

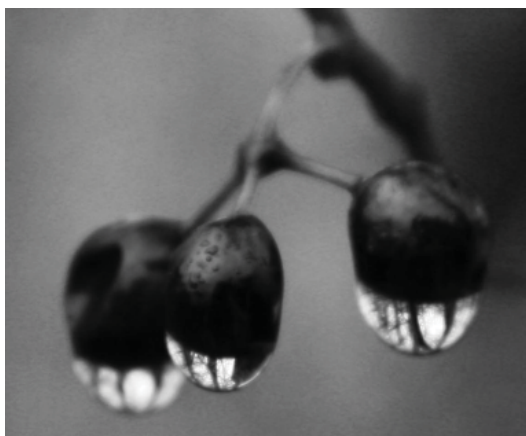
# (DE)CONSTRUCTING THRESHOLDS

VIRGINIA WAMBAUGH



# (De)Constructing Thresholds

Virginia Wambaugh



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Virginia Wambaugh

Thesis is submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Master of Architecture.

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Alexandria, VA

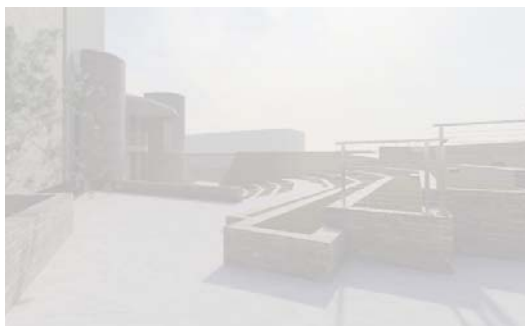
Keywords: Threshold, Theater

(De)Constructing Thresholds  
Virginia Wambaugh

How can a building and the landscape be integrated in such a way that the interior and exterior begin to infiltrate each other, blurring and in some cases breaking the threshold between them?

A threshold is a place, time, or event that indicates the passage from one state to another. Instead of a simple dividing line, thresholds should be understood as a choreographed sequence of spaces, both inside and outside the building envelope.

This project will explore the means to strategically break thresholds between different conditions to create a building intimately bound to the physical, social, and mental landscape it inhabits.





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Figure 1

**The Eco-Mod House**, a 2006 collaborative studio project at the University of Virginia, is a design-build project in New Orleans. Part of its strategy of sustainably dealing with its climate is to promote outdoor living by creating a series of covered outdoor rooms. These spaces are accessible from the house's circulation spine, just like the interior rooms. The idea of treating the interior and the exterior spaces of the house as related components of the same design, rather than two separate designs, is a fundamental shift in the usual architectural mindset.

THRESHOLD:

1. THE PLANK, STONE, OR PIECE OF TIMBER THAT LIES UNDER A DOOR.
2. GATE, DOOR, BOUNDARY, THE PLACE OR POINT OF ENTERING OR BEGINNING.

-MERRIAM-WEBSTER

**Falling Water**- by Frank Lloyd Wright, uses the same local, natural materials both inside and outside to ground the house to its locale. The cantilevered decks and the large expanse of windows allow an easy visual and physical connection to the exterior. This house dissolves the thresholds between interior and exterior through the use of similar materials in both places as well as the easy, fairly unobstructed views.

**University of Virginia**- The Lawn has several layers of space to gradually transition from exterior to interior. The grassy lawn, the rows of trees, and the colonnade create a gradual shift instead of an abrupt change in conditions. This composition introduced the idea of creating a layered threshold zone, from the most open, public area (the center of the Lawn) to the most enclosed, private area (the student rooms along the colonnade).

**Dogwood Dell** in Richmond, VA- An amphitheater and stage house, the seating is a series of small retaining walls holding flat grassy terraces for people to sit on during performances. The landscape has been sculpted in such a way that it acts as a piece of architecture.

**Finlandia Hall** - A theater hall by Alvar Aalto in Helsinki Finland, this large building has several stages, meeting rooms, and conference rooms. While it is significantly larger than the project here, it does provide a good example of what kind of spaces a theater can and should have in addition to the main stage and auditorium.

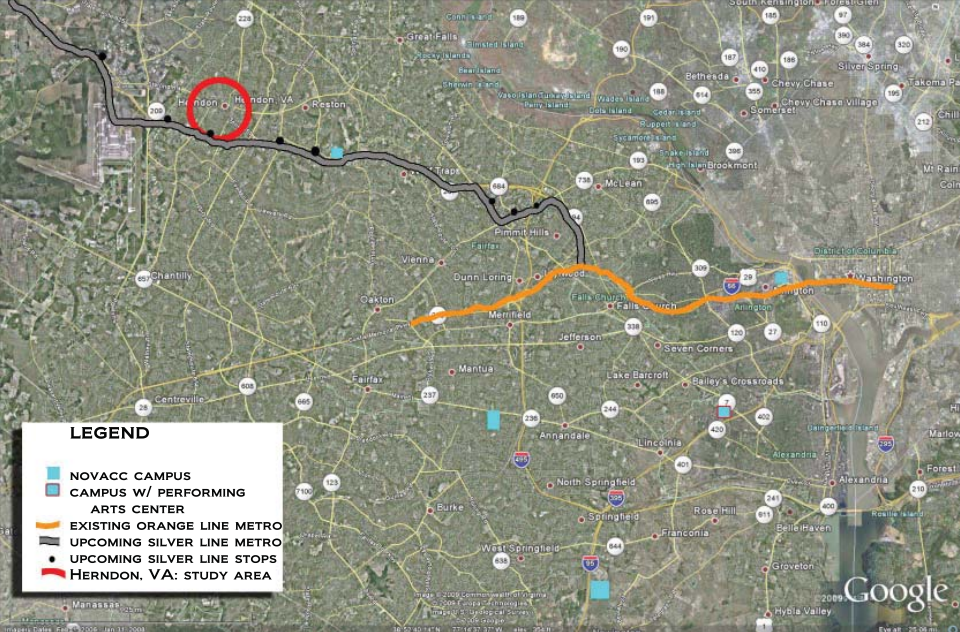


Figure 2

The area around Washington, DC is in a constant state of flux. Small towns that were once a distance from the city are being swallowed up by the ever-expanding metropolitan region. They struggle to hold on to their identity within the increasingly homogenized urban sprawl. Herndon, VA is one such town. The historic town center was once a depot for the W&OD railroad, which has been converted into a pedestrian & biking path. On the southern edge of town, a new Metro rail stop is scheduled to be built along the extension leading to Dulles International Airport. This new metro stop will provide a valuable connection to the region's transportation network, but it also has the potential to draw beneficial development and activity away from the town core.

How can the historic district both remain true to its identity as a historic town center while changing to meet the challenges and opportunities presented by the presence of the people using the new Metro stop?



Figure 3

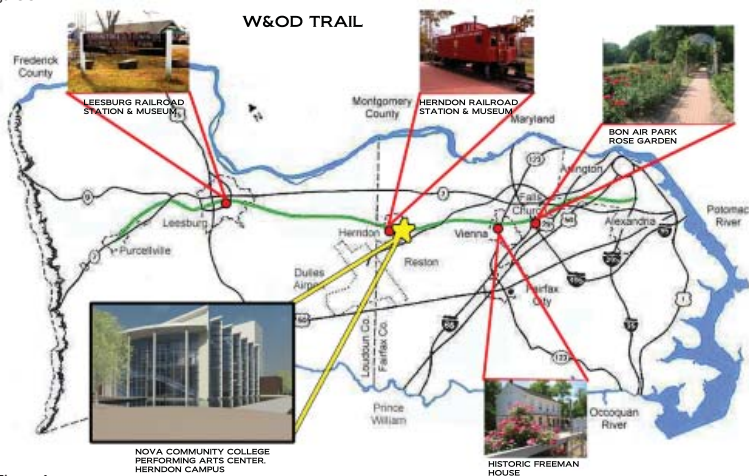


Figure 4



5: Project Site

6: Art Center

# SITE : HISTORIC TOWN CENTER EXISTING CONDITIONS



1: Municipal Center



2: Street Fair



3: Depot & W&OD Trail



4: Red Caboose



7: New City Hall Entrance




8: Streetscape



Figure 6

“(NOTHING) CAN SURVIVE CHANGE UNCHANGED.”  
-CHANG 1956, 48



A community college campus in the town core would draw people to this area and help serve as a magnet for future development. A new public bus or trolley line connecting the campus and the new metro stop would help draw people up into the historic district, possibly encouraging activity in the corridor between the two nodes.

The first phase of this community college campus is a performing arts center. The site is in the center of the historic district, at the confluence of several modes of transportation. Pedestrian, bicycling, cars, and buses come together in this area to create a mixing of people. To take advantage of the opportunity provided by the location, the design is careful to incorporate different ways of approaching the building. The entrance to the theater will be choreographed differently depending on one's means of arrival. Pedestrian and bicycling are the preferred means of entrance, and they have several means of entering the building spaces.

Later phases of the community college campus will include more classroom buildings and an underground parking garage. The parking garage will provide space for people driving cars to park during performances.



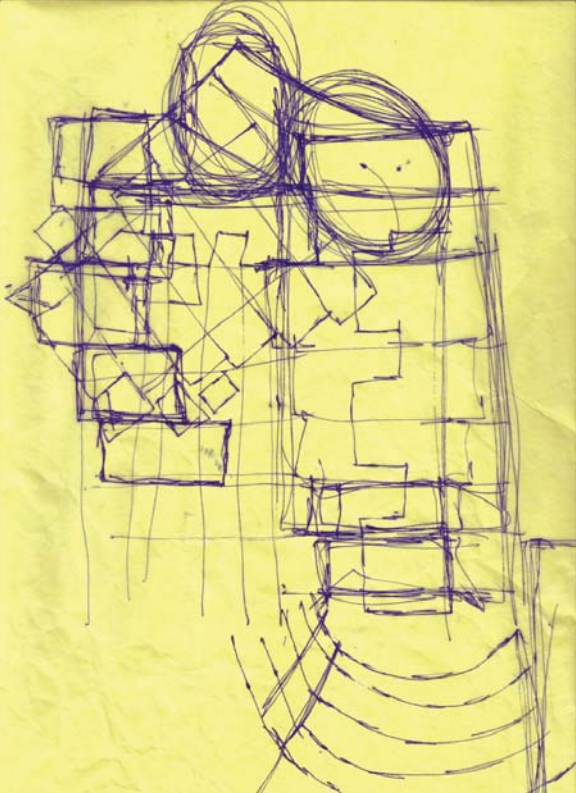


Figure 7

Inside - - - - -

Up - - - - -

Building - - - - -

School - - - - -

Private - - - - -

Dark - - - - -

Front - - - - -

Solid - - - - -

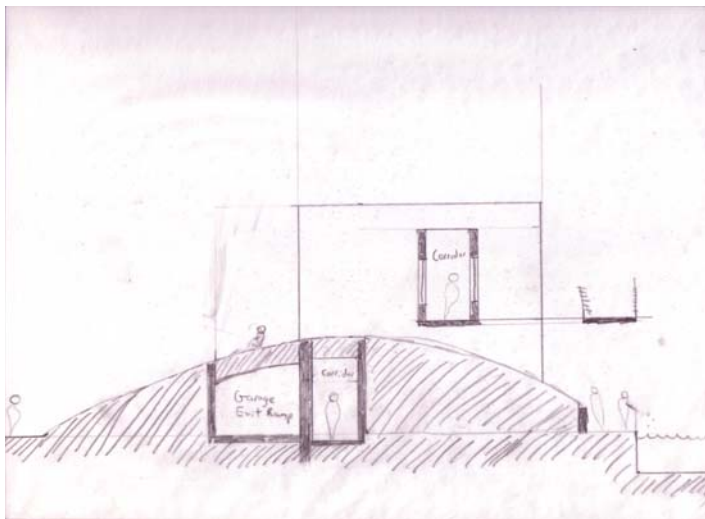


Figure 8

# INITIAL CONCEPTS: SKETCHES

- - - - - Outside
- - - - - Down
- - - - - Landscape
- - - - - Town
- - - - - Public
- - - - - Light
- - - - - Back
- - - - - Void

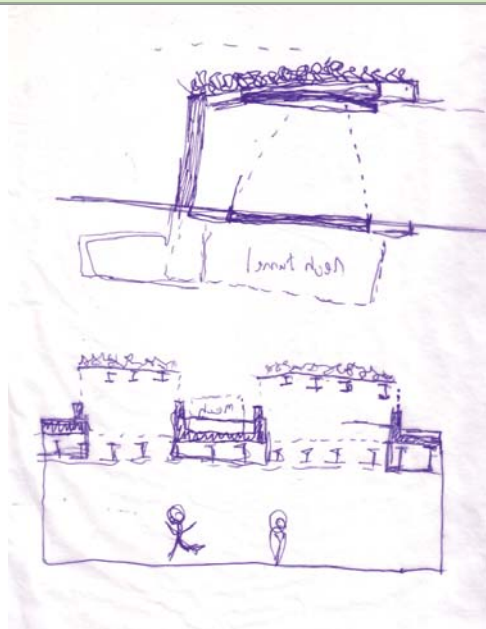


Figure 9

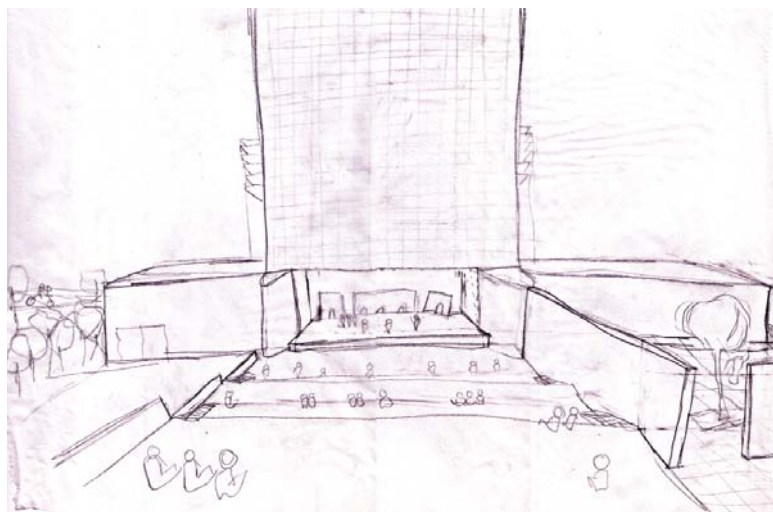


Figure 10

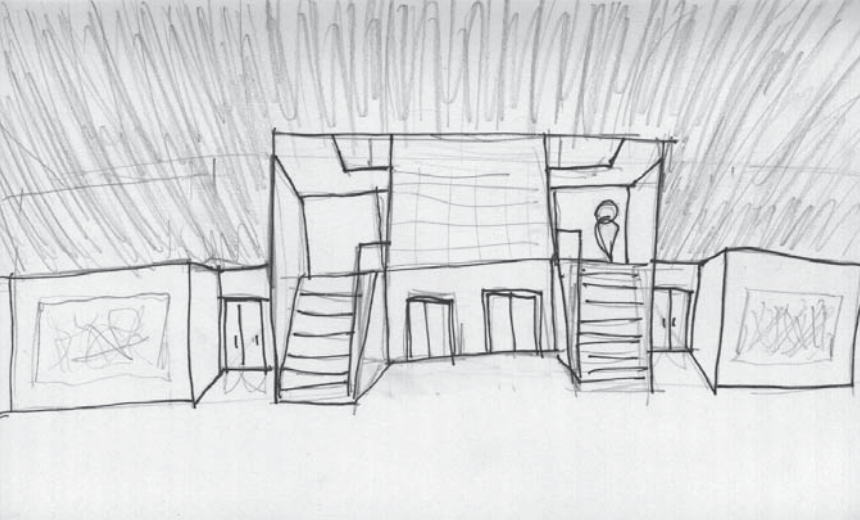


Figure 11

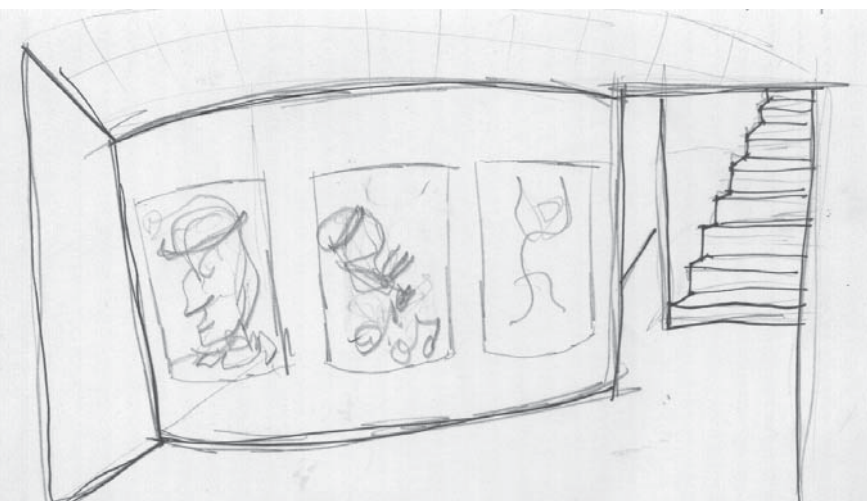


Figure 12

"IF LIGHT BE CALLED THE LIFE BLOOD OF AN ARCHITECTONIC FORM, DARKNESS COULD RIGHTLY BE CALLED ITS SOUL."

-CHANG 1956, 16.

Early sketches showing initial ideas for the front entry piece, building circulation, and side courtyard spaces.

Some important ideas that emerged included the idea of the grand front entrance, the side courtyard spaces as a buffer between classroom and performance spaces, and the idea of the building itself as a backdrop for artistic display and living theater.

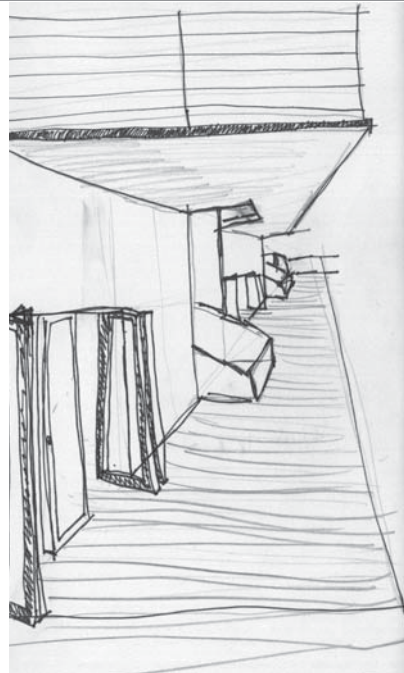


Figure 13

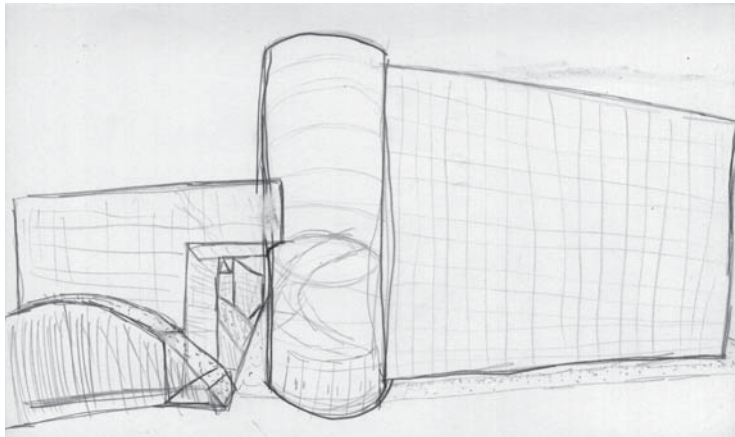


Figure 14



Figure 15

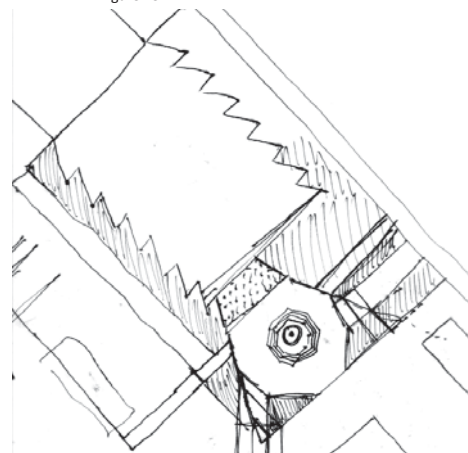


Figure 16

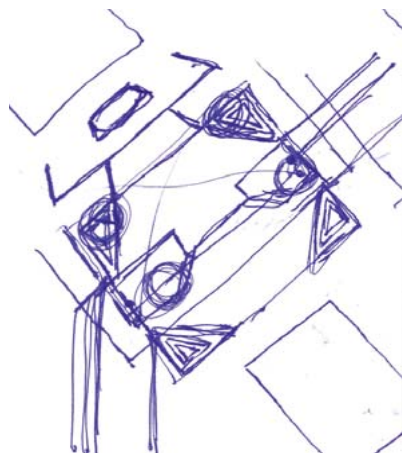


Figure 17

"THRESHOLD IS THE EDGE BETWEEN TWO SYSTEMS. IT IS THE ZONE WITH THE HIGHEST EXCHANGE AND DIVERSITY."

-Berrizbeita 1999, 82.

## SKETCHES : FRONT PLAZA DESIGN

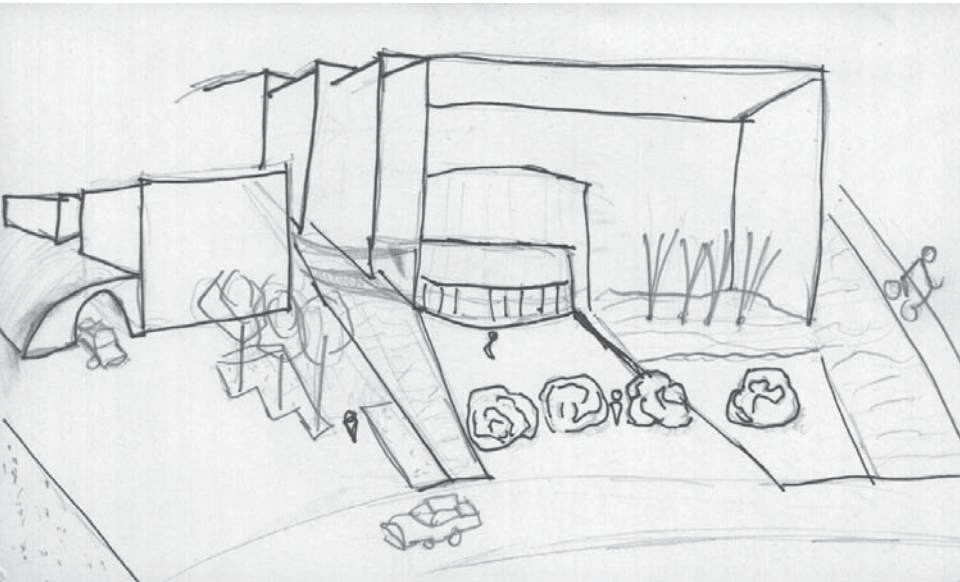


Figure 18

How can a space be usable for many modes of transportation? How can pedestrians, bicyclists, motorists, and people on buses coexist peacefully and safely in the same place? How can we provide welcoming spaces for people to pause and meet with friends in the midst of all this movement?

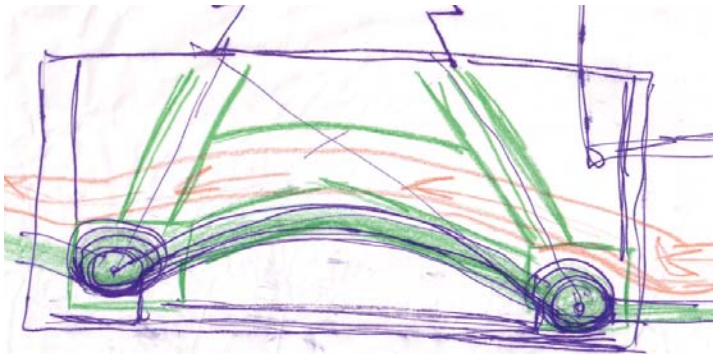
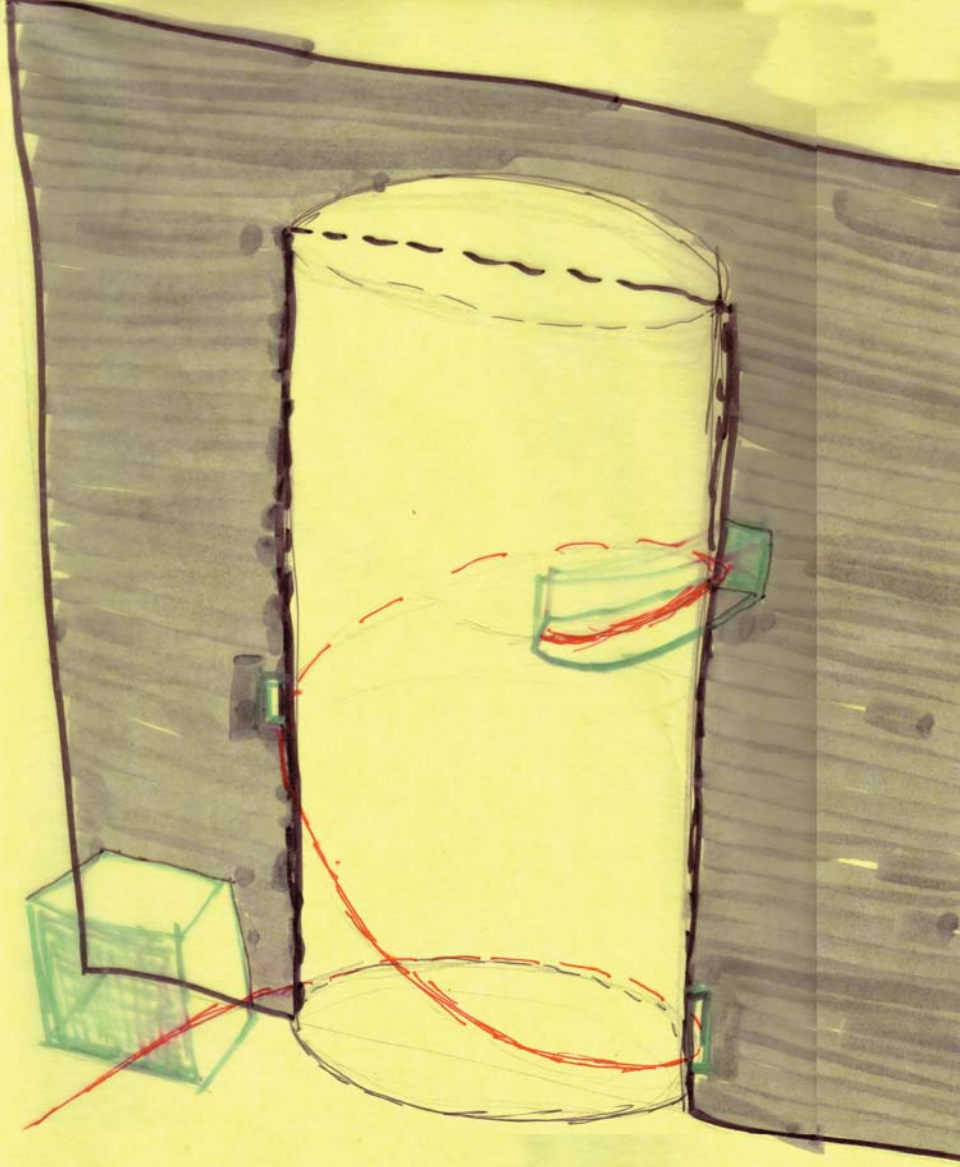


Figure 19



THE GOAL IS "NOT TO BE ONE WAY OR THE OTHER, BUT TO BE ADJUSTABLE BETWEEN TWO EXTREMES AND THUS ALWAYS BE IN A STATE OF INTANGIBLE BALANCE."

-CHANG 1956, 48

A threshold has two main components. It has a divider between two or more different conditions, and it has an observer traveling between these different conditions. It is an event only understood over the course of movement in time and space.

In this case, the threshold had several tasks to perform. The most basic is providing the weather envelope of the building, so that rain and other inclement weather conditions do not enter the body of the building. Its more important function is to separate different spatial conditions both inside and outside the building. While it creates this separation, it must also provide a means to bridge the separation of spaces, so that people can cross from one to another. These spaces include the lobby and the front plaza as well as the first and second floors of the building.

The main divider piece is a thick wall separating the interior and exterior. This wall is pierced by a central atrium, which allows views to and from the different lobby levels. The path circles this atrium, curving around and through the wall, at times completely inside, at times completely outside, and at times within the thickness of the wall. The threshold becomes an important experience in its own right, instead of something one passes through to get to the next space.



The front entrance is to the south of the building, and the act of entering starts well before coming close to the building. The circle to the southeast of the building is a mixing point- people in cars, on bikes, and on foot meet here. This will be the main bus stop for the campus, as well. The vehicles swing in front of the Performing Arts Center to the south of the line of trees; pedestrians walk on the north side of this tree line.

The entry roof forms a porch over the main entrance, supported by five large columns. This is the first layer of the building threshold. The main doors lead into a vestibule, which then exits into a two story entry lobby. The front wall of the building continues through the lobby area, dividing the entry lobby from the main lobby.

The water to the east and south of the building is an important part of the edge definition. On the east, it forms the border between the W&OD trail and the building; people on the trail can see into the auditorium, but cannot approach. It creates a physical barrier to peoples' movement, channeling that movement to the point along the building edge where the water can be crossed. The water on the south side of the building flows under the glass floor of the entry lobby, reinforcing the idea that this area is different from the rest of the building. In this way the water becomes an integral part of the experience of entering the building; the front entrance is a literal bridge between the exterior world and the world of the interior.

*"I PREFER 'BOTH-AND' TO 'EITHER-OR,' BLACK AND WHITE, AND SOMETIMES GRAY, TO BLACK OR WHITE. A VALID ARCHITECTURE EVOKES MANY LEVELS OF MEANING AND COMBINATIONS OF FOCUS "*

*-VENTURI 2002, 16.*

# DESIGN: PERFORMING ARTS CENTER

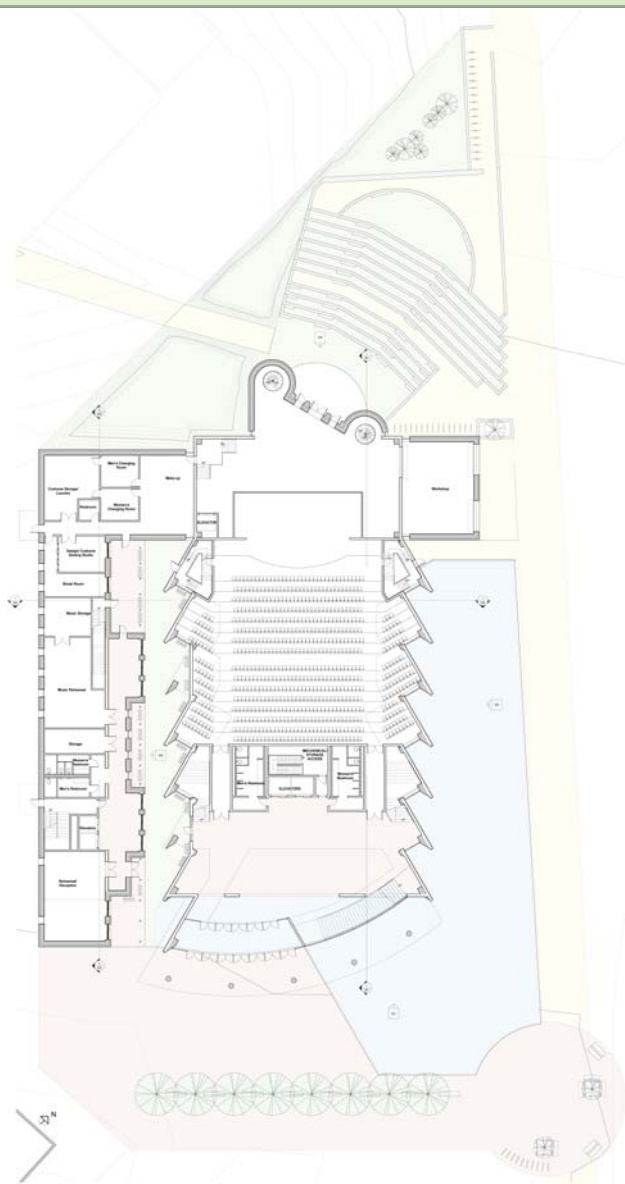


Figure 21

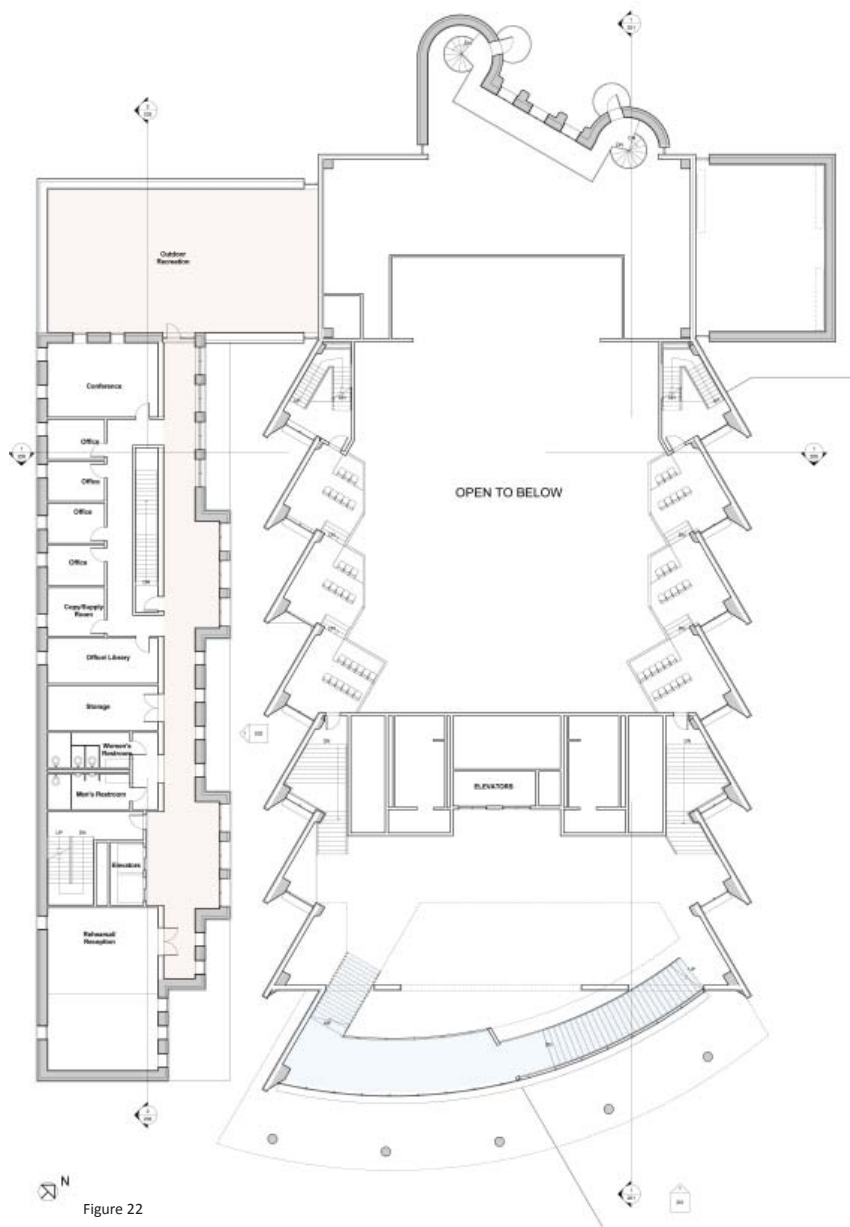


Figure 22

## CLASSROOMS, 2ND FLOOR AUDITORIUM BALCONY

The wing to the west of the auditorium contains the classroom, rehearsal and support spaces for the Performing Arts Center. The entrance to these rooms are off the corridor between the classrooms and the auditorium. The exterior wall of this corridor is staggered, so that some areas are inside and some areas are outside. The flooring material, which runs in a constant strip on the ground, helps tie this space together.

The points where the smaller building pieces (dressing rooms, workshop, rear stage) meet the stage flyloft are important, both from a constructability standpoint and from a theoretical standpoint. These joints have been emphasized with glass curtain walls at the threshold between the two conditions. Since the flyloft is finished concrete and the classrooms, rear stage, and workshop are brick, this glass also helps create a clean transition from one material to the other.

The auditorium balcony is reached by the stairs to either side of the main lobby. These seats step down along the course of the auditorium's side walls until they meet the stairs near the stage. This pair of stairs is for emergency egress and access for the theater crew.



Figure 23



Figure 24

The second level of the auditorium is reached primarily by the grand staircase in the lobby. After one enters through the main doors, the path circles back to the stairs leading along the front curtain wall, in the entry area. These stairs lead to the top of the glass vestibule. After crossing the vestibule roof, one continues up the stairs to the second level of seating. The path, however, continues to the east side of the lobby and circles back through the front wall. It terminates in an open air porch with a view back to the front plaza.

# AUDITORIUM 2ND LEVEL

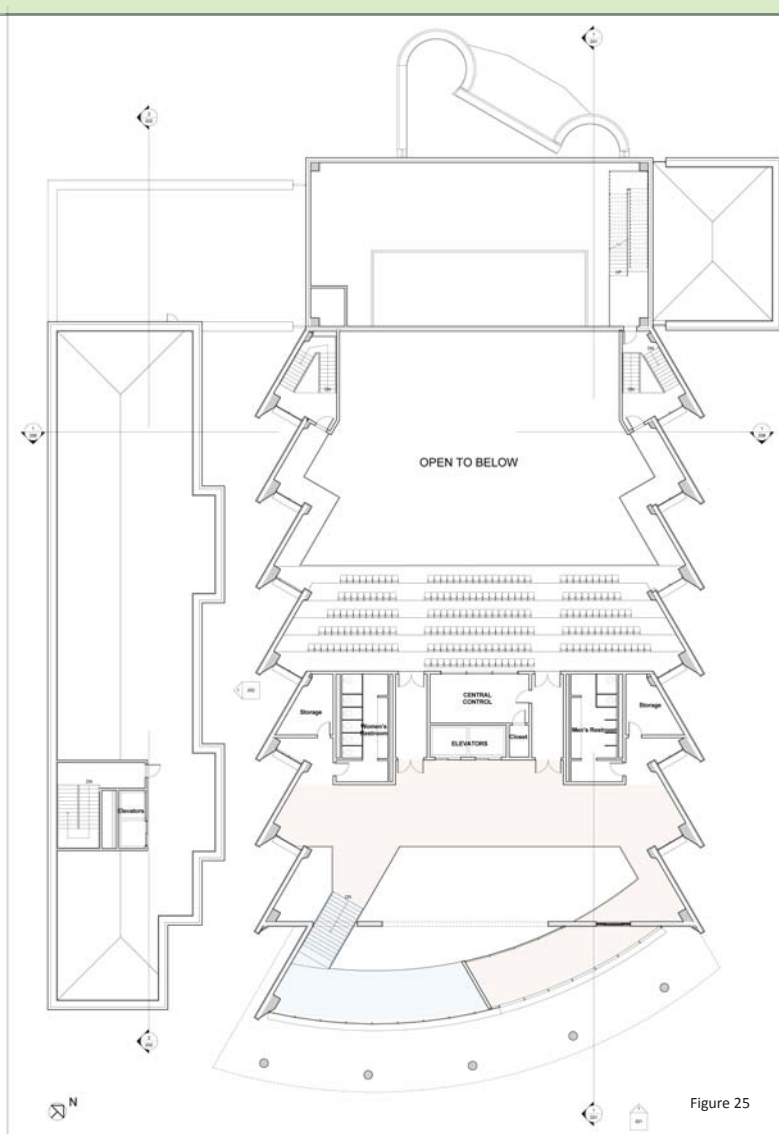
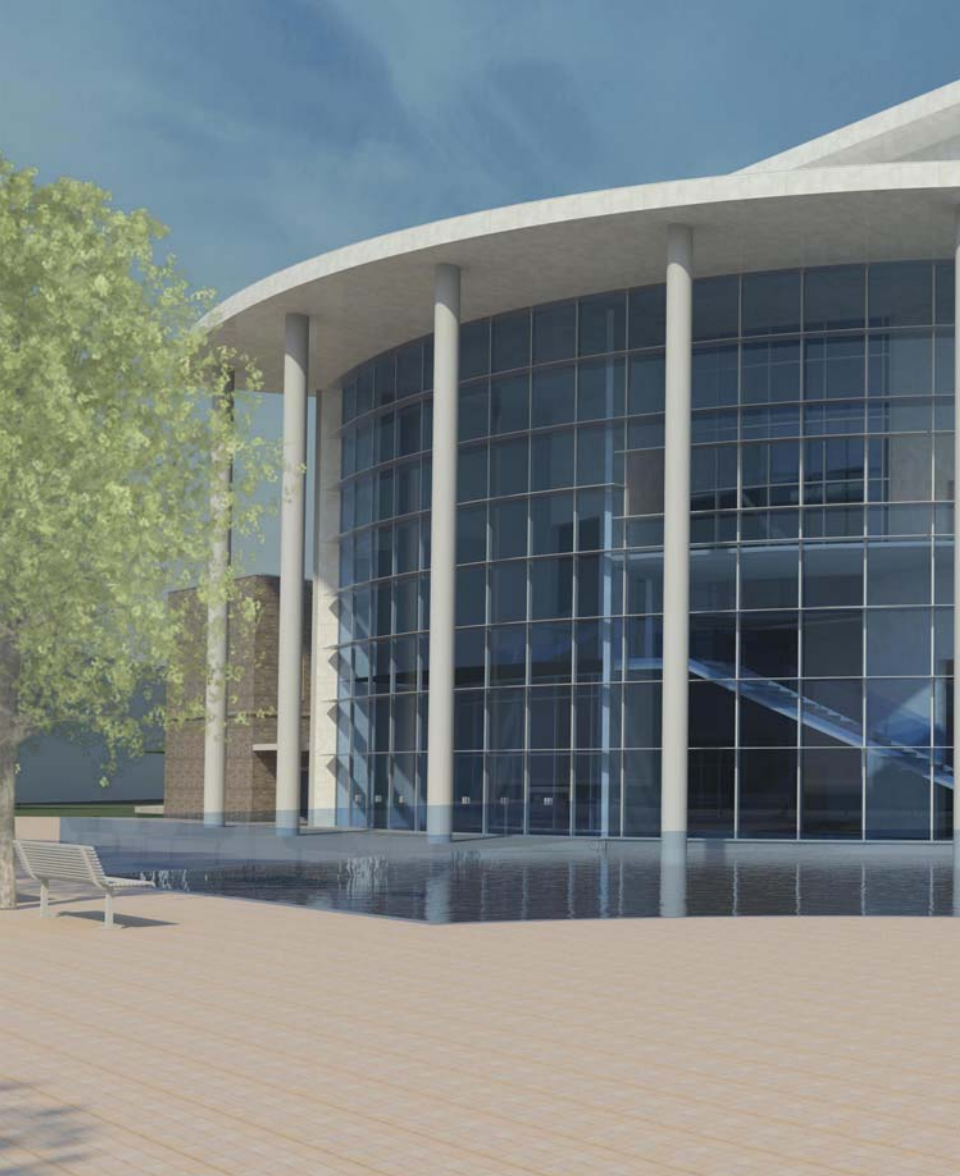


Figure 25

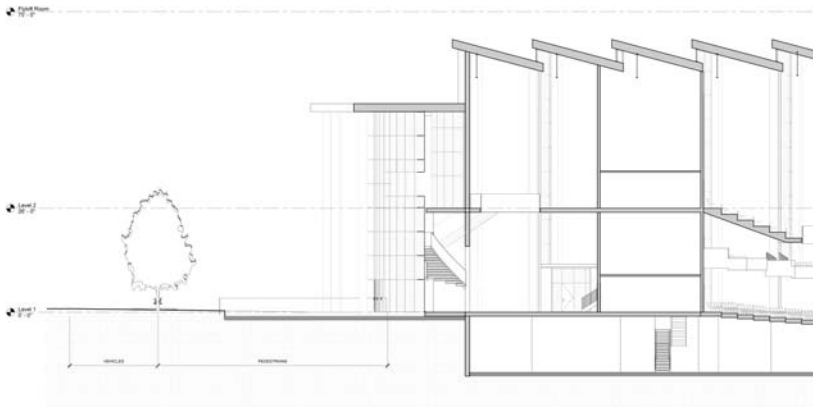


**NOVA COMMUNITY COLLEGE PERFORMING ARTS  
CENTER: FRONT ENTRANCE**



Figure 26





The auditorium building is the largest part of the Performing Arts Center, and will become the signature building for the new college campus as it is built. The sawtooth form of the main roof allows natural light to penetrate down into the auditorium hall at certain places, giving it the potential to host day-lit lectures or performances. The rear of the building is also an important piece, since it faces the main civic center of the town and all the people on the W&OD trail. The rear stage and amphitheater provide a place for outdoor theater events as well as an informal gathering place for the community and passers-by. The flyloft is oversized; the top part of it contains a break room for the theater crew and performers.

## BUILDING SECTIONS

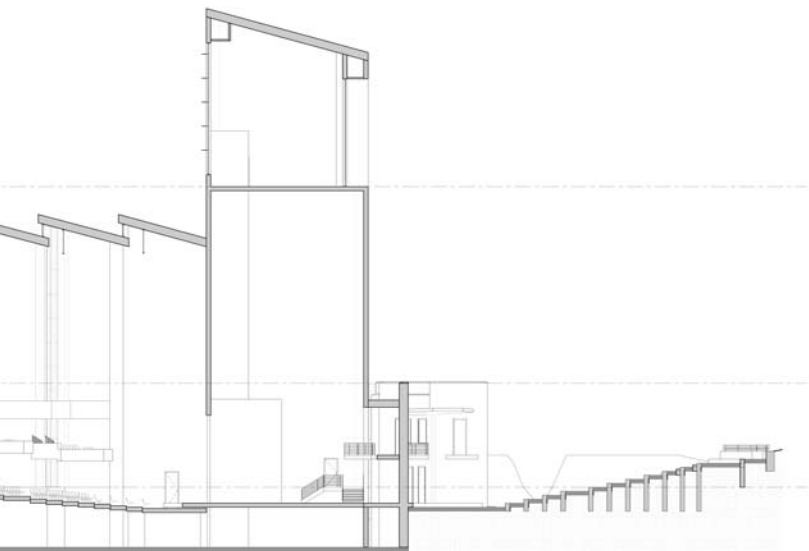


Figure 27

The flyloft break room also has a large curtain wall facing the bike path, allowing for signage or other designs. At night, in the event of a gathering in this space, people on the ground could even see silhouettes of the students up here, creating a spontaneous performance.

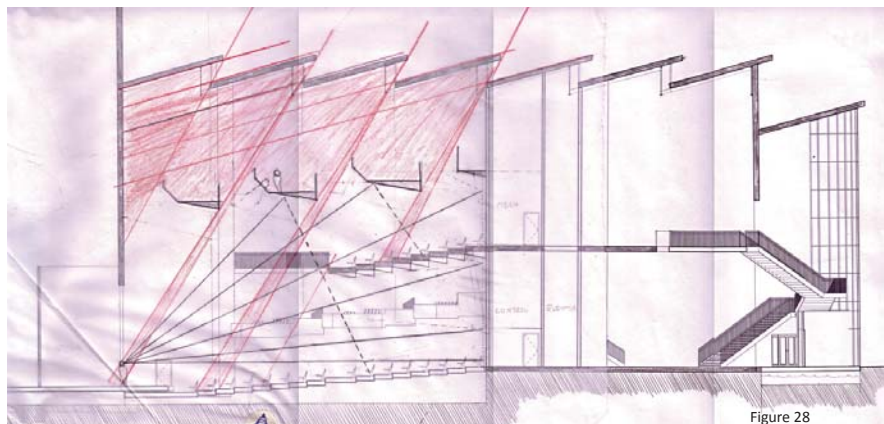


Figure 28

The side walls of the auditorium are also saw-toothed, for much the same reason as the roof. The tall slender windows would allow light in from the side, but are set far enough back along the side walls not to get a great deal of hot, direct light. The windows also help break the visual barrier solid walls would present. People along the bike path would be able to get teasing glimpses of the activities and performances inside the auditorium.

On the west side of the auditorium, the pattern of windows is broken in places on the ground floor only. The wall pulls back to create a series of small, linked courtyards between the auditorium and the classroom building for students to casually gather. The main hallway of the classroom building has two areas for gathering, as well; these areas have sliding glass doors, allowing them to open to the exterior courtyards at will. The entire hallway of the classroom building becomes a threshold space. It divides the interior of the building from the outside without definitively belonging to either condition.



Figure 29

## BREAKING THRESHOLDS: SKETCHES & SITE MODEL



Figure 30

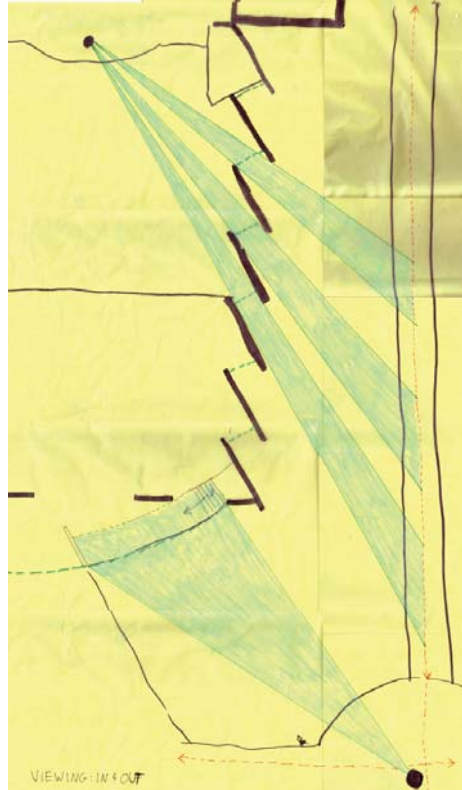


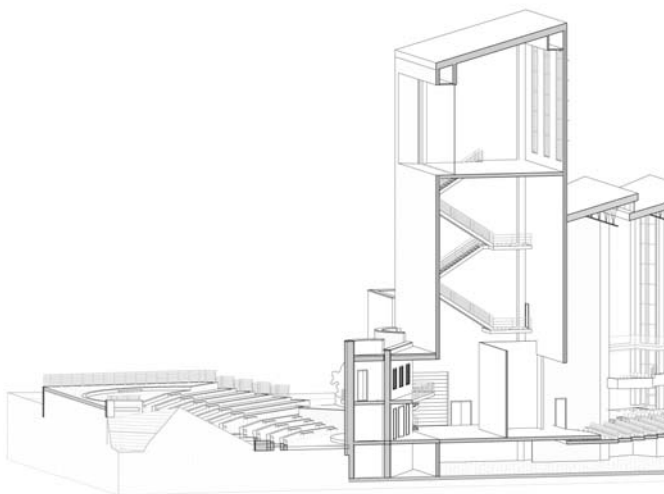
Figure 31



Figure 32



SECTION PERSPECTIVE- WEST



SECTION PERSPECTIVE- EAST

## SECTION PERSPECTIVES

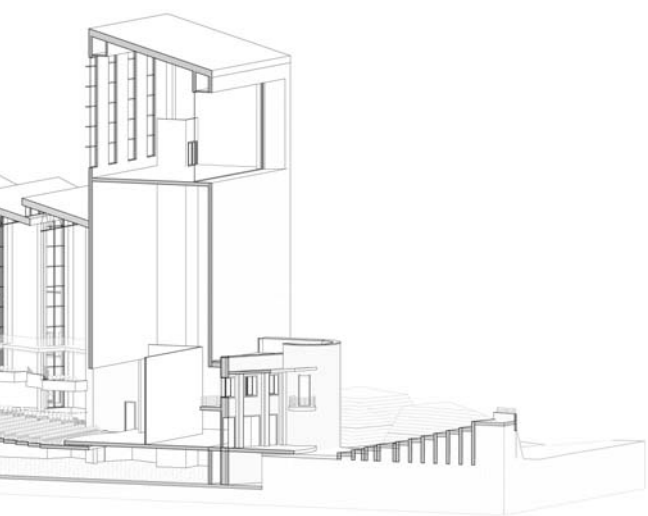
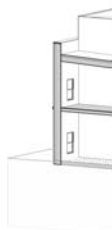
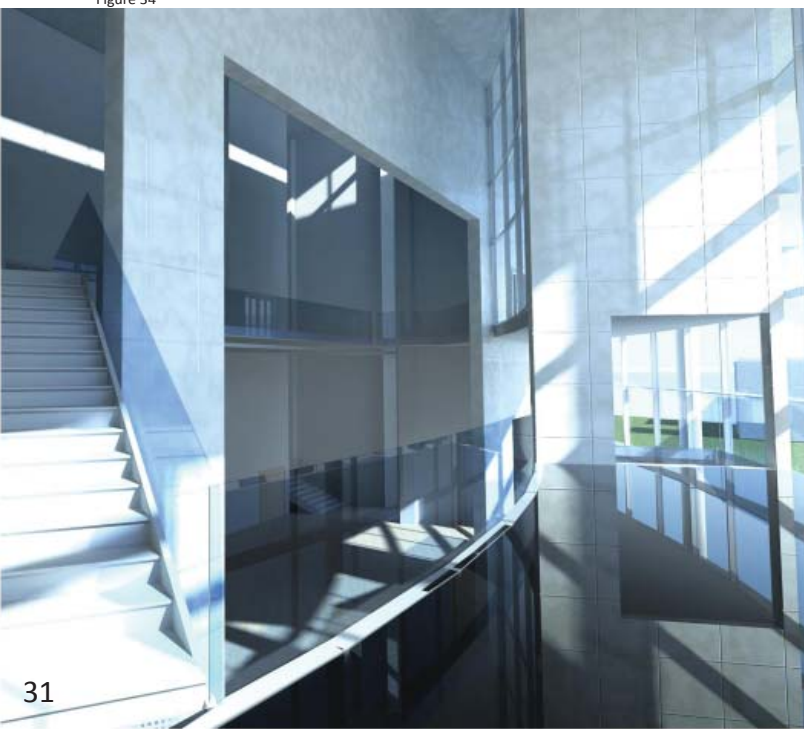


Figure 33

The idea of watching people is very important to the design. The auditorium is naturally a place for this activity, but many parts of the design lend themselves to less formalized viewing. As previously mentioned, the windows on the side of the building allow passers-by brief glimpses of the activity taking place within the building, hopefully tantalizing them enough to stop and enter. The lobby is a double height space, and there are several places along the grand staircase and the upper balcony for people to pause and watch the people around them without feeling they are blocking the flow of movement. The open-air porch on the upper level allows views both into the lobby and out onto the front plaza.

Figure 34



“ALL THE WORLD’S A STAGE, AND ALL THE MEN AND WOMEN MERELY PLAYERS.”  
-SHAKESPEARE

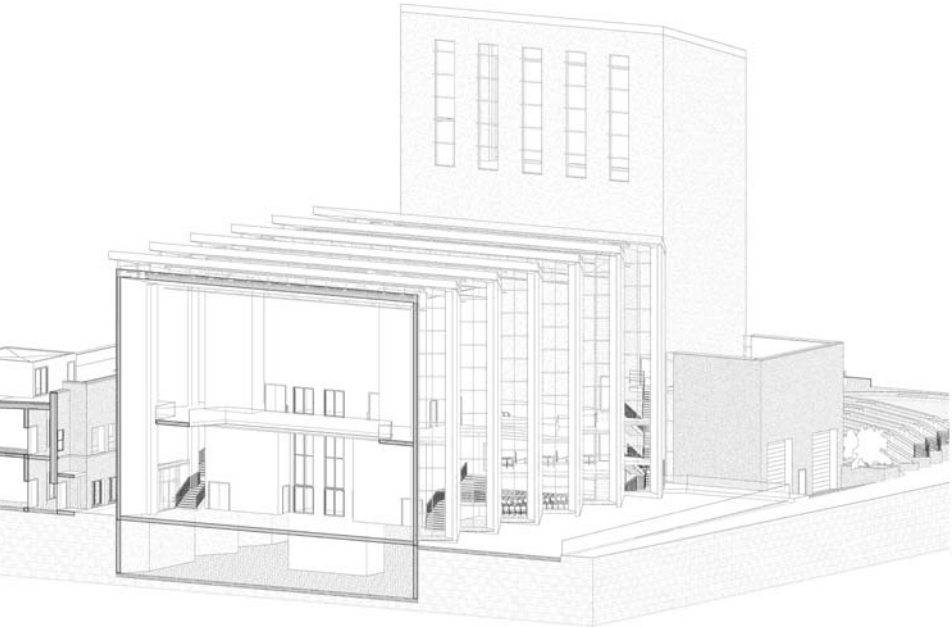


Figure 35

The movement of people through the lobby is intended as part of the spectacle of the theater. The elevators are glass fronted, to add additional, vertical movement to the lobby. The grand staircase deliberately wraps the inside of the front curtain wall, and the path passes over the main entry vestibule. People moving along this path would be visible to people outside the building, adding movement and life to the front facade. The whole entry experience is set up as a real-life stage set, and allows people to both move through it and to observe the movement of others.





The rear amphitheater and the front plaza are the school's two direct, physical contributions to the town fabric. The amphitheater, especially, is a place for anyone to come, meet friends, and hold informal gatherings. It connects directly to the W&OD path; in fact, it uses some of the same materials so that the path seems to spill into the amphitheater. There are spaces along the side and back of the amphitheater to park bicycles. These spaces are out-of-the-way of anyone trying to watch a performance, so people could meet casually here even when there was an event in progress.

*"AT THE SAME TIME THAT ARCHITECTURE MAKES US AWARE OF THE DEPTH OF EARTH, IT MAKES US DREAM OF LEVITATION AND FLIGHT."*

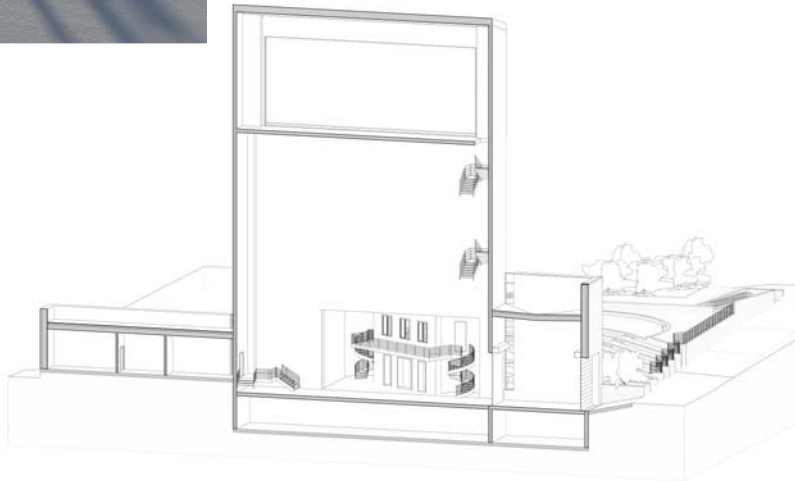
*-HOLL ET.AL. 2007, 37.*

## REAR AMPHITHEATER



The amphitheater stage backs up to the interior stage serving the auditorium, and the two would share work and dressing spaces. The stage of the amphitheater is itself a permanent, two level stage set. It would be open to the public for community meetings, concerts, lectures, etc. This will encourage spontaneous use of the space by people not affiliated with the school.

Left-Figure 36  
Below-Figure 37





"MORE COMPLEX AND INTENSE INTELLECTUAL EFFORTS MEAN A FULLER AND RICHER LIFE.  
-OLIVER WENDELL HOLMES, JR. QUOTED IN JACOBS 1961, 2.

The flyloft over the stage has a large curtain wall facing the W&OD trail and the town center that would allow the school an opportunity to post large scale theater advertisements, student artwork, or other graphics to communicate with the community. This would be another in a series of enticements to rouse peoples' interest in the school and encourage them to stop and look at its offerings.

In addition to breaking the physical thresholds of the building, this teasing of people outside the building shows a programmatic and spiritual breaking of the building's boundaries. The idea of the theater, of performing, of watching, and of gathering, breaks out of the actual auditorium space to infuse the entire building and the space around it. The building's height allows it to be seen by people a good distance away, increasing its area of influence far beyond its walls. The building reaches out to the community and invites people from all over the town and beyond to come in and enjoy the performances. In this manner, it starts to erode the barriers between people, allowing strangers to meet and mingle.

By bringing many people into this area and providing them with a stage for living, this building can start to inject new life into the town center and community.

Figure 38

Front & Back Cover: “Paper” 2009  
Title Facing Page: “Water World” 2009  
Page iii: “Rear Ampitheater Rendering, Close” 2010  
Page iv: “Money Shot” 2010

- 1: “EcoMod Floor Plan” Quale et al. 2006, 7
- 2: “Regional Map” 2010
- 3: “Town of Herndon Map” 2010
- 4: “W&OD Trail Attractions” 2010
- 5: “Herndon Existing Conditions Map” 2010  
-Photographs on pages 5 & 6 keyed into above  
image are named as listed on page, 2010
- 6: “New Work Site Map” 2010
- 7: “Sketch: Massing” 2010
- 8: “Sketch: Hallway Tunnel” 2010
- 9: “Sketch: Sections” 2010
- 10: “Sketch: Rear Ampitheater” 2010
- 11: “Lobby: Grand Staircase” 2010
- 12: “Lobby: Art Gallery Wall” 2010
- 13: “Classrooms Walkway” 2010
- 14: “Front Elevation & Main Entry” 2010
- 15: “Front Plaza Diagram” 2010
- 16: “Front Plaza Sketch1” 2010
- 17: “Front Plaza Sketch 2” 2010
- 18: “Front Plaza Sketch 3” 2010

Unless noted otherwise, all photos & images are by author  
Aerial Photographs are from Google Earth

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- 20: "Entrance Threshold Diagram" 2010
- 21: "First Floor Plan" 2010
- 22: "Second Floor Classrooms Plan" 2010
- 23: "Balcony Seating Rendering" 2010
- 24: "Lobby Rendering" 2010
- 25: "Balcony Seating Rendering" 2010
- 26: "Money Shot" 2010
- 27: "Auditorium Section" 2010
- 28: "Auditorium Section Daylight Diagram" 2010
- 29: "Site Model: Oblique View" 2010
- 30: "West Side Courtyards & Classrooms" 2010
- 31: "W&OD Trail Views" 2010
- 32: "Site Model: Birds Eye View" 2010
- 33: "East & West Section Perspectives" 2010
- 34: "Lobby Rendering: Top of Vestibule" 2010
- 35: "Lobby Section Perspective" 2010
- 36: "Rear Ampitheater Rendering, Close" 2010
- 37: "Flyloft Section Perspective" 2010
- 38: "Rear Ampitheater Rendering, Approach" 2010

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Aerial Photographs are from Google Earth

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- Aerial Photographs are from Google Earth



