

ABSTRACT

Title of Thesis: STUDIO METAMORPHOSIS:
A PERFORMANCE THEATER FOR GEORGETOWN, WASHINGTON, D.C

Anita Bui-Yu Chen, Masters of Architecture, 2008

Thesis Directed by: Professor Michael Ambrose
School of Architecture, Planning and Preservation

Studio *μεταμόρφωσις* (metamorphosis) explores the physical and psychological transformation of performance architecture. The performance theater is a threshold into the world of the narrative. It has a dual role of an actor and spectator. The actor takes on a physical transformation of each narrative. The building and all its parts becomes a costume and physical embodiment of the character. The theater is also a spectator. As spectator, the theater suspends reality and allows for the world of the narrative to take over. This psychological canvas upon allows the world of the performance comes to life.

STUDIO METAMORPHOSIS:
A PERFORMANCE THEATER FOR GEORGETOWN, WASHINGTON, D.C.

by

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Source: Author.

INTRODUCTION

μεταμόρφωσις (metamorphosis) consists of the Greek words: μετα- “change”¹ and μόρφω “form”.² Metamorphosis is a profound change in form from one stage to the next in the life history of an organism.³ This same physiological change is analogous to the physical and psychological change that occurs in a theater. This thesis explores the physical and psychological transformation of performance architecture. Studio μεταμόρφωσις is a performance studio that investigates the theater’s role as an actor and a spectator.

The theater is an actor, and its context, the city, the stage. The building influences the relationships of its context and responds to its context. It is a physical threshold within the city (between Georgetown and Foggy Bottom) and the threshold between the city and the performance. The role of “actor” speaks largely to the physical characteristics of the building that allow the building to transform and assume multiple identities over time. Each performance requires a uniquely different configuration of modular units. These units weave, twine, and knit creating a unique metaphorical costume for each performance.

The theater is a spectator. As spectator, the theater suspends reality and allows for the world of the narrative to take over. This psychological canvas upon allows the world of the performance comes to life. The theater is the psychological border, link and container that can close off or connect the narrative to reality.

1. “μετα-” Henry George Liddell. Robert Scott. *A Greek-English Lexicon*. revised and augmented throughout by. Sir Henry Stuart Jones. with the assistance of. Roderick McKenzie. Oxford. Clarendon Press. 1940.

2. “μόρφω” Henry George Liddell. Robert Scott. *A Greek-English Lexicon*. revised and augmented throughout by. Sir Henry Stuart Jones. with the assistance of. Roderick McKenzie. Oxford. Clarendon Press. 1940.

3. metamorphosis.” Dictionary.com *Unabridged (v 1.1)*. Random House, Inc. 04 Dec. 2008. <Dictionary.com <http://dictionary.reference.com/browse/metamorphosis>>.

CHAPTER 1: THESIS AND PHILOSOPHY

Studio μεταμόρφωσις proposed the idea that architecture can act as a record of movement and narrative. The experimental theater allows the performer to design an entire performance space (and theater) according to the needs of the narrative and the performance. Flexible and malleable walls can be re-configured but the performer to affect the movement and experience of the audience. However, the physical movement within the building and outside the building affect the physical form of the building. The audience will affect the space and walls by how they occupy and change it.

The physical form of the building embraces the narrative, the performance and the audience. The narrative is a preconceived notion of space for the performance that is designed to tell a story. From start to finish the performance will the environment of the performance. The audience is a temporary force on the building by occupying the space only briefly, but specifically to experience the performance. Each force will push the form of the building until a natural balance is found. Walls for a performance may change by the end of the performance to allow the audience to leave.

CHAPTER 2: SITE

Lincoln Memorial, the Capitol Building and the Smithsonian Castle are some of the images that come to mind when discussing Washington, DC. These buildings have historical and national identities that influence the way Washington, DC is seen around the world. There is no doubt the Washington, DC is identified with historical and national symbols. However, The image of Washington, DC as a cultural center of performing arts is not as strong. One striking example of this is the placement of John F. Kennedy Center for the Performing Arts. The Kennedy Center is located almost a half a mile off to the side of the mall and has no pedestrian connections to the mall. In fact the Kennedy Center is separated from the rest of the mall and the city by a sea of highway on-ramps (see figure 2.1). This isolation forces the Kennedy Center to serve only a specific crowd who are attending to performances or specific events. The building loses the mass of sight seeing visitors that wander through the national mall every day. Consequently, the city turns its focus from the performance arts and focuses more on the historical aspect of national culture. The proposed Studio *μεταμόρφωσις* is a catalyst to reestablish the importance of performing arts as part of the

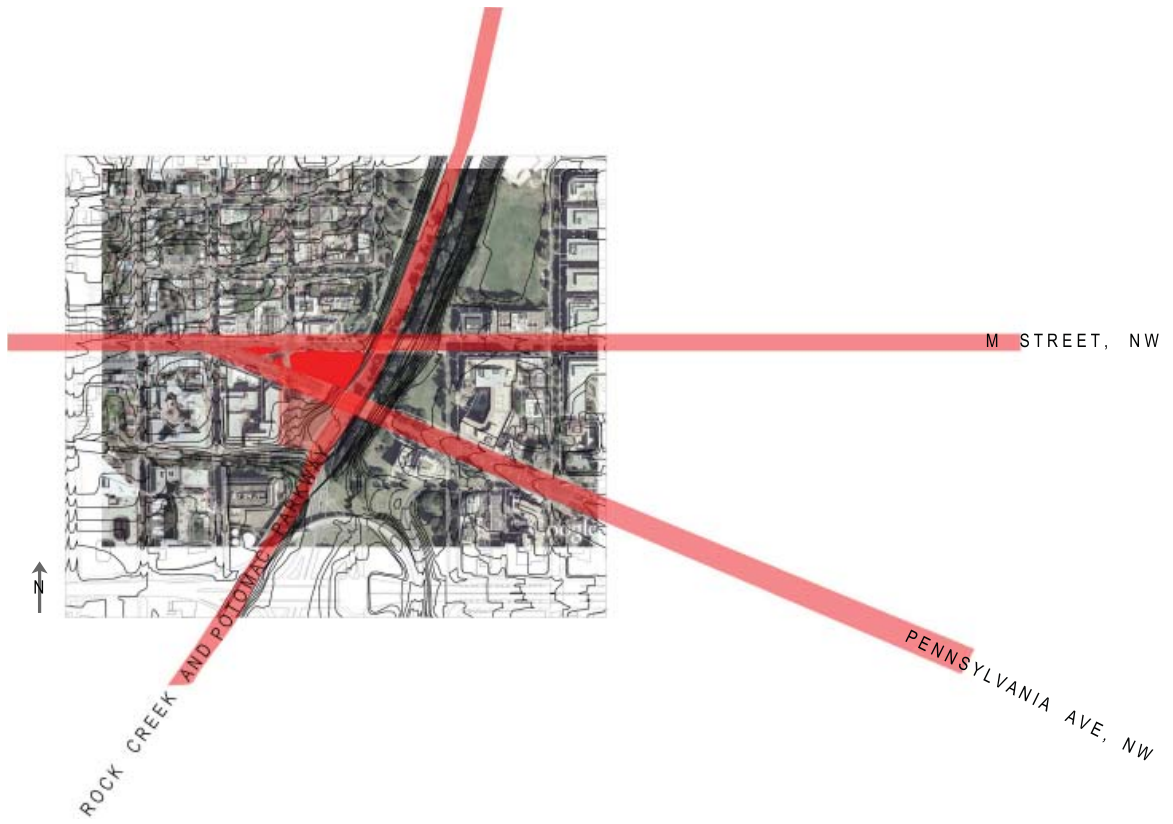


2.1: Aerial view of Washington, DC. Image from Google Earth 2008



2.2: Site in Washington DC context. Image from Google Earth 2008
identity and culture. It is accessible to the public and holds a visible presence in Georgetown, Washington, D.C.

The proposed site of Studio Metamorphosis is situated on the edge of Georgetown, adjacent to Rock Creek Park and Foggy Bottom (see figure 2.2). The site sits at the intersection of M Street and Pennsylvania Avenue with 28th Street, NW to the west and the Rock Creek and Potomac Parkway to the east. Here, the regular gridiron layout of DC intersects the diagonal of the Pennsylvania Avenue creating a triangular site. This triangular site has a figural role at the end of the main procession through Georgetown on M Street (see figures 2.3 and 2.4). The relatively flat site drops a significant 24 feet on the east side marking the Rock Creek and Potomac Parkway, which separates Georgetown from Foggy Bottom. This divide between Georgetown and Foggy Bottom is so significant that both M Street and Pennsylvania Avenue extend into bridges to cross the 360-foot wide expanse.



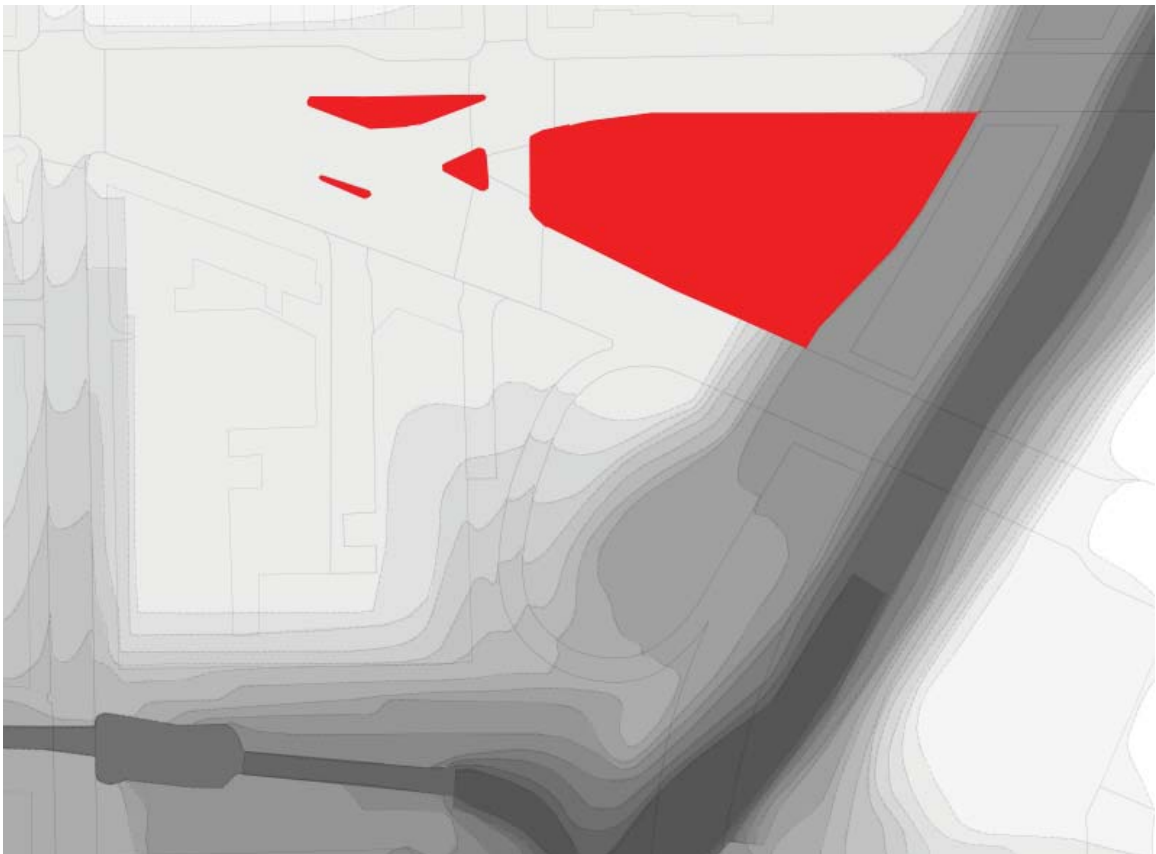
2.3: (top) Diagram of site defining relationships. Source: Author
2.4: (middle) Photo of perspective from M Street. Source: Author



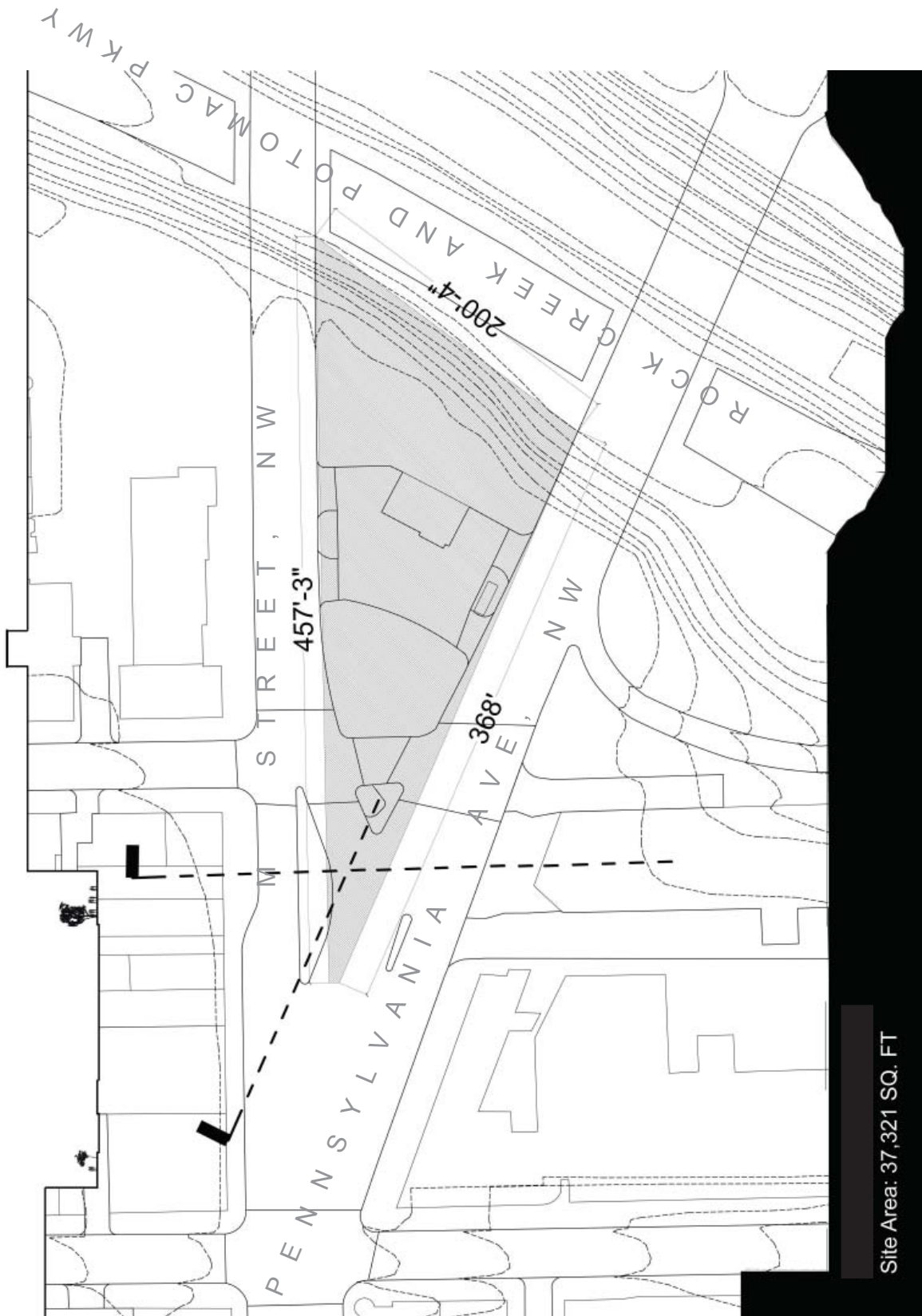


2.5: (bottom) View of site from M Street approach from Foggy Bottom. Source Author.

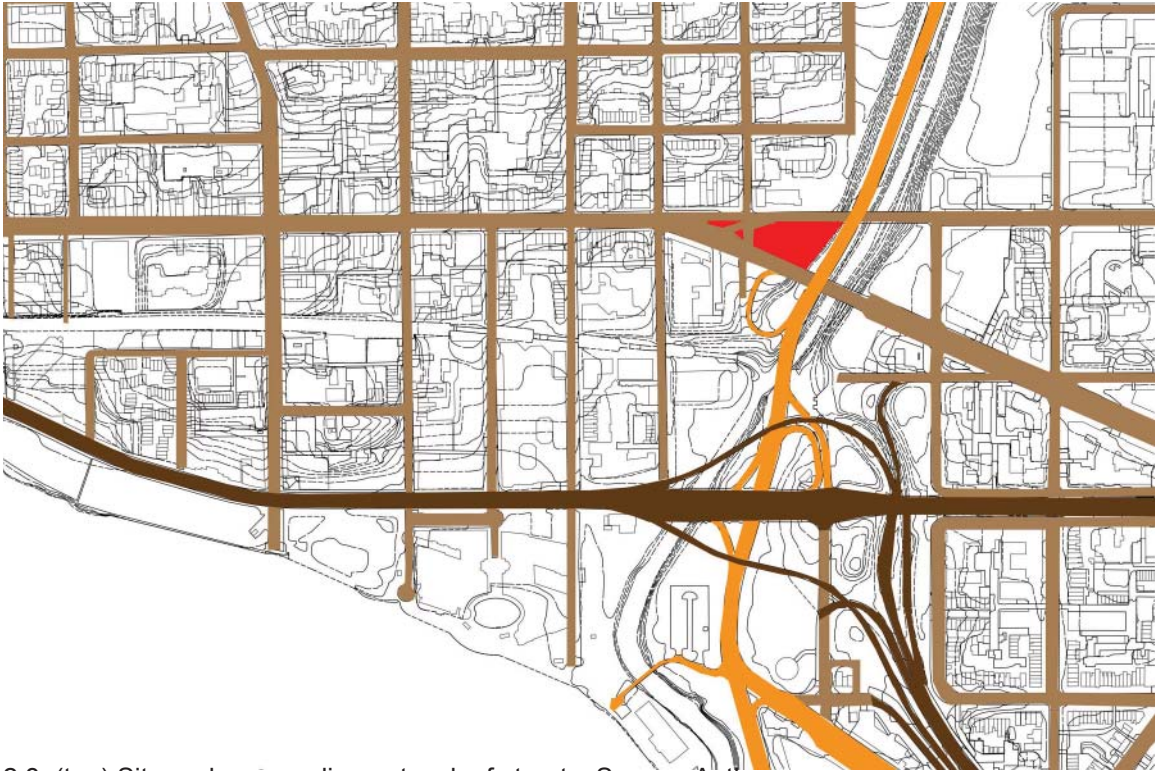
This is an ideal location to construct a symbol of performance culture in Washington, DC. The Rock Creek and Potomac Parkway sits 24 feet below Georgetown and Foggy Bottom, which creates a visual and physical drop at the end of M street dividing Georgetown and Foggy Bottom (see figure 2.6). From M Street, the site becomes an iconic terminus of the M Street procession through Georgetown (see figure 2.5). From Foggy Bottom, the site holds iconic significance as an entry gate or marker as one cross into Georgetown.



2.6: Diagram showing topography in relationship to site. Source: Author



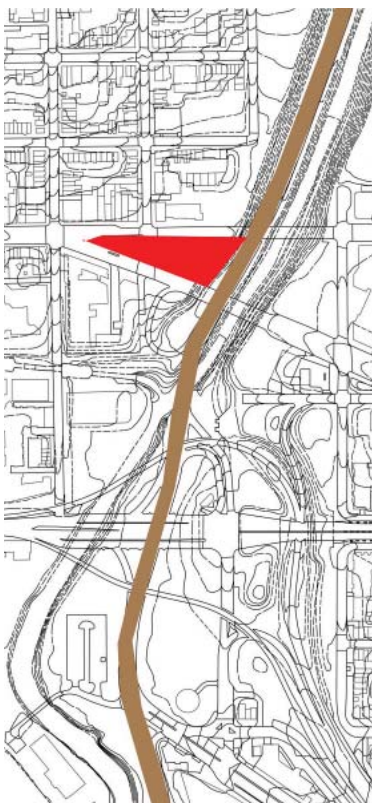
2.7: (top) Street section transverse across site. (center) Site plan with location of section cuts. (bottom) Section through site. Source: Author.



2.8: (top) Site and surrounding network of streets. Source: Author.

2.9: (bottom left) Diagram of edges created by M Street, NW and Pannsylvania Ave. Source: Author.

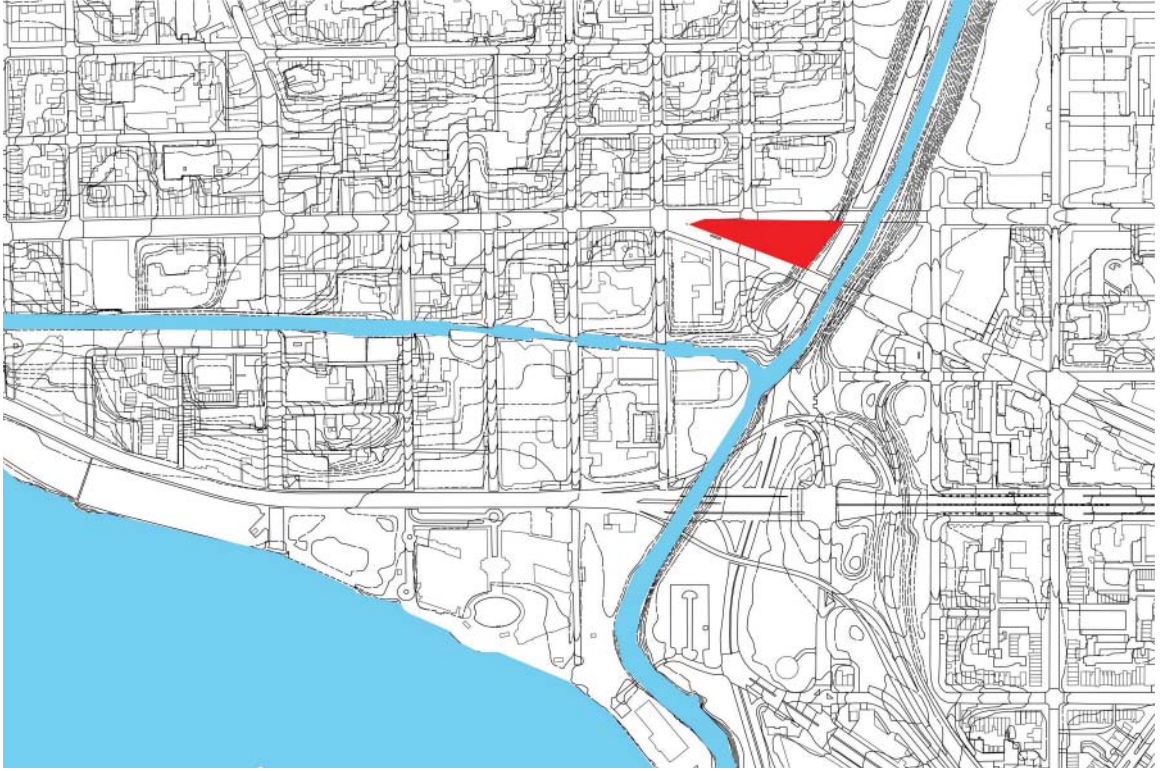
2.10: (bottom right) Diagram of Rock Creek Parkway and site. Source: Author.





2.11: (above) Pedestrian walkways surrounding site. Source: Author.

The three major streets surround the site, each with their individual characteristics. The most significant of these is Pennsylvania Avenue. Most of the vehicular and pedestrian traffic comes through Georgetown from M Street then follows Pennsylvania Avenue as the site splits the roads (see figure 2.9). Thus, the “front” for the site is interpreted as the elevation facing the M street procession from Georgetown and the elevation along Pennsylvania Avenue. The segment of M Street along the proposed site runs in the opposite direction. It is a one-way flow of traffic from Foggy Bottom toward Georgetown. Though it is open to pedestrian traffic, the majority of pedestrian traffic is along the Pennsylvania Avenue. Thus, this corridor serves as a secondary or service front for the site. The last elevation is toward Rock Creek and Potomac Parkway, which runs through to natural greenery of Rock Creek Park. The Rock Creek and Potomac Parkway carries vehicles and a flow of bicyclists and joggers past at the base of the site (figure 2.11).



2.12: (bottom left) Diagram of waterways surrounding site. Source: Author.

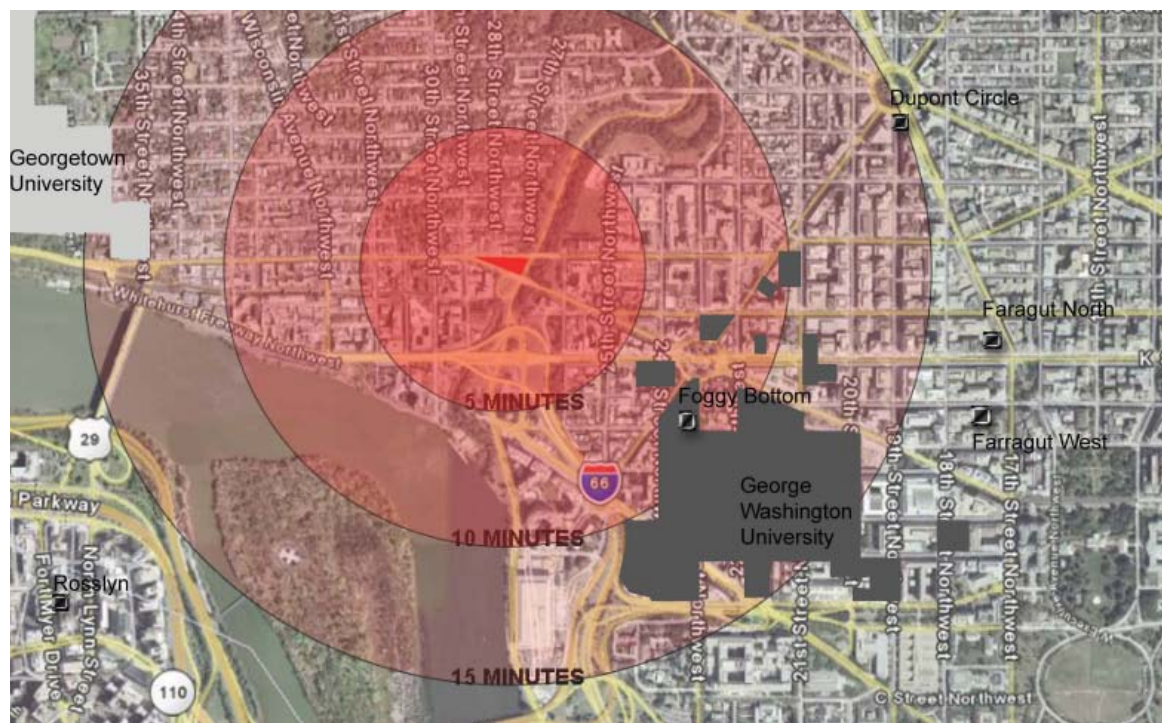
2.13: (bottom right) Diagram of Rock Creek Park in relationship to site. Source: Author.



Rock Creek Park was established in 1896 to safeguard the stream bed (figure 2.10), but now extends from the Potomac to most of the creeks tributaries consisting of over 1,800 acres.⁴ The park is an anomaly in the organization of the city. It is physically lower than the rest of the city. The land is unbuilt and runs along a creek that breaking the ideal grid of the city. Much of the proposed site extends into Rock Creek Park. This allows the building to propose sustainable for the water run-off from the site into the park.

Studio μεταμόρφωσις is in the proximity of both Georgetown University and George Washington University, as seen in figure 2.14. This allows the building to be exhibit the work of theater, dance and artist groups from both universities and act as a hub for collaborative projects between both universities.

4. Weeks, Christopher. *AIA Guide to the Architecture of Washington, DC*. 3 ed. Washington, DC: The Washington Metropolitan Chapter of the American Institute of Architects, 1994: 204.



2.14: (top)Diagram of walking distances from site in relationship to Georgetown University and George Washington University. Source: Author.



2.15: (bottom left) Photo: Rock Creek Parkway and site to the left. Source: Author.

2.16: (bottom right) Photo: site. Source: Author.



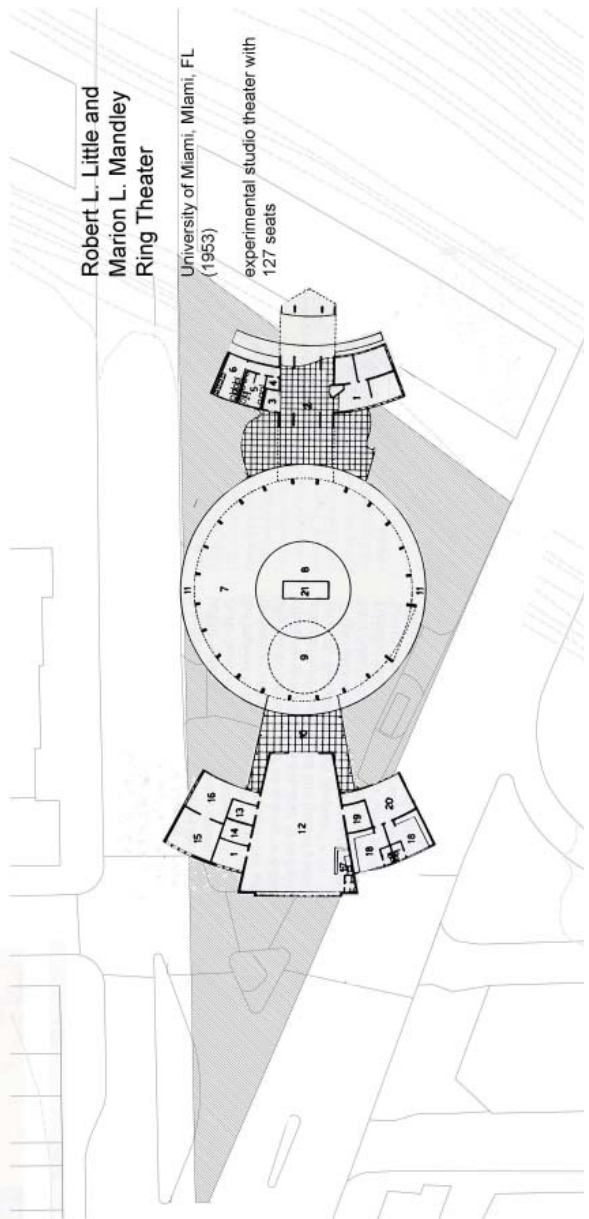
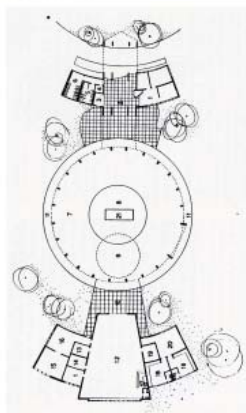
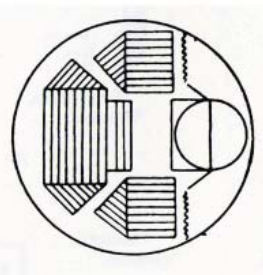
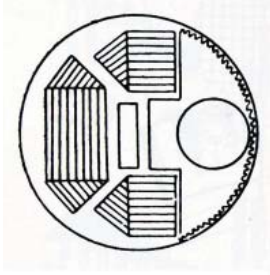
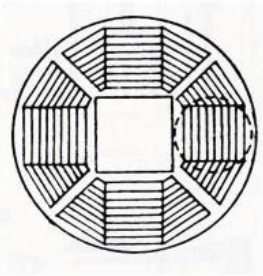
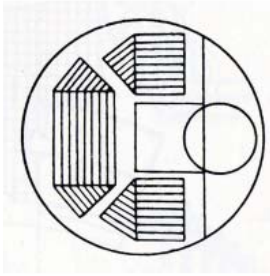
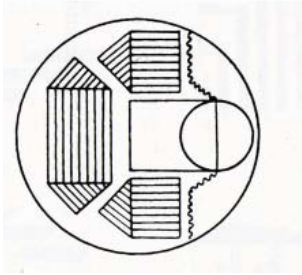
CHAPTER 3: THE STUDIO-THEATER

Recent trends in contemporary performance to incorporate diverse media and experiment with differing spaces, demands a new architectural form, the studio-theater. The “studio-theater” is a configurable and flexible space that allows for differing relationships between the performer and the audience. This experimentation with different forms and spatial requirements in a single architectural space requires the development of a system of the internal movement of space descriptors -- walls, ceilings, floors, screens.

One of many theater forms that experiments with multiple interior configurations, is the black box theater: a shell structure within which free, non-structural elements are arranged to allow for configurable spaces. This can be compared to a circus tent or a multi-purpose gym where curtains are drawn to create temporary separations, props and scenes are moved in to create a narrative of place and seating is in foldable chairs or bleachers. Everything is movable free from the structure and of the building.

The Ring Theater at the University of Miami in Florida is one evolutionary step up from the black box theater (figure 3.1). The seating, the scene and many of the theater elements are freestanding of the cylindrical enclosure--unfixed but confined by the form of the theater walls. The only element of the Ring Theater that detracts from the ideal black box theater, is the a revolving platform and a peripheral passage way. However, the theater space is restrictive and uncomfortable, even to the observer. The walls seem to cramp and force what little space there is into a cylindrical form. Though free standing, the seating, scene, and stage elements seem too big for the space, creating small passageways and awkward angles.⁵ Though the square footage can fit on the proposed Georgetown site, space is not about quantity but

5. Athanasopoulos, Christos G. *Contemporary Theater: Evolution and Design*. New York, NY: John Wiley & Sons, 1983: 212.



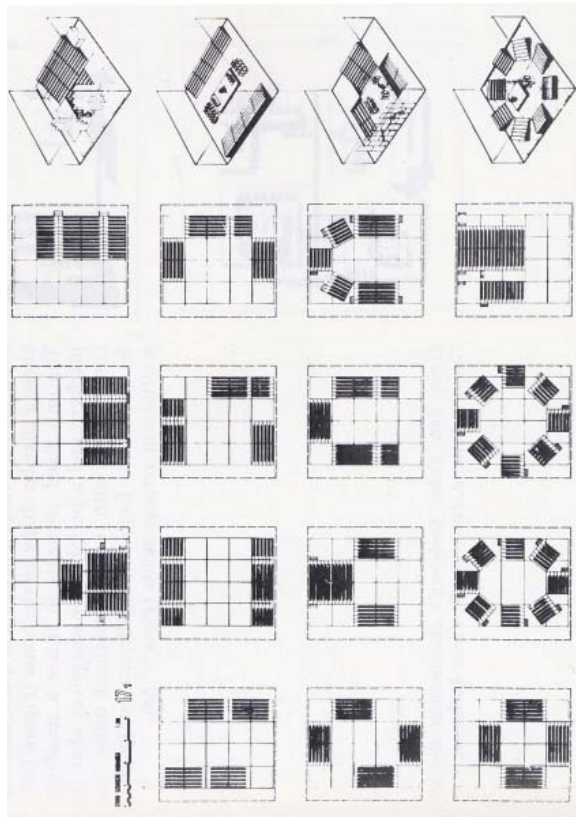
3.1: The Ring Theater, University of Miami, FL. Images and plan from Athanasopulos, 1983. Site image from author.

quality. The ability to have performances and audiences breathe--visually or physically--outside the regular confinement of the theater walls is a major element of quality. The variety of the spatial experience and experimentalism of the performance should not be limited to confined entombment.

The experimental studio theater developed from the black box theater's ideas of experimentation of relationships between performer and audience through form. However, the idea is integrated a modular system of organization, where sections of flooring can be adjusted in height and freestanding elements become modular units. Weber and Rubinov's design an experimental theater addition to the National Theater in Budapest is an example of this modular organization (figure 3.2). The plane of the experimental theater is designed as a 28-meter square. Within this square, twenty units of 5-by-5 meter divide the space. Each unit can be raised hydraulically 83 centimeters above the main floor height. 5-by-5-meter modular seating areas (43 seats each) are also built, but can be arranged freely, unfixed to the structure.⁶ This allows for an enormously wide variety of seating arrangements. However, this theater suffers from the opposite problem the Ring Theater in Florida--the vast awkwardness of too much space. Many of the arrangements leave large amounts of void unused peripheral space, which creates awkwardness between the place of the performance and the building that contains it. The walls that contain the performance and which allow for the qualifying elements of the audience's experience-- confinement, comfort or awkward vastness -- no longer play a role. They are sacrificed and ignored for the functionality of the configurable performance space.

The "Podium", an experimental studio theater designed by Franz Schafer in the basement of the Ulm Municipal Theater, has the most exemplary modular design. Based on a

6. Athanasopoulos, Christos G. *Contemporary Theater: Evolution and Design*. New York, NY: John Wiley & Sons, 1983: 209.



Weber and Rubinov
proposal for **National Theater**

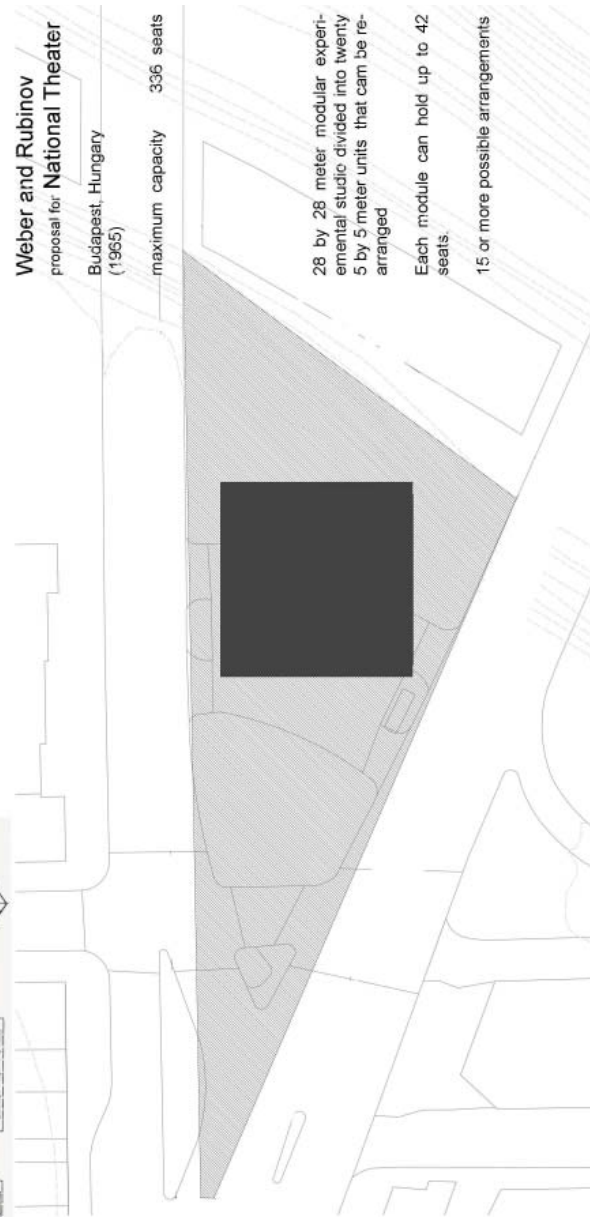
Budapest, Hungary
(1965)

maximum capacity 336 seats

28 by 28 meter modular exper-
imental studio divided into twenty
5 by 5 meter units that can be re-
arranged

Each module can hold up to 42
seats.

15 or more possible arrangements

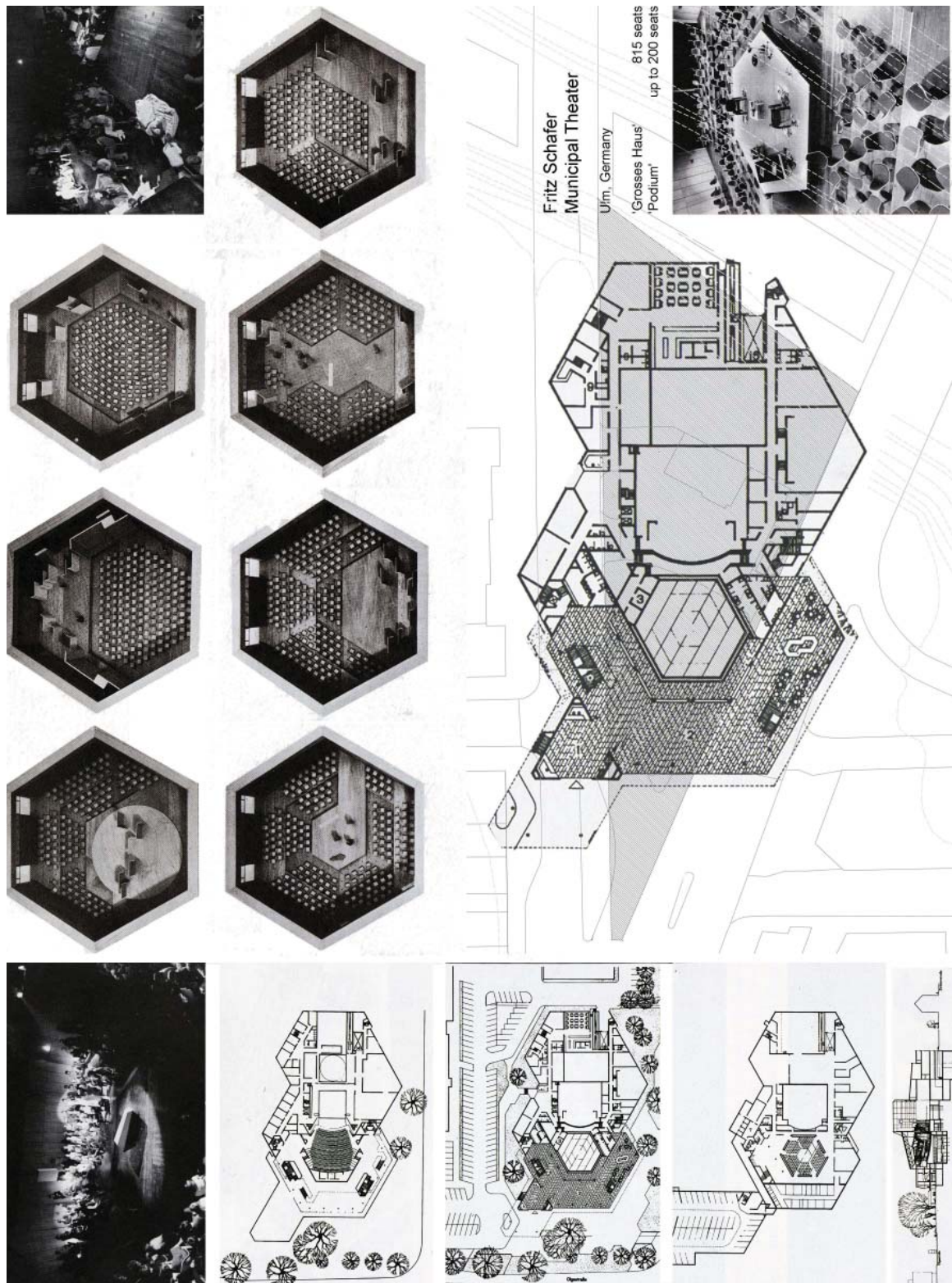


3.2: Weber and Rubinov's design for an experimental theater addition to the National Theater, Budapest, Hungary. Images and plan from Athanasopoulos, 1983.

hexagonal floor plan, the theater floor was divided into 16 adjustable and 2 fixed parts (figure 3.3). The 16 sections could be adjusted up to a height of 1.8 meters. The theater could seat up to 200 people with removable swivel chairs that attached by poles into the floor.⁷ The neutrality of the interior lent itself to multiple configurations. Though the containing theatre walls were immovable, the containing walls related back to the angled corners of each section. An inventive performer could decide how contained or expansive the space needed to be.

Both the black box theater and the modular forms of experimental theaters allow the reconfiguration of space, however the theaters are still confined to unmovable walls. Studio μεταμόρφωσις design focuses on the “performance” space and the walls that contain the “theater”. The flexibility of built form will give the performance a diverse palette of arrangements and differing relationships with the audience and physical parameters of the space itself. The entire building will stretch and bend to form these connections. The dynamisms of the interior form will extend to a point where the exterior walls can no longer contain it and will be forced to respond to the pressure of the interior spaces.

7. Athanasopoulos, Christos G. *Contemporary Theater: Evolution and Design*. New York, NY: John Wiley & Sons, 1983: 224.



3.3: Ulm Municipal Theater, Ulm, Germany. Images and plan from Athanasopoulos, 1983.

CHAPTER 4:

ON THE TRANSPARENCY OF ARCHITECTURAL FORM

The argument for architecture to be expressive of its function in modern architecture perhaps is most widely seen in the work and writing of Le Corbusier. In *Towards a New Architecture*, Le Corbusier searches for the ideal form of architecture. He describes machines as truthful expressions of aesthetics in design. A machine's aesthetic and form is entirely functional, logical to serve its use. Le Corbusier believes this to depict the harmony between aesthetics and function.⁸ He argued that architects should embrace this new artistic idea of rational and simplistic beauty⁹, which has greater significance than replicating old architectural ornamentation which has lost its meaning—later termed as kitsch by Herman Broch and other contemporaries. Later, in 1963, Colin Rowe and Robert Slutzky make observations about literal and phenomenal transparency in the article “Transparency: Literal and Phenomenal”. They argue that transparency should not be confused with material transparency. Literal transparency is a transparency of complete clarity. They offer the example of the glass wall of the Bauhaus building, which displays its internal organization at a single glance. The architects during this time argued that the hovering floors of the building related to the overlapping planes in cubist paintings.¹⁰ Rowe and Slutzky argue that the simplicity and directness does not offer the viewer any of the intrigue or mystery that the overlapping layers of the cubist paintings.¹¹ The implication of spatial relationships and connections -- phenomenal transparency -- allows overlapping layers. The villa at Garches offers multiple readings of spatial connections and organizations. Here, parallel planes organize the facade horizontally. Spaces such as a second-floor balcony interrupt the organization, but are still framed by the parallel organization of the horizontal planes. The overlapping spaces and connections implied in the facade are still

8. Le Corbusier. *Toward An Architecture*. translated by John Goodman. Los Angeles, CA: The Getty Research Institute. 2007: 95

9. Le Corbusier. *Toward An Architecture*. translated by John Goodman. Los Angeles, CA: The Getty Research Institute. 2007: 85

10. Rowe, Colin and Robert Slutzky. “Transparency: Literal and Phenomenal” *Perspecta*, Vol. 8, 1963: 49.

11. Rowe, Colin and Robert Slutzky. “Transparency: Literal and Phenomenal” *Perspecta*, Vol. 8, 1963: 49.

truthful to organization of the building, but their rigorous complexity gives a sense of ambiguity and curiosity to the visitor.¹² Rowe and Slutzky are obviously arguing for phenomenal transparency. However, more importantly is the idea of implied truth of the building and its spaces to its exterior form.

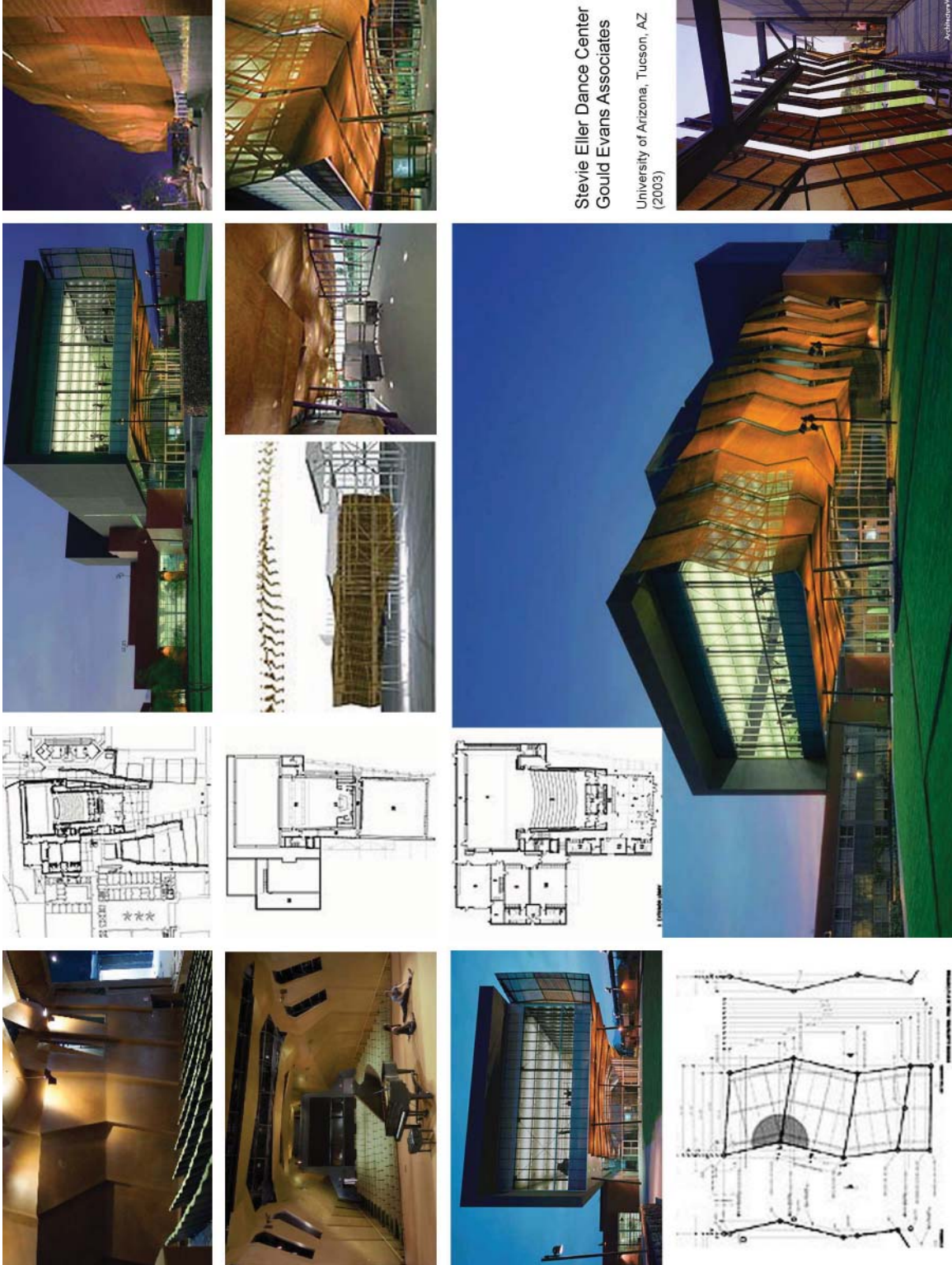
Gould Evans and Associates designed the Stevie Eller Dance Center for the University of Arizona (figure 4.1). The dancers and architects collaborated in the design of the new dance center. The performers were interested in a space that allowed for the exploration of dance and movement, namely “how the human body fills space and glides through it.”¹³ Using the idea of labanotation—a method for graphically describing choreography, the design team studied “Serenade”, George Balanchine’s first ballet written for the American Ballet company. From this study, a matrix of points emerged and were used to locate the columns of the second floor dance studio. A skin with a labanotation study, also, wraps the building with a screen of mesh.¹⁴ The Stevie Eller Dance Center successfully integrates the idea of “the study of dance” into the dance studio plan and building facade. The building is essentially a pavilion, allowing for the freedom of interior movement and freestanding elements. Though the form of the building is clearly derived from the idea of labanotation, the idea does not affect the layout of the program or the relationship of the spaces. It lacks the spatial complexity or overlap of space that Rowe and Slutzky argue for in their article. The facade is only a skin and not expressive of any connection between the spaces and the main concept.

Moving toward a more extreme level of “interactive” skin, the Wukesong Sports Center has high-tech LCD screens on all four facades measuring 130 meters by 50 meters (figure 4.2). The screens project the sports events held inside the stadium, while sound islands transmit the sound in the

12. Rowe, Colin and Robert Slutzky. “Transparency: Literal and Phenomenal” *Perspecta*, Vol. 8, 1963: 50-52.

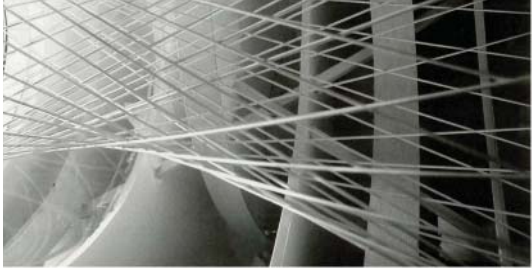
13. Crosbie, Michael J. “Dances with Building.” *ArchitectureWeek*. 2004 ArchitectureWeek. 8 Aug. 2008 < http://www.architectureweek.com/2004/0204/design_1-1.html>

14. Crosbie, Michael J. “Dances with Building.” *ArchitectureWeek*. 2004 ArchitectureWeek. 8 Aug. 2008 < http://www.architectureweek.com/2004/0204/design_1-2.html>

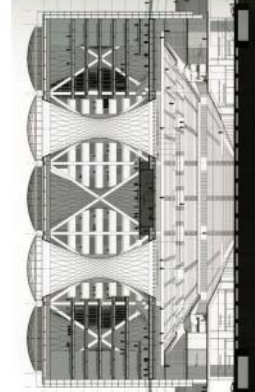
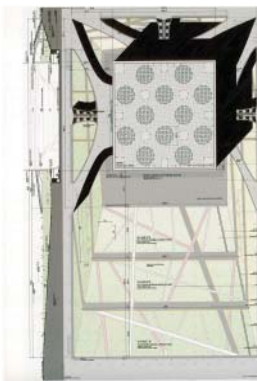
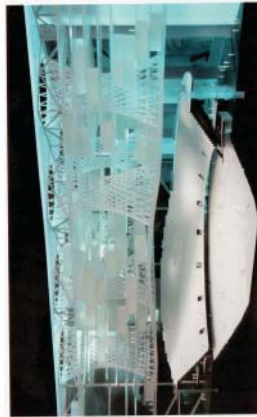


Stevie Eller Dance Center
 Gould Evans Associates
 University of Arizona, Tucson, AZ
 (2003)

4.1: Stevie Eller Dance Center. Source: Crosbie, Michael J., 2004 and "PROJECT WATCH: Gould Evans' Stevie Eller Dance Theatre: Raises the Barre in Tucson" AIArchitect. October 20, 2003. www.aia.org/aiarchitect/thisweek03/tw1017/1017pw_dance.htm



Wukesong Cultural and Sports Center
Office Burckhardt + Partner Zurich
Beijing, China
(2008)



4.2: Wukesong Cultural and Sports Center. Source: Nussbaumer 2004.

park.¹⁵ The facade is an example of literal transparency--there is no complexity of spaces expressed and it takes on the shape of the stadium. Though the projection of the sports events on the facade adds a layer of visual complexity, it has no spatial implications. (What will the screens project, when there is no event inside? Thus, the LCD screens of the Wukesong Sports Center also fail to meet the spatial complexity of Rowe and Slutzky's "phenomenal" transparency. The skin doesn't interact with the rest of the building. It can all too easily lose its connection to the program.

15. Bernet, Jris, Christine Holl, Othmar Humm and Martin Kraft. *Moser Nussbaumer: Vision und Architektur/ Vision and Architecture*. Basel, Switzerland: Birkhäuser, 2004: 157.

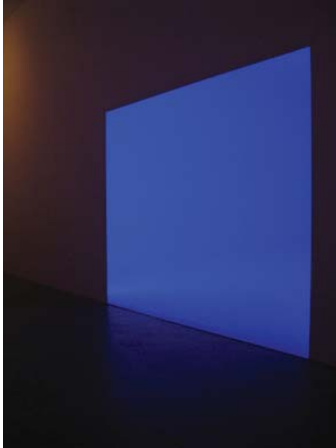
CHAPTER 5: THE NARRATIVE OF SPACE

In the age of television and cinema, the physical space, which holds the interaction between the audience and the performance, is lost. If a fist thrown at the audience in a 3D movie, the audience might jump back in a momentary suspension of reality. However, it contains no physical sense of space and movement. It is entirely visual. Many theaters, namely the proscenium theater, also suffer from the same artistic epidemic, stressing the visual presentation over all other interactions. The proscenium theater focuses the audiences' attention on a single idealized perspective of the performance. The realm of the stage is separated from the realm of the audience. In many ways, individuals have come to rely on the visual narrative more than any other sense. Amongst the narrative elements lost in this trend of visual escapades is the use of spatial relationships to convey a performance. Studio μεταμόρφωσις uses space to draw the audience into the narrative and allowing them to become a part of the performance.

In his article "Anatomie der gelebten Umwelt", Günther Nischke describes experienced space: "It has a center which is perceiving man, and it therefore has an excellent system of directions which changes with the movement of the human body; it is limited and in no sense neutral, in other words it is finite, heterogeneous, subjectively defined and perceived; distances and directions are fixed relative to man . . ." ¹⁶ Space is an endless, neutral void, whose distance and volume can only be understood by its relative proximity from one individual to another object. Without the physical presence of the human body to act as a marker, space is un-quantifiable and unperceivable. Spatial boundaries in relationship to the human body transform the experience of space and can be used to create a physical narrative of a performance.

Tuan Yi-fu writes: "The human being, by his mere presence, imposes a schema on space. Most of the time he is not aware of it. He notes its absence when he is lost. He marks its presence on those

16. Nischke, Günther. "Anatomie der gelebten Umwelt" Munich, Germany: Bauen + Wohnen September 1968.



5.1 and 5.2:
Ganzfeld, an
 instillation by
 James Turrell.
 Yorkshire Sculp-
 ture Park, Hall
 Green, Wake-
 field. December
 2005. Photos
 source: Andrew
 Paul Carr. www.
 flickr.com



ritual occasions that lift life above the ordinary and so force him to an awareness of life's values, including those manifest in space."¹⁷ In the absence of identifiable space, the individual is lost and his/her senses become heightened. It is the lose of spatial proximities that draws the individual to internalize senses. Each small, sound, etc. is a measured projection of the individual's self on the unfamiliar space. In his instillation *Ganzfeld*, James Turrell uses the absence of perspective corners to create a seamlessly infinite amount space (see figure 5.1 and 5.2). The blue engulfs the entire room. Here the spatial identifiers, the edge of the container, have disappeared completely. This creates a heightened state of sense for the visitor who is forced to find his way through a dimmed, room with un-quantifiable spaces and proximities.

Space, in essence is more than just another element of the theater, but the catalyst for the experience of the performance. In his article, "Die Ungreifbarkeit des Raumes", Sigfried Giedion "The process by which a spatial image can be transposed into the emotional sphere is expressed by the spatial concept. It yields information on the relation between man and his environment. It is the spiritual expression of the reality that confronts him. The world that lies before him is changed by it. It forces him to project graphically his own position if he wants to come to terms with it."¹⁸ The projection of the individual's self in relationship to the physical environment creates a tension. It is this tension that a narrative draws upon to create empathic experience.

17. Tuan, Yi-Fu. *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press, 1977: 36-7

18. Giedion, Sigfried. "Die Ungreifbarkeit des Raumes" *Neue Zürcher Zeitung*. August 1965: 22.

CHAPTER 6: PROGRAM

The program for Studio μεταμόρφωσις is an experimental performance theater that promotes the exploration of spatial and narrative relationships between the performer and the audience. The theater performances represent an outlet for critical commentary of contemporary thought and society. As such, the theater contains flexible, configurable space that promotes the use of architectural elements as a language of the narratives. The performer transforms the physical architecture of the building creating spatial and sequential conditions that draw the audience into the narrative of the performance. The program consists of a total of 22,000 square feet of program, which is divided as follows:

The Narrative:

The Narrative is the performance area and its thresholds. It is the area where the audience interacts with the performance and the performer. It consists of 11,000 square feet of interior performance space. The maximum occupancy is 300 people. The space is large enough to hold up to three events. Such events range from dance practices to theater performances to art installations. The space is configurable with modular flooring set on hydraulic pumps and can be elevated up to 10 feet. Wall partitions, acoustic panels, lighting, curtains and sound equipment are all hung from structure above.

This area also includes 3,000 square feet of exterior spill out space. This spill-out space acts as an extension of the performance as well as a threshold from the city into the performance space.

The Modules:

Freestanding modules contain support spaces for the performance area. These modules include offices, dressing areas, green rooms, practice rooms, storage space and work rooms. These modules

are hung from a track system above and can be reconfigured in any combination according to the needs of the performance.

Fixed Spaces:

The fixed spaces include all the programmatic elements that cannot change locations. This category includes administrative offices, restrooms, electrical closet, and mechanical room.

Administrative Offices include 1,900 sq feet of space for the director's and the director's assistant's office, a workroom, and front desk.

Public restrooms for both men and women are 500 square feet each with a minimum on lavatory per restroom, and of 3 toilets for men's and five toilets for the women's. The one employee restroom is also required.

A 400 square foot electrical closet and an 880 square foot mechanical room are also required.

CHAPTER 7: DESIGN APPROACHES

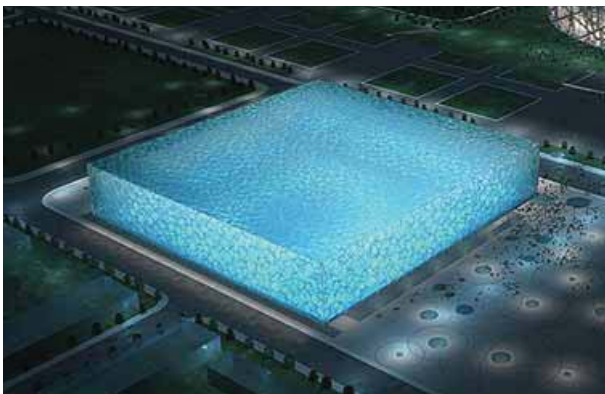
Early in the design process of Studio μεταμόρφωσις three design methodologies were considered. They are the LED box theater, the modular form and the foldable wall theater.

DESIGN APPROACH 1: LED BOX THEATER

The exterior enclosure of the theater is an interactive skin. The exterior skin is free from the internal structure of the building. This would allow the interior walls to be transformed according to different performances without changing the exterior of the building. The building would consist of the layers as follows: exterior skin, structure and interior movable partitions. Ideally the exterior skin addresses the interior changes through interactive LED lighting. However, it is also possible for the performer to use the exterior skin as an entirely different canvas.

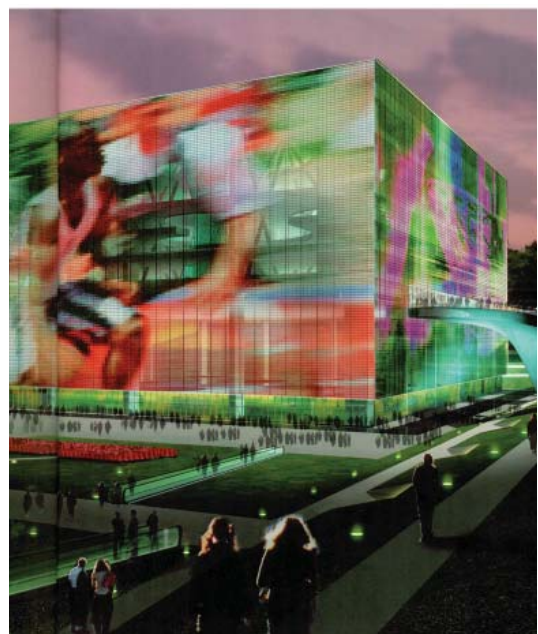
At the Olympic Swimming Pool, the skin is constructed of lightweight transparent Teflon (EAFE) pillows. These pillows are lit at night to create a blue glow. During the day, the pillows are transparent allowing daylight and visibility into the building. This exterior skin would be preferred due to its transparency during the day and its ability to change its character at night (figure 7.1)¹⁹. LED

19. PTW. "National Swimming Centre: 2008 Olympics: Beijing, China" 14 January 2004 *arcspace.com* 11 Dec. 2008 <<http://www.arcspace.com/architects/ptw/>>



7.1: Swimming Pool for Beijing Olympics 2008, designed by PTW. Source: <http://www.arcspace.com/architects/ptw/>

7.2: Wukesong Cultural and Sports Center. Source: Nussbaumer 2004.





7.3: Ulm Municipal Theater, Ulm, Germany. Images and plan from Athanasopoulos, 1983.

screens fill the entire facades of the Wukesong Cultural Center (figure 7.2). These screens broadcast the sporting events that take place inside the building.²⁰ In both examples, the exterior skin of the building is removed from the interior organization and structure of the building.

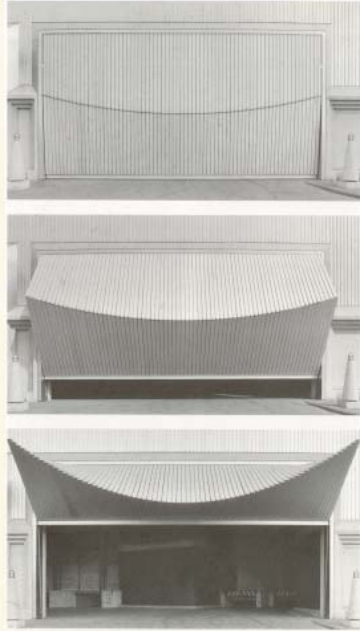
DESIGN APPROACH 2: MODULAR FORM

This idea follows the great success of Franz Schafer's Podium Theater in Ulm. Using 16 (out of 18) movable floor sections, which could each move almost 6 feet in height, Schafer was able to create a theater space that could accommodate almost any configuration (figure 7.3). His theater also includes rotating chairs, which stand on a single removable pole that attached into holes in the flooring. His exploration stops here with the exterior of the building fixed.²¹ However, example does offer a reasonable way to configure the interior of the building.

This design approach will take the example of Schafer's theater and apply it on a larger scale. The exterior walls of the theater would also operate on a modular system. The interior of the building

20. Bernet, Jris, Christine Holl, Othmar Humm and Matin Kraft. *Moser Nussbaumer: Vision und Architektur/ Vision and Architecture*. Basel, Switzerland: Birkhäuser, 2004: 157.

21. Athanasopoulos, Christos G. *Contemporary Theater: Evolution and Design*. New York, NY: John Wiley & Sons, 1983: 224.



7.4:Ernsting Warehaise by architect Santiago Calatrava. Source: Tzonis, Alexander. *Santiago Calatrava: The Complete Works--expanded Edition*. 2007

would have to accommodate not just the performance but the entire “narrative” space, “secondary” and loading dock space, etc. This implies that partition walls also move and transform according to a modular system.

DESIGN APPROACH 3: FOLDABLE WALLS

The concept of this design approach is that a foldable wall can take on at least two or three forms. In the Ernsting Warehouse, Santiago Calatrava used a foldable garage door. The door closes flat, but when lifted creates an awning (figure 7.4)²².

The foldable walls could be built into the facade of the building or into a removable modular of the façade. In either case, the facade of the building is a foldable envelope that attaches to a fixed steel frame. The foldable module is not limited to a single fold as seen in the example of Jakem Warehouse. Multiple folds are possible. The facade will display the displacement of its latest form. This progression is seen the displacement of the folds in comparison to the frame of the building. The interior partitions also fold, displace, and move on tracks. The material aesthetic will match the exterior. The major issue of this design is the building envelop and the ability to protect the interior from the elements. The floors will also have the same material aesthetics. Parts of the floor will seamlessly blend into the walls. Parts of the partition walls can be folded into the ground to become the floor.

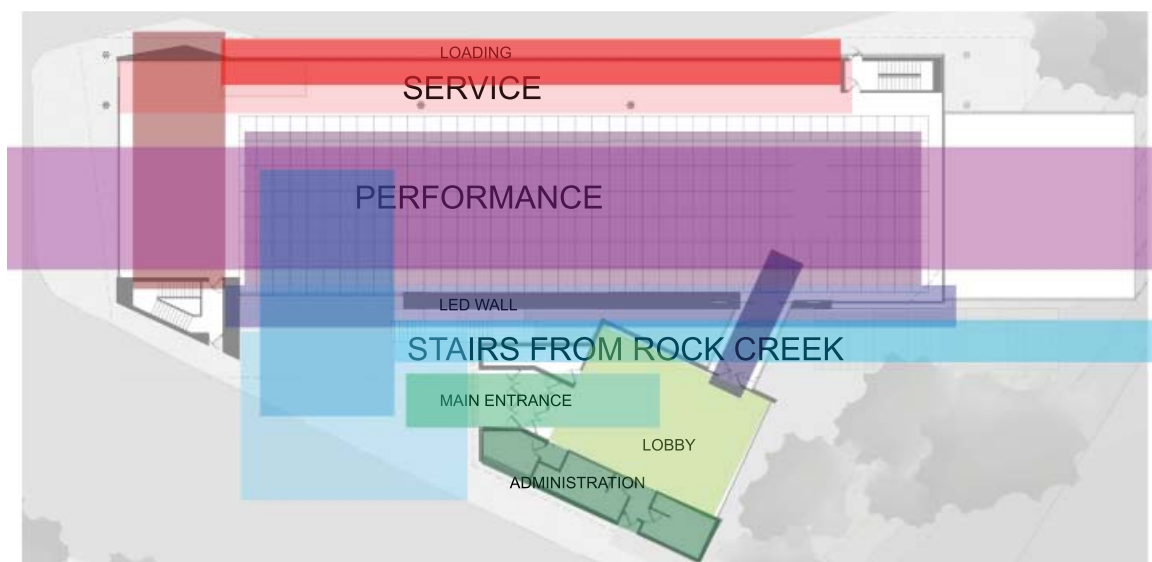
22. Calatrava, Santiago. *Santiago Calatrava: Structures in Movement*. Dallas, Texas: Meadows Museum, Southern Methodist University, 2001: 25-31

CHAPTER 8: STUDIO μεταμόρφωσις: THE DESIGN

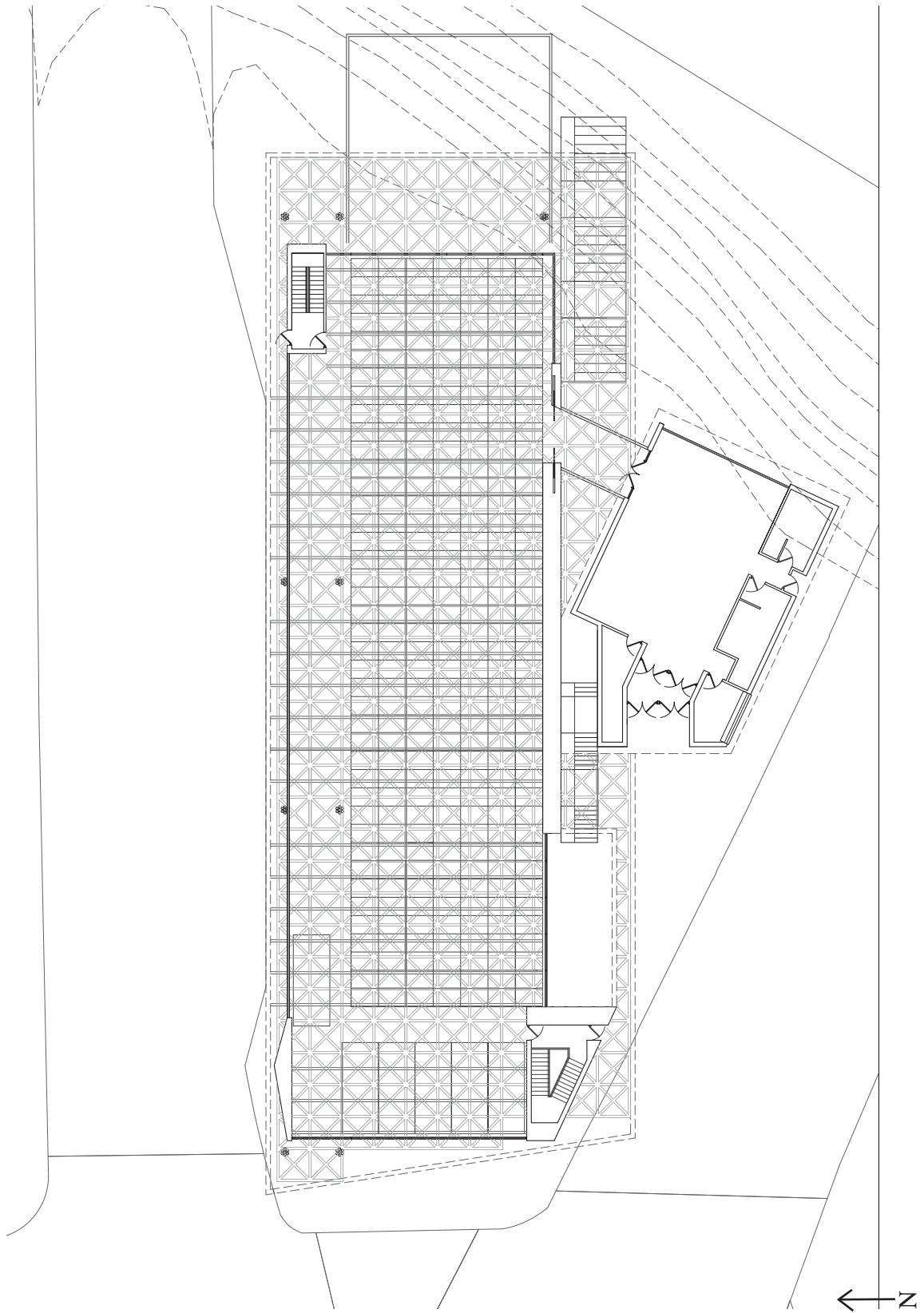
Studio μεταμόρφωσις is an exploration of the theater's dual role as both actor and spectator. As an actor, the theater physically transforms affecting both its interior relationship with the performance and the exterior stage of the context. As a spectator, the theater is also a canvas and an extroverted self-reflection of the transformation or metamorphosis within. The address the duality as actor-spectator, the design of Studio μεταμόρφωσις focuses on four key issues: the configurable interior space, the "transparency" and threshold of the building envelope, and the relationship of the building to the site and context.

The building is made up of two distinct zones the "shed" to the north and the diagonal wedge to the south. The "shed" houses the "narrative" and the modules of the program (see Chapter 6). This includes performance area, its support modules, and a loading area to the north along M Street. The angled building holds all the fixed elements of the program (refer to Chapter 6.) Spatially the building is organized into a series of bands (figure 8.1)

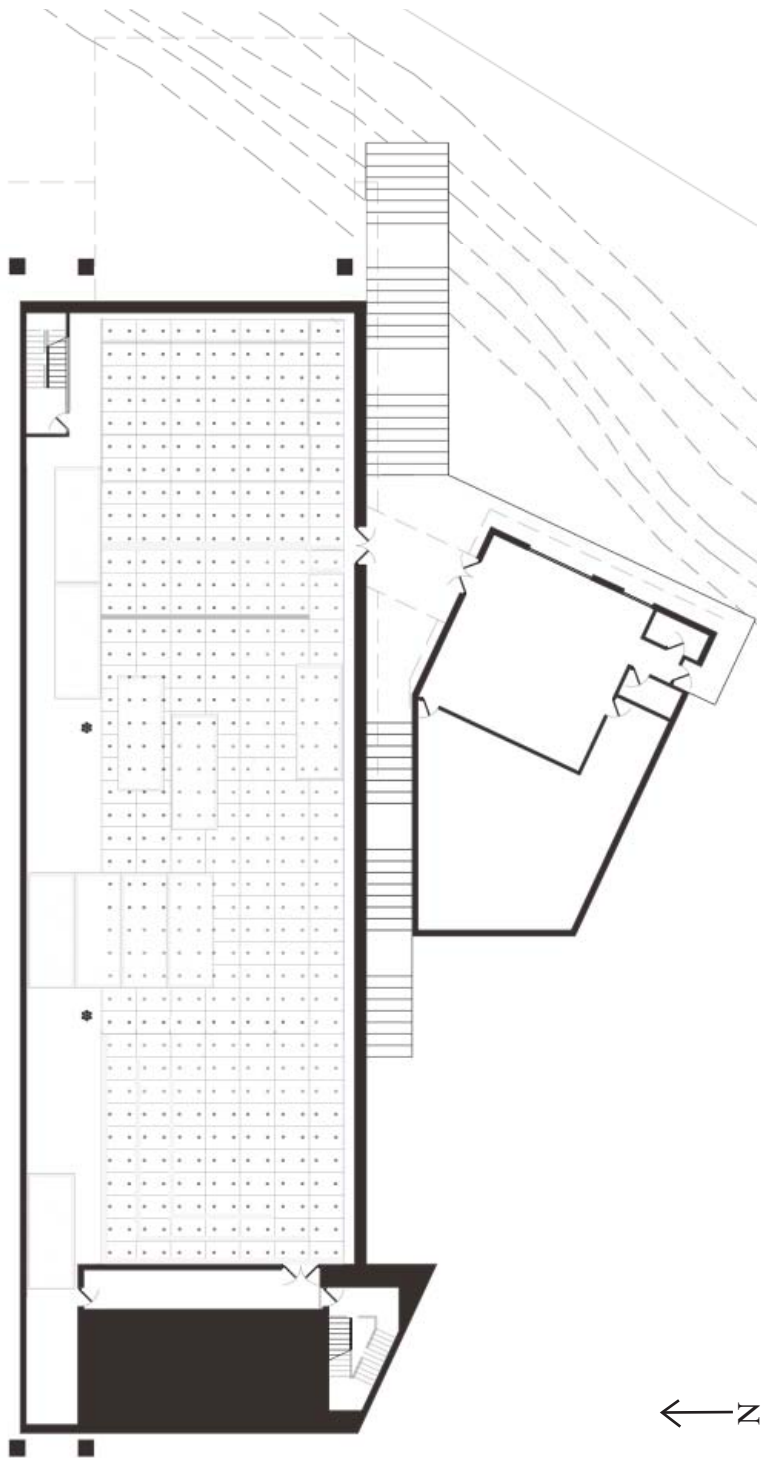
The idea from the very beginning was that the building is a performer and dances both with the



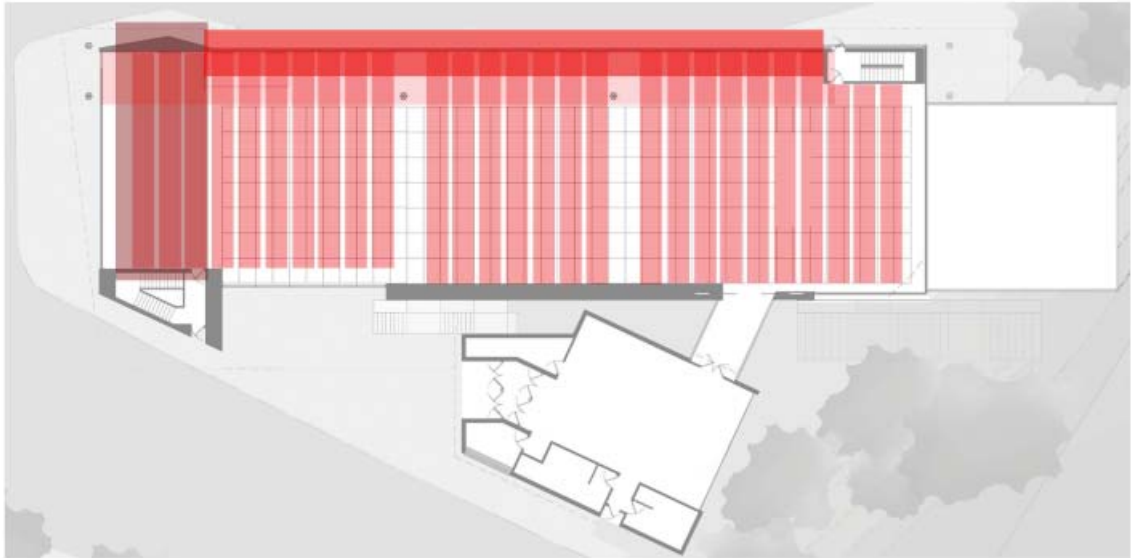
8.1: Spatial Diagram of Building. Source: Author



8.2: Reflective ceiling plan of the ground floor. Source: Author



8.3: Lower floor plan. Source: Author

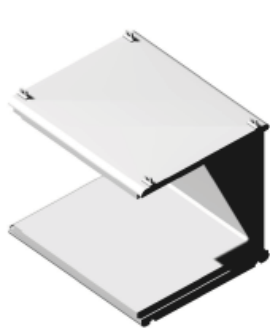


8.4: Diagram of module grid system. Source: Author.

internal activity of the performance and with in the stage of the context. The interior flexibility of various temporary and permanent modular systems allows the building to do just this. The main focus of this flexibility is in the performance area. First, the floor is set on 6 feet by 8 feet hydraulic lifts. Each floor panel can be raised 10 feet. This idea is borrowed from many previous experimental studio theaters, especially Franz Schafer's Podium Theater in Ulm, Germany (see Chapter 7: Design Approaches). Temporary partitions, acoustic tiles and temporary sets are attached to the space frame structure. Also attached to the space frame is a track system for the modules (see Chapter 7.) The modules hold all the support spaces of the performance: practice rooms, green rooms, dressing rooms, offices, workshops, storage, sound equipment, lighting equipment, catwalks, and sets (see figure 8.5). These modules are designed to fit on a truck trailer. A platform flat bed trailer measures 26 feet long by 8 feet wide.²³ These modules can be reconfigured according to the needs of the performance.

The performance should have both an audience on the streets and an audience in the seats. The building addresses connect the street audience to the performance through the building's envelope

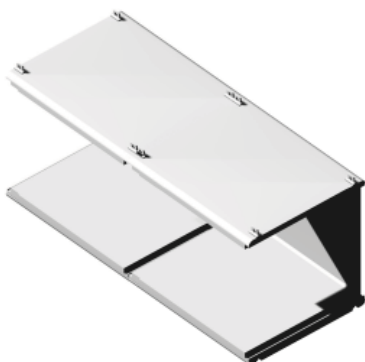
23. World Trade Press. "Guide to Truck Trailers." 2006. *World Trade Press*. 5 Dec. 2008 <http://www.worldtraderef.com/WTR_site/Truck_Trailers/Guide_to_Truck_Trailers.asp>.



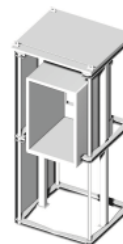
OFFICE MODULE



PROJECTOR BOX OR
SOUND STATION



STORAGE OR WORKSHOP



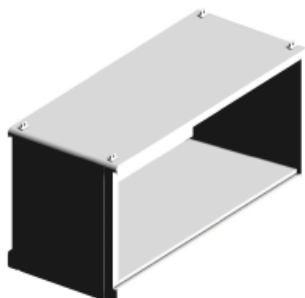
ELEVATOR



PRACTICE MODULE



STAIRS

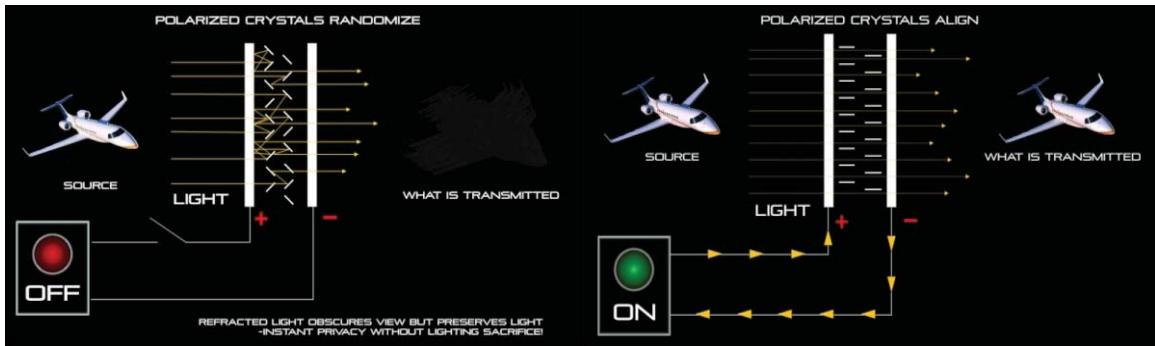


CATWALK



LADDER

8.5: Possible modules. Source :Author.



8.6 and 8.7: The main principles behind privacy glass. Source: LTI Group. <http://ltisg.com/ltisg/index.php/Privacy-Glass-Features.php>

and thresholds. The building envelope is such that the performer can connect with the street without building or adding complex walls or screens. The building envelope on the east, north and south elevations is made up of 4 feet by 6 feet panels of Smart Glass (also called Electric Glass or Electrified Privacy Glass). This glass made up of electrified privacy film and conductive adhesive sandwiched between two panes of glass. Without and electric current, randomly aligned molecules disperses light giving a translucent appearance to the glass. When an electrical current is added to the glass, these molecules are polarized and align allowing light to pass, thus a transparent appearance²⁴ (see figure 8.6 and 8.7) This flexibility of transparency or translucency allows the performer to determine the degree of interaction the performance should have with the context of the building -- whether and essence is captured through the translucent wall or a direct visual connection is made between the audience and the street. Two sets of large doors on the east and west elevations of the building can also be opened. Allowing the audience to flow from the street into the theater space and again out to the balcony facing Rock Creek Park. In the section of figure 8.8, a large proscenium leading from the east facade to the west facade is one example of opening both facades. The audience flows into the building from M Street. The stage area extends out the building in the balcony allowing Rock Creek Park to become a backdrop. Finally, and LED wall along the south elevation of the performance “shed”. These LED can be used to provide performance information or show the performance itself. This is another form of transparency and allows the performance to visually connect with the street audience. It is an external reflection of the internal events.

24. “Privacy Glass” *LTI Smart Glass*. 2007. Laminated Technologies, Inc. 5 Dec. 2008. <<http://ltisg.com/ltisg/index.php/Privacy-Glass-Features.php>>.



8.8: (above) Longitudinal Section through performance space. Source: Author.

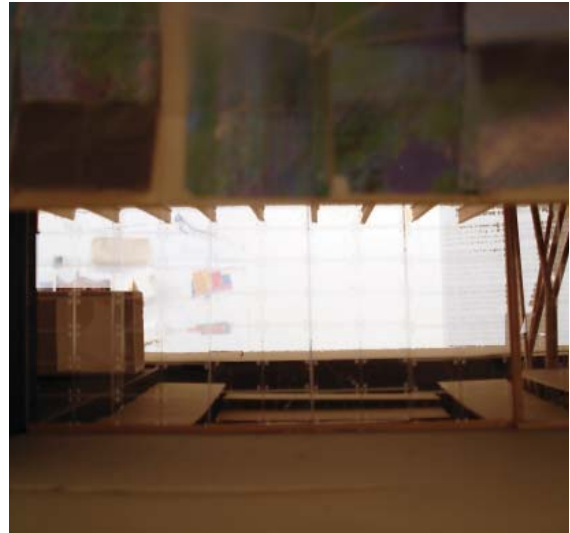
The building addresses three different site conditions: the main pedestrian sequence that turns along M Street to Pennsylvania Avenue, the secondary street of M Street (north of the side), and Rock Creek Park. The main pedestrian and vehicular sequence from M Street turning along Pennsylvania Ave is the front of the building (see 8.9 and 8.10). These “front” elevations conceptually consist of a solid volume broken by framed views into the interior performance space. The Studio *μεταμόρφωσις* has an iconic role at the end of the M Street approach from Georgetown. Here, M Street splits and joins with Pennsylvania Ave (see Chapter 2). The west and east facades open, thus conceptually extending the M Street approach into the building and out to Rock Creek Park. In this scenario, the building becomes a threshold from the built-up, busy streets of Georgetown into the serene and quiet, Rock Creek Park. The south elevation of the performance “shed” is a solid facade with portals and LED panels. The portals allow views into the performance space (see figure 8.11). These portals can also open, allowing a visual connection in to the interior space to become a physical threshold as well. The LED wall as previously mentioned is also a self-reflection of the interior space. These two main elevations focus on a framed transparency as opposed to a literal or direct transparency into the space, as is the case of the east elevation facing Rock Creek Park. The park is an anomalous cut in the city’s fabric dividing Georgetown from Foggy Bottom (see Chapter 2). The building opens-up toward Rock Creek Park and extends into the park, creating an iconic and threshold into Georgetown (see figures 8.12 and 8.13). Finally, the north facade facing the branch of M Street is a one-way street running from Foggy Bottom into Georgetown and has little pedestrian traffic. This is treated as a service street for the building. Sections of the transparent facade slide open allowing equipment, scenes and modules to be loaded directly into the performance “shed”.



8.9 (above) Perspective view down M Street toward Studio μεταμόρφωσις. Source: Author



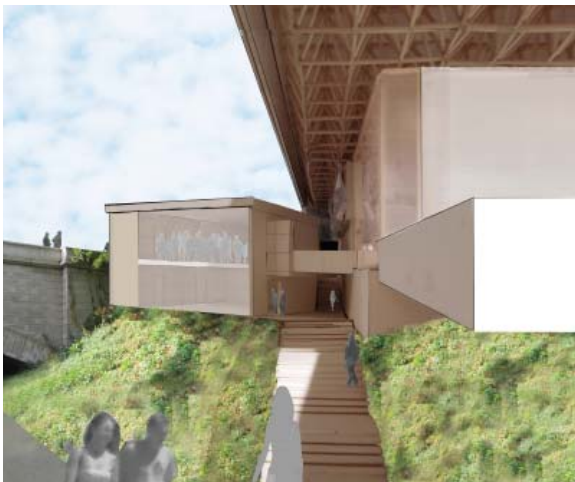
8.10:(middle left) Image of model in gallery show. Source Author.

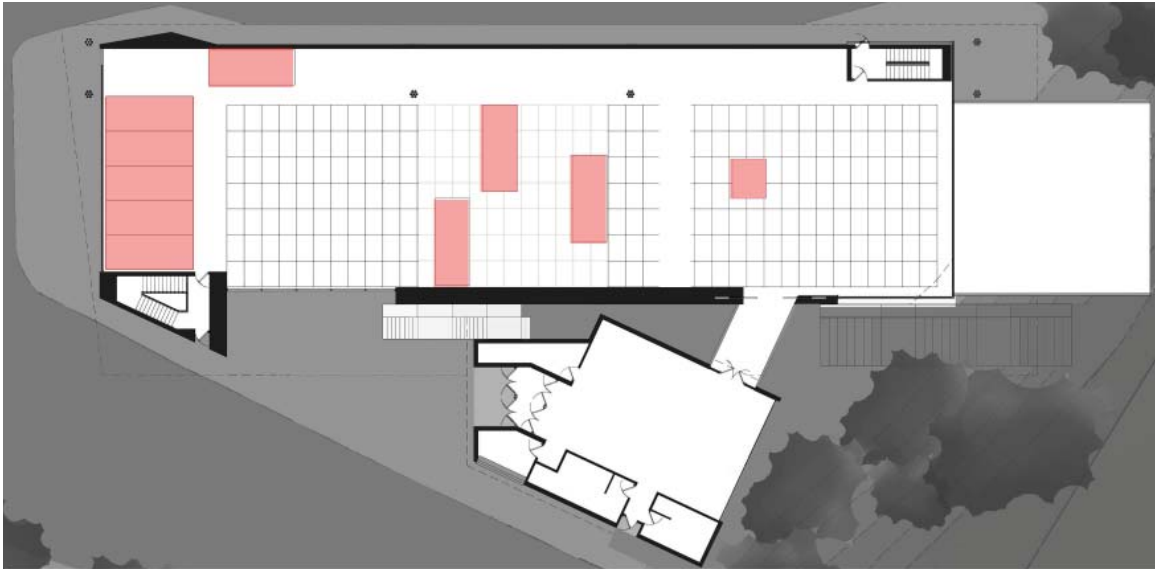
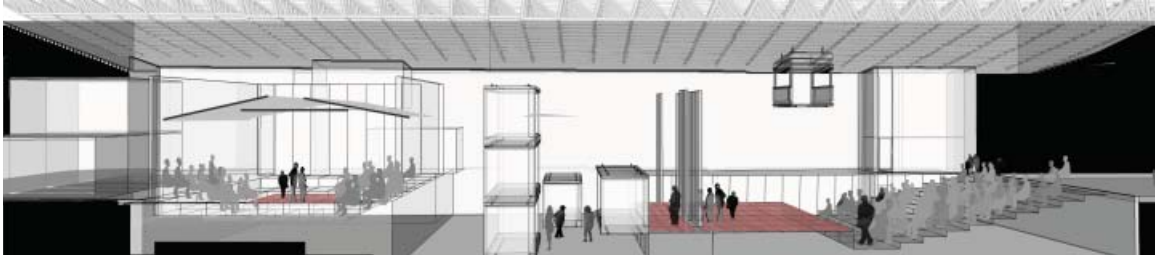


8.11: (middle right) Image of "portal" view into the performance space. Source: Author.

8.12: (lower left) Stairs from Rock Creek Park. Source: Author.

8.13 (lower right) Image of model showing view from Pennsylvania Avenue approach. Source: Author.



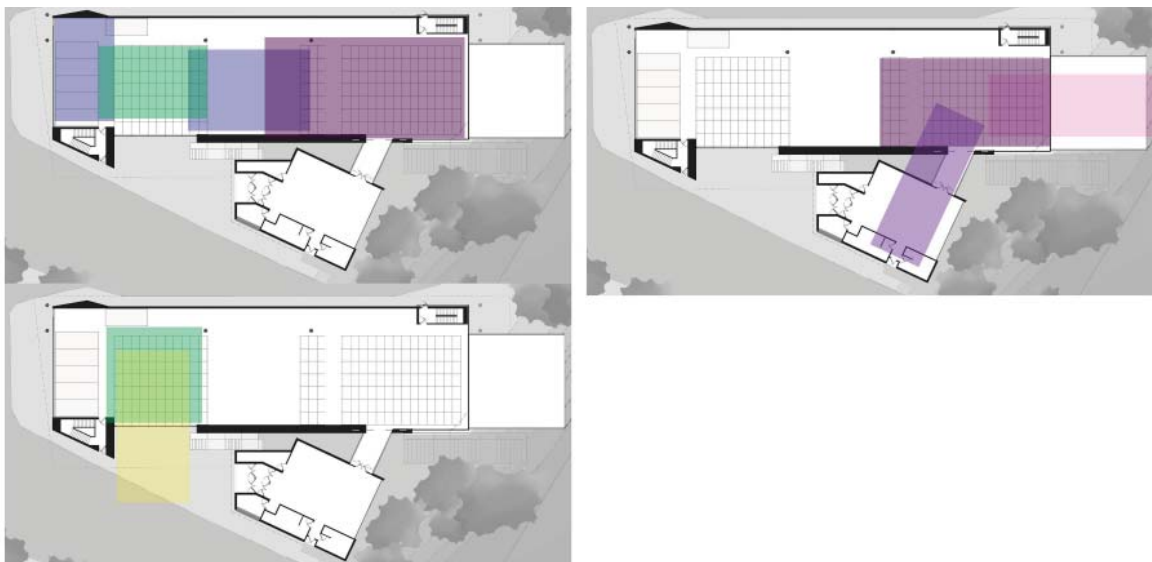


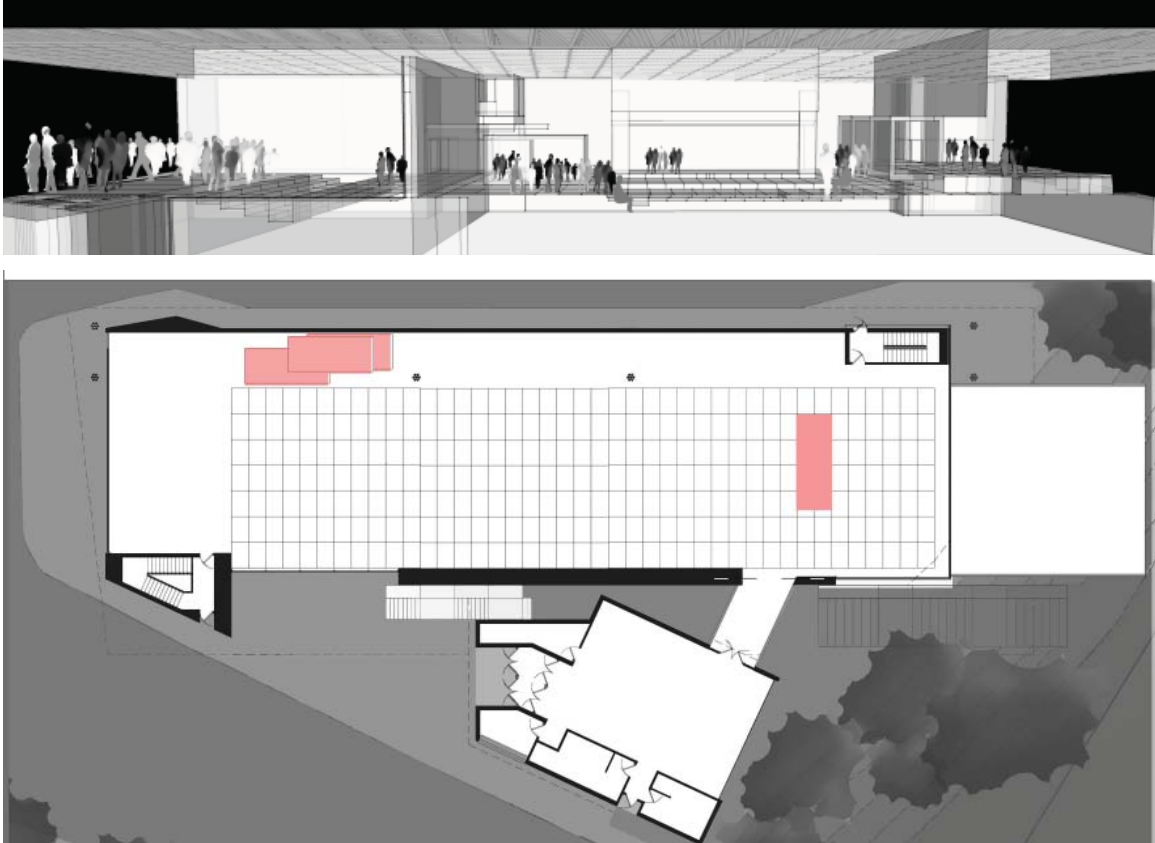
8.14-16: Example of performance space divided into three event spaces: a theater in the round, a practice space and a small thrust theater.

8.14: (top) Longitudinal section through building. Source: Author.

8.15: (middle) Ground plan. Source: Author.

8.16: (below) Spatial diagrams. Source: Author.



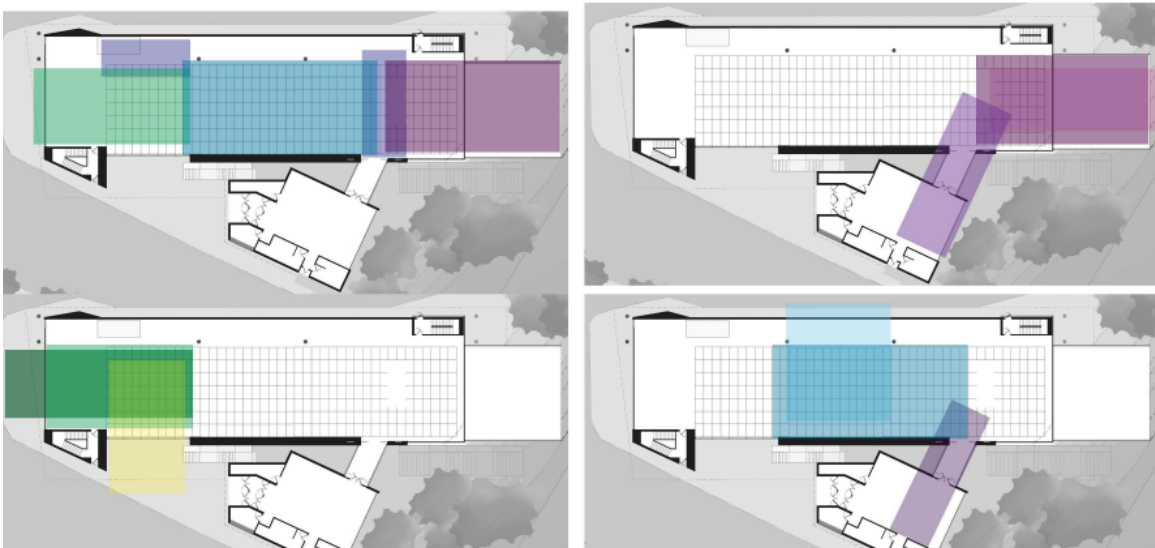


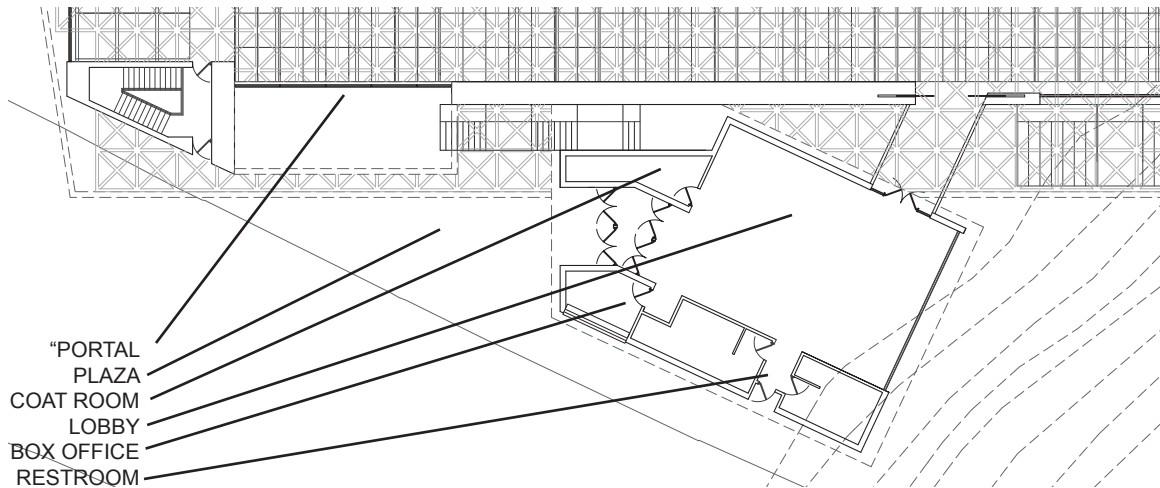
8.17-19: Example of performance space divided into two event spaces: small proscenium and a semi-circular performance.

8.17: (top) Longitudinal section through building. Source: Author.

8.18: (middle) Ground plan. Source: Author.

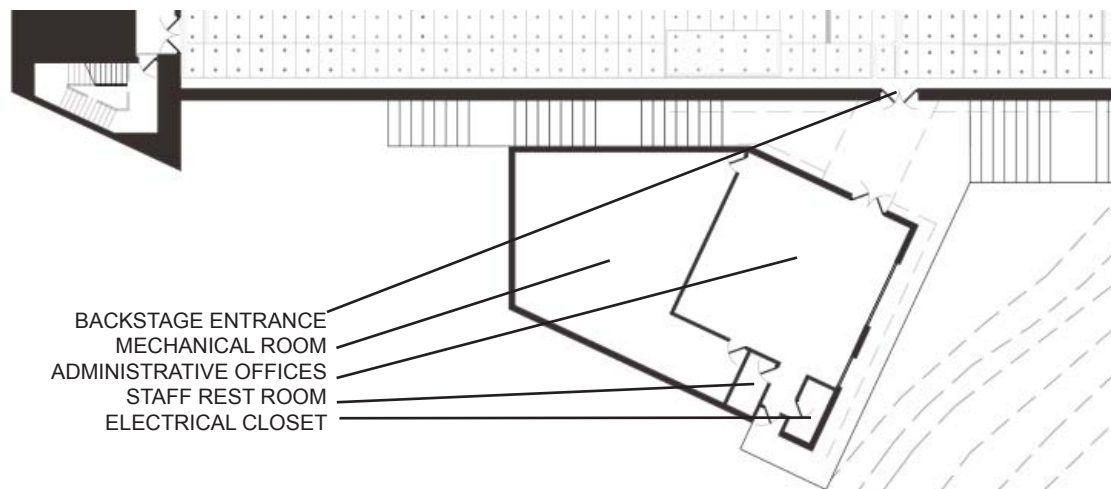
8.19: (below) Spatial diagrams. Source: Author.





8.20: (above) Ground floor plan showing the smaller building to the south. Source: Author.

8.21: (below) Lower/Basement floor plan showing the smaller building to the south. Source: Author.



To the south of the performance building, the smaller angled building houses the main formal entrance, the restrooms, administrative offices, mechanical room and electrical closet. During a performance, an audience member enters from the plaza past the coat check to the lobby (see figure 8.20). The can also serve as a formal reception area and has windows that open to Rock Creek Park. The restrooms are also located off to the side. To continue to the performance area, the audience member crosses a bridge that connects to the performance building. The Administrative offices, mechanical room and electrical closet are located in the lower level of the building (see figure 8.21).

CHAPTER 9: DESIGN CONCLUSIONS

One of the main focuses of the final review was the angled building that house the restrooms, administrative offices, electric closet, and mechanical equipment located to the south of the performance building. One of the main issues was the proximity to the other building. The smaller building blocks the south wall of the performance building, which is the front of the building. Also, the LED panels are not visible to the pedestrians along Pennsylvania Avenue. Three suggestions were taken into consideration. The first was to remove the building entirely creating a plaza, which would extend into the performance area. Below, this plaza the offices, mechanical room, and electrical closets would be housed. The rest rooms would move into a service area of the performance hall. This remove the original formal entrance and use the envelope of the performance building as entrance spaces. The second suggestion was to further separate the two buildings. The performance area would keep its “shed”-like form. The smaller building would distinguish itself with an anamorphic form.

The other focus of the discussion was the clarification of the main entry plaza along Pennsylvania Ave. In the design, part of the solid wall of the south performance area blocks views of the plaza from the Main M Street procession through Georgetown. The main suggestion has been to remove the angled solid corner of the performance building, allowing a clear view of the plaza.

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