

Gallery For Art

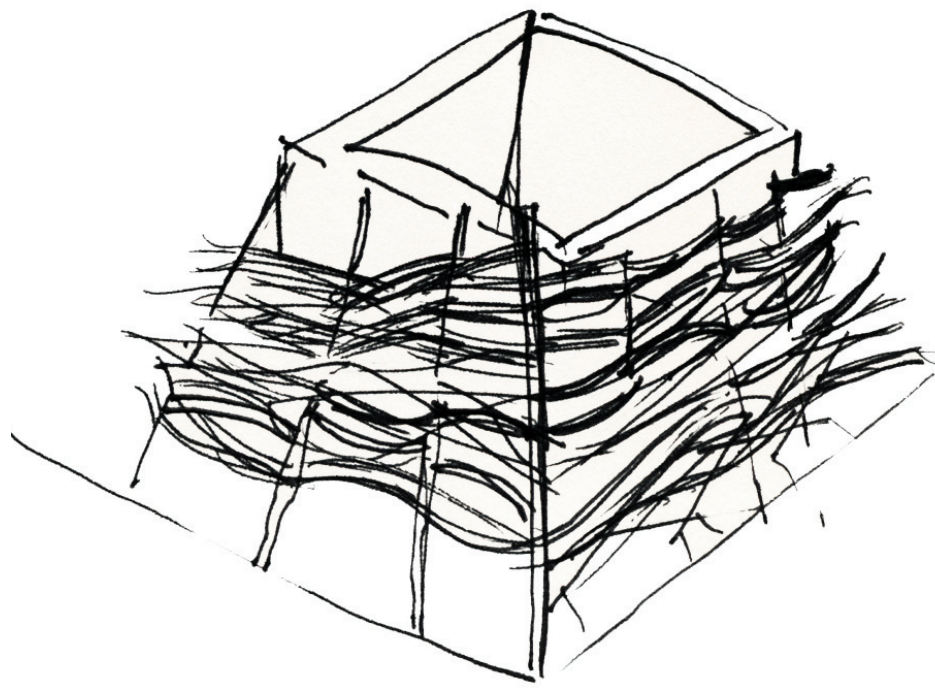
Tarek F Ajlani

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

Marcia Feuerstein, Chair
Bill Galloway
Hans Rott

June, 6 2005
Blacksburg, Virginia

Keywords: mask, facade, H-joint system



Gallery for Art

Tarek F Ajlani

Abstract:

For my thesis I explored the idea of the mask in relation to architecture. For my project I designed an art gallery located in Georgetown Washington DC which is composed of three layers: a structural layer, an environmental casing, and an outer layer. Theoretical parallels are drawn between the outer layer of the gallery and what is commonly referred to as a mask. Additionally, I explored the interaction between the layers of the gallery. The distinguishing characteristics of the building include the tri-façade mask, the unique spaces in between the gallery's layers, the glass system, the mask's ghost effect, and the floor system.

Acknowledgements:

I wish to thank my committee chair Marcia Feuerstein, and my committee members Hans Rott and Bill Galloway for all their help, support, and advice.

Thank you!

Table of Contents:

| | |
|---|--------|
| Abstract..... | ii-iii |
| Acknowledgements..... | iv |
| Table of Contents..... | v |
| I. The Site: 2929 M St. Georgetown, Washington D.C..... | 6-7 |
| II. Transferring Identity: The Mask or Façade?..... | 8-13 |
| III. The Transition..... | 14-19 |
| IV. Three Facades..... | 20-27 |
| V. The Mask: Its Composition..... | 28-33 |
| VI. The Glass System..... | 34-37 |
| VII. The Liminal Layer..... | 38-41 |
| VIII. The Ghost Effect..... | 42-43. |
| IX. The Floor System..... | 44-45 |
| X. The Gallery Core..... | 46-56 |
| XI Facade studies..... | 57-72 |
| Bibliography..... | 73 |
| Image credits..... | 74 |

I. The Site: 2929 M St.

Georgetown, Washington D.C.

The site is centrally located in downtown Georgetown on M Street among the hustle and bustle of the nation's capital. I chose this site because it is situated on a sharp corner and has three sides. The unique characteristics of the site allow me to explore the idea of the mask in three different settings. This was pertinent in the development of my thesis. The first side faces M Street, the second side faces an alley, and the third side will face a garden. The fourth side is a party wall. The dimensions of the site are eighty-one by one hundred and thirty feet.







II. Transferring Identity: The Mask or Façade?

Masks are among the most exotic and impressive of the arts with widespread use through history and in a variety of geographical settings. The word 'mask' invokes many concepts such as mediation, representation, secrecy, cover, iconography, power, interaction, outer layer, and disguise. However, a mask is also a unique form of art ranging from various indigenous masks to modern interpretations. The same concepts and understanding used to describe a mask can also apply to what is commonly known as a façade.

Donald Pollock in a traditional understanding of masks explains that "the general relationship between masks and identity has long been recognized; the mask is normally considered a technique for transforming identity, either through modification of the representation of identity, or through the temporary- and representational- extinction of identity" (1995: 582).

Likewise, John Picton in the article "What's in a Mask" explores the relationship between a person, a mask, and that person's masked identity. Specifically, he questions the role of the mask in mediating the relationship between the performer and his identity in the performance (1990: 181). This mediation between the mask and the person is similar to the interaction between the façade and the building; both transfer identity. The mask is not made to conceal, but to expose identity. The façade does not hide the insides of a building, but frames and reveal its most luring parts.

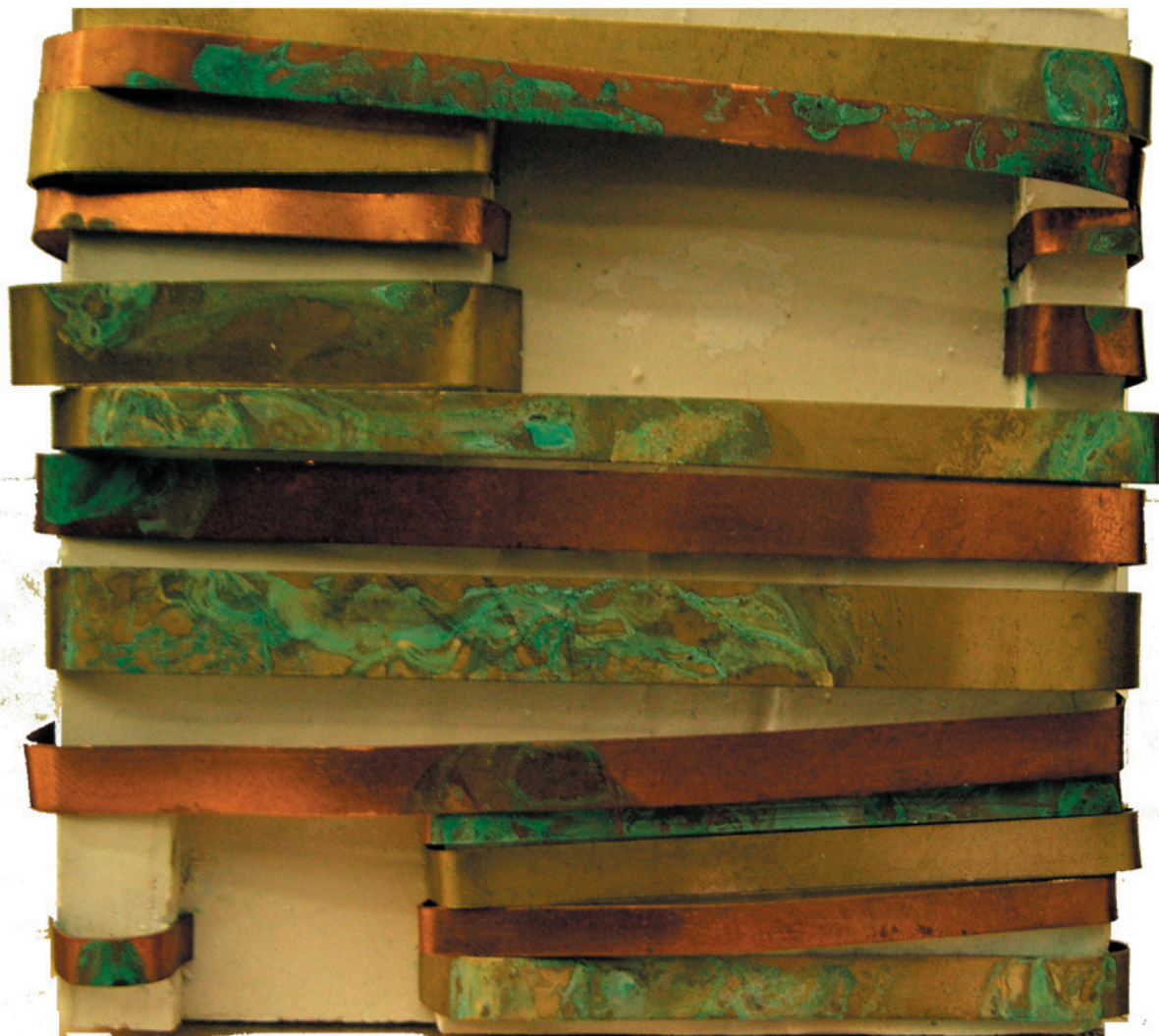


Paul Wingert claims that “in many primitive masks, particularly those from Africa, there is evidence that an important relationship between the carved forms and the anatomical structure of the human head from which they are derived” (1954: 69). He explains that the sculptured forms of the masks match the disguised physical features behind them, such as the opening of the eyes and mouth, and the slope of forehead, cheekbones, nose, jaw, etc (Wingert, 1954: 69).

A mask frames a section of the face, sometimes it reveals a fragment, and other times it highlights a particular feature. According to Wingert the mask is a representation of the wearer’s actual facial features. To a certain extent, the same is true with a façade. It focuses on certain characteristics of the structure, represents specific aspects of the building design, and lets the mind wonder about the rest.



Interactions between the mask and the wearer also differ depending on the type of mask, whether ritual or theatre, and culture. Theatrical masks are usually attached to the face by string. Venetian masks, on the other hand, are either held in place or the wearer may have to bite a clamp inside the mask to hold it in place (see Venetian masks). In each case, there is some interaction between the mask and the wearer. As such, there is an interaction between the building and its façade.





III. The Transition: Bone-Face-Mask, Structural Core-Environmental Casing-Mask

There is usually a point of transition in any major study when the pieces fall into place clearly. In my case this happened when my study about masks transformed itself into architecture. In understanding this transition, it is first necessary to define what I mean by 'mask'.



When discussing a mask, I'm implying that there are three layers. The first layer is literally a person's anatomical bone structure. The second layer is the face, including the skin, all facial features, texture, etc. Finally, the third layer is the 'mask,' in the sense of its familiar and accepted definition.

In relating this to architecture, the building was also conceptualized in layers. The first layer of the building is the inner core, or the structure of the building. The second layer is the outer core, or environmental case. And the third layer is the mask. Again, in its commonly held understanding. Additionally, in conceptualizing the word 'mask' in both my architectural definition and the traditional understanding of that word, I'm approaching it as an art form.







IV. Three Facades:

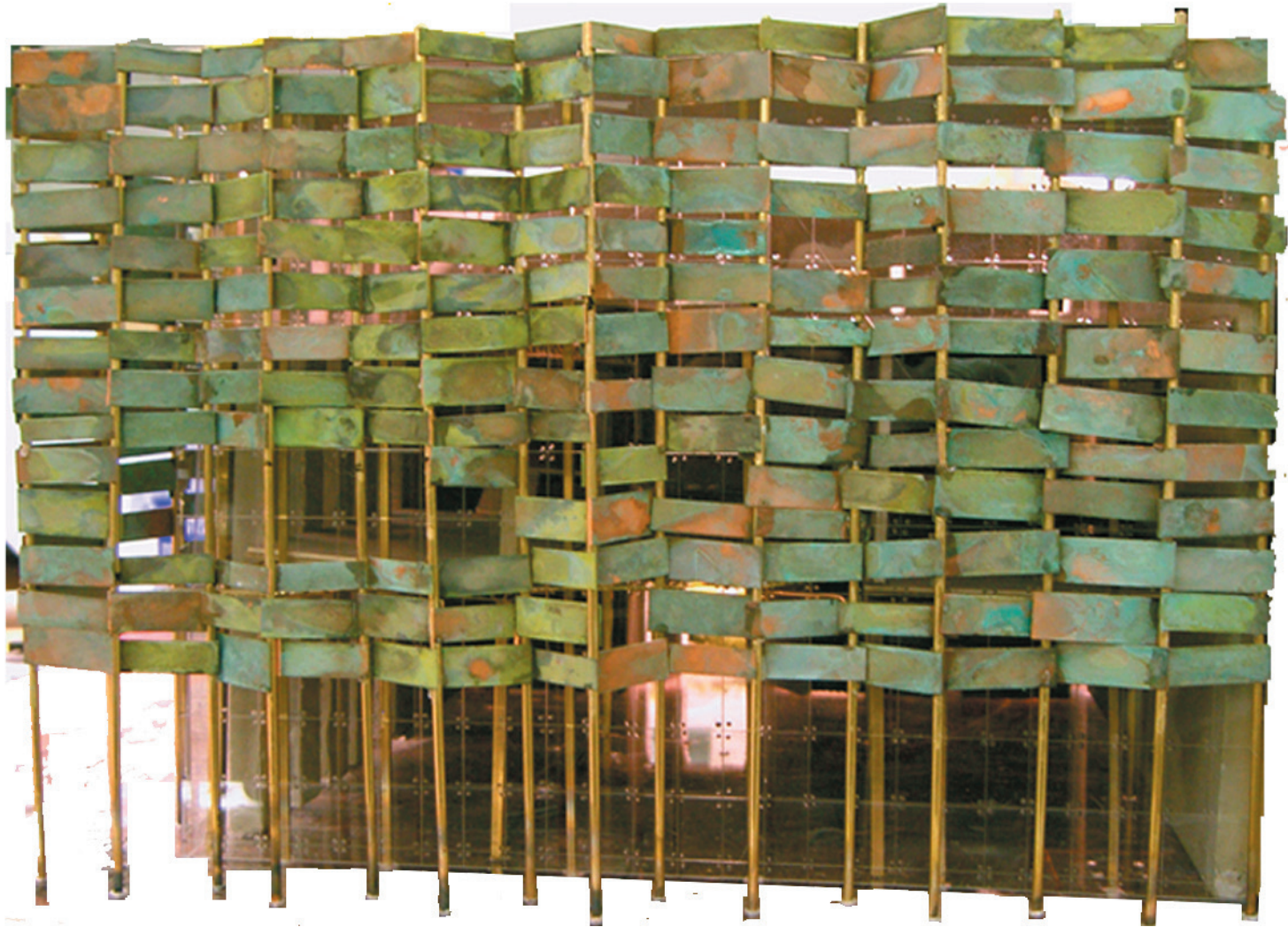
The building has three facades. The first façade faces south and looks upon M street. M street is the most central street in downtown Georgetown. The second façade faces west and looks upon the alley. The third facade faces north and looks upon a garden and loading dock.

For each façade there is a different degree of privacy. The facade facing M street is the least private while the facade facing the garden is the most private. In other words, the façade facing the street is the least private because it is the most transparent, allowing the people passing by to gaze inside the building. As such, the facade facing the garden is the most private because it is the least transparent.



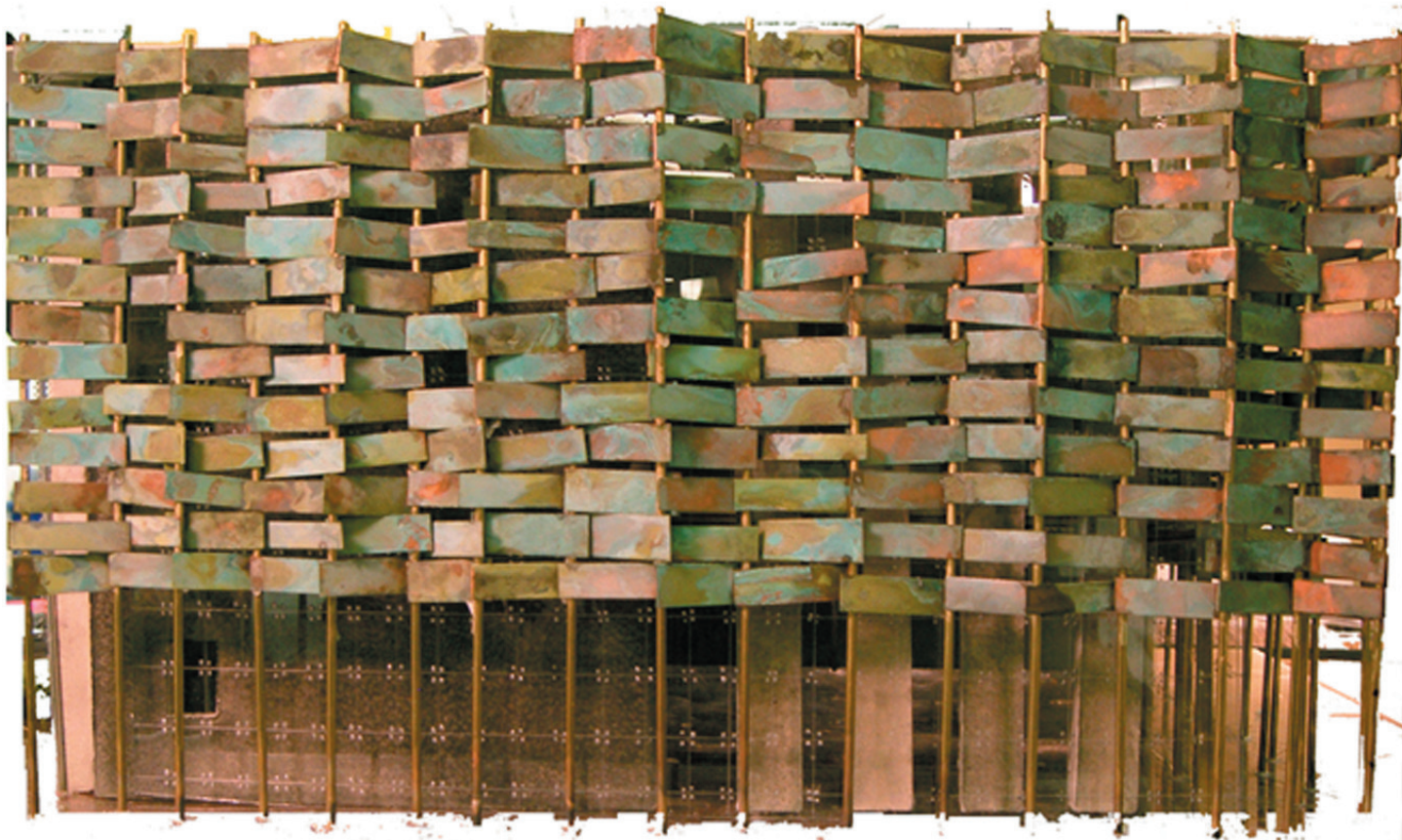


The facade facing the street is composed of three layers: the metal panels mask layer, the glass environmental casing, and the structural concrete layer. The mask layer and the glass environmental casing layer are the largest part of this façade. The concrete layer is almost nonexistent because it barely encloses the building. Instead, the glass layer encloses the building, allowing the people passing by on the street to see more of the inside of the building.



SOUTHERN FACADE FACING M STREET

In contrast, the façade facing the alley is also composed of three layers. However, the concrete layer is more prevalent on this facade relative to the facade facing M street. This façade is unique because as it extends from the corner of M street down the alley, the degree of privacy changes. The concrete layer begins semi-open near M street and becomes solid or closed as it expands further down the alley. In other words, the part of the façade nearest to M street is more translucent while the facade furthest away is more enclosed by the concrete layer. This was done to reflect the alley because the alley is more residential to the back and more commercial near M street.



WESTERN FACADE TO THE ALLEY

The façade to the garden is the most private because it reveals very little of the building's inside. This facade only has two layers: the structure core and the mask. There is no glass layer on this façade. Thus, for this facade, the structure core layer becomes the environmental casing. The mask on this façade is also a vertical extension to the garden. The façade is made for the vines, so the garden is not interrupted, but extended upwards upon the building. This allows the foliage to fuse with the mask.



NORTHERN FACADE TO THE GARDEN

V. The Mask: Its Composition

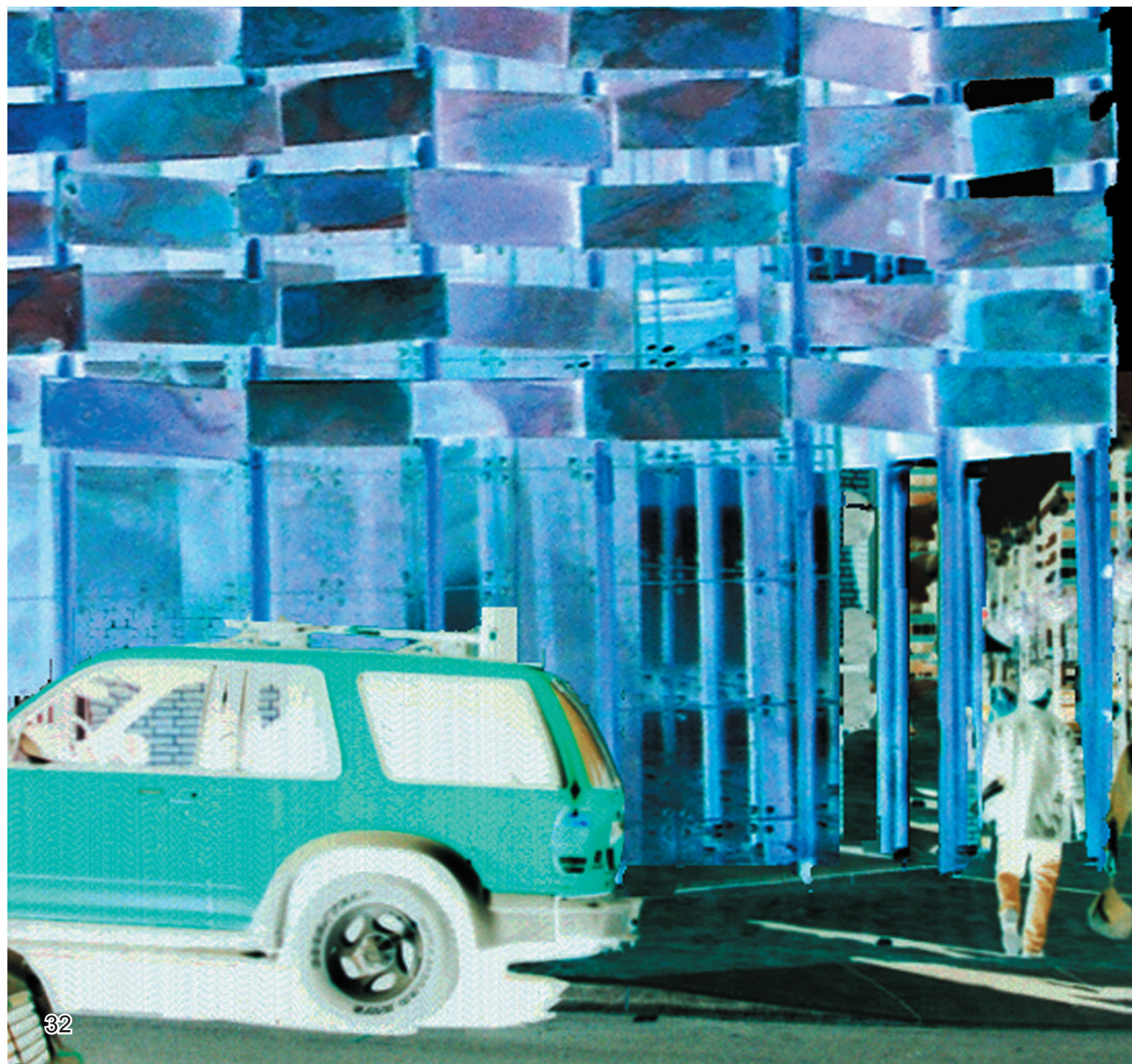
The southern and western mask layers are made of copper panels attached to steel tubular columns. The panels are mounted on the tubular columns using clamp-on joints. This allows flexibility in the positioning of the panels. The panels have a constant length of 90 inches. Although, the panels vary in height from 24-48 inches. The northern or garden mask layer is made out of wire screen and foliage.

The mask layer does not have to enclose the building or as explained differently, environmentally seal the building. Thus, it is not restricted to the building.









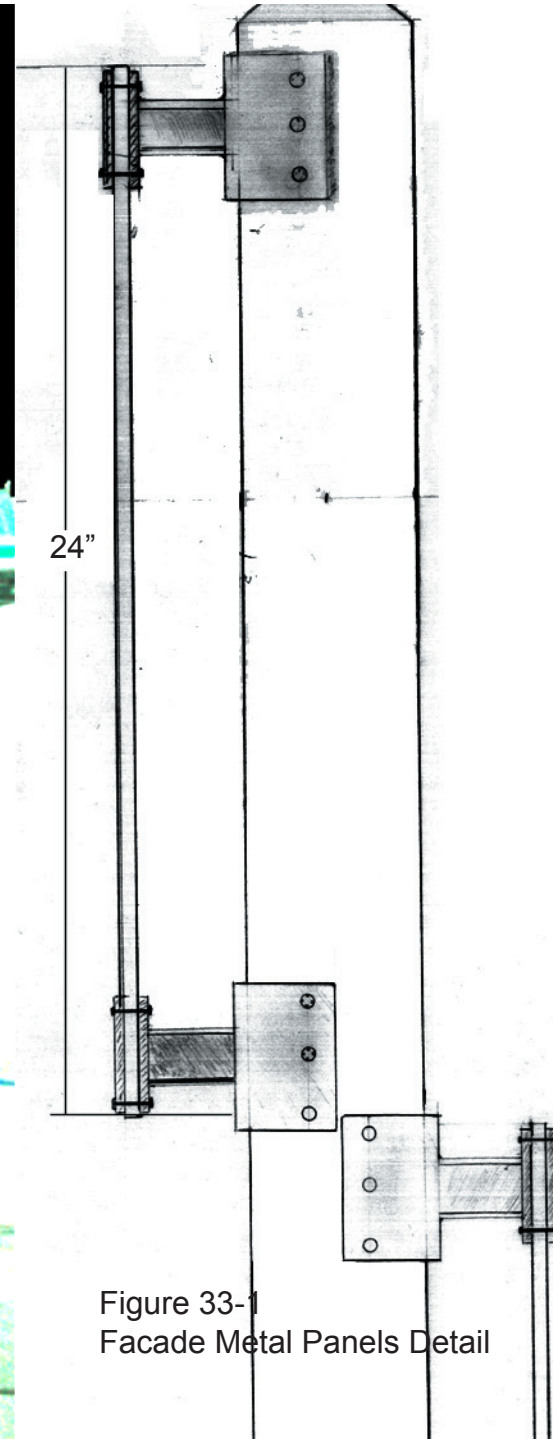
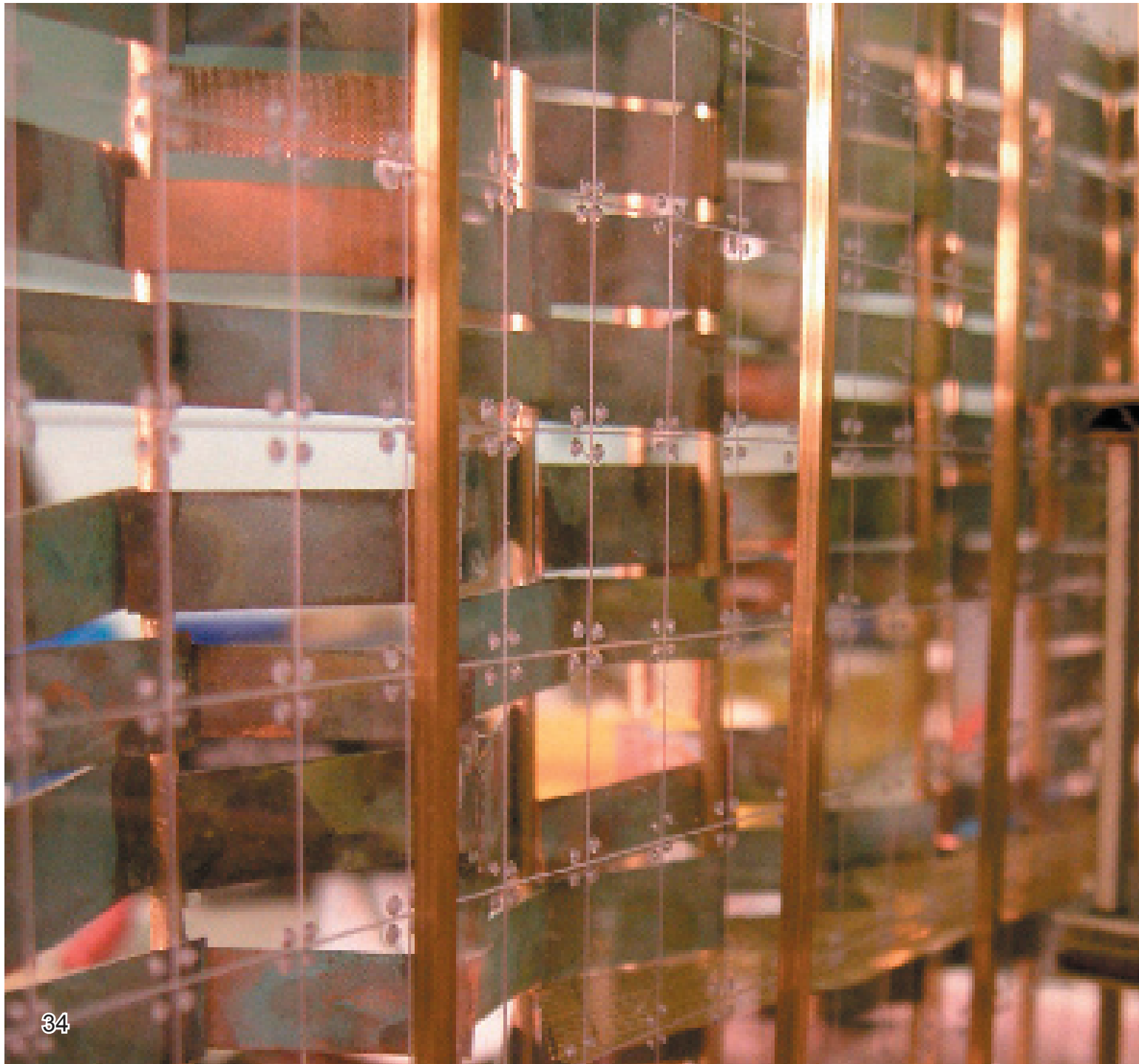


Figure 33-1
Facade Metal Panels Detail



VI. Glass System:

The art gallery has a glass environmental casing that consists of a frameless glass system with an H joint. The H joint is supported by trusses on the inside connected to a steel grid of tubular columns. The H joint is architecturally unique because the glass can be used in a structural way; the H joint makes the glass hold a portion of its own weight. This glass system allows for a much greater transparency in the facade and more light throughout the building. This joint is composed of three main elements: the glass plains, a complex metal connector, and a weather-proof seal between the planes.

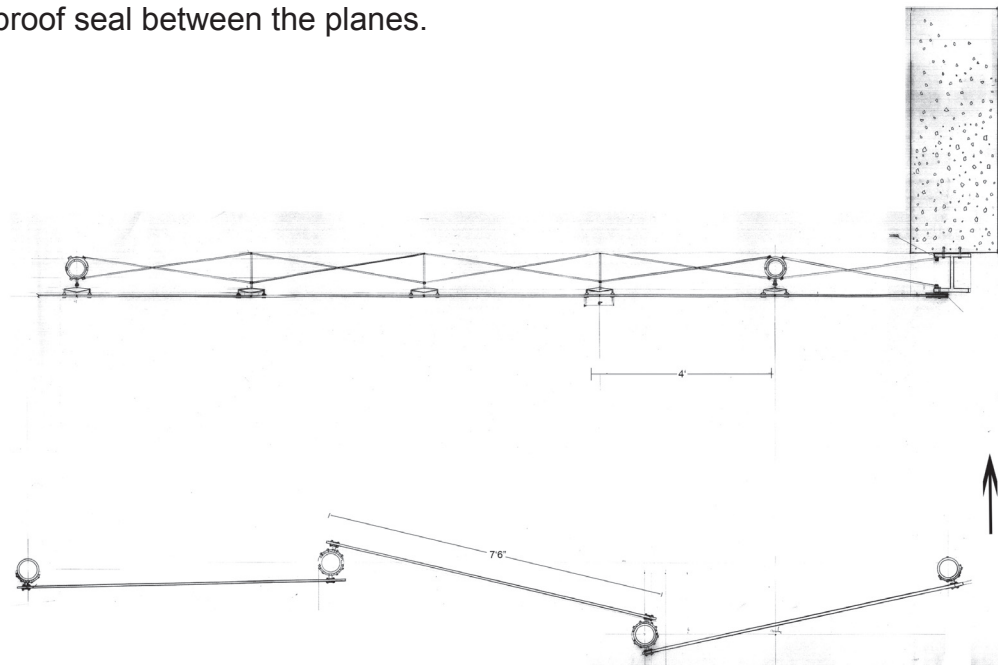


Figure 35-I Facade Glass system detail in plan.

Each glass plane has four holes drilled in each corner so that the bolts used in the H joint will fit. The holes will be drilled offsite and prior to the toughening or heating of the glass. Additionally, each hole must be drilled simultaneously on both sides of the glass. This can be done by using two drills, each drilling on both sides of the panel to avoid chipping (Rice, 1995: 40). Also, the holes are chamfered to maximize the area of contact with the bolt. This minimizes the stress on the glass.

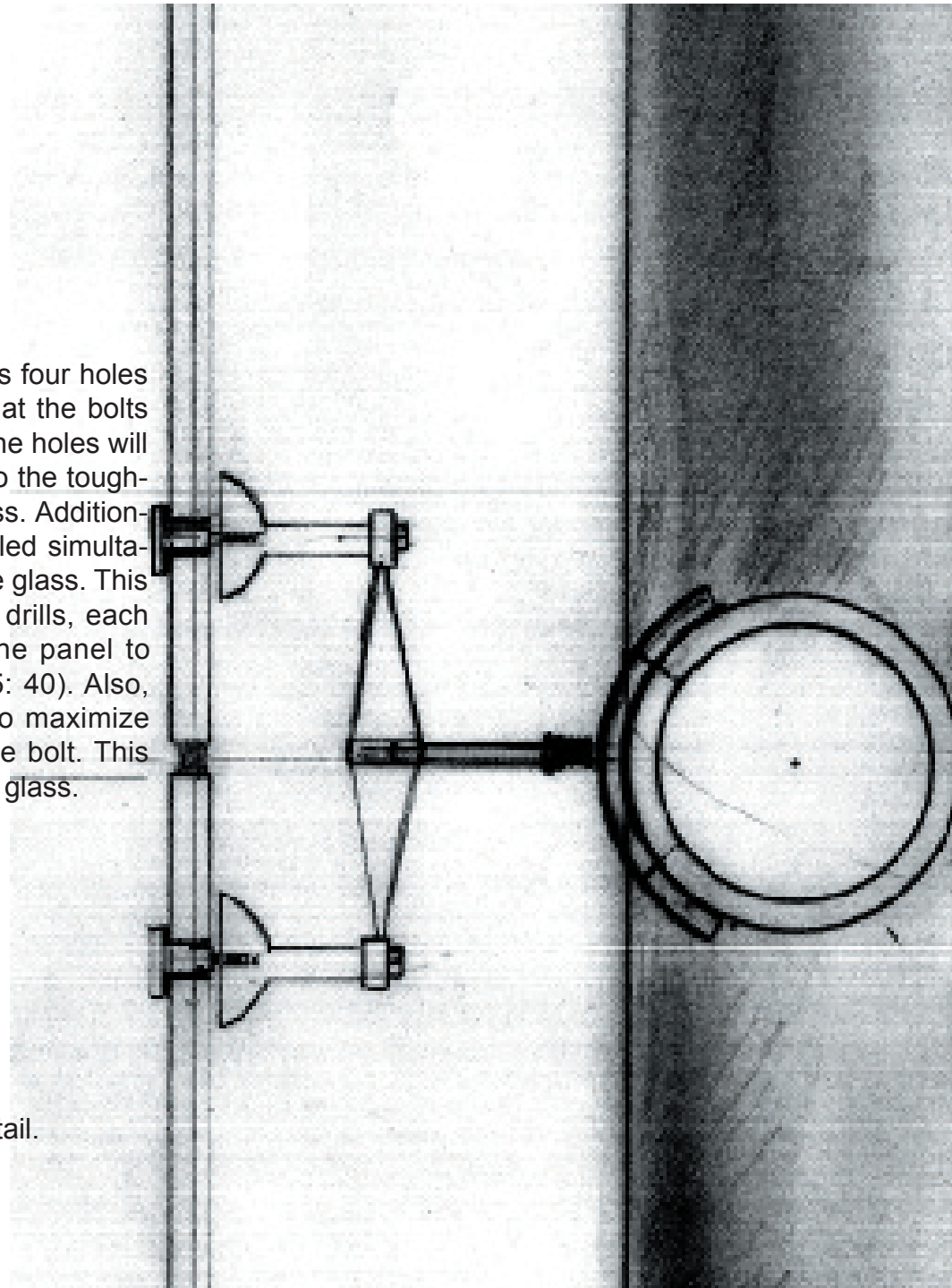


Figure 36-I Glass System detail.

The complex metal connector between the four planes of glass is shaped like an 'H'. This joint connects the planes of glass together in four points at the tips of the H. However, the H joint is also flexible, allowing for some movement between the bolts and the H connector. The H figure distributes the load to all the surrounding planes of glass. Therefore, the H figure holds the glass planes together and transfers the vertical load to the steel metal trusses behind the glass through the center of the H and to the tubular steel grid. The H figure also allows for an increase or decrease of distance between the holes on site. This complex connector is composed of the bolts and the H connector (Rice, 1995: 45).

The seal is a weather-tight seal between the planes of glass. It is made out of a silicone extrusion that is glued to the glass with silicone mastic. The silicone is ideal for this use because it expands up to five times its size. Moreover, it adheres perfectly to the glass creating a weather-tight seal. Whenever the silicone joint fails, it fails internally (Rice, 1995: 57). This is important because it would prevent the glass from cracking on the edges.

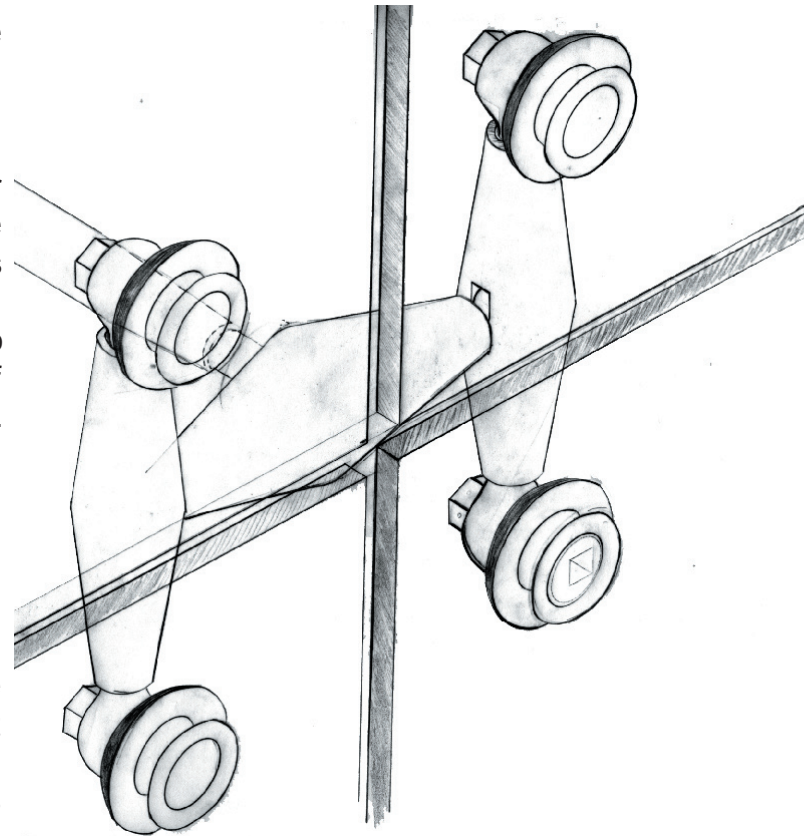


Figure 37-I H-Joint

VII. The Liminal Layer:

Between the layers of the building in certain areas there are transitional or 'liminal' layers. On the southern façade, there is a deck composed of metal decking material supported by metal beams. This deck is located outside, between the glass and mask layer. This deck creates a place for someone to look out through the mask onto the M street and understand the building's layers.

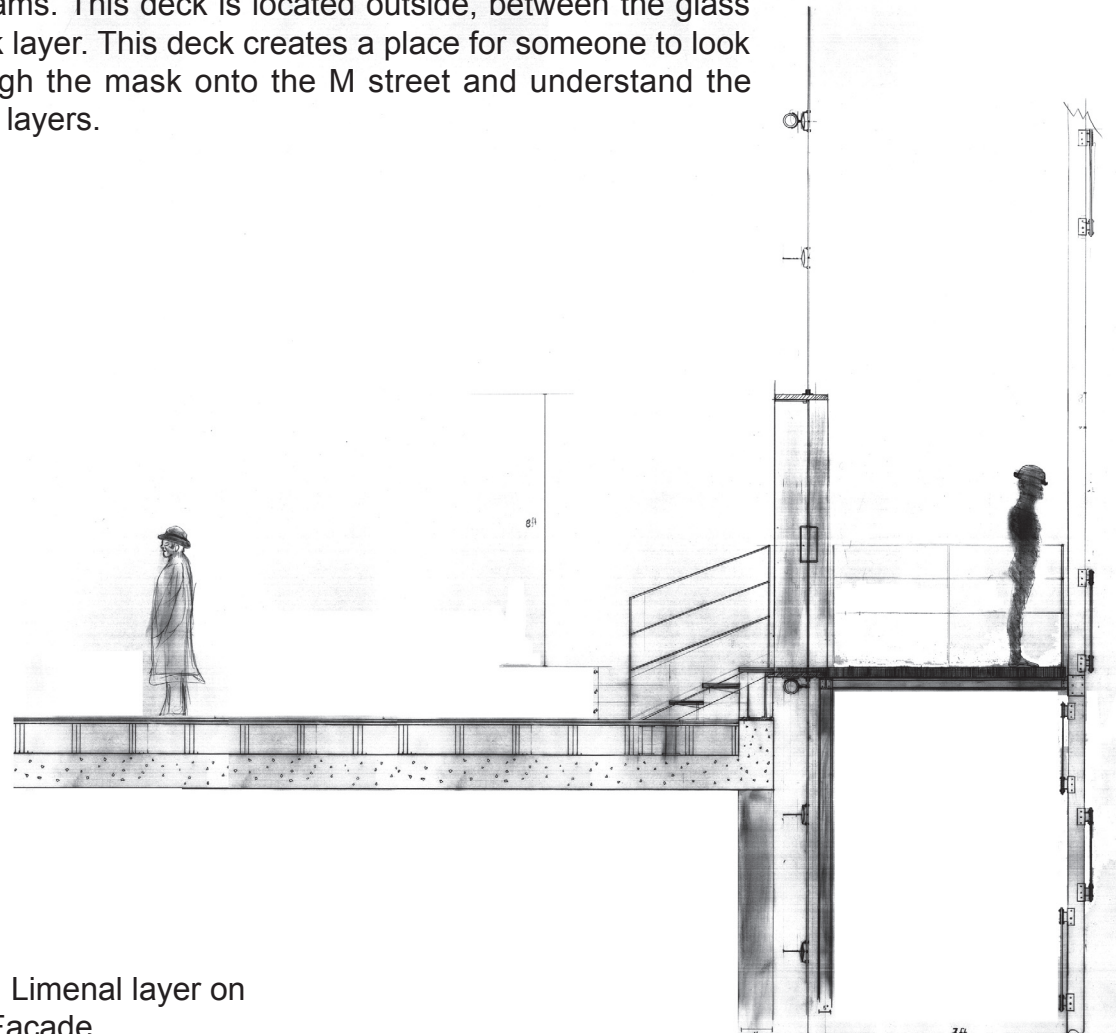
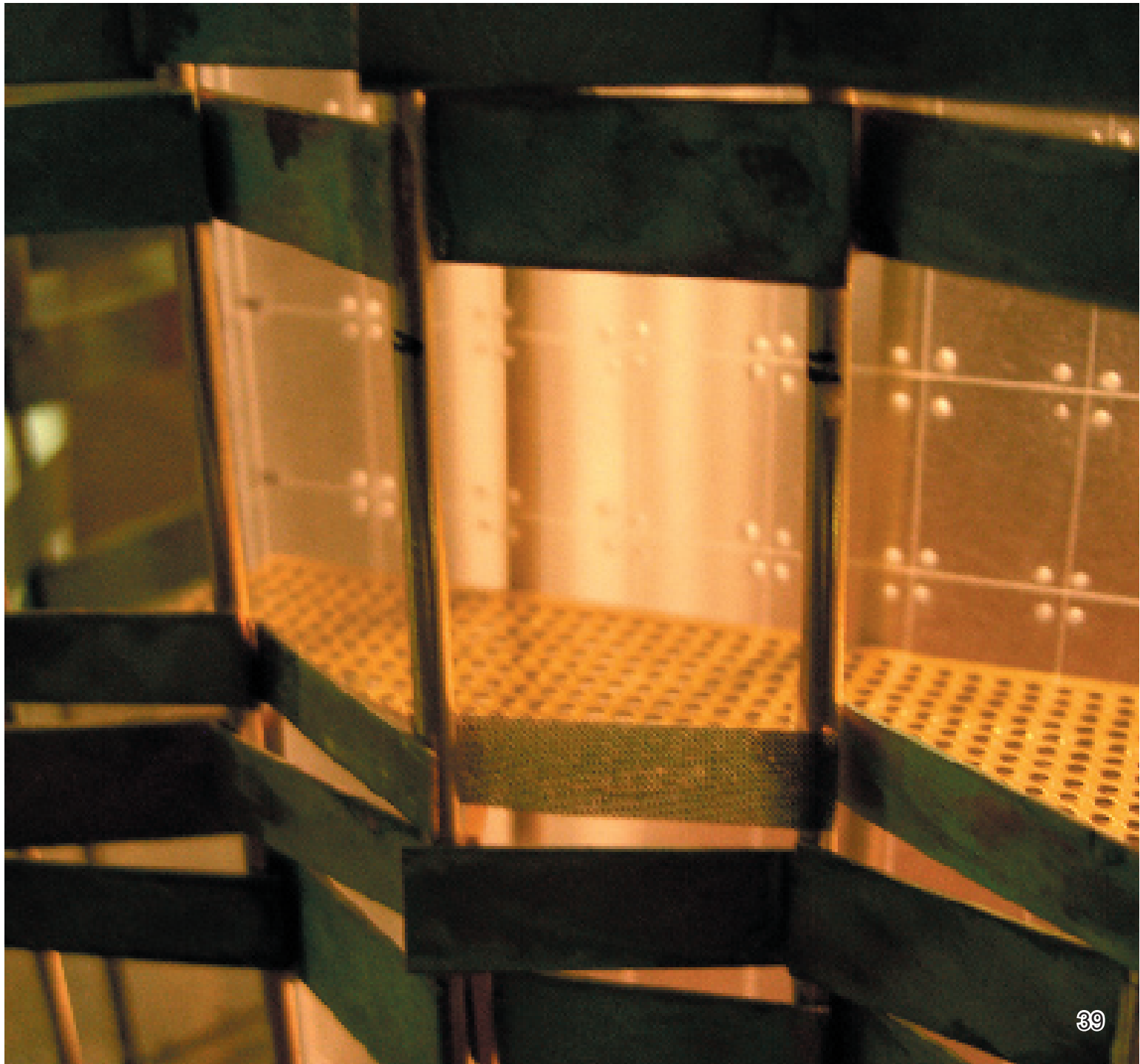
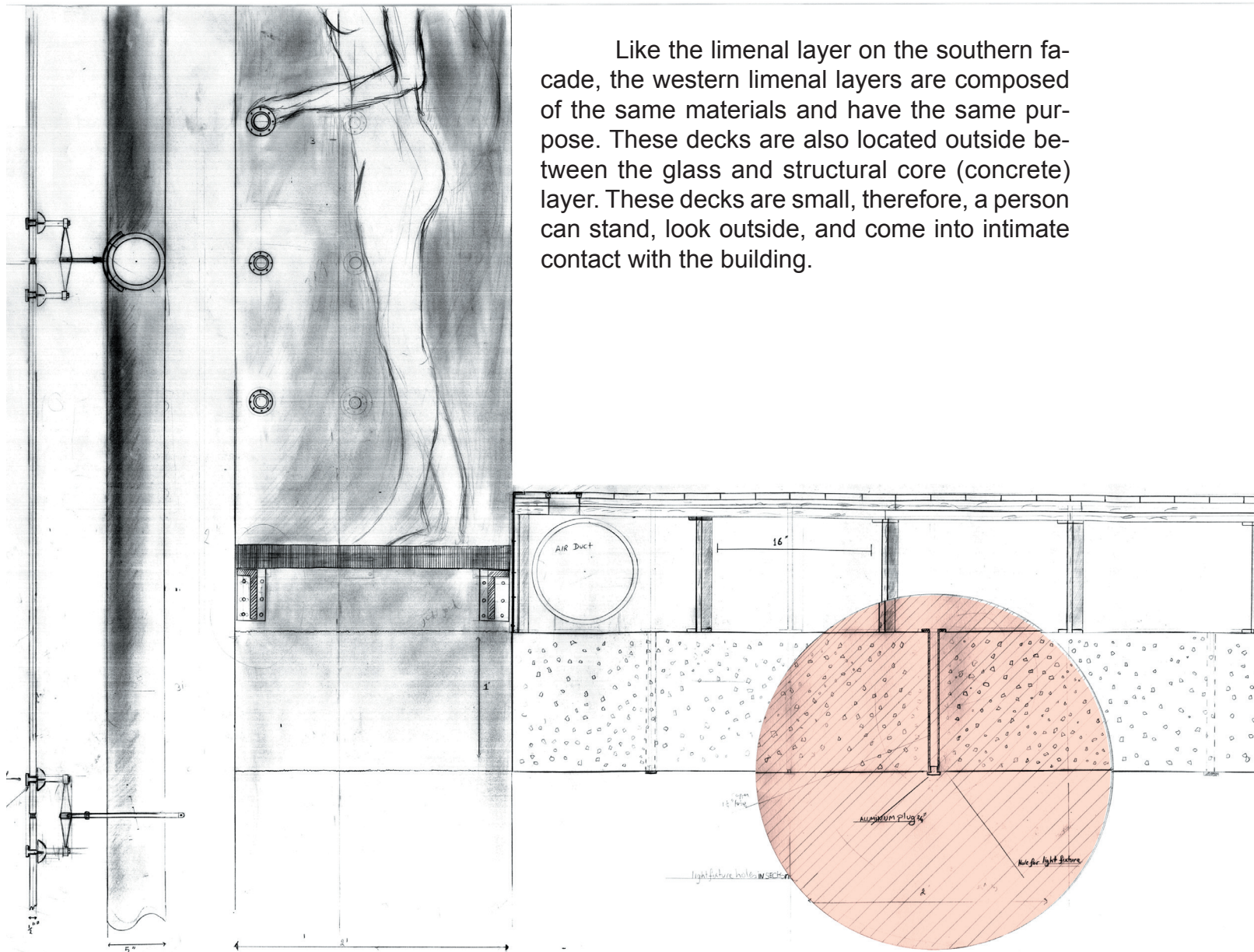


Figure 38-I Liminal layer on Southern Facade





Like the liminal layer on the southern facade, the western liminal layers are composed of the same materials and have the same purpose. These decks are also located outside between the glass and structural core (concrete) layer. These decks are small, therefore, a person can stand, look outside, and come into intimate contact with the building.

Figure 40-1 Liminal Layer on Western Facade



VIII. The Ghost Effect:

On the southern and western façades, the mask layer is made from numerous metal panels. While all the panels look identical to the unaided eye, they are not. Several panels are distinctive because they are translucent. This translucency is achieved by a grid of small perforated holes on the metal panels that allow some light to pass through. The translucency of the metal panels is most apparent at night, when the inside of the building is lit. As the light flows through the panels, a ghost effect is produced.



IX. The Floor System:

In the building, a raised floor system will be used. Therefore, all the electrical, heating, venting, and cooling functions of the building will be housed in the floor, and not the ceiling. By designing the building in this way, all of the building's system functions will be easily accessible.

In Figure 45-I, you can see that there are three layers; a concrete layer, a crawl space layer (through which the heat, venting, and cooling systems, and electrical wiring will run), and a wood layer, or the floor that the people will walk on. Every two feet square, there is a hole through the concrete layer connecting the crawl space layer to the ceiling. This grid of holes will be repeated throughout the ceiling.

Figure 45-II represents the plug designed for the holes. These holes can either be plugged or could be used for a light fixture. The light adaptor would be installed in the crawl space layer. This is purely up to the gallery's curator depending on his/her lighting needs.

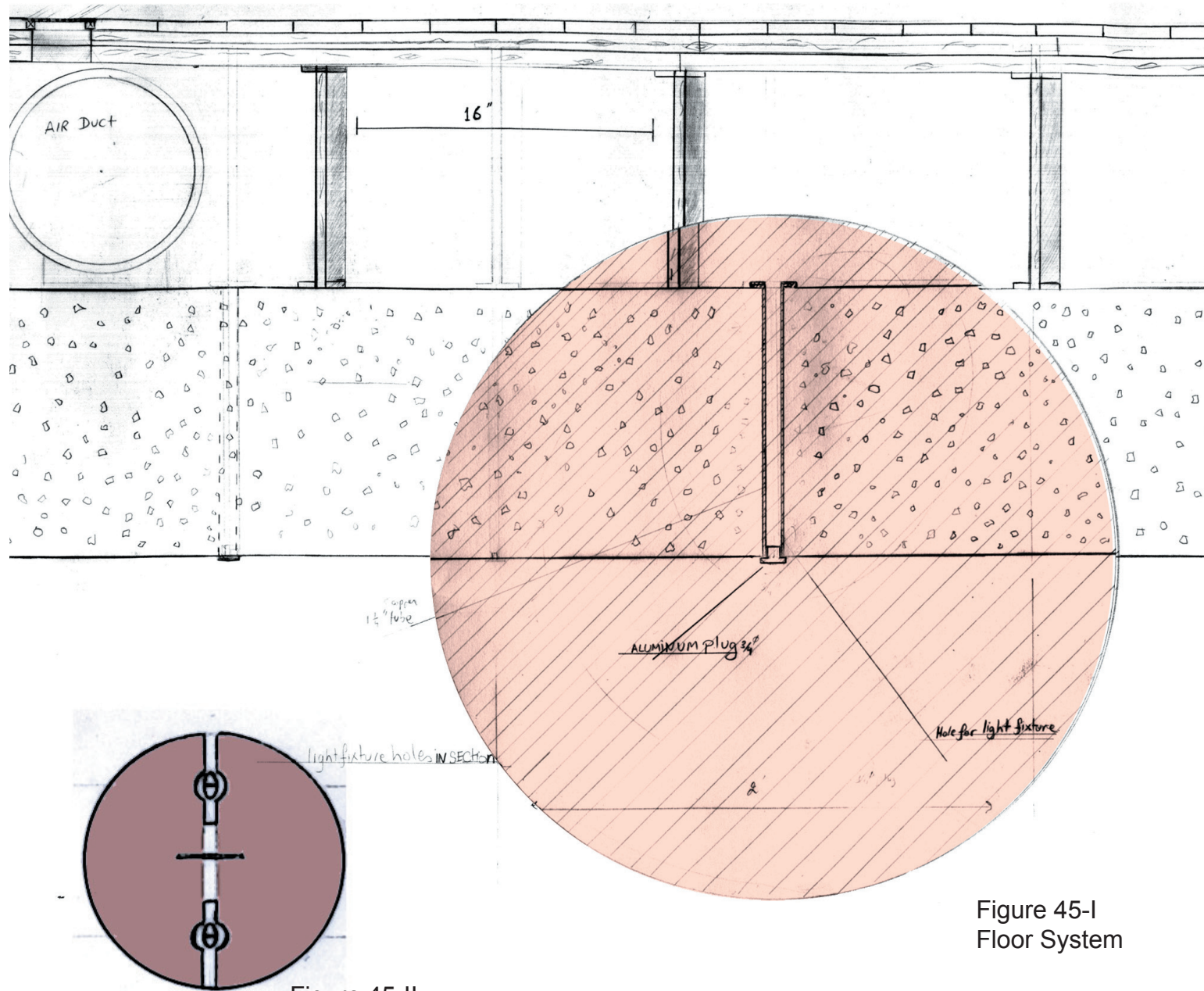


Figure 45-II

Figure 45-I
Floor System

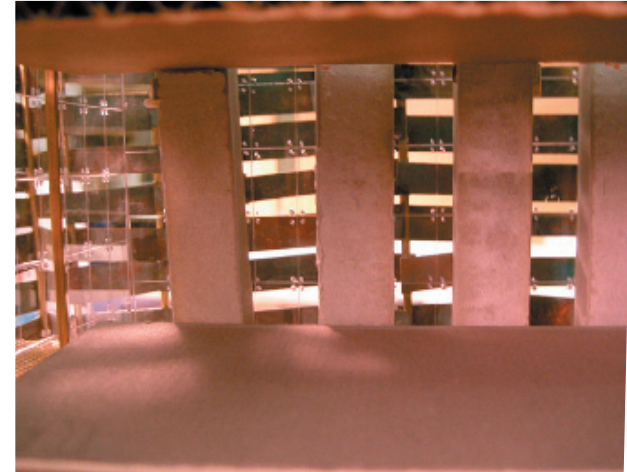


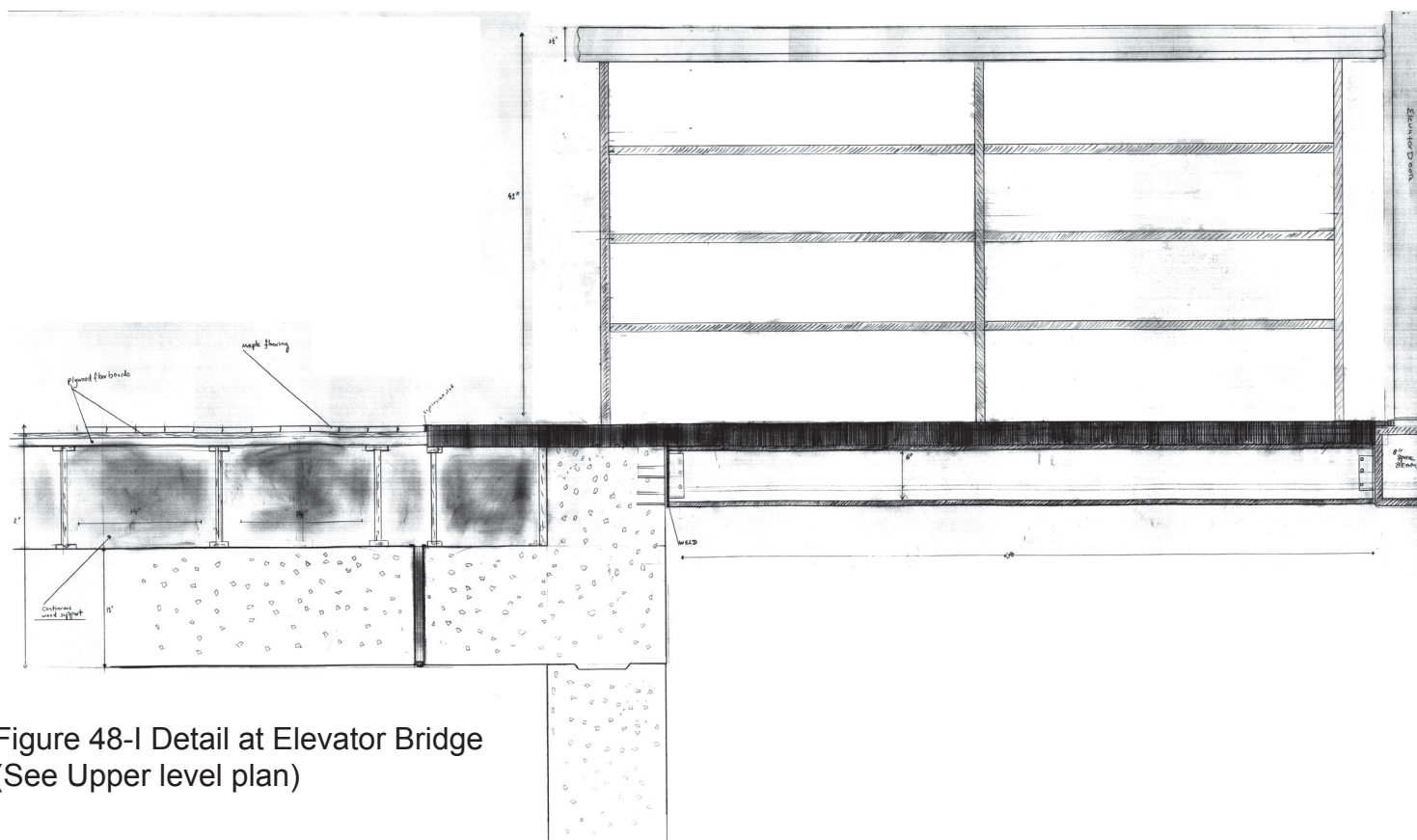
X. The Gallery Core: Elevator, 'Hanging' Bridges, & Service Areas.

The inside of the gallery is an open space with three floors. On each floor there are four varying floor and ceiling heights to accommodate different sizes of art. The varying heights of the floor and ceiling separates the different display areas that are only accessible by either the stairs or the elevator.

The elevator is machine-room-less and has three doors. By having three doors, the elevator can stop at three different sub-levels at each floor. This solves the accessibility dilemma produced by having varying floor heights. The elevator is connected to the concrete layers by 'hanging' bridges.

The stairs, HVAC systems, office, loading area, and temporary storage area are located in the back of the building. The loading dock is not paved, but rather incorporated in the garden by a stone grid laid in the surface of the ground. This stone grid, which covers the entire garden, is not only a place for the trucks to drive on, but it also makes the garden more accessible. And finally, the restrooms, storage, and work shops are located in the basement of the building.





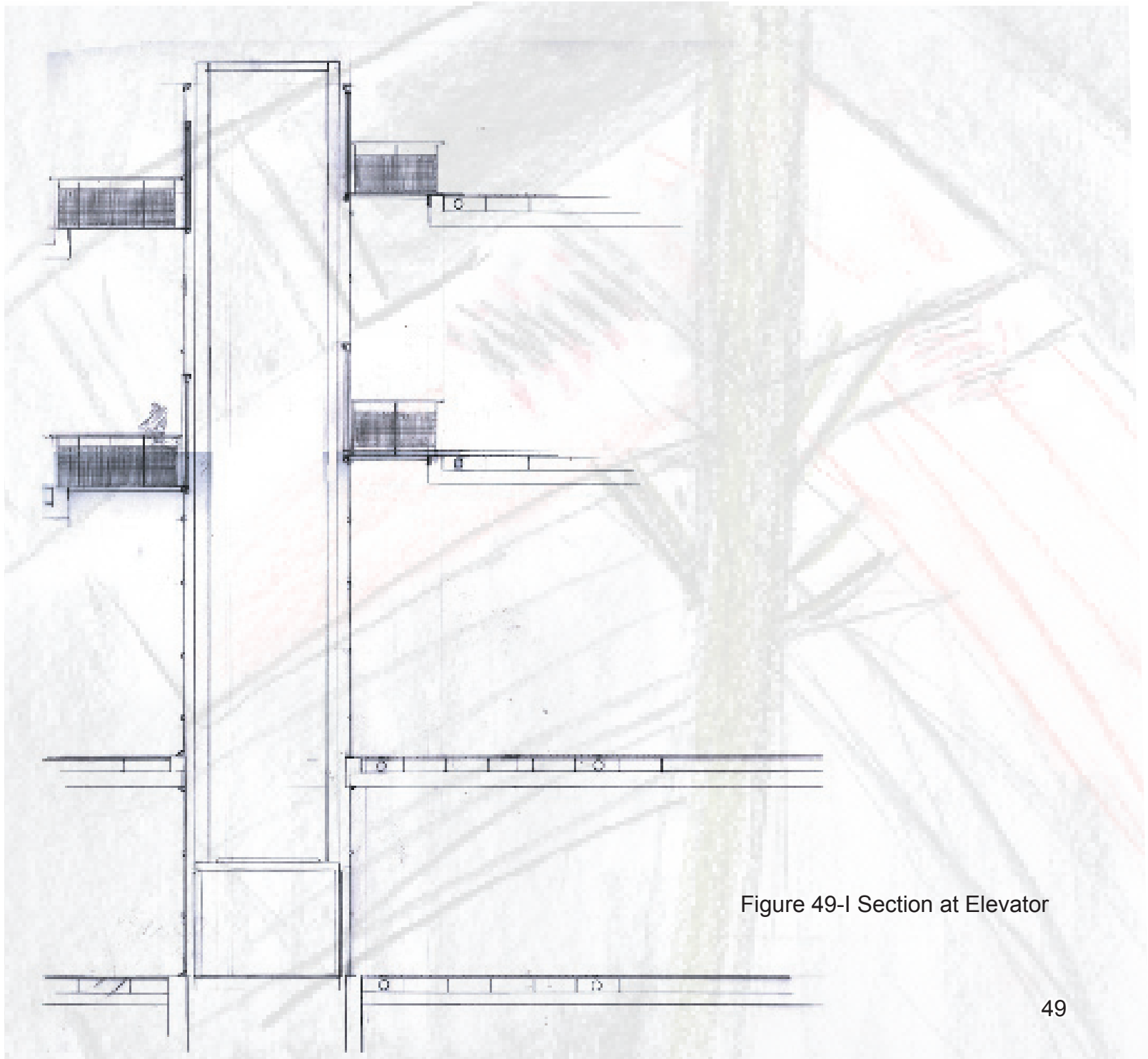


Figure 49-I Section at Elevator



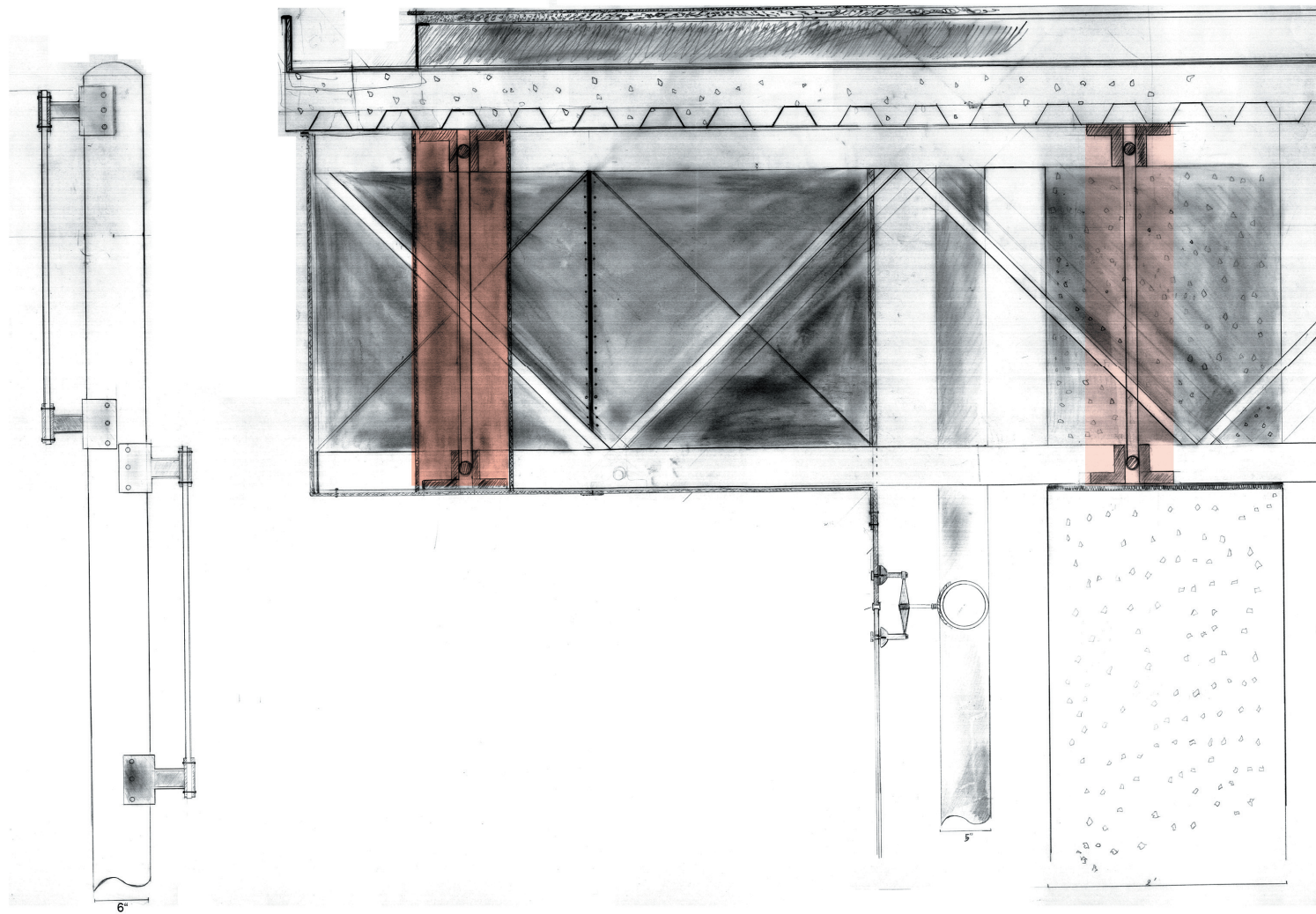


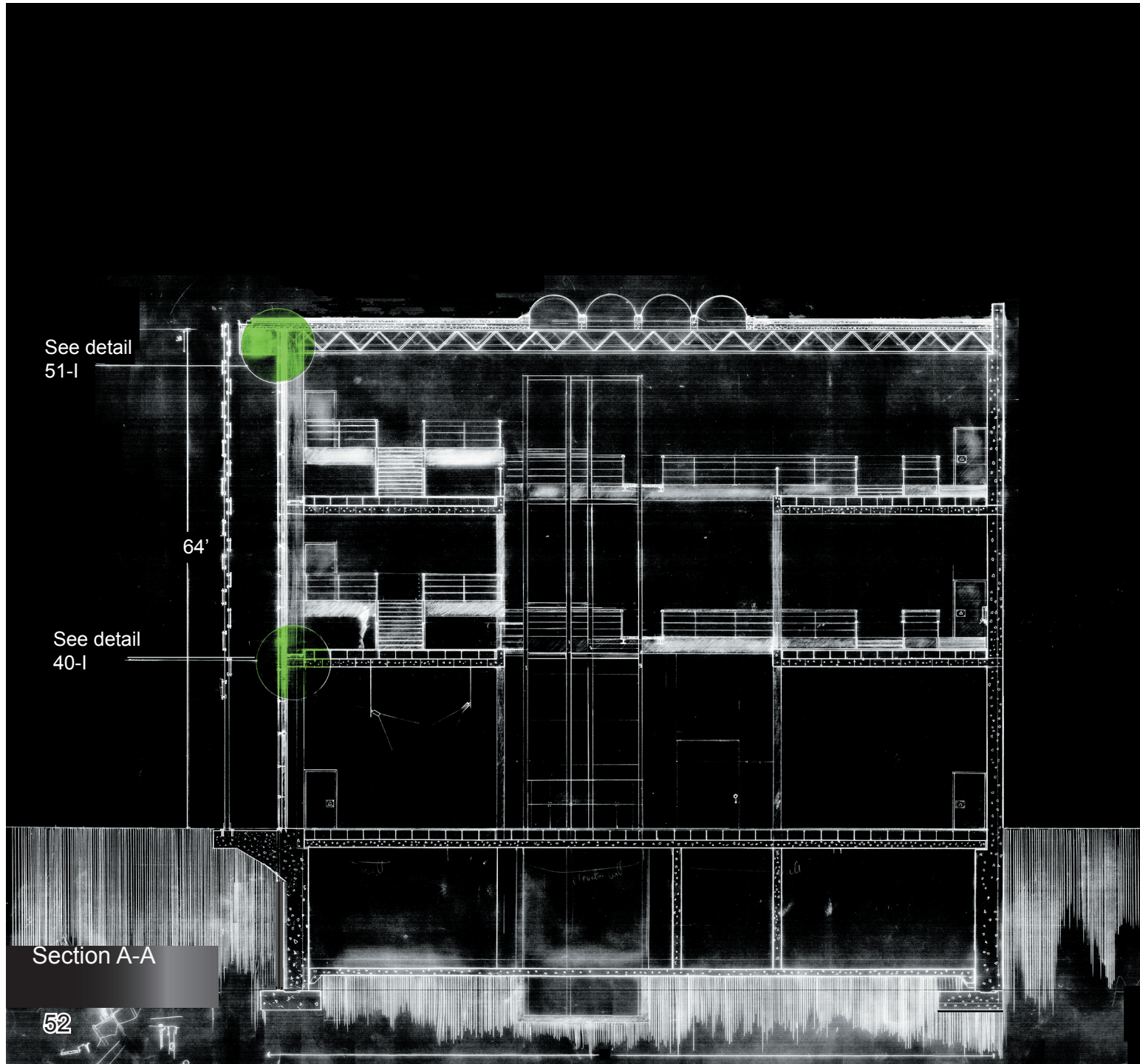
Figure 51-I
Detail at Roof Truss

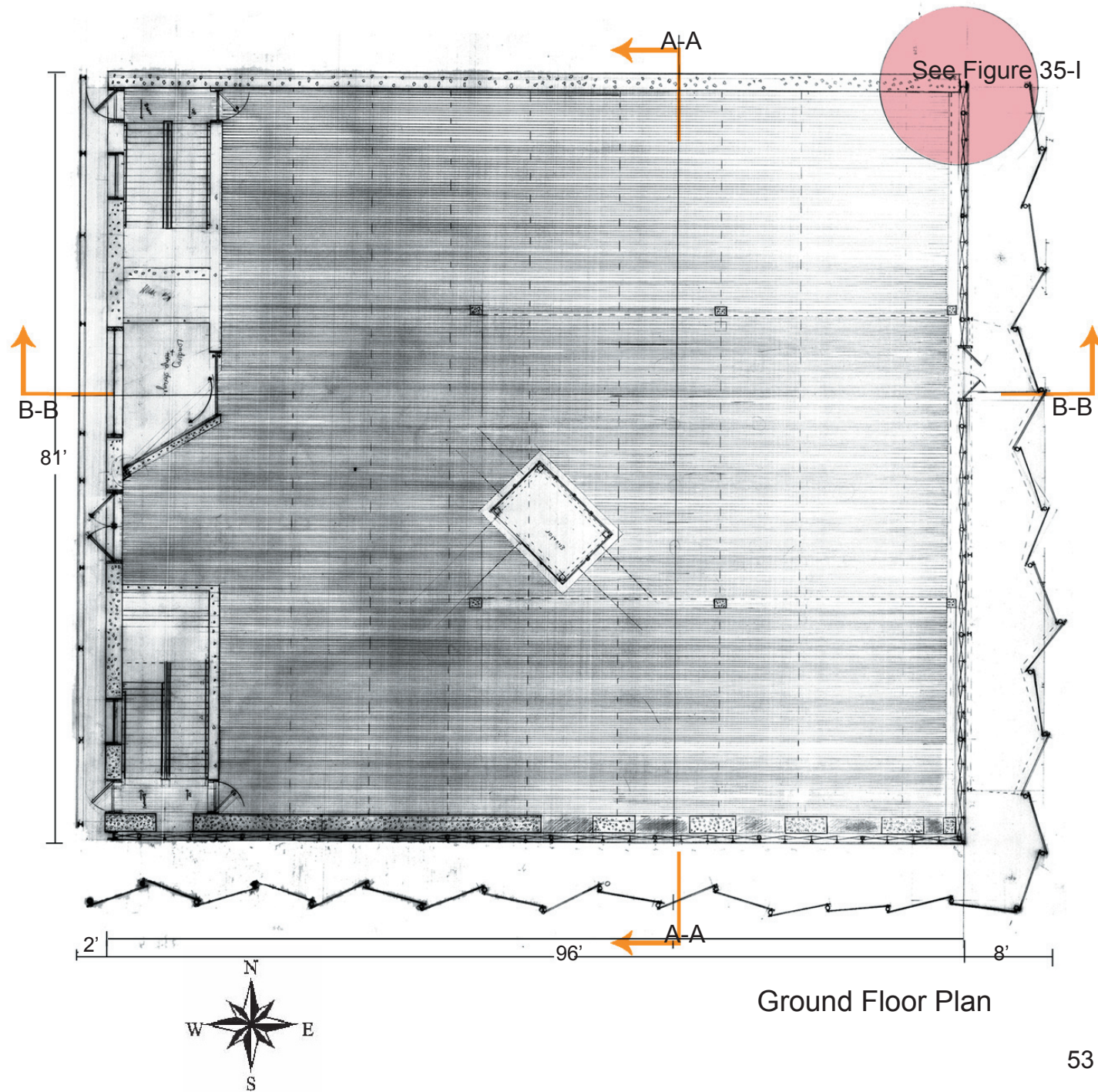
See detail
51-I

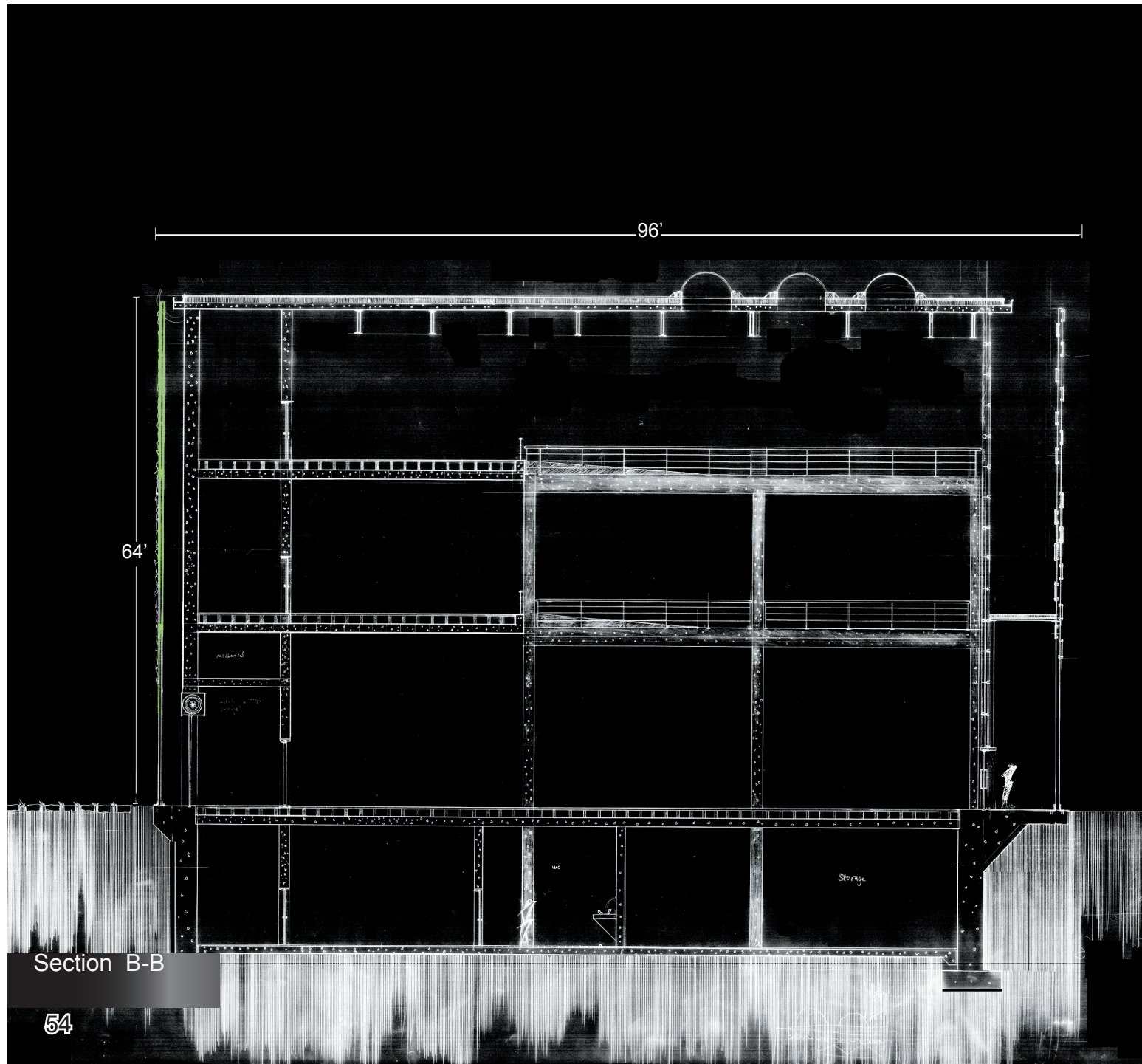
64'

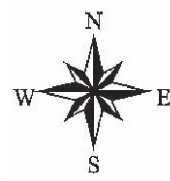
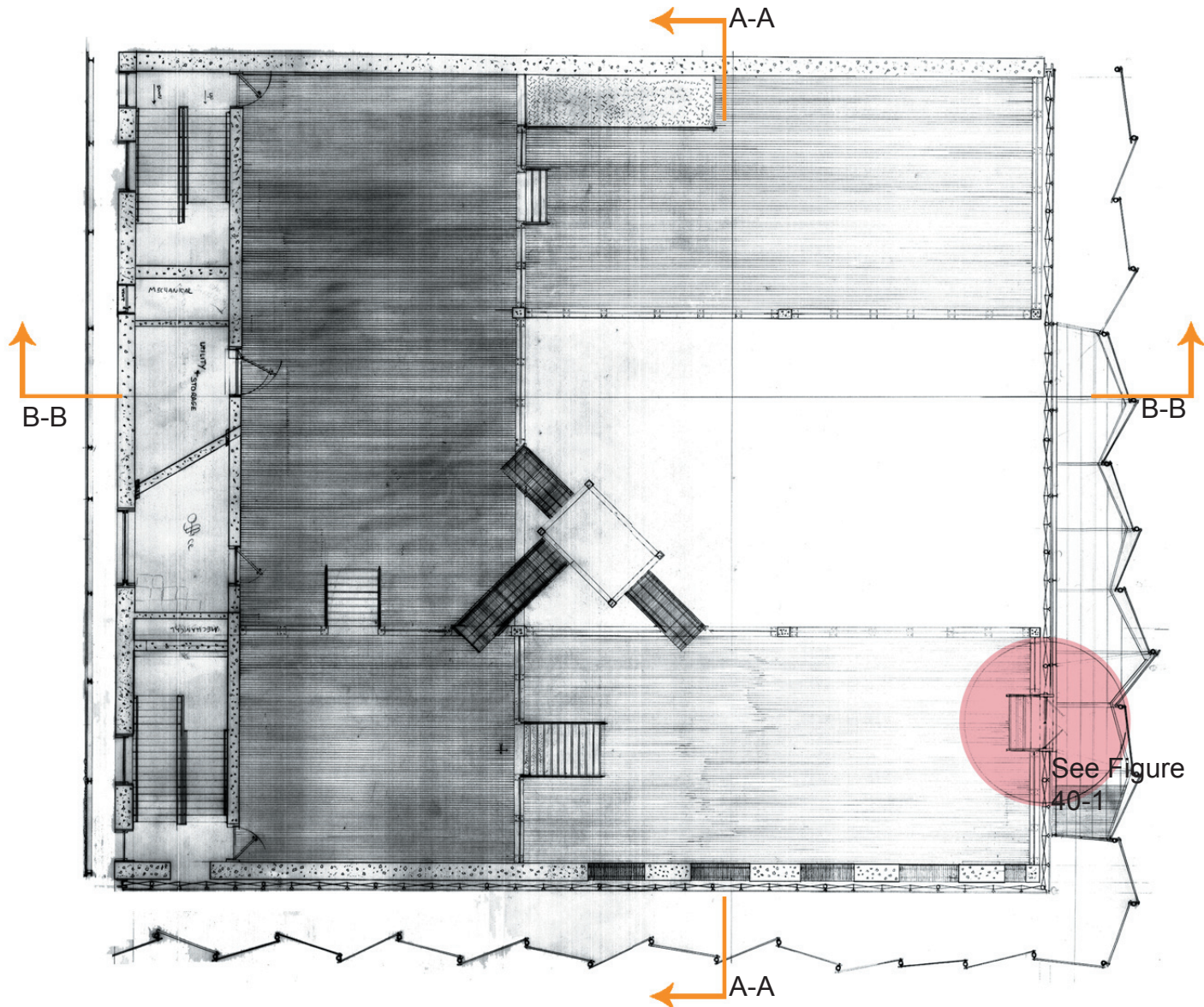
See detail
40-I

Section A-A

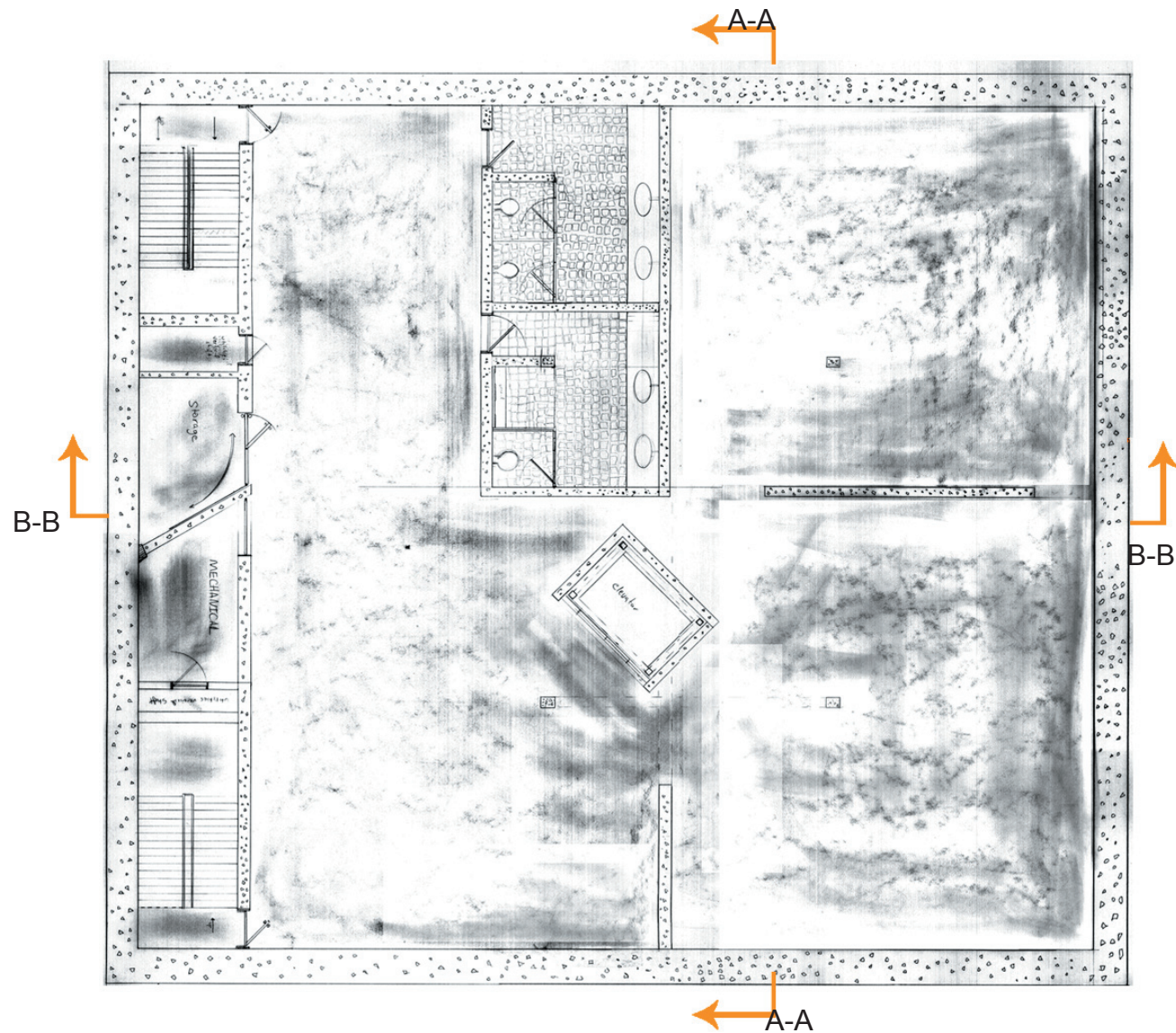




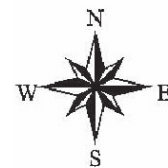




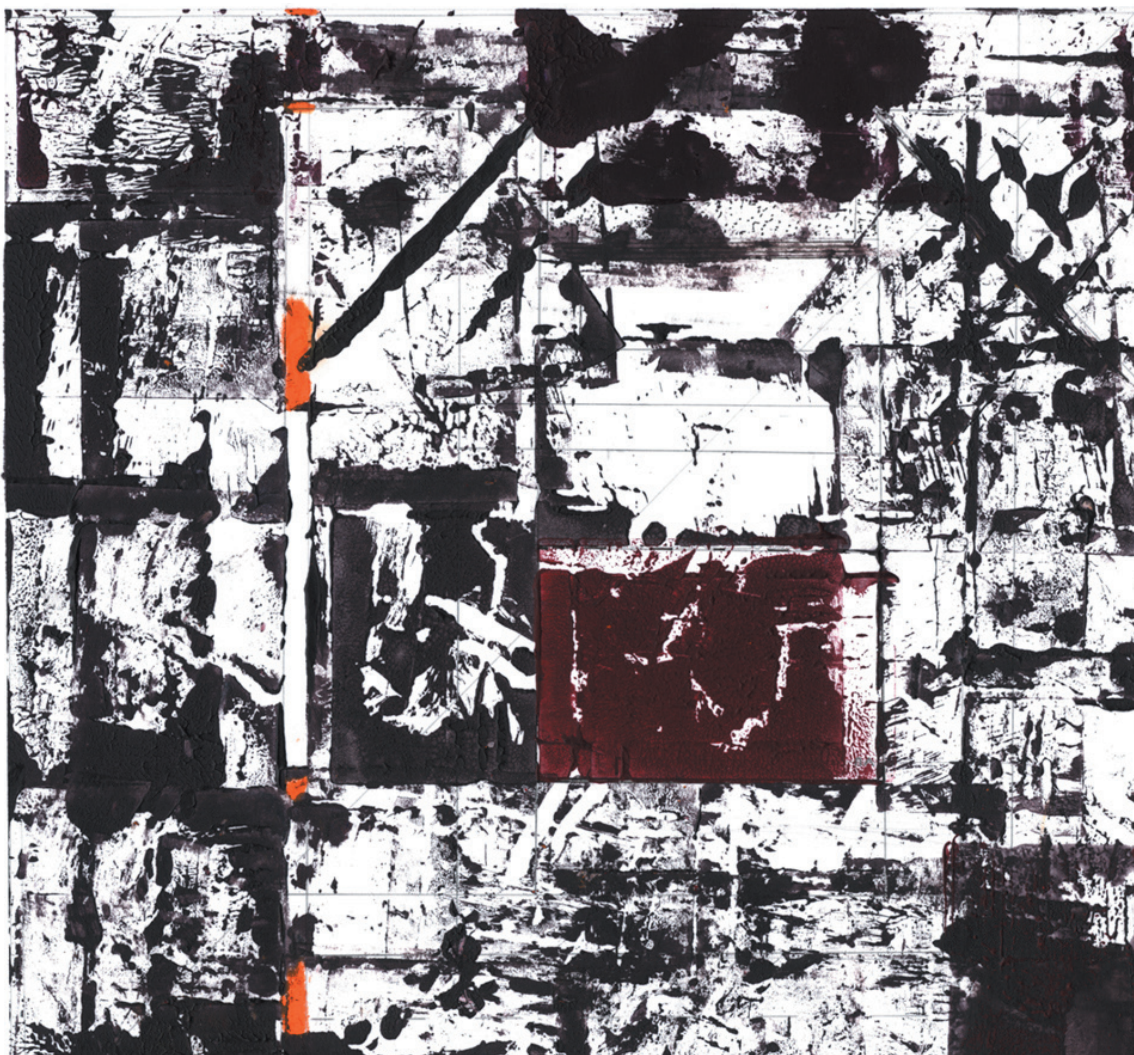
Upper Level Floor Plan



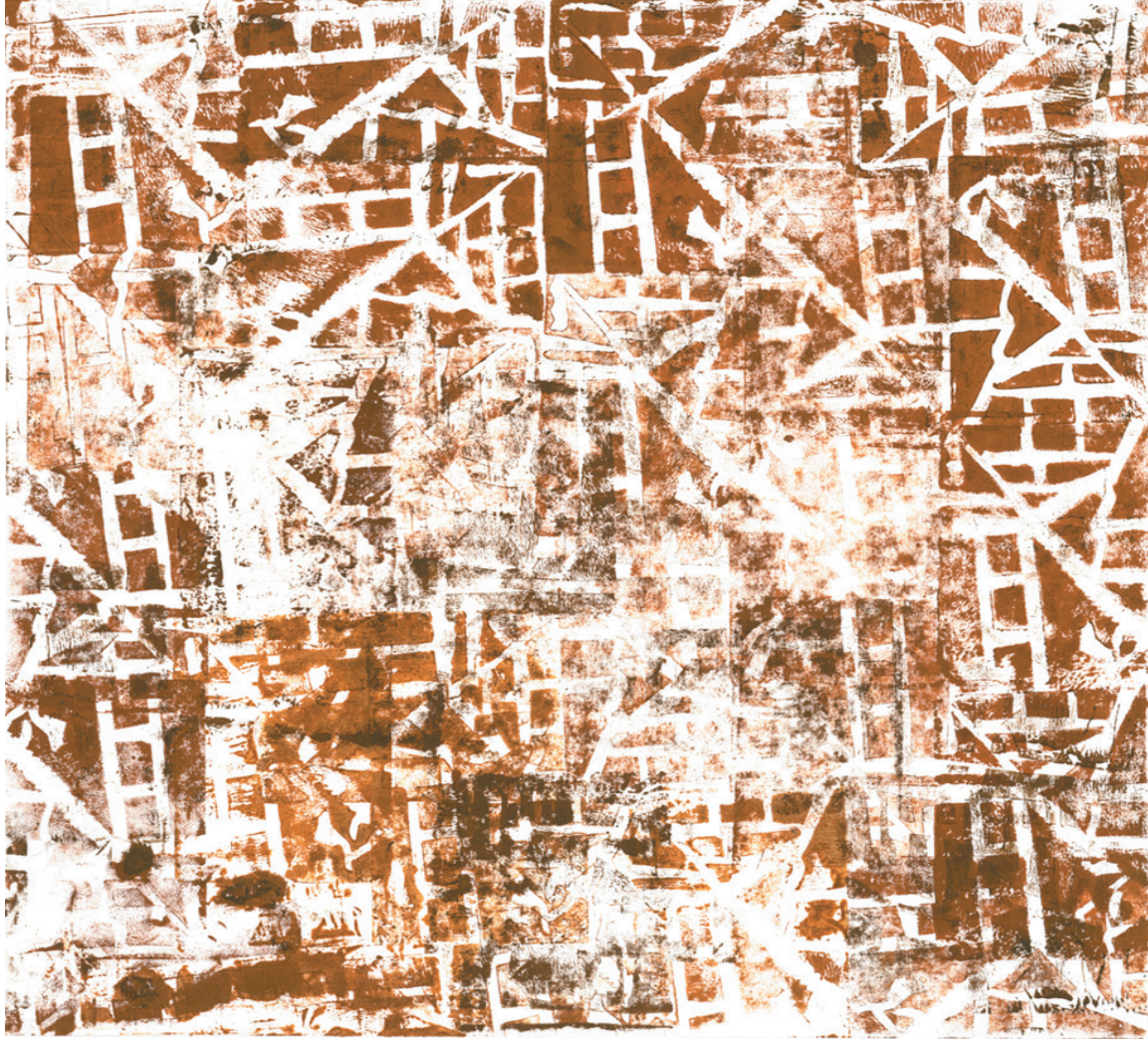
Basement Floor Plan



XI
FACADE STUDIES













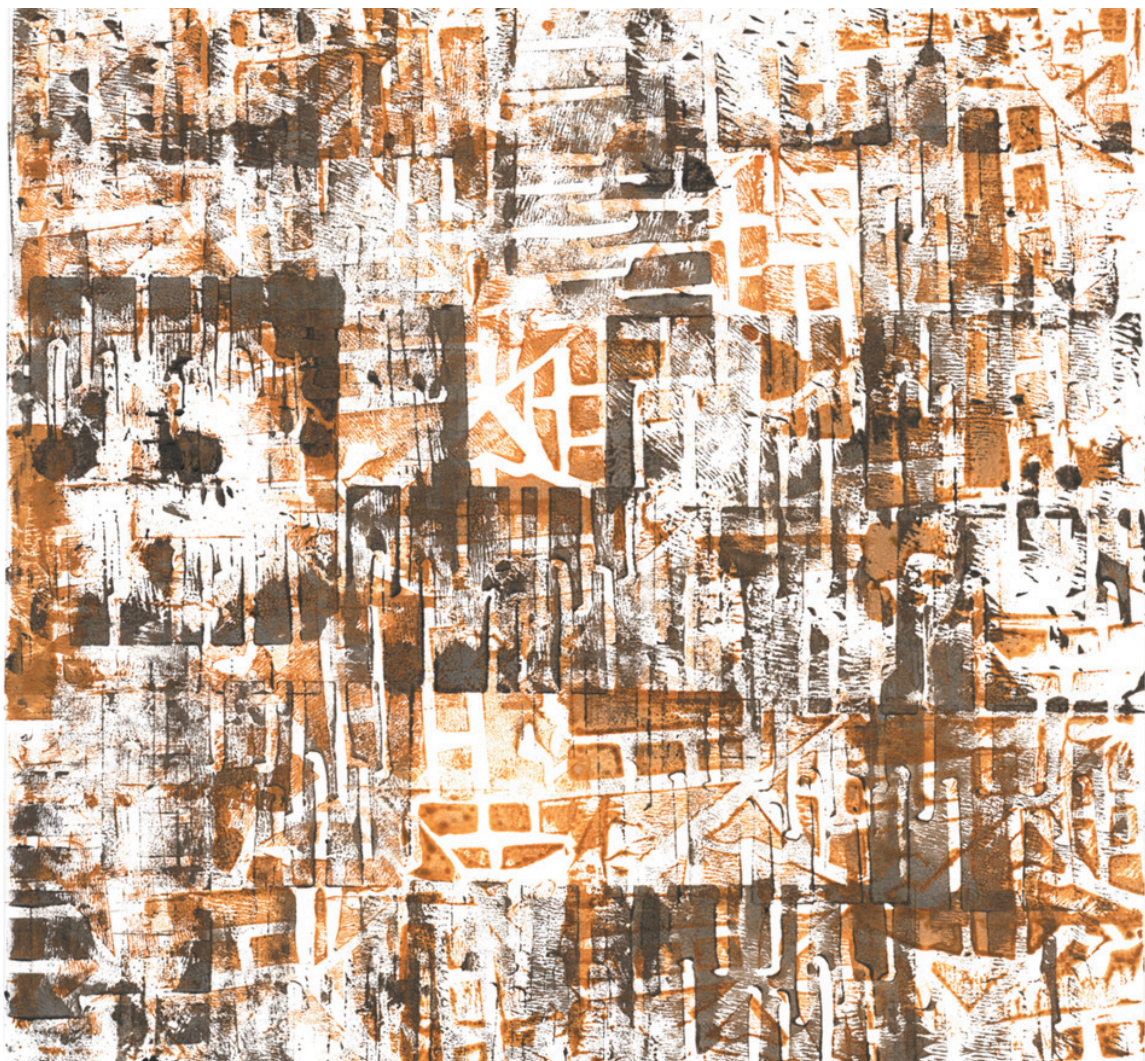






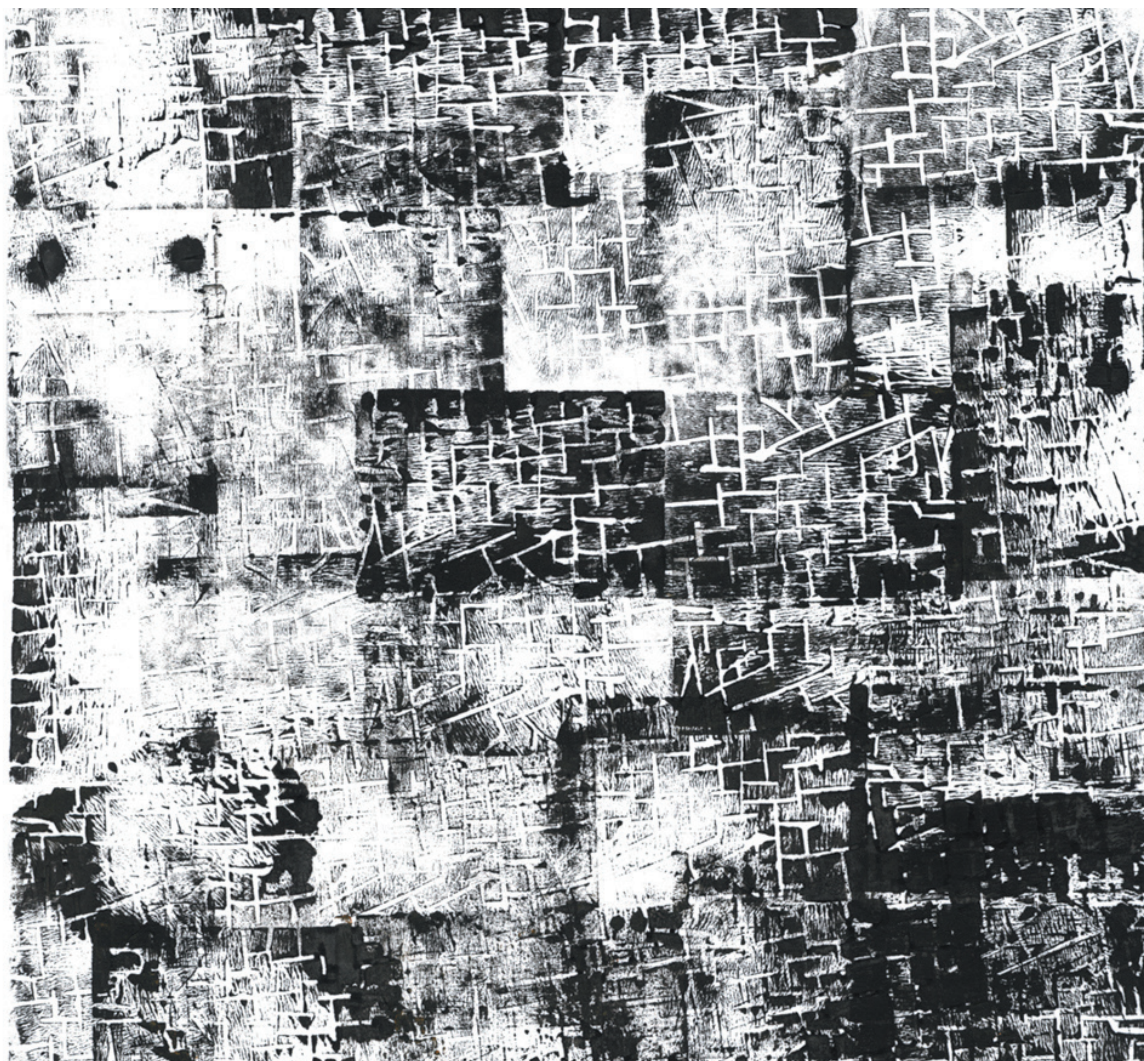












Bibliography:

Brunet, Jacques. 1982. "Masks of Southeast Asia." *The Drama Review* 26. 4 (Winter): 66-69.

Georgetown Washington DC: business, attractions of Georgetown and many more. <<http://www.georgetowndc.com/>>

Picton, John. 1990. "Whats in a Mask." *African Languages and Cultures* 3. 2: 181-202.

Pollock, Donald. 1995. "Masks and the Semiotics of Identity." *The Journal of the Royal Anthropological Institute* 1. 3 (Sept): 581-597.

Rice, Peter. 1995. *Structural Glass*. E & FN Spon: New York.

Tonkin, Elizabeth. 1979. "Masks and Power." *Man* (N.S.) 14 (June): 237-248.

Venetian Masks. <<http://www.masksvenetian.com/>>

Wingert, Paul A. 1954. "Anatomical Interpretations in African Masks." *Man* 54 (May): 69-71.




Image Credits:

All images and photographs are the work of the author.