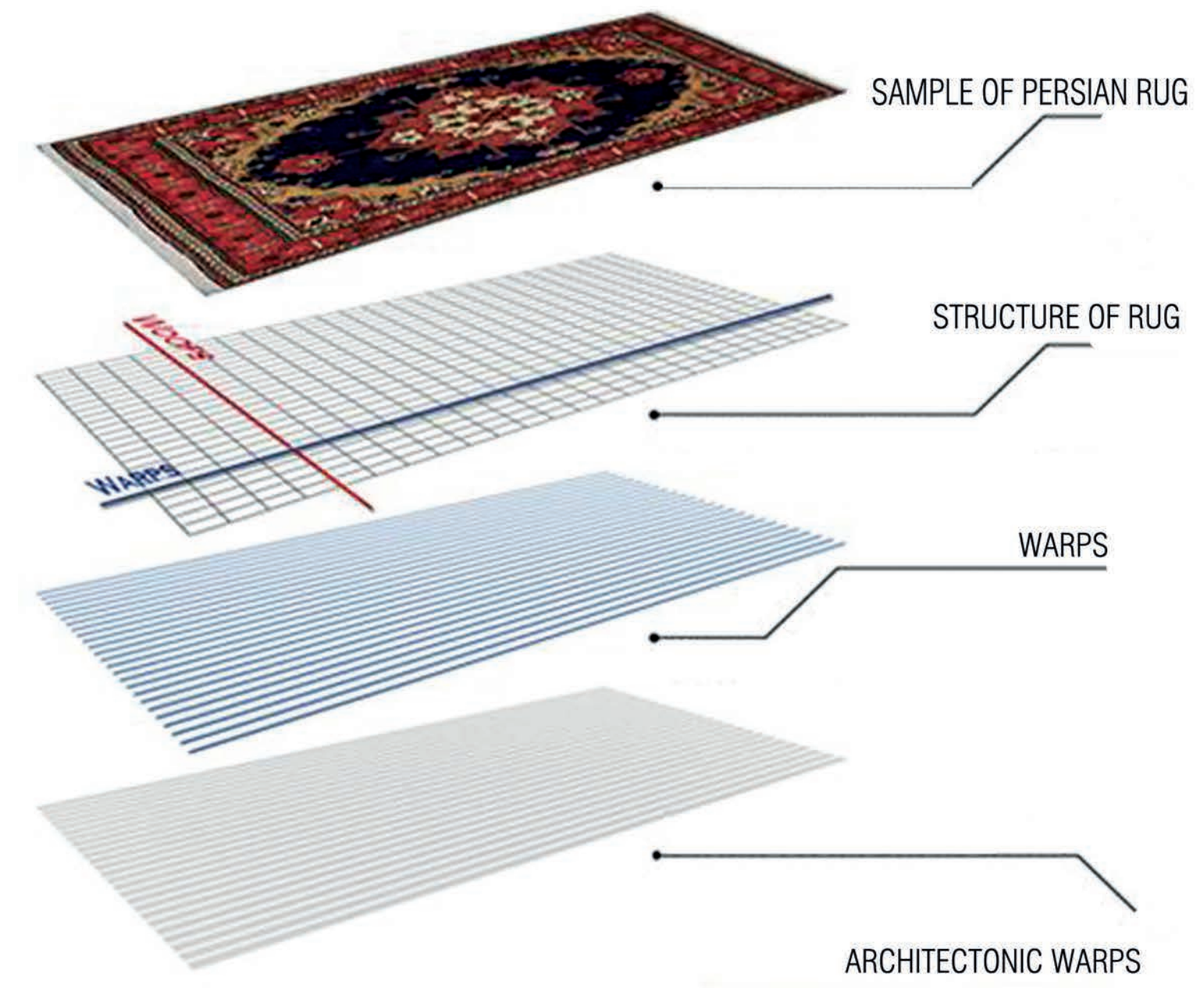
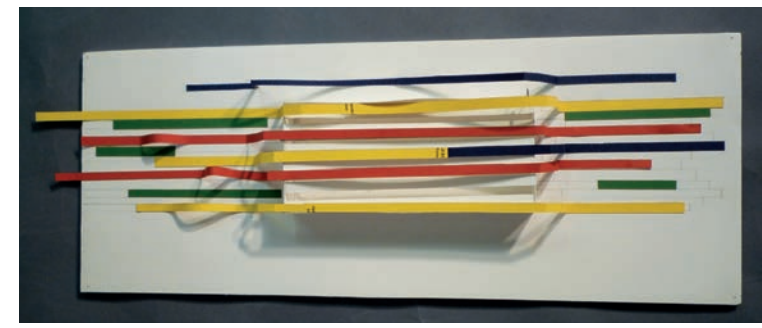
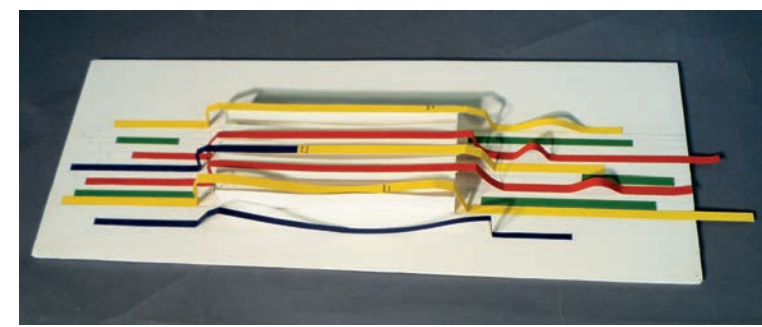
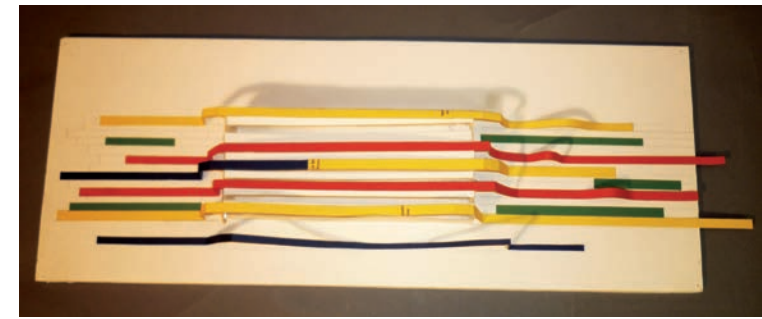


Diagram of Translating the Warps to Architectonic Continuous Lines



Conceptual Model, Continuous Architectonic Warps

ARCHITECTONIC WARPS

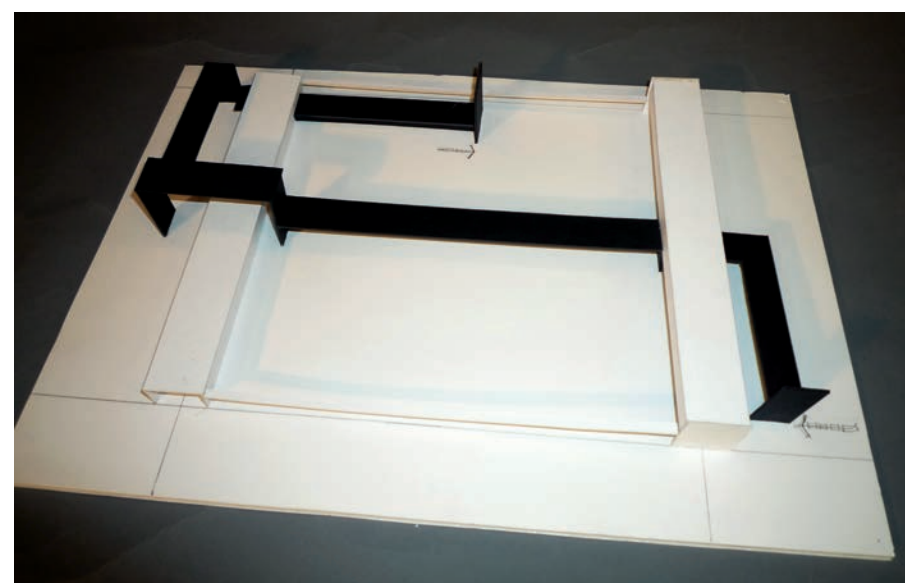
After considering the city as a large carpet, the first inspiration derived from the underlying structure of carpets; The continuous fabrics called the warp is barely visible as a structural support underneath the weft fibers. The warp, which acts as a structural basis of the carpet, is set up on the loom first. These lines/fibers in a gridded city can be imagined as the vertical or horizontal streets.

The same idea regarding the continuation, parallelism and functionality of the fibers followed in design consideration of the conceptual model. (Left Images)

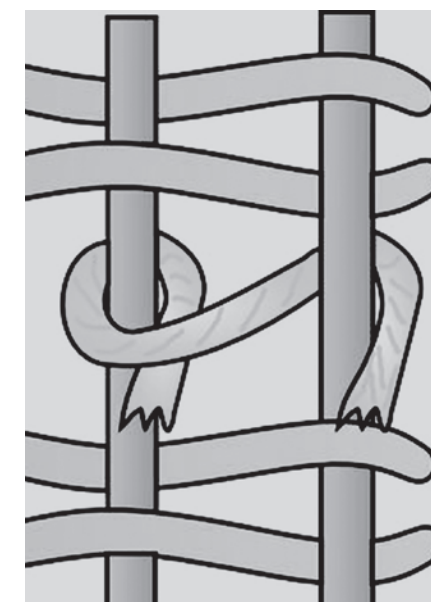
In terms of function, the continuous lines represent the structural grids where in the building would be assigned to the desired structural system. On the landscape surrounding the building they become a continuation of finished structure or a place for visitors to sit, relax and interact with the exterior natural environment. Museum visitors smell, touch and observe the vegetation inside of linear flower boxes in between the siting areas either in the courtyard or around the museum.



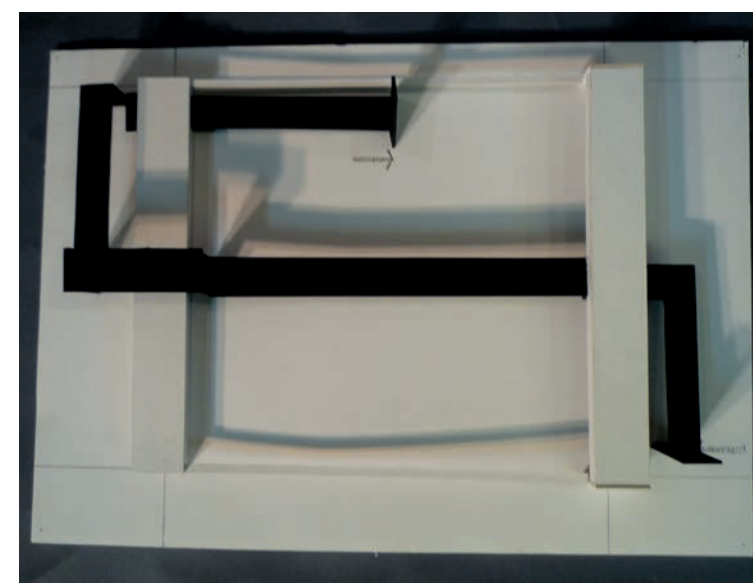
Persian Knot Being Tied on a Vertical Loom (12,Page 76)



Conceptual Diagram Representing a Tied Asymmetrical Knot



How to Make a Persian Knot (Verticals: Warp, Horizontal : Weft)(13, Page 76)



Conceptual Diagram Representing a Tied Asymmetrical Knot

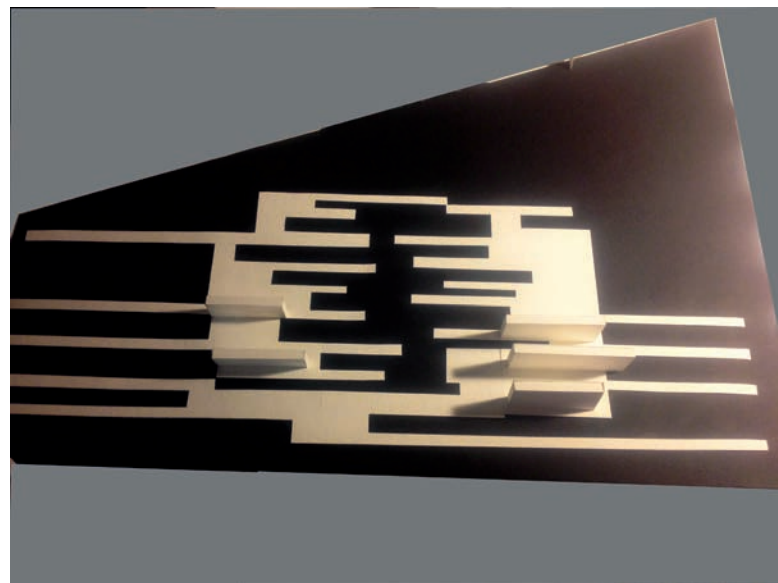
ARCHITECTONIC KNOT

"The colors' silent whisper
The wool's palpitation of blood through the knot's vessels
And the fingers' sweet souls which are trampled ..."

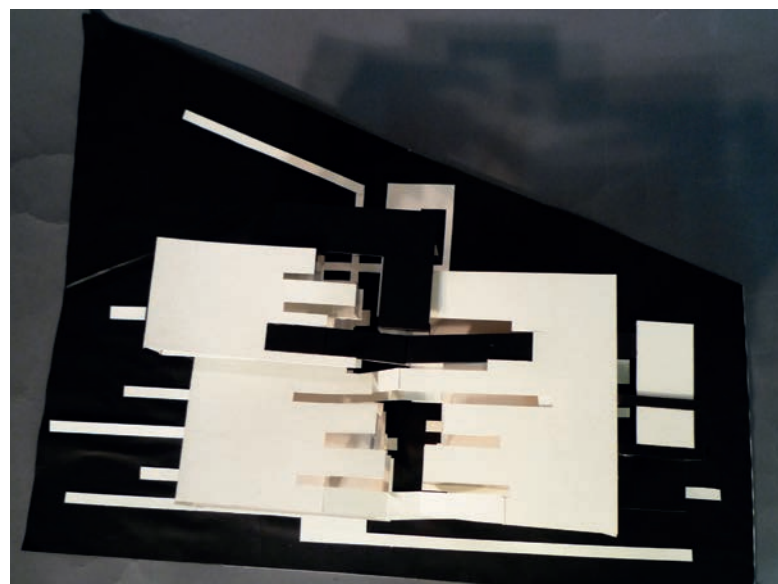
- To the Scarlet Blossom of a Dress,Ahmad Shamlu

A very ancient application of the knot,used by tribes for fishing and hunting led to the invention of the network. The mesh of the net type of knot has the advantage that a damaged mesh does not affect the whole system and is easily mended.

There are also numerous types of knots known by rope makers and sailors, but the weaver's knot is the strongest and most useful of all,perhaps also the oldest or at least the first that figured in the technical arts. The second conceptual model was a study of making an architectural diagram of the Persian knot called "Asymmetrical Tie". The intention of this diagram was to respond to the initial concept of perceiving a city as a carpet and a building as a knot. The weft fiber shown on the top left which passes through each two vertical fabrics applies to the building accordingly and presents itself by way of becoming an additional architectural element- (black areas on the diagram showed to the left)- added to the building in regard to the museum program and design approach.

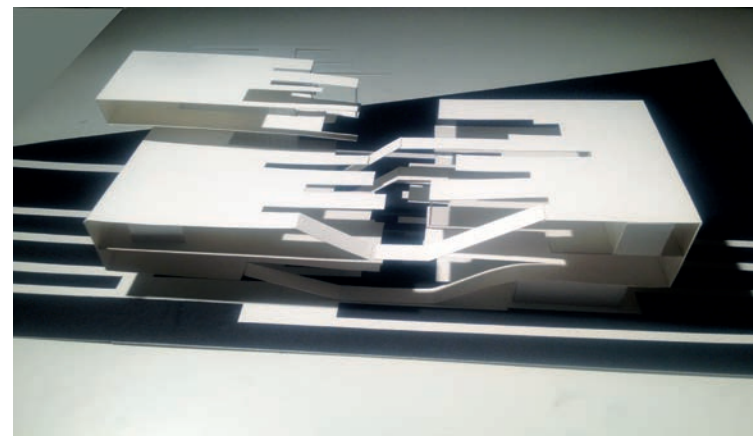


1

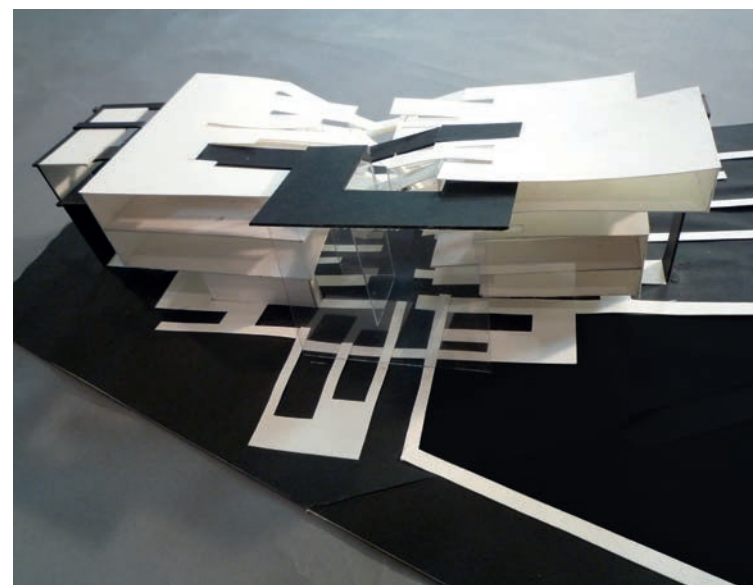


3

Process of Model Making, How Fabrics and Knot Creates a Building

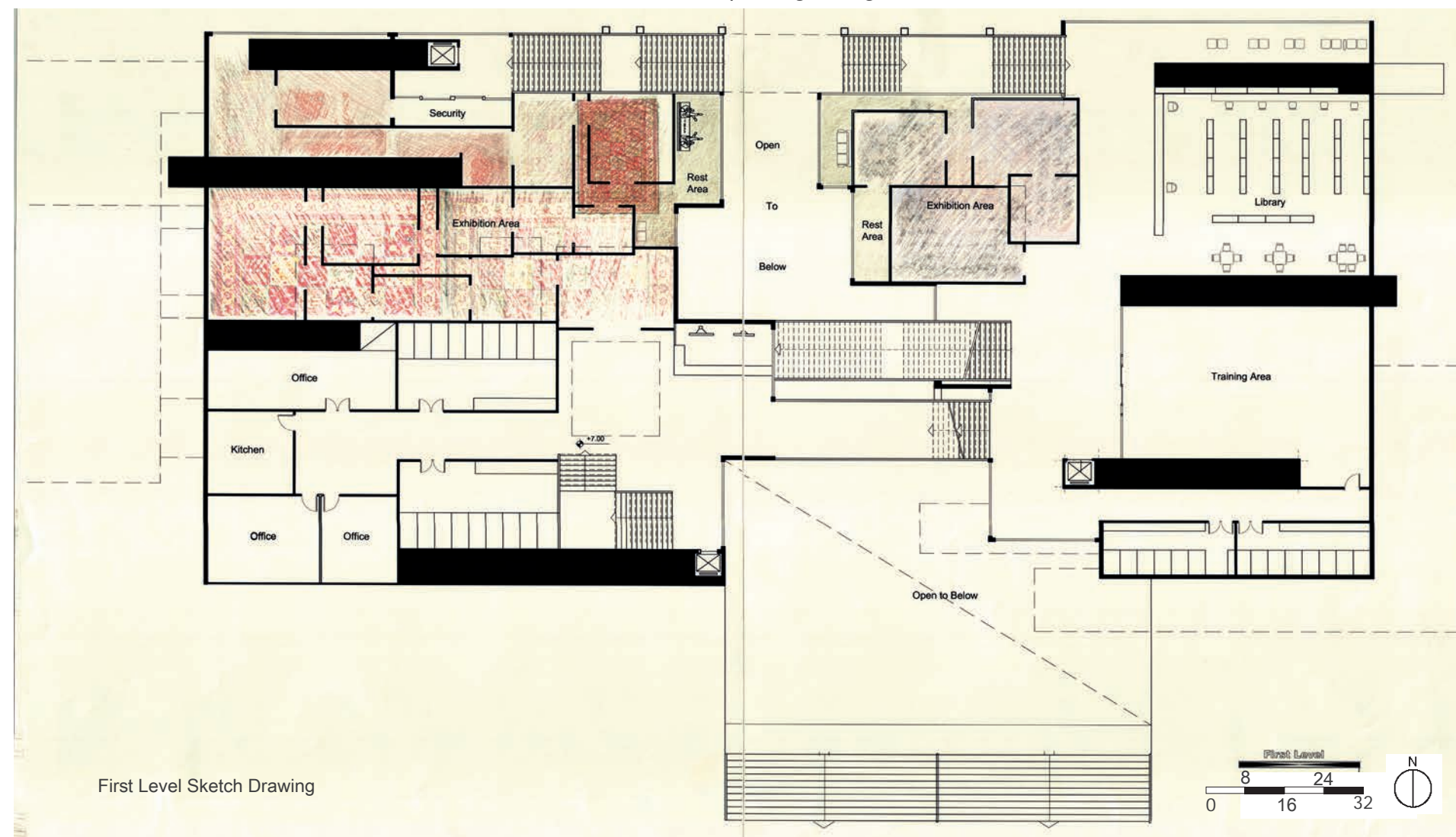


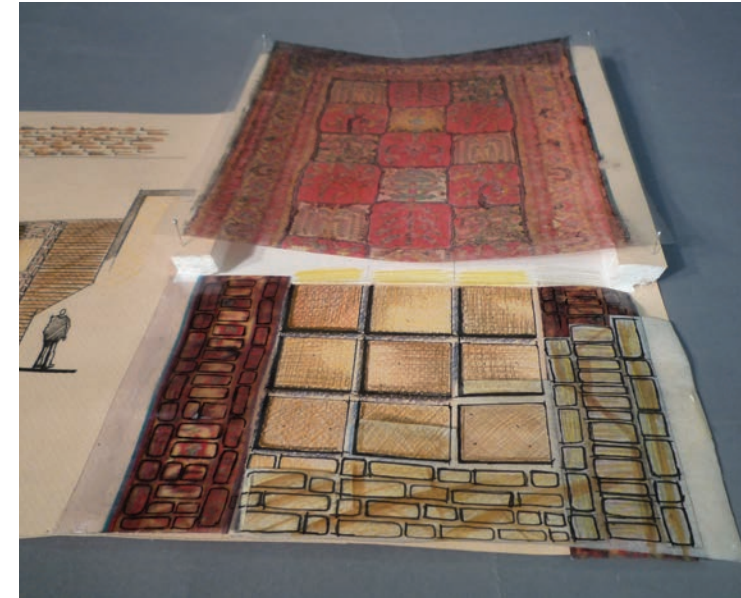
2



4

Parallel with thinking about the building program, the conceptual models evolved and developed to form a building, embracing the museum spaces. The third conceptual model (Opposite page) which is now more accurate is a result of transition from lightweight diagrammatic lines, consisting the previous models to a new confined form. This model consequently is a combination of the last models and aims to tie a knot with the continuous lines passing through the site.





Collage Composition ,Brick Wall Representing Adobe Carpet



Collage Composition ,Brick Wall Resembling Adobe Carpet

MATERIAL/STRUCTURE

Gotfried Semper indicates that the initial idea of weaving ,or the textile art in general, formed not for dressing the body's nakedness, but in prehistoric time it was invented only for the purpose of covering encampments and spatial enclosures.

This idea about the origins of textile art can become more tangible if we think of the tribes of the most early people who were unfamiliar with clothes but used skins to defend their camps. They even possessed a more or less developed industry of spinning,plaiting and weaving to furnish their spaces. From this, it can be deduced that:

“the beginning of the building coincides with the beginning of the textiles.”⁷

The pen - the fence of interwoven and tied sticks and branches - is the first hand woven partition invented by man. An architectural element which at the same time is a piece of textile.

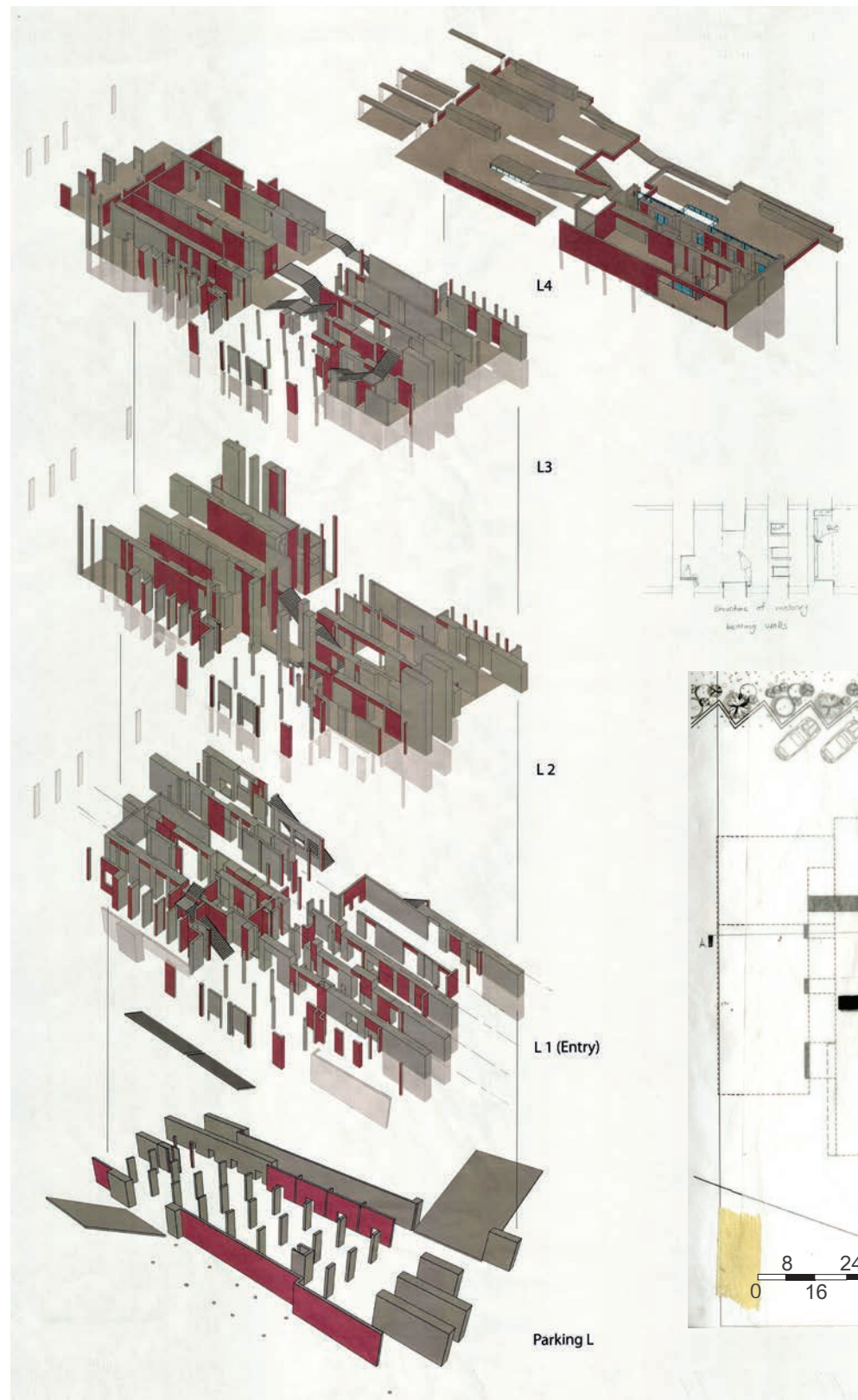
“It is certain that a kind of crude weaving began with pen,as a means of dividing the “home”,the inner life from the outer life,as a formal construct of the spatial idea.”⁸

We can see that even where the solid walls were necessary they remain only the inner and unseen support for the true and legitimate representation of the spatial idea,which is more or less an artfully woven and knitted textile wall.

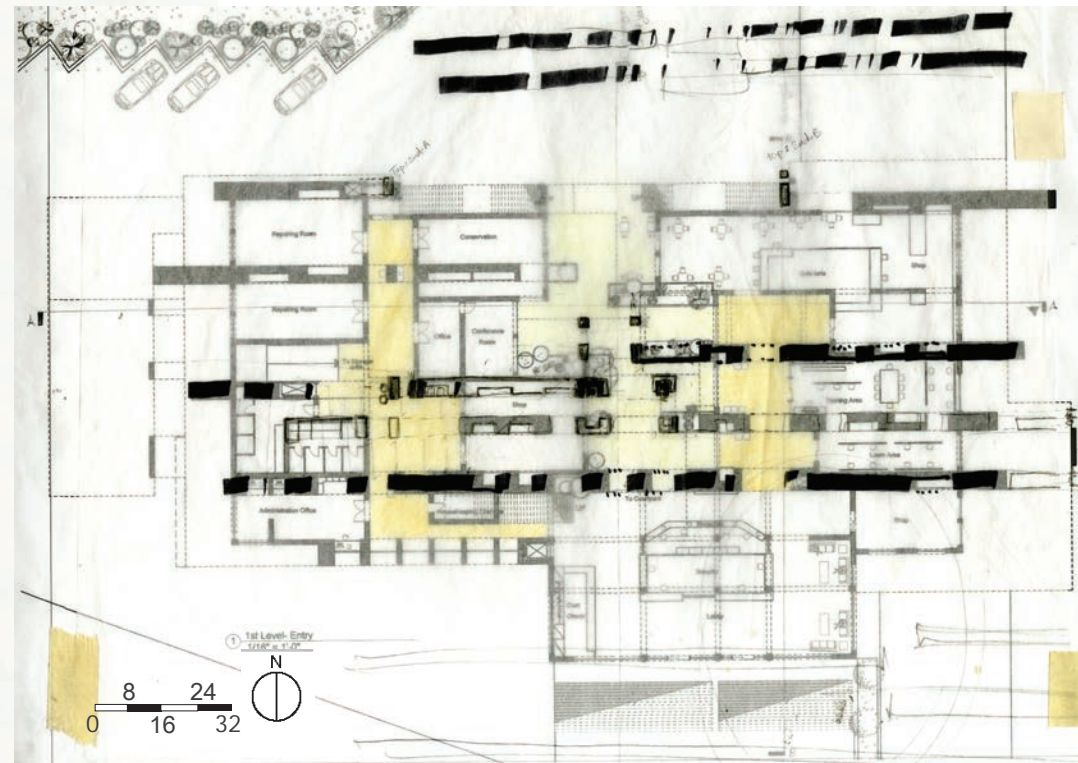
Another clear indication of the textile origin of building elements can be found in spoken language. For example,Wand, the German word for wall. Wand comes from the same root as Gewand which, in English, means garment.

⁷ Semper,Gotfried, Style in the Technical and Tectonic Arts; or Practical Aesthetics (Texts and Documents),Page 247. (Page 74)

⁸ Same as above,Page 248. (Page 74)



Left : Finalized 3D Drawing showing the Structure of Building,Bearing Walls from Parking Level Going All the Way Up to Roof



Top : Sketch Drawing of Masonry Bearing Walls ,Entry Level
Orange Areas = Corridors



Drawing Showing the Use of Cavities inside of Bearing for Sitting area in Corridors



Drawing Showing the Use of Cavities inside of Bearing Walls for Sitting area in Corridors,Locating a Desk in Administration Offices or a Setback Embracing a Carpet in Exhibition Area

By discovering the original relationship of the wall and weaving,I realized that the consideration of walls,where they are located and how they look are very important in designing the Carpet Museum. In addition to this I wanted to make the aforementioned connection more dominant. One of the objects that really inspired me in this path was a type of Persian carpet called: "Adobe Carpet". The name pertains to the very specific design structure used for this type of carpet. In the Adobe carpet,the squares ornamented by floral and vegetal patterns stack on top of each other the same way as adobes stack on top of each other to create a brick wall.

In selection of materials,the enhancement of design quality as well as conformity with the idea of thesis were considered carefully.

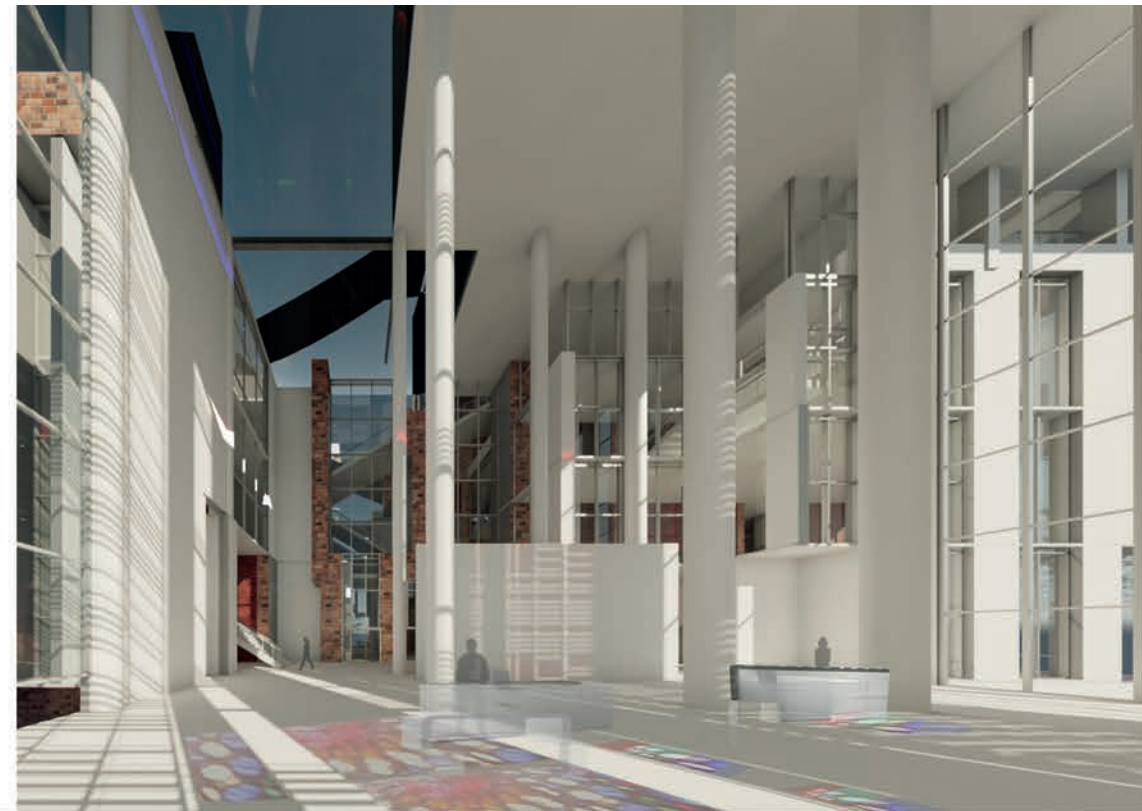
- Brick masonry cavity wall was selected for thick bearing walls of the building.
- Stucco wall was chosen as the material of the non-bearing walls. Light caramel color for interior and white color for exterior surface of stucco walls was selected. The caramel finish gives a warm glow inside of the exhibition and lounge areas,as well as creating an inviting atmosphere for visitors.

- A louver system of circular tubes was applied on the curtain wall facade of lobby to represent itself as fabric and also control the strong southern light.

- A different way for representation of glass is used on the main entrance facade. Colored glass with different orientations is located between the curtain walls. In some situations throughout the building,some portion of a brick wall is carved to host a strip of colored glass ornamented by paisley patterns in order to induce the idea of adobe carpet and the connection of weaving craft with wall. (See Page 35,Top image -Page 36)



South Elevation(partial):Main Entrance



View into Lobby,Looking toward the entrance area



Elevation Idea ,Inspired by Structure of the Carpet and Paisley Patterns

04 | B U I L D I N G D E S I G N

MUSEUM ENTRY

As mentioned earlier in site circulation section (page 12),the main entry to the museum is on Massachusetts Avenue.

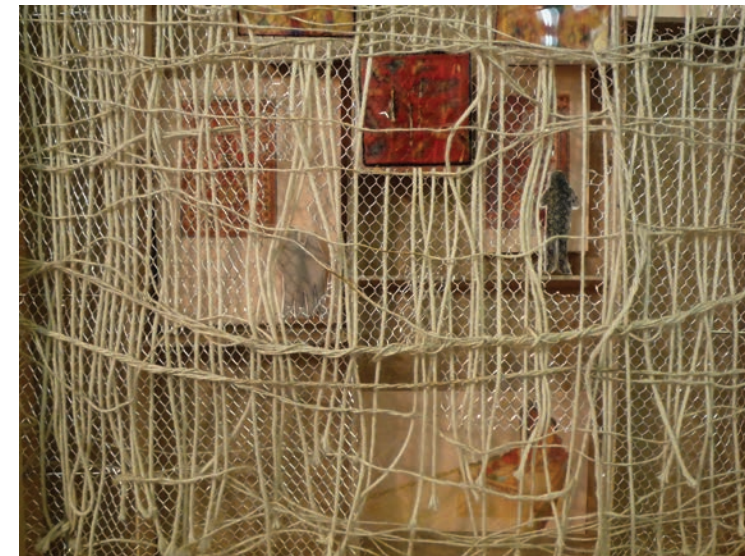
Upon arrival,the extensive glazed openings and glass curtain wall draw the visitors' attention toward the museum entrance. The elevation of the south facade is an aesthetic layer that frames memorable moments happening inside the museum.

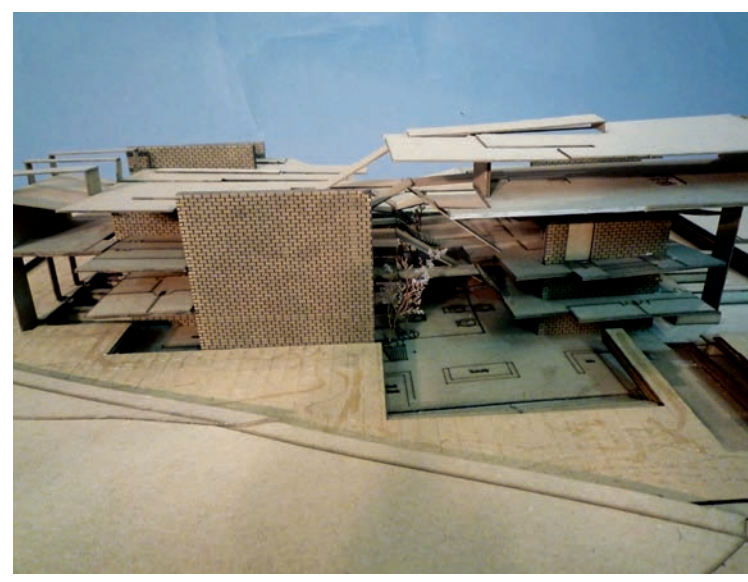
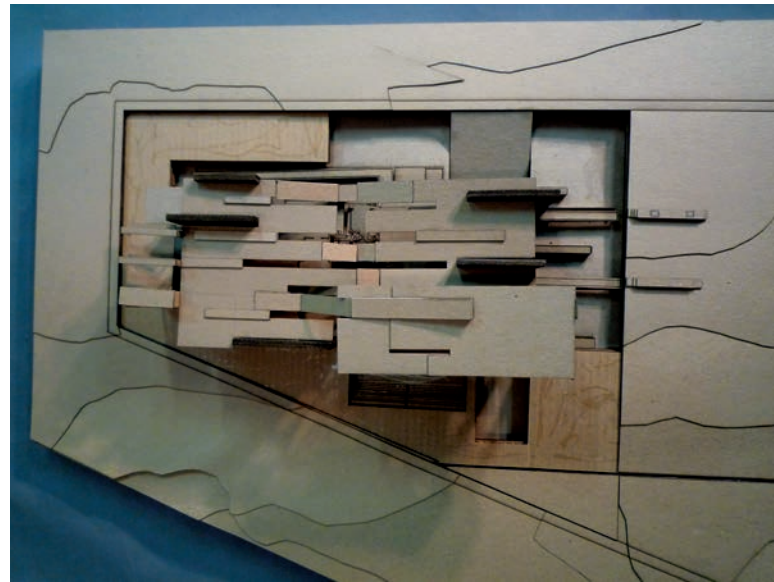
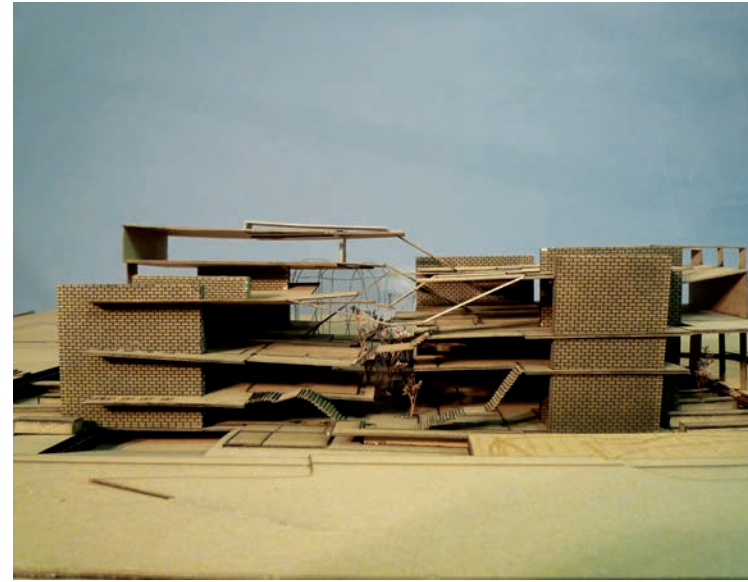
As visitors enter the lobby space, first scene they perceive is a carpet made out of light and shadows laying on the floor. The slim bars of sunlight pass through the colored glass and cast colorful shadows on the lobby floor. (Opposite page,3D rendering of Lobby)

MUSEUM CIRCULATION

At the lobby,after passing the security and check coat area,visitors get information about exhibitions from reception and start their journey throughout the museum. Moving towards the north,visitors will approach to the courtyard in the heart of the building.

Except the Lobby and courtyard on the entry level, there are some shops and also training areas all located on the eastern edge of courtyard .Museum visitors find their access with the help of a longitudinal corridor leading them along the courtyard from south to north,ending up with a cafe accessible both from the courtyard and this interior corridor.





Penultimate Model

The administration offices are on the western side of the courtyard. The employees and staff have their own entrances either from designated street level parking on north or from the lobby on south.

The access to the courtyard also provided by a passage through a small textile exhibit.

The museum is a four story building with split levels on two sides and a small theater or lecture hall on the highest level. at the center of the building the conceptually taken apart fabrics, which are the extended floors of museum, house the stairs. These expanded stairs go back and forth, as cross stitching in textile, between gallery levels and also embrace the courtyard, underneath without even touching it. As a result, an outdoor room was created as a vertical space open to sky.

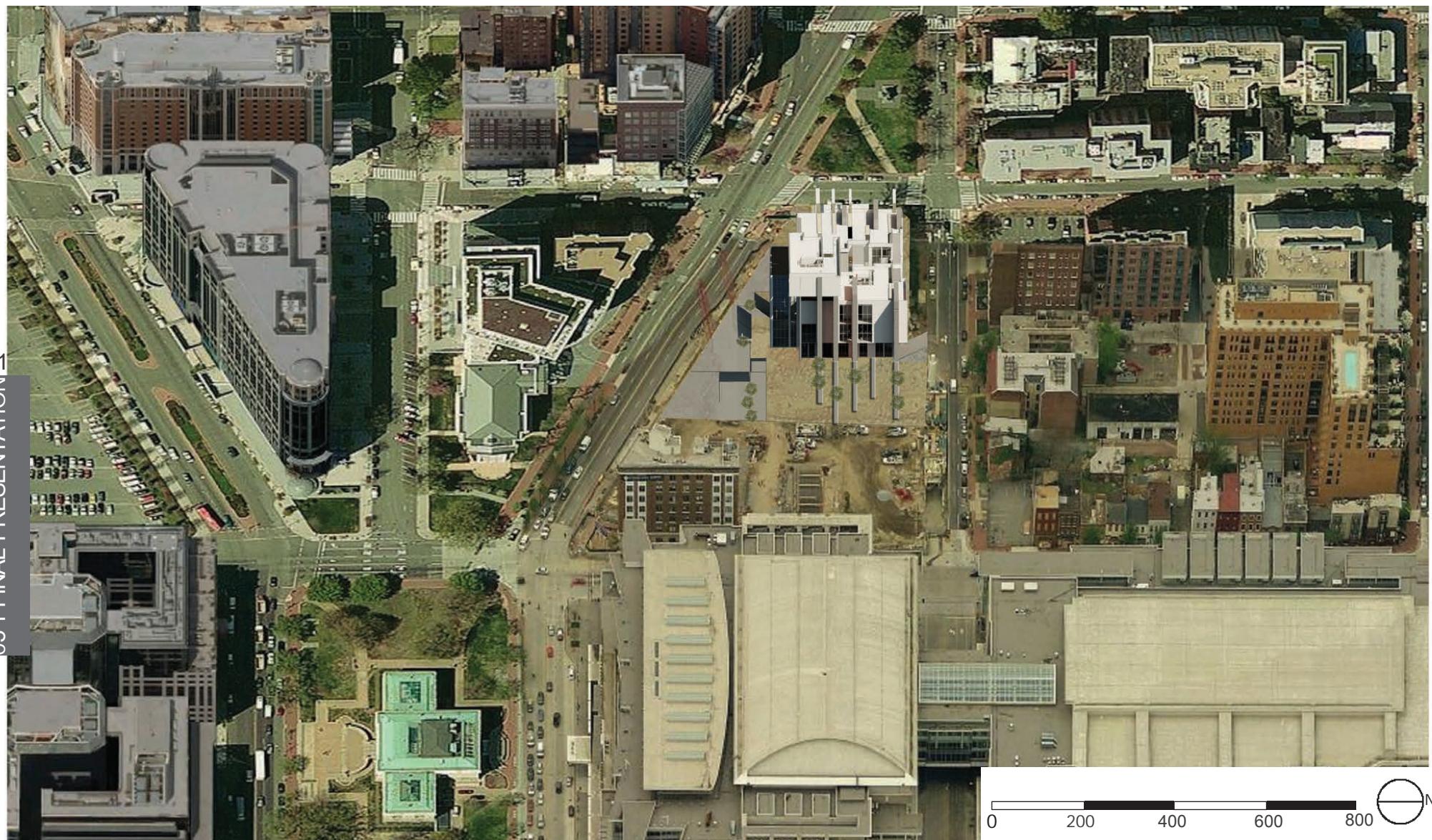
The elevators are located inside the thick bearing walls Which in the initial concept of thesis were continuous lines passing through the building.

Bearing walls rise all the way up from parking level to the roofs or in some situation partially extend from the roof level to emphasize the concept of thesis and continuation of strips on the landscape as well as cantilevering stairs above the courtyard.

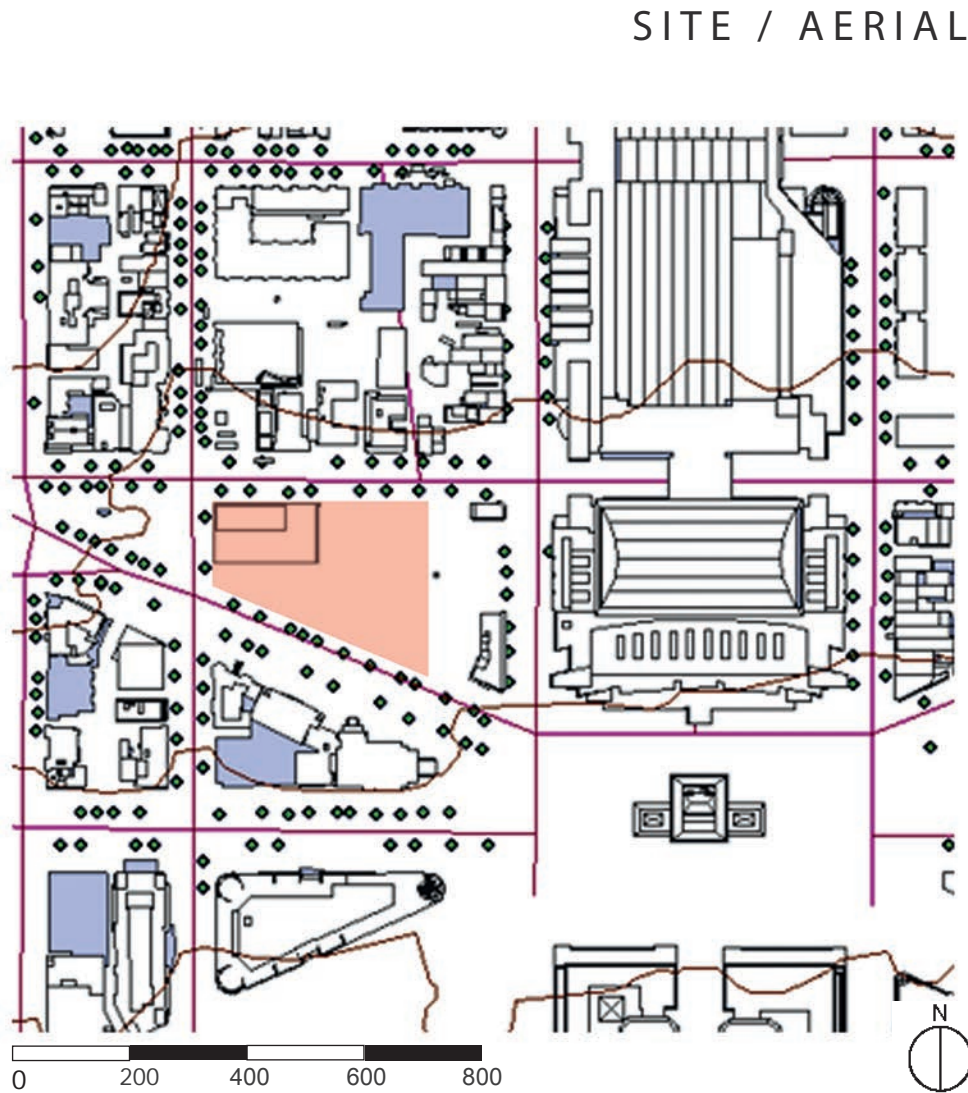
Lounges, the sitting areas for relaxing after exploring the galleries, are defined along the inner edge of the building

parallel to courtyard, extending overhead from second and third floors. This part of design consideration creates a moment for visitors to feel themselves connected to outside while they are still inside of the exhibition area. Regarding the preservation facilities and design decisions for preservation of the carpets, The carpets can't be exposed to strong day lighting, so the lounges are divided from the galleries through a double, in-between wall. Some narrow strips of skylights are embedded on roof in order to allow some daylight to penetrate partially due to the lack of natural light in the exhibition areas.

05 | FINAL PRESENTATION



AERIAL VIEW (EAST)



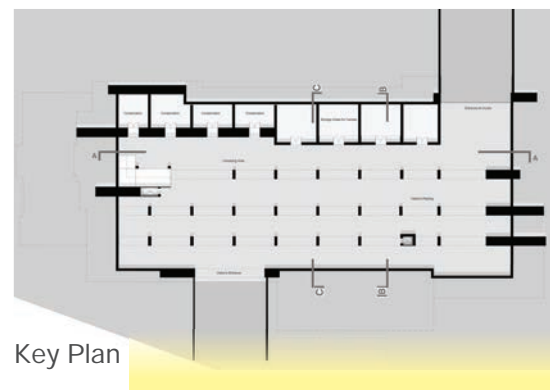
SITE / AERIAL

SITE

RENDERINGS/ KEY PLANS

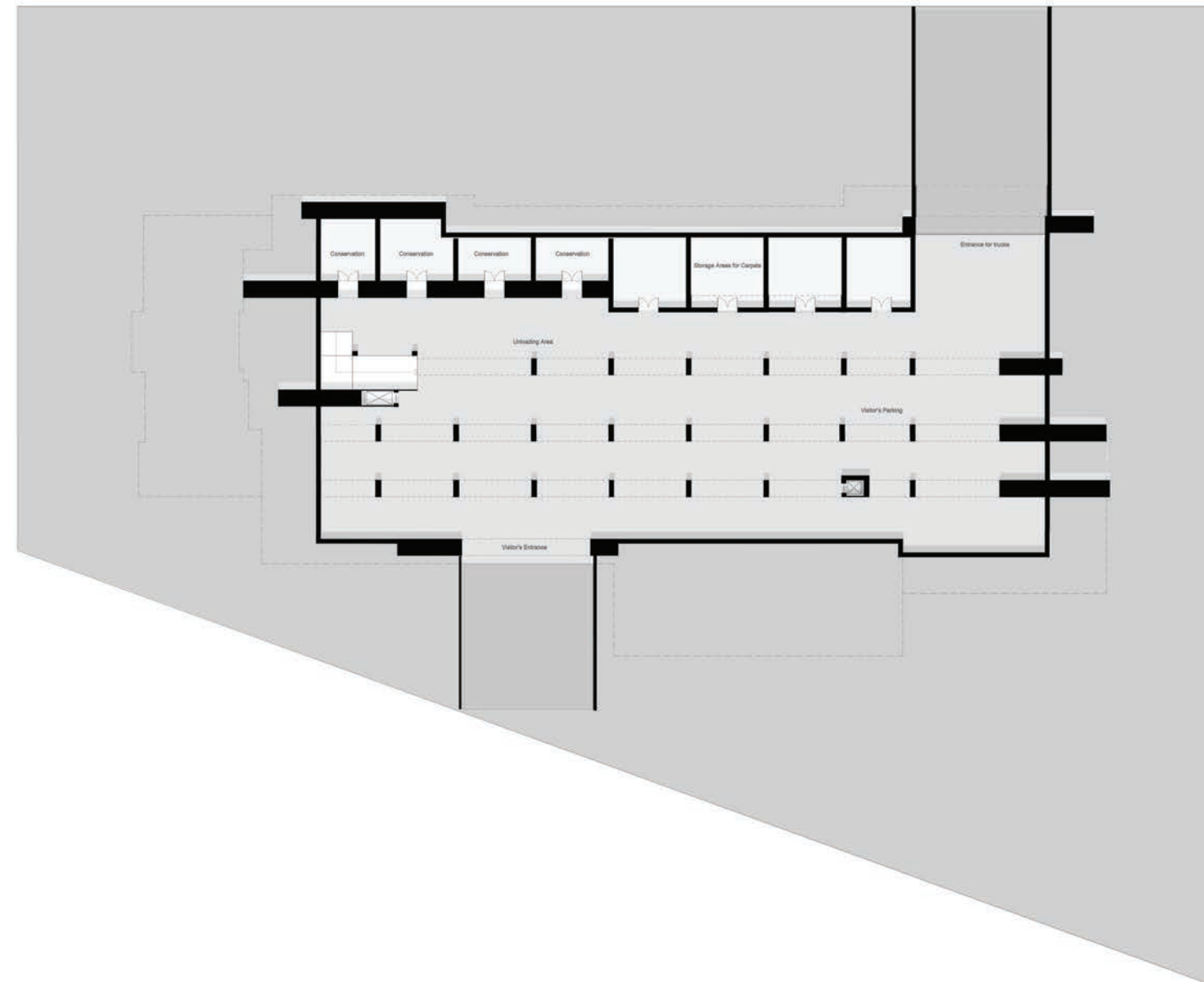


Main entry of museum from Massachusetts Avenue

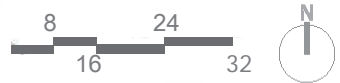


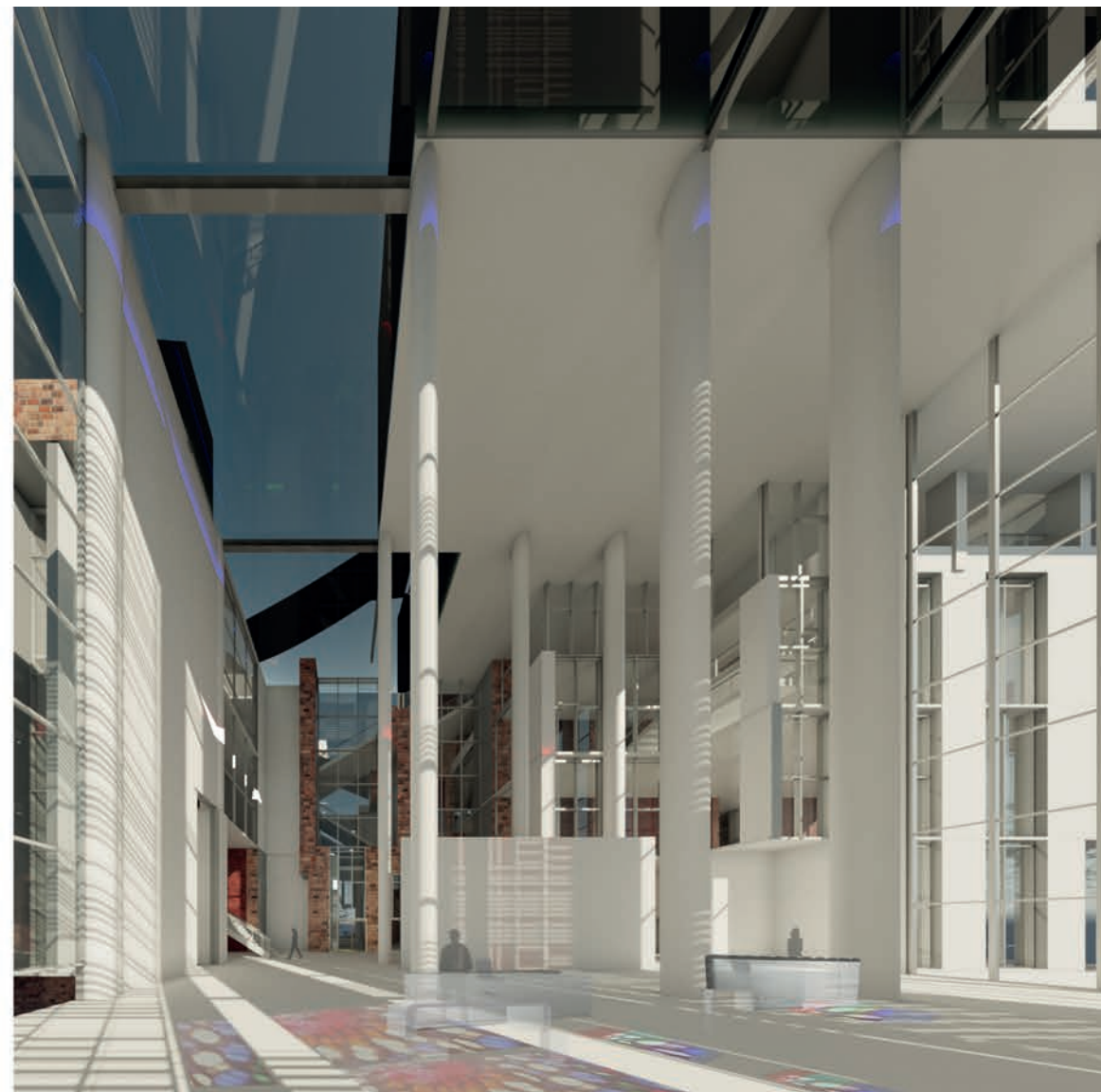
Key Plan

FLOOR PLANS

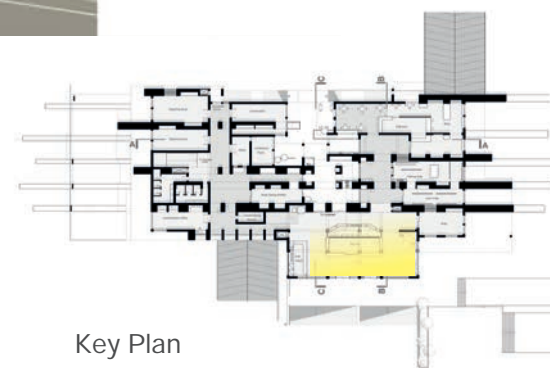


PARKING LEVEL

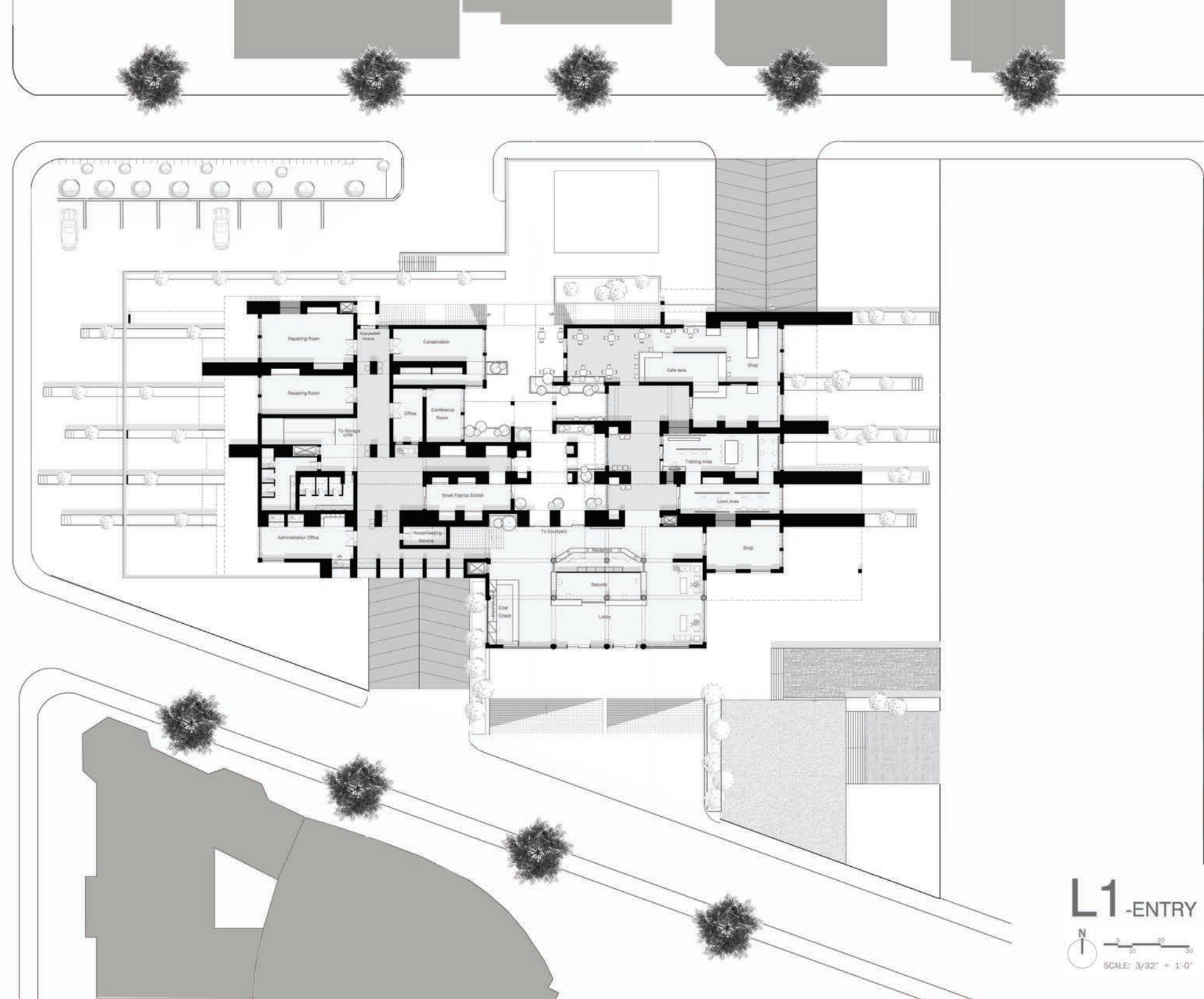




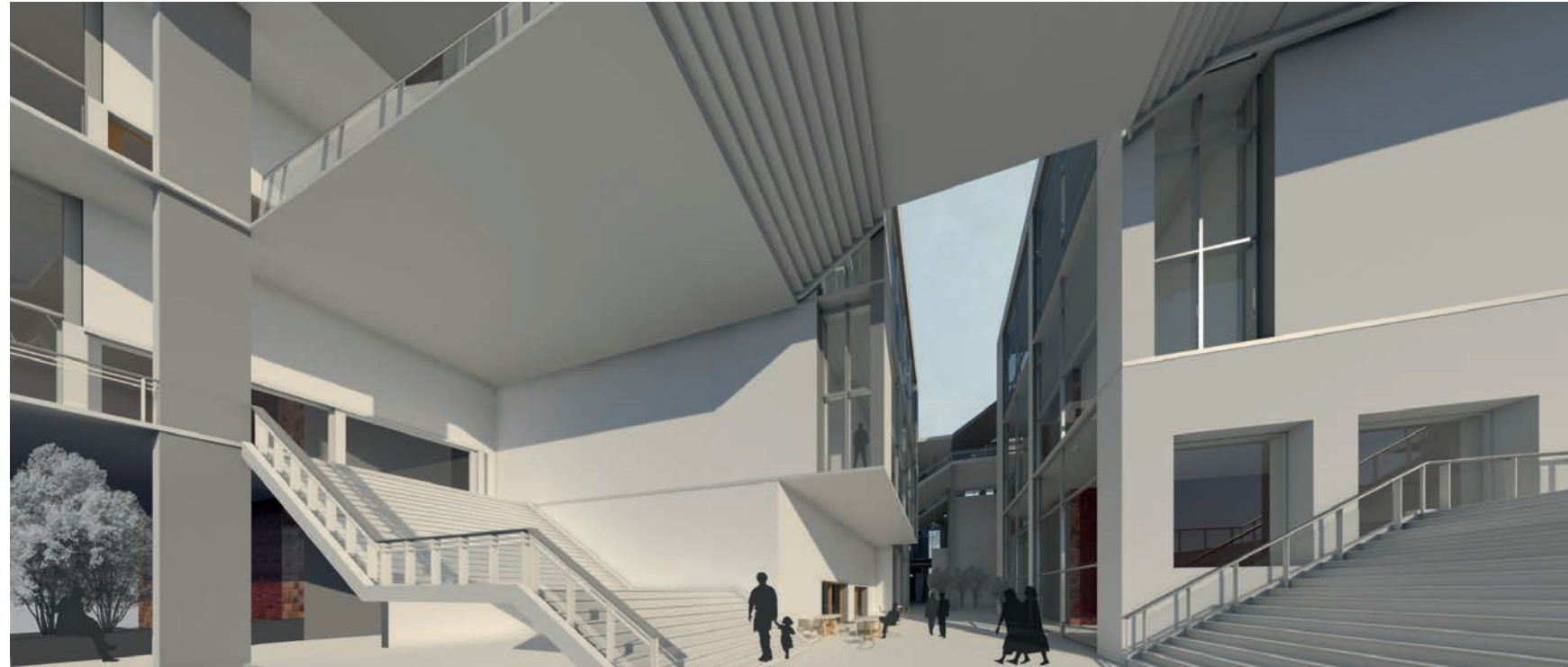
Lobby , Entrance area



Key Plan



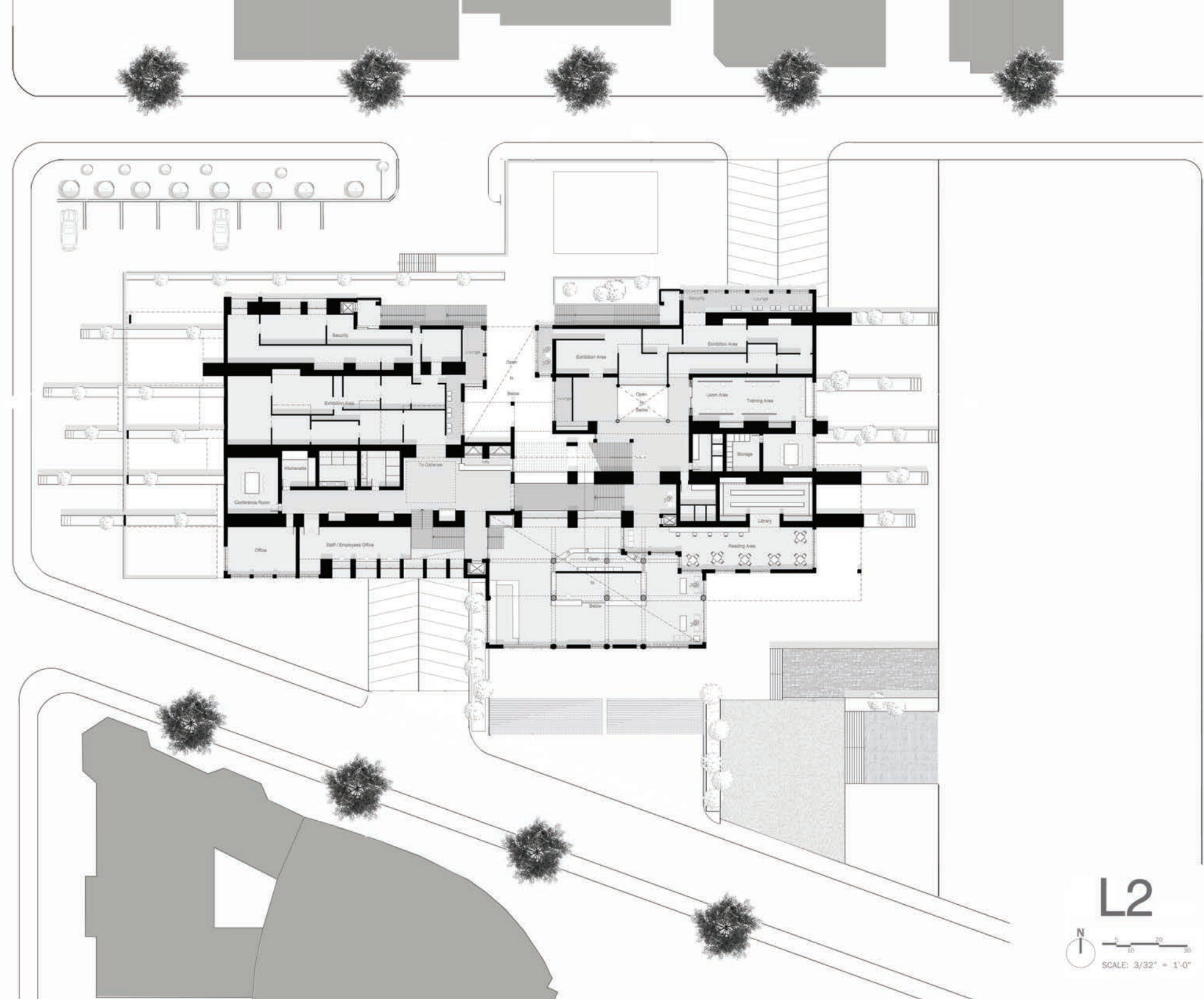
L1-ENTRY
N
SCALE: 3/32" = 1'-0"



Exit stairs on northern side of the building, Courtyard



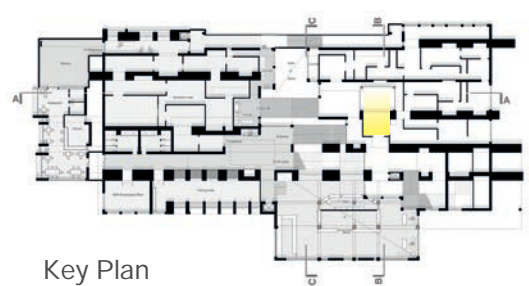
Key Plan



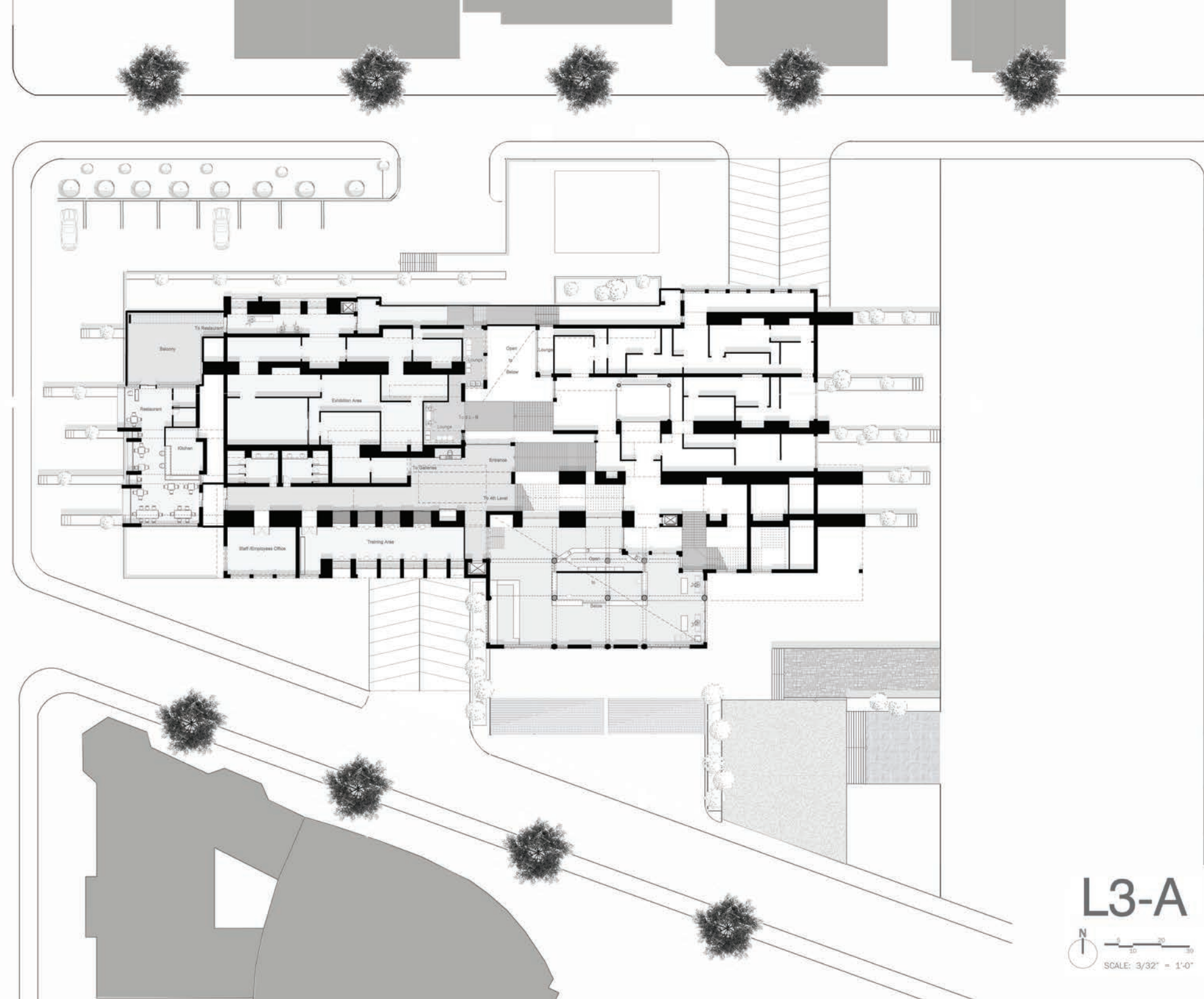
L2
SCALE: 3/32" = 1'-0"



Interior space of a gallery, Exhibition area on second level



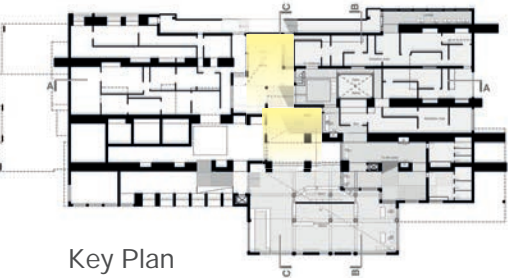
Key Plan



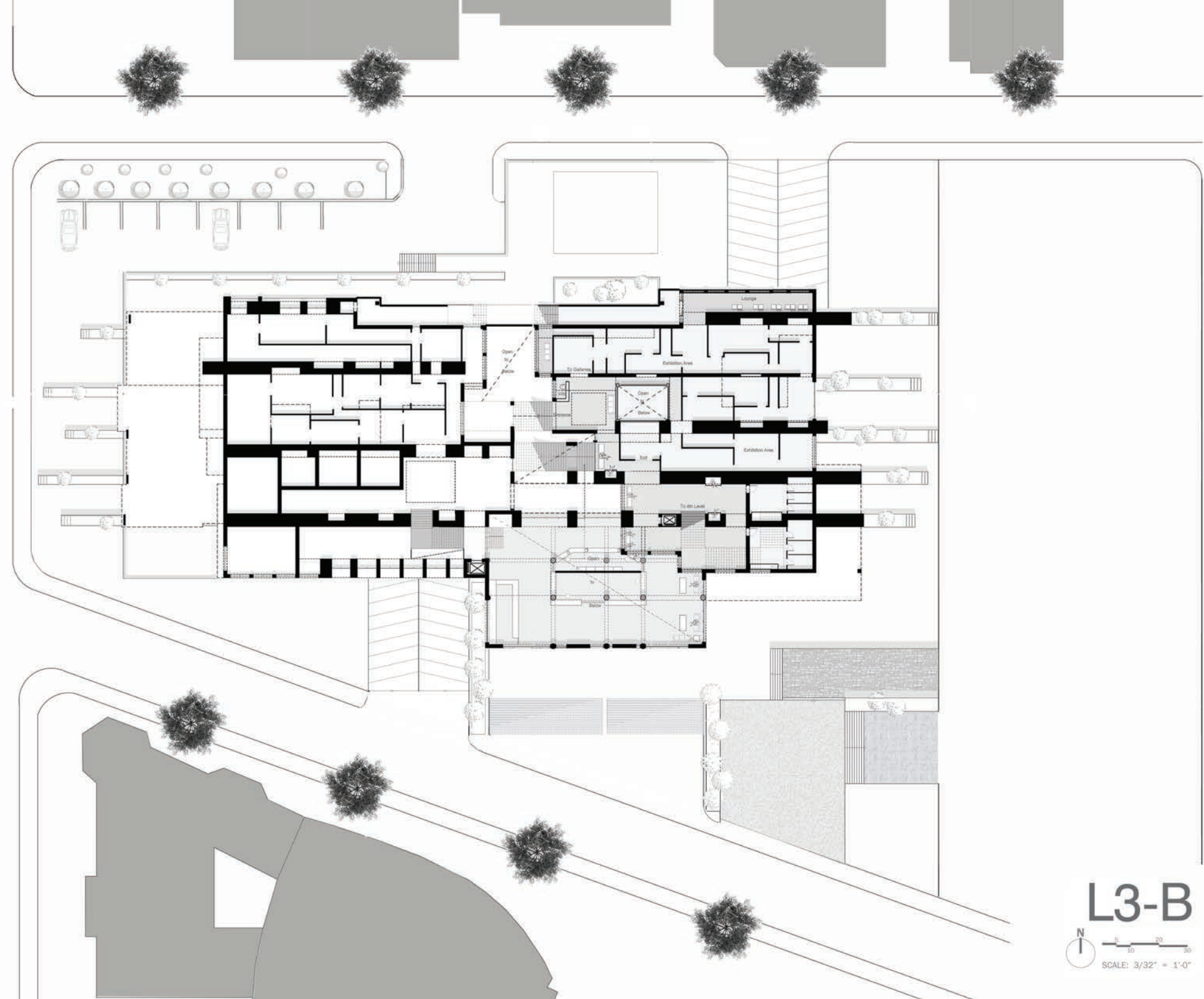
L3-A
N
SCALE: 3/32" = 1'-0"



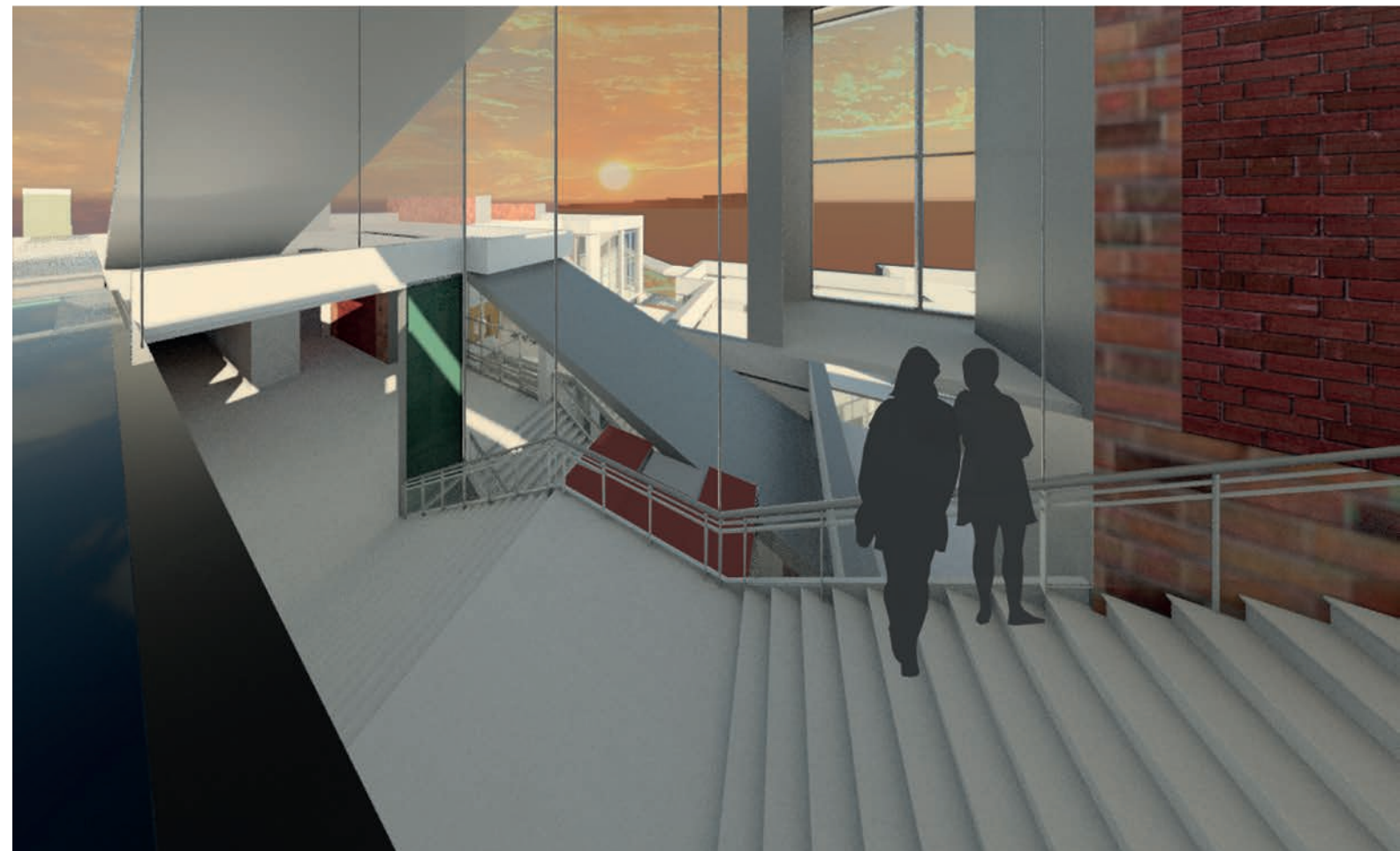
View towards the central stairs connecting the split levels on two sides above the courtyard



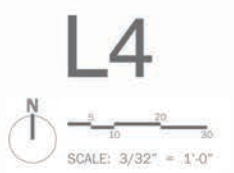
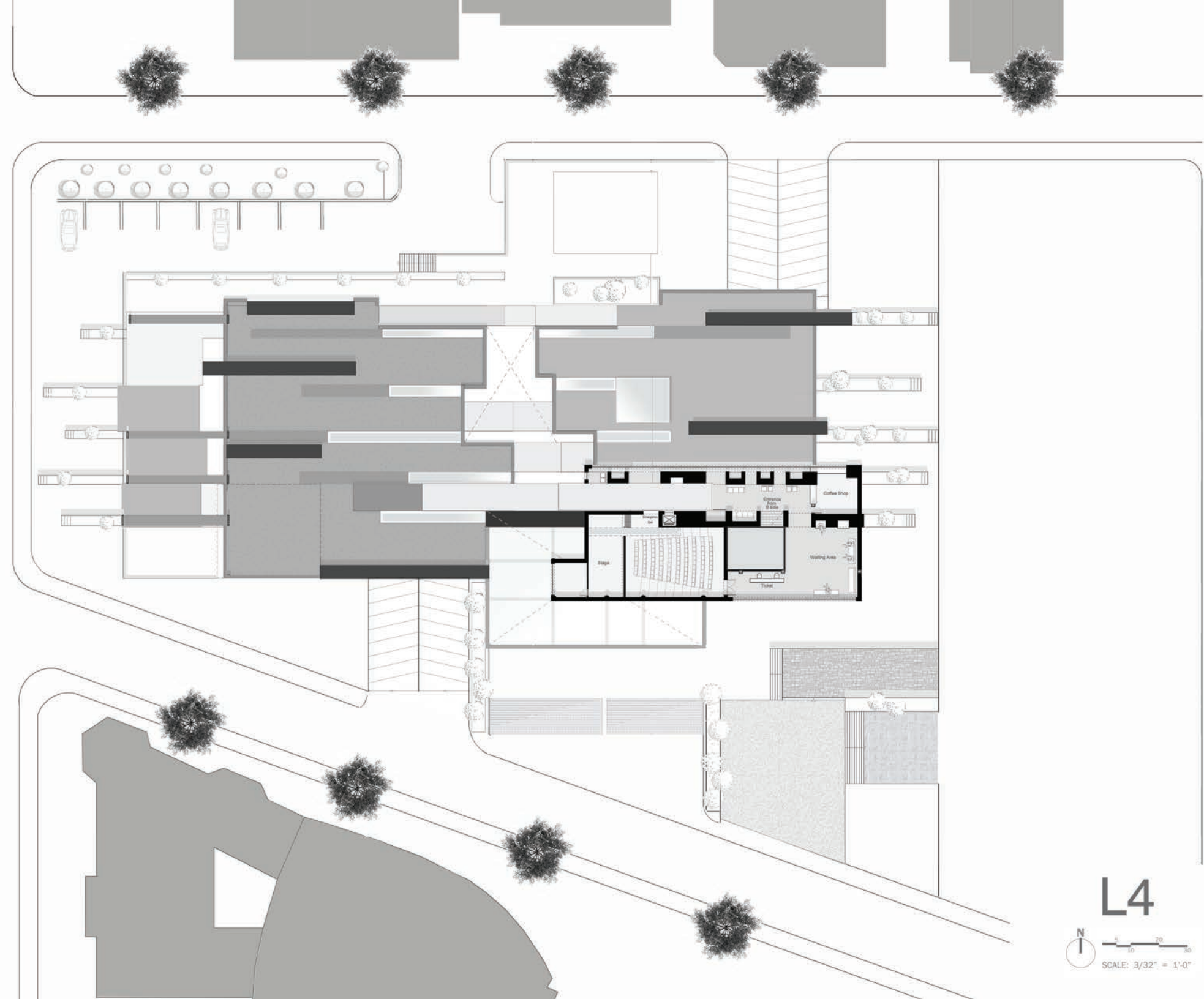
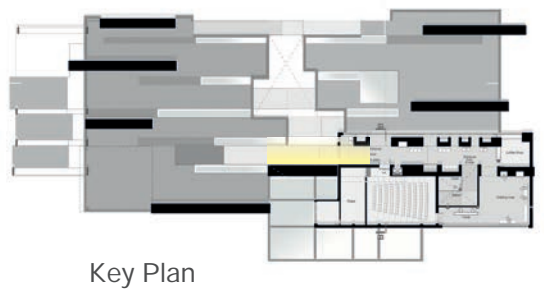
Key Plan



L3-B
SCALE: 3/32" = 1'-0"



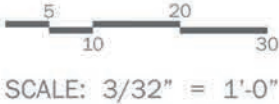
Stairs to theater (4th Level)- East view towards the 9th street





SOUTH ELEVATION

Main Entrance Facade - Massachusetts Avenue





Rear Elevation - L Street

NORTH ELEVATION



SCALE: 3/32" = 1'-0"



WEST ELEVATION



SCALE: 3/32" = 1'-0"



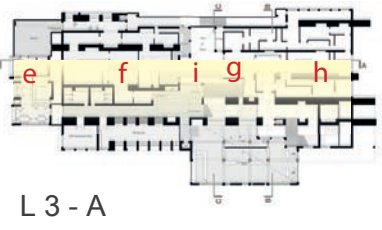
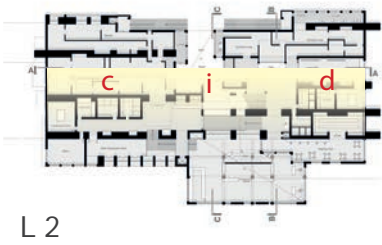
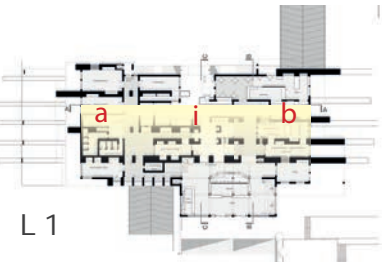
EAST ELEVATION



SCALE: 3/32" = 1'-0"



SECTIONS

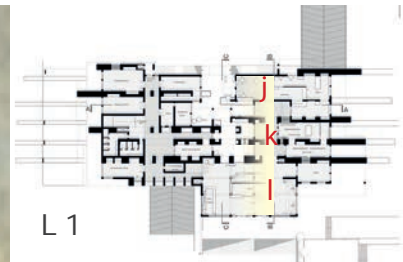


- a . Carpet Repairing/Work Shop
- b. Textile/Gift Shop
- c. Exhibition Area,galleries(2-A)
- d. Training,Classroom
- e. Restaurant
- f. Exhibition Area,Galleries(3-A)
- g.Lounge
- h.Exhibition Area,Galleries(3-B)
- i.Courtyard,Open to below

SECTION A

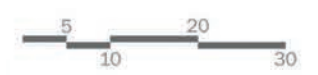


SCALE: 3/32" = 1'-0"



- L 1
- L 2
- L 3 - B
- L 4
- j. Cafe
- k. Corridor
- l. Lobby
- m. Exhibition Area, Galleries(2-B)
- k. Library(Reading Area)
- o. Exhibition Area, Galleries(3-B)
- p. Lounge
- q. Theater, Stage

SECTION B



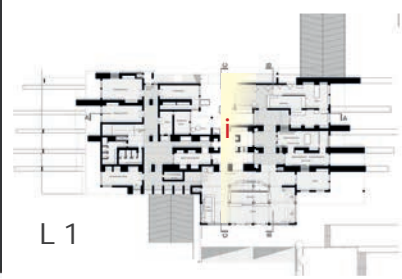
SCALE: 3/32" = 1'-0"



SECTION C (THROUGH COURTYARD)



SCALE: 3/32" = 1'-0"



L 1

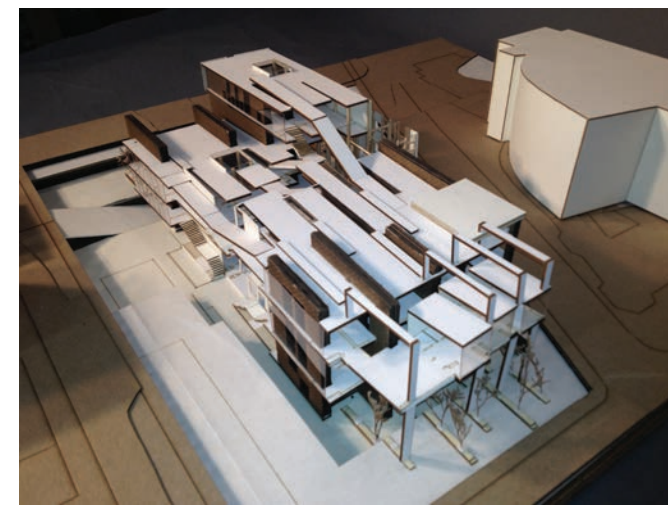
i.Courtyard



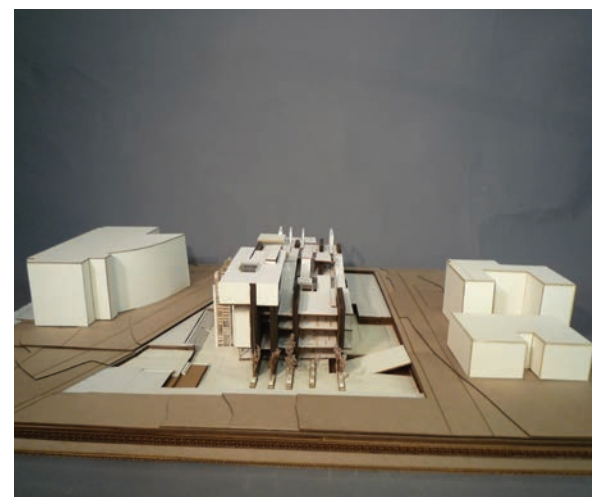
Top Left : South Elevation - Massachusetts Avenue



Top Right : North Elevation - L Street



Top:Bird's Eye View - North Western Side



Top:East Elevation-9 th Street



FINAL MODEL

D E F E N S E

Friday , 20 September , 2013 | 4:00 PM | West Room

05 | FINAL PRESENTATION



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1-4.Knot Series Photography in Historic City of Yazd,Iran by Jalal Sepehr,Web,Jalal Sepehr: Knot , <http://www.oneart.org/galleries/jalal-sepehr-knot>

5. Drawing Showing Building Heights and Green Spaces Around the Site,Figure 28,Page 38, Himmelheber, John J, Weaving Place and Object : A new martin Luther king Memorial Library, University of Maryland,College Park, masters Thesis,2005

6. Diagram Showing the Shadows Cast at 4 PM on September 1st ,Figure 27,Page 37, Himmelheber, John J, Weaving Place and Object : A new martin Luther king Memorial Library, University of Maryland,College Park ,masters Thesis,2005

7. North-South Route Runs along the Eastern Edge of the Site, Proposed Routes of the DC Circulator,District of Columbia Office of Planning. Downtown Circulator. Washington D.C. 2004.

8.Homage to Square Series, Joseph Albers The Color Theorist, Web,<http://www.socialphy.com/posts/art/14043/Josef-Albers-The-Color-Theorist.html>

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IMAGE CREDITS

9.Weaving Workshop at the Dessau Bauhaus. 1927, Stölzl, Gunta. "The Development of the Bauhaus Weaving Workhop, 1931." bauhaus(July1931),Web,<http://www.guntastolzl.org/Literature/B6lzl-on-Bauhaus-Weaving/empty/1936287q6dNTM#!i=98775960&k=W2JTctD>

10. Anni and Joseph Albers in Black Mountain College, North Carolina, 1949 -Photo by Ted Dreier,Web,www.albersfoundation.org

11. Joseph Albers, Two Structural Constellations, 1959. Incised Gold Leaf on White Vermont Marble, 488 x 1,859 cm. New York: Corning Glass Building, 717 Fifth Avenue,The Joseph and Anni Albers Foundation.

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