

STRUCTURE OF SOUND

The Interpretation of a Multifaceted Venue

Asti Joy Jackson

Thesis 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
In
Architecture

Michael G. Ermann, Chairman
William U. Galloway
Howard S. Gartner

May 6, 2015

Blacksburg, Virginia

Keywords: architecture, music venue, event space, concert hall, latticing, wood, concrete

STRUCTURE OF SOUND

The Interpretation of a Multifaceted Venue

Asti Joy Jackson

This thesis creates a complementarity relationship with the use of timber and concrete as primary structural and accent materials. Key elements of this thesis include (1) The development of a wood latticing system (2) Stairs that possess a strong sculptural language (3) The Lantern, a free standing lobby/box office, clad in wood and glass (4) Circulation towers that accommodate balcony seating. Studies of these elements went through many iterations resulting in over one hundred drawings. Progression of these drawings are directed to the interpretation of building form and the interaction with the site.

These concepts are then implemented in the design of a multifaceted music venue located on a hillside in the New River Valley. Minutes from the college town of Blacksburg, Virginia this event complex caters to an array of musical functions. Spaces include The Lantern, which is a multipurpose lobby/lounge, the main auditorium, and an outdoor amphitheater.

ACKNOWLEDGEMENTS

I would like to thank my parents Suzie, Will, and Tim for supporting and encouraging me throughout my college career. For always putting up with my sleep deprived grumpy moods, my manic nerdy architecture rants, as well as the days I felt deprived of human contact and called nonstop. Without you this book wouldn't be possible.

As for my crazy family, thank you for encouraging me to use my creativity growing up. Jackie and Nina for always urging me to transform my talents into a career I can become passionate about.

To my fellow colleagues congratulations on your success. It has been a long ride and I am so grateful to have had you by my side through the many sleepless nights. A special thanks to Tate, Stephanie, and Duru I will always cherish the many laughs and memories shared over the years.

I would like to recognize the professors that inspired me with their contagious passion for architecture. Lahib Jaddo, Elizabeth Loudon, Michael Ermann, and Bill Galloway thank you for sharing your wisdom and for challenging me to push the boundaries of art and architecture.

CONTENTS

Title	i
Abstract	ii
Dedication	iii
Contents	iv
List of Figures	v

Thesis Elements

Wood	1
Stair	8
Lantern	16
Tower	22

Project Completion

The Complex	29
Site & Plans	32
Elevations	39
Sections	45

Appendix

Tri-Design	48
Live House	49
Concert Hall	52
Final Complex	55

LIST OF FIGURES

Figure 1.1	Wood Collage	1
Figure 1.2	Masonry Construct Elevation	2
Figure 1.3	Masonry Construct Cavity	2
Figure 1.4	Column Construct Elevation	3
Figure 1.5	Column Construct Post	3
Figure 1.6	Wall Section/Interior Elevation	4
Figure 1.7	Wall Section/Partial Elevation	5
Figure 1.8	Concept Model Wall Image	5
Figure 1.9	Concept Model Doorway Image	6
Figure 1.10	Wood Tectonic sketches 1	6
Figure 1.11	Wood Tectonic sketches 2	7
Figure 1.12	Wood Tectonic sketches 3	7
Figure 2.1	Stair Collage	8
Figure 2.2	Stair to Mezzanine Study	9
Figure 2.3	Stair Concrete Columns	10
Figure 2.4	Undulating Stair Study	11
Figure 2.5	Corresponding Envelope/Rail	11
Figure 2.6	Undulating Stair/Latticing	12
Figure 2.7	Stair Detail Sketch	12
Figure 2.8	Final Lantern Stair	13
Figure 2.9	Tower Stair Concepts	14
Figure 2.10	Tower Stair Sketch	14
Figure 2.11	Final Tower Stair	15
Figure 3.1	Lantern Collage	16
Figure 3.2	Interior Perspective 1	17
Figure 3.3	Interior Perspective 2	18
Figure 3.4	Concept Model Bar Image	18
Figure 3.5	Interior 1 Stair	19
Figure 3.6	Interior 1 Latticing	19
Figure 3.7	Interior 1 Bar/Railing	19
Figure 3.8	Concept Model Stair Image	19
Figure 3.9	Interior 2 Bar	19
Figure 3.10	Interior 2 Latticing	19
Figure 3.11	Lantern Skin Study	20
Figure 3.12	Lantern Structural Study	20
Figure 3.13	Lantern Final Structure	21
Figure 4.1	Tower Collage	22
Figure 4.2	Final Tower Facade	23
Figure 4.3	Tower Latticing Model Image	23
Figure 4.4	The Beacon	24
Figure 4.5	Tower Latticing Study 1	25
Figure 4.6	Tower Latticing Study 2	26

LIST OF FIGURES CONTINUED

Figure 4.7	Tower Wall Stair Cavity	27
Figure 4.8	Tower Corner Window Sketch	27
Figure 4.9	Tower Corner Window Model Image	27
Figure 4.10	Tower Balcony Perspective	28
Figure 4.11	Tower One Stair	28
Figure 5.1	Complex Axon	29
Figure 5.2	Beacon Render	30
Figure 5.3	Lantern Render	31
Figure 5.4	Site Plan	32
Figure 5.5	First Floor	33
Figure 5.6	Second Floor	34
Figure 5.7	Third Floor	35
Figure 5.8	Fourth Floor	36
Figure 5.9	Fifth Floor	37
Figure 5.10	Basement	39
Figure 6.1	Lantern Southwest Elevation	39
Figure 6.2	Lantern Northeast Elevation	39
Figure 6.3	Lantern Northwest Elevation	40
Figure 6.4	Lantern Southeast Elevation	40
Figure 6.5	Venue Southwest Elevation	41
Figure 6.6	Venue Northeast Elevation	42
Figure 6.7	Venue Northwest Elevation	43
Figure 6.8	Venue Southeast Elevation	44
Figure 7.1	Transverse Southeast Section Cut	45
Figure 7.2	Longitudinal Northeast Section Cut	46
Figure 8.1	Concept 1 Collage	47
Figure 8.2	Tri-Design Site Grid	48
Figure 8.3	Tri-Design Exterior Perspective	48
Figure 8.4	Tri-Design Preliminary Floor Plan	48
Figure 8.5	Tri-Design Study Model 1 Image	48
Figure 8.6	Tri-Design Study Model 2 Image	48
Figure 8.7	Tri-Design Study Plan 1 Image	48
Figure 8.8	Tri-Design Floor Plan	48
Figure 8.9	Tri-Design Study Plan 2 Image	48
Figure 9.1	Live House Exterior Perspective With Stone Wall	49
Figure 9.2	Live House Interior Perspective Towards Stage	49
Figure 9.3	Live House Interior Perspective Towards Seating	49
Figure 9.4	Live House Preliminary Floor Plan	49
Figure 9.5	Live House Building Plan Sketches	49
Figure 9.6	Live House Floor Plan	49
Figure 9.7	Live House Interior Stair/Ramp Layout	50
Figure 9.8	Live House Floor Plan Sketch	50

LIST OF FIGURES CONTINUED

Figure 9.9	Live House Square Floor Plan Sketch	50
Figure 9.10	Live House Square Stair/Ramp Layout	50
Figure 9.11	Live House Balcony Perspective	50
Figure 9.12	Live House Structural/Circulation Sketch	50
Figure 9.13	Live House Forest Integration Sketch	51
Figure 9.14	Live House Building Submersion	51
Figure 9.15	Live House Building Layers Sketch	51
Figure 9.16	Live House Interior Plan Stair/Balcony	51
Figure 9.17	Live House Building Axon Sketch	51
Figure 9.18	Live House Roof Drainage Sketch	51
Figure 9.19	Live House Plan and Section Sketch	51
Figure 10.1	Concert Hall Angled Lobby Stair/Second Floor 7°	52
Figure 10.2	Concert Hall Tapered Transitions/First Floor 7°	52
Figure 10.3	Concert Hall Central Lobby Stair/Second Floor 14°	52
Figure 10.4	Concert Hall Central Lobby Stair/First Floor 14°	52
Figure 10.5	Concert Hall Preliminary Plan Sketches	52
Figure 10.6	Concert Hall Preliminary Outdoor Seating Sketch	52
Figure 10.7	Concert Hall Balcony Angle Sketch	53
Figure 10.8	Concert Hall Structural Angle Sketch	53
Figure 10.9	Concert Hall Balcony Beam Concept	53
Figure 10.10	Concert Hall Angled Lobby Stairs/Robust Hall	53
Figure 10.11	Concert Hall Second Floor Seating/Robust Hall	53
Figure 10.12	Concert Hall And Amphitheater Layout	53
Figure 10.13	Concert Hall And Amphitheater Concepts	54
Figure 10.14	Concert Hall Structure Connection From Lobby	54
Figure 10.15	Concert Hall Interior Perspective From Stage	54
Figure 10.16	Concert Hall Longitudinal Section Cut	54
Figure 11.1	Final Complex Four Tower Design Axon	55
Figure 11.2	Final Complex Four Tower First Floor Final Scheme	55
Figure 11.3	Final Complex Four Tower First Floor Concept	55
Figure 11.4	Final Complex Three Tower Design Concept	55
Figure 11.5	Final Complex Tower 4 Beacon Latticing	55
Figure 11.6	Final Complex Three Tower Interior Axon	55
Figure 11.7	Final Complex Tower 4 Beacon Roof Drainage	55
Figure 11.8	Final Complex Full Site Plan	56
Figure 11.9	Final Complex Basement Concept	56
Figure 11.10	Final Complex First Floor Concept	56
Figure 11.11	Final Complex Second Floor Concept	56
Figure 11.12	Final Complex Third Floor Concept	56
Figure 11.13	Final Complex Fourth Floor Concept	56
Figure 11.14	Final Complex Fifth Floor Concept	56

Wood

This warm organic material expands and contracts with its environment, much like humans interact with their surroundings. Before becoming a building material, a trees most elegant moment is when light is filtered through its limbs. With the development of a wood latticing system this same experience can be obtained. This system will be used as the primary envelope for the lobby/ lounge area as well as interior and exterior accents for the main performance space.

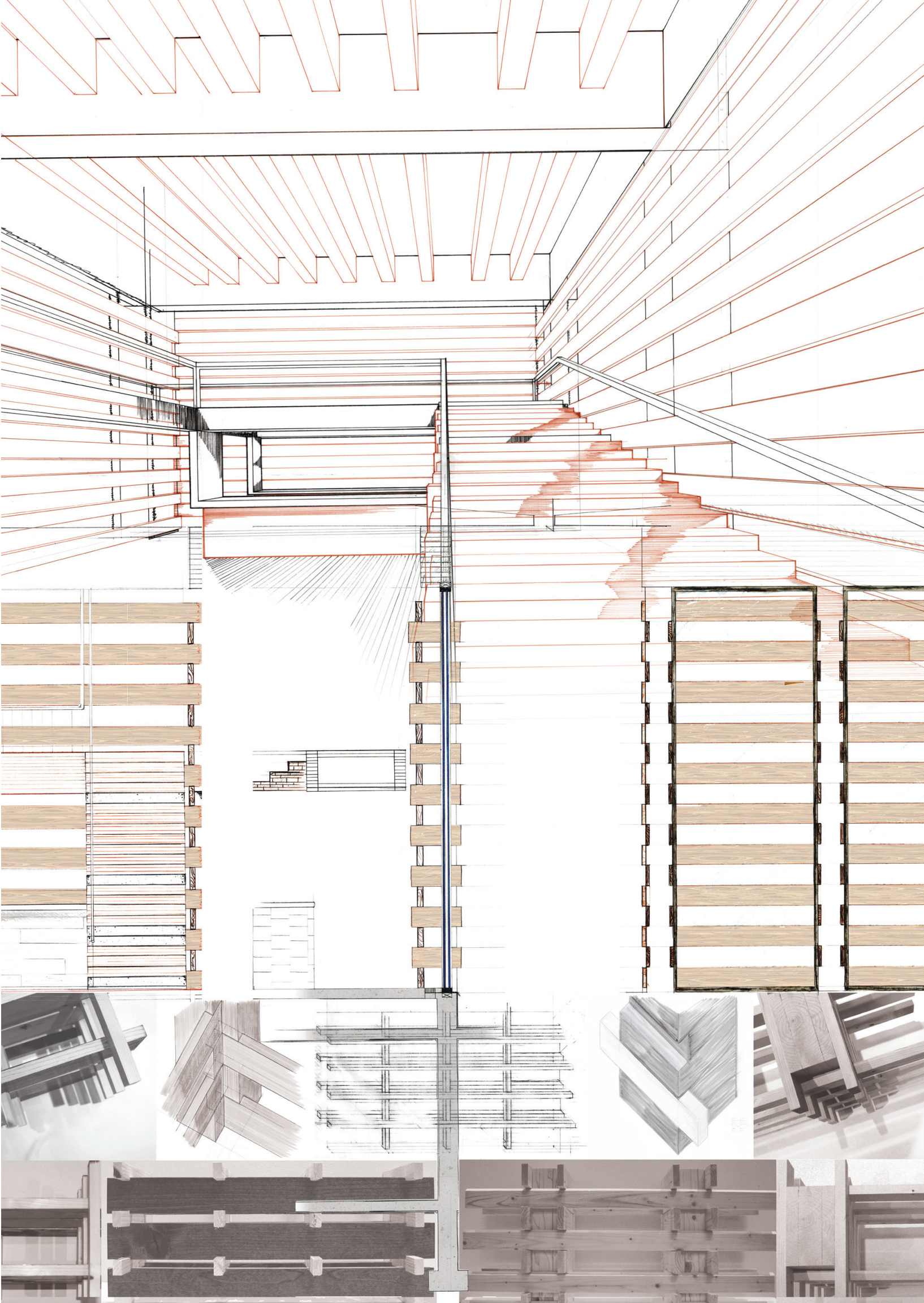
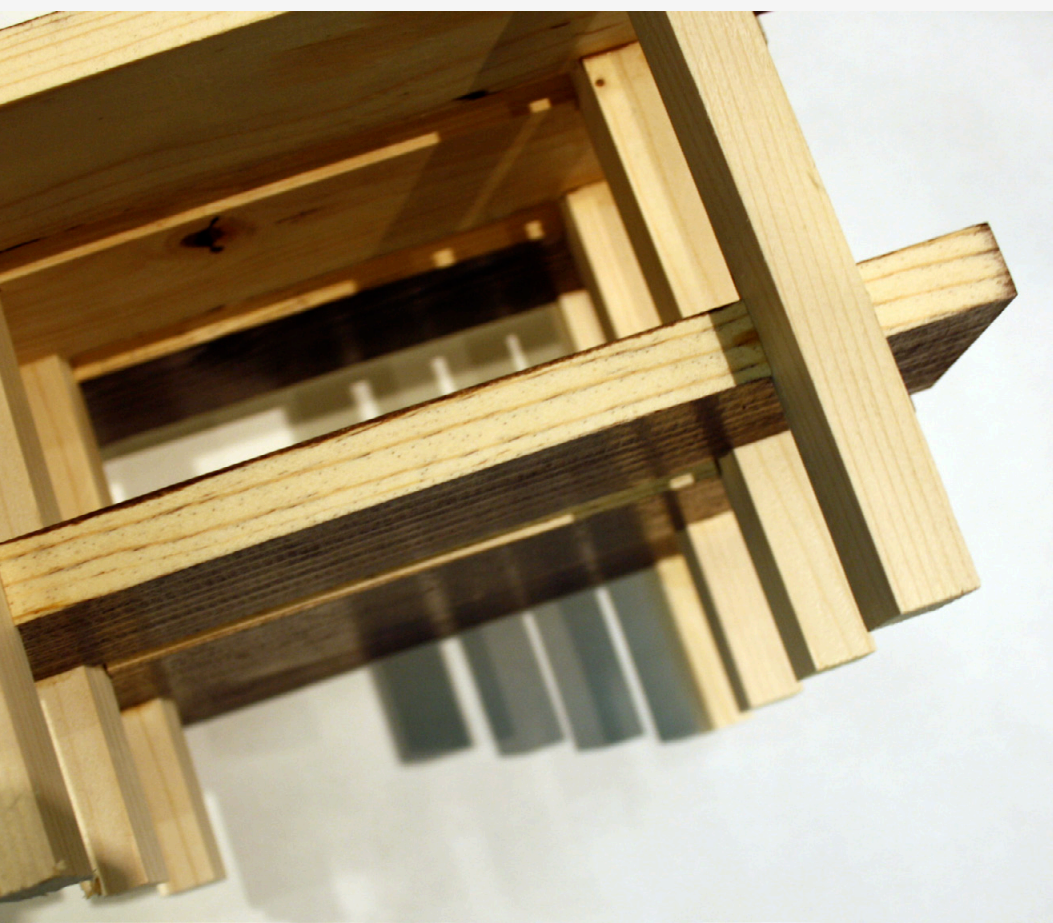
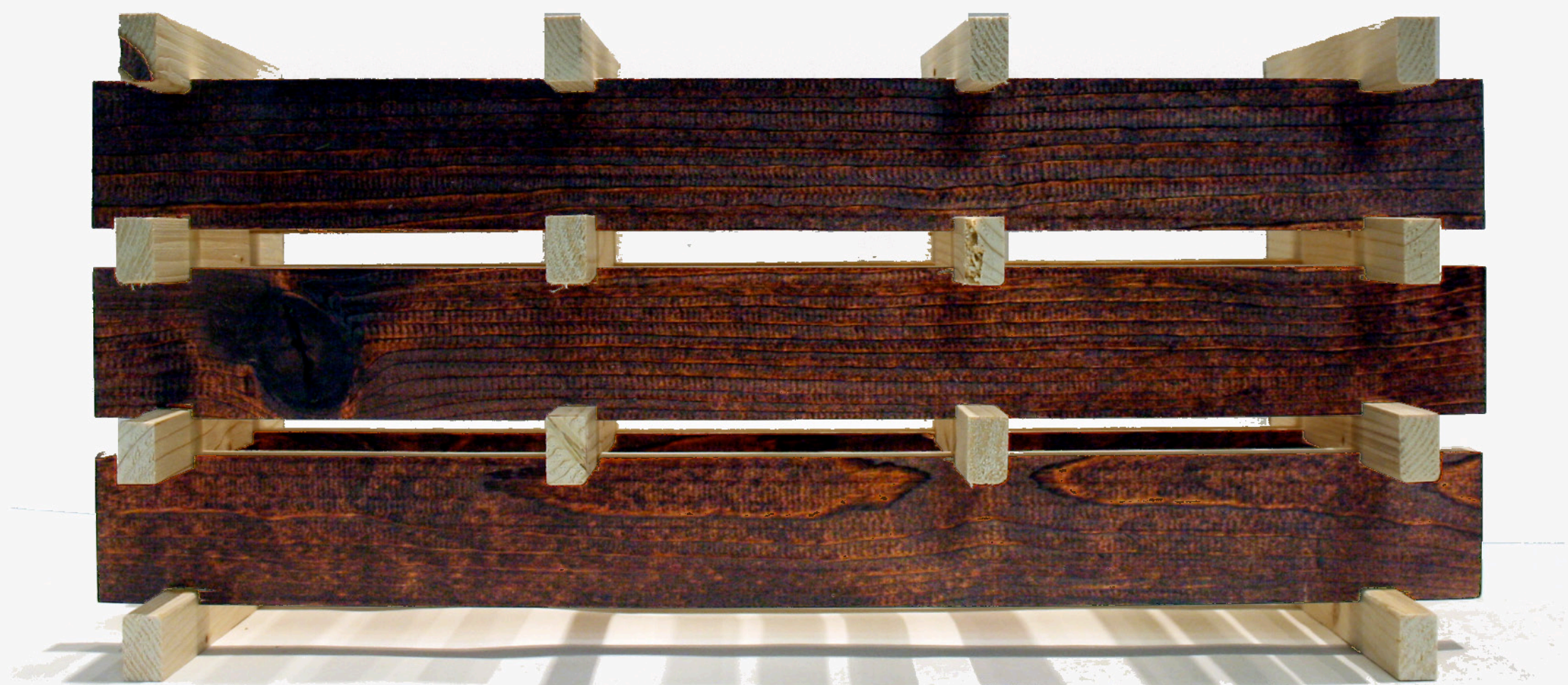


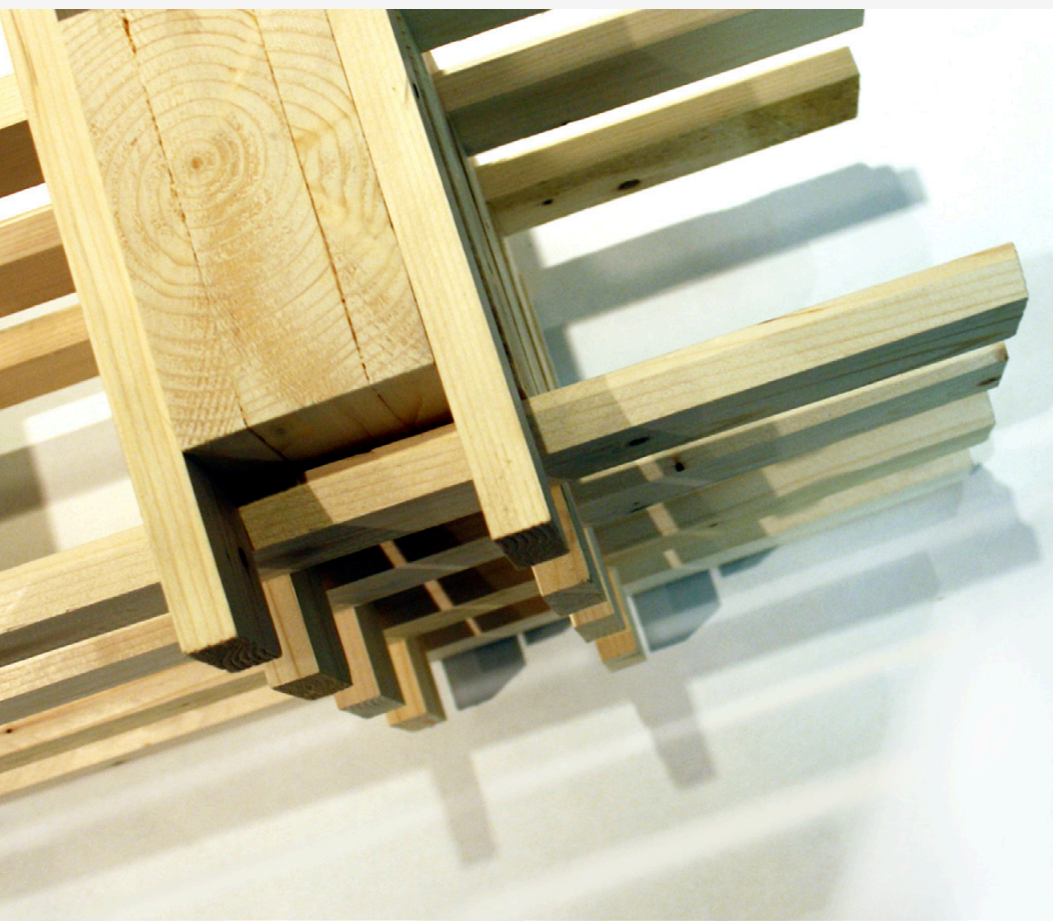
Figure 1.1 Wood Collage



Masonry Construct

The use of wooden members as masonry units creates a self supporting system. Each transverse member is notched to interlock with horizontal boards. This construct filters light and connects interior spaces to exterior elements.

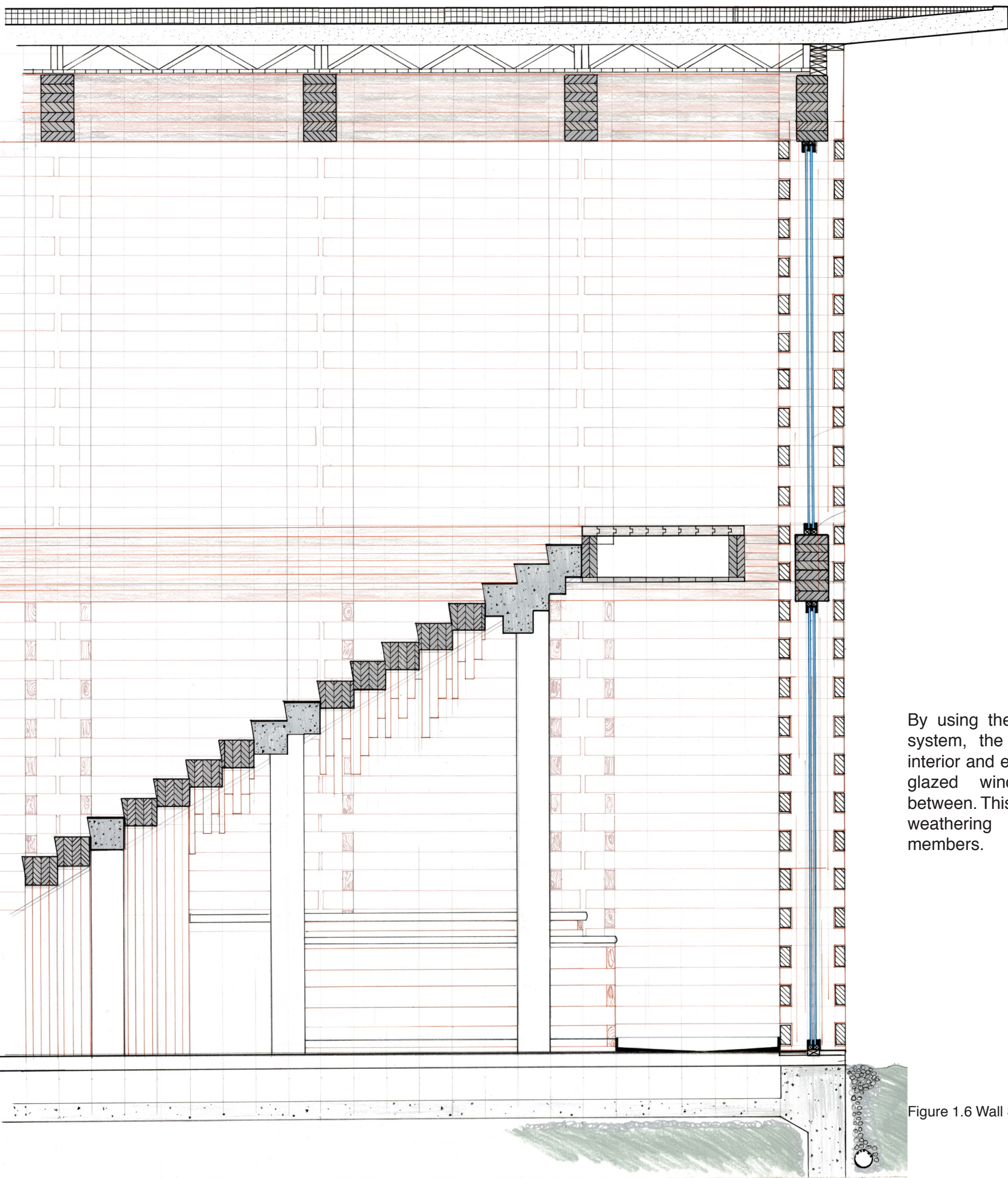
Figure 1.2 Masonry Construct Elevation
Figure 1.3 Masonry Construct Cavity



Column Construct

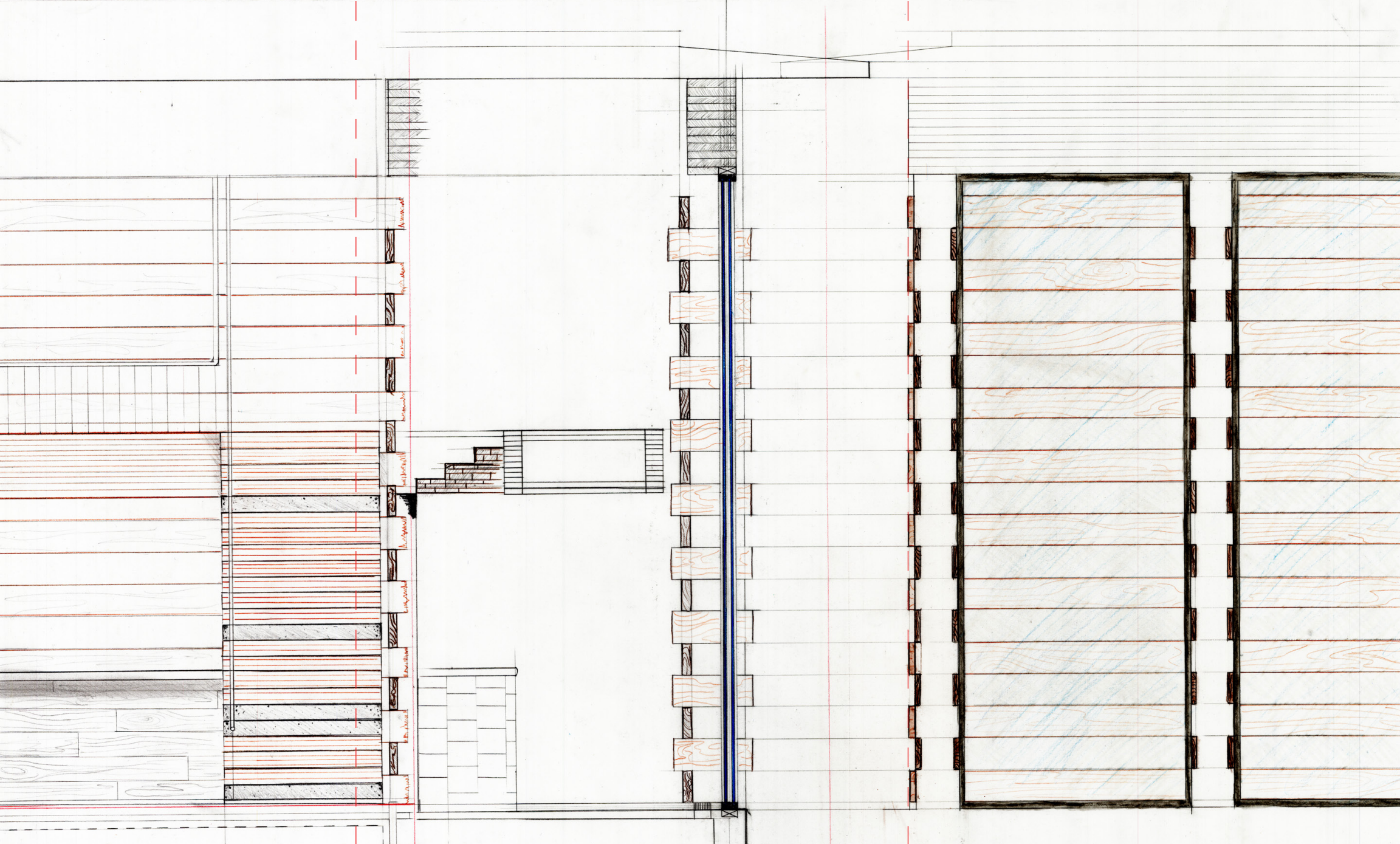
Brackets are imbedded into either side of the primary structural columns, and horizontal boards are then placed between the brackets. Using this system, a glazing panel can be integrated between the cavity or this system can stand alone as an exterior sun screen.

Figure 1.4 Column Construct Elevation
Figure 1.5 Column Construct Post



By using the column construct system, the latticing is on the interior and exterior with a double glazed window treatment in between. This could cause uneven weathering of the horizontal members.

Figure 1.6 Wall Section/Interior Elevation



By modifying the column construct system, the latticing on the interior protected by a double glazed window treatment to prevent weathering.

Figure 1.7 Wall Section/Partial Elevation
Figure 1.8 Concept Model Wall Image

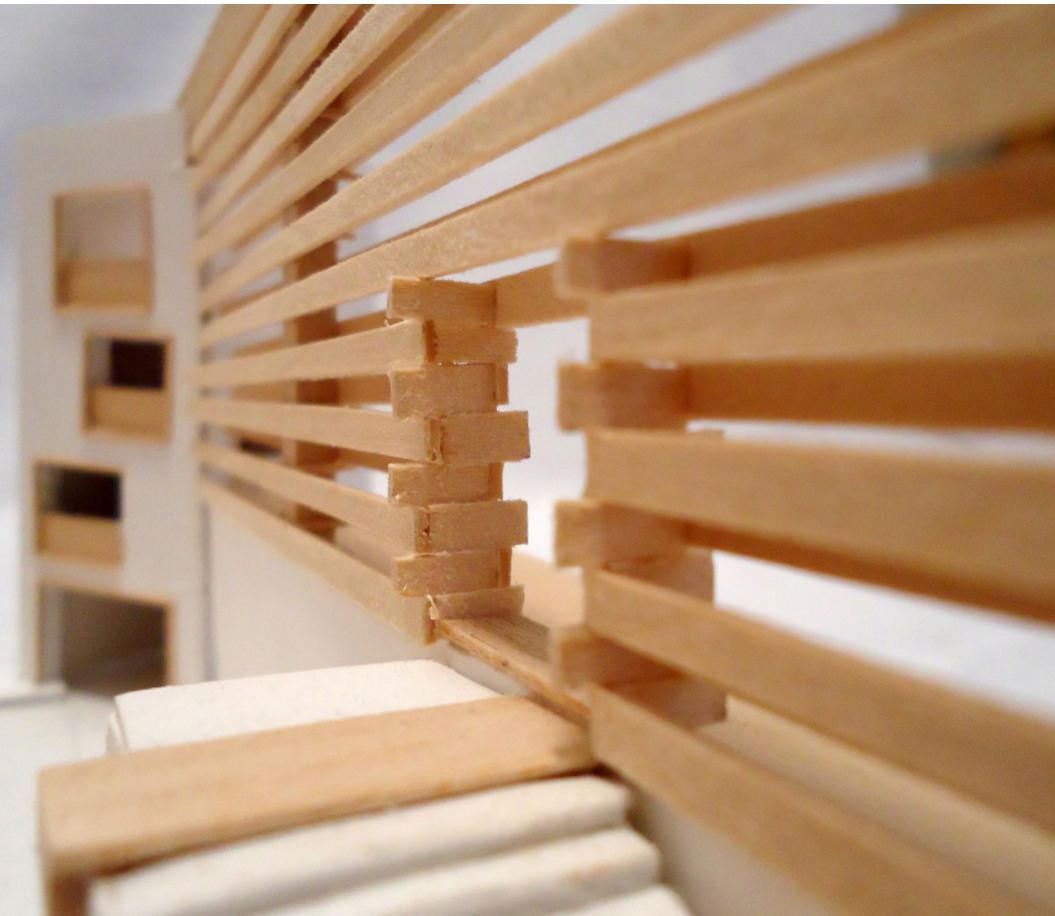
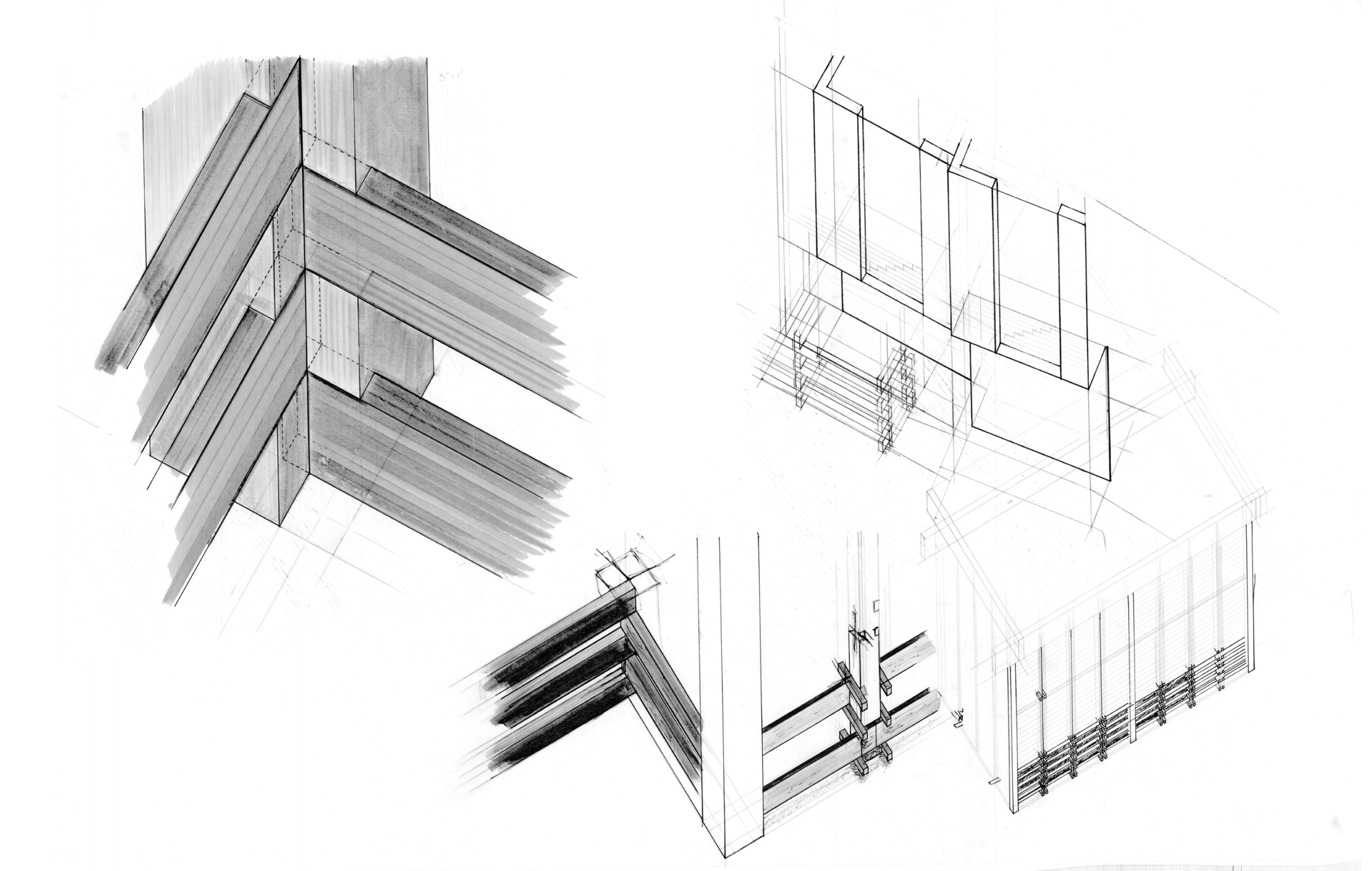
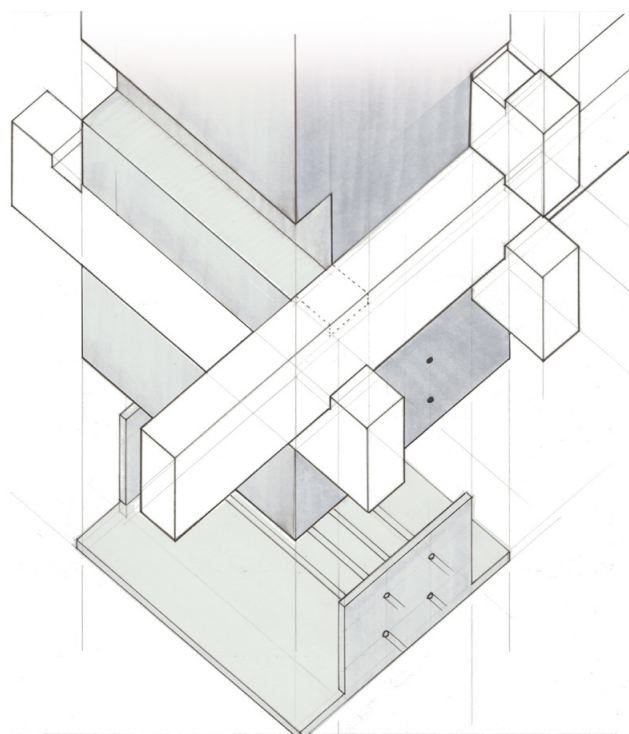
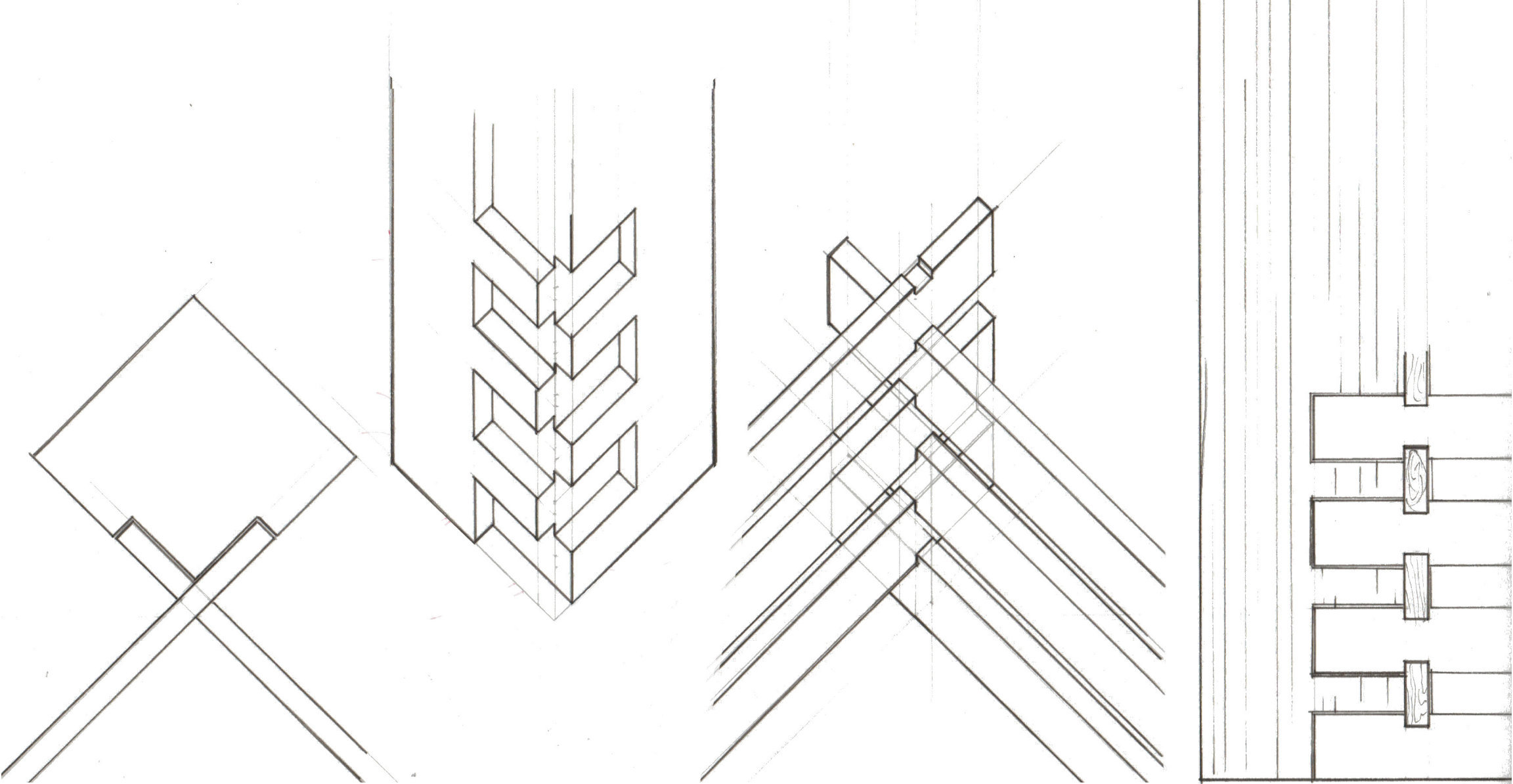


Figure 1.9 Wood Tectonic Sketches 1
Figure 1.10 Concept Model Doorway Image



The integration of the latticing system to the structural columns helped minimize the use of hardware. Columns have voids that hold brackets, those brackets are notched to hold horizontal beams that span column to column.

Figure 1.11 Wood Tectonic Sketches 2
Figure 1.12 Wood Tectonic Sketches 3

Stairs

Rather than solely catering to their function stairs are transformed into a sculptural element. To methodise a stairway with rules and material boundaries creates a unique allure. Leading to a mezzanine that frames the lobby space for its own performance space. Utilizing the space beneath the stairs for storage and the overhead plane of the mezzanine for a bar.

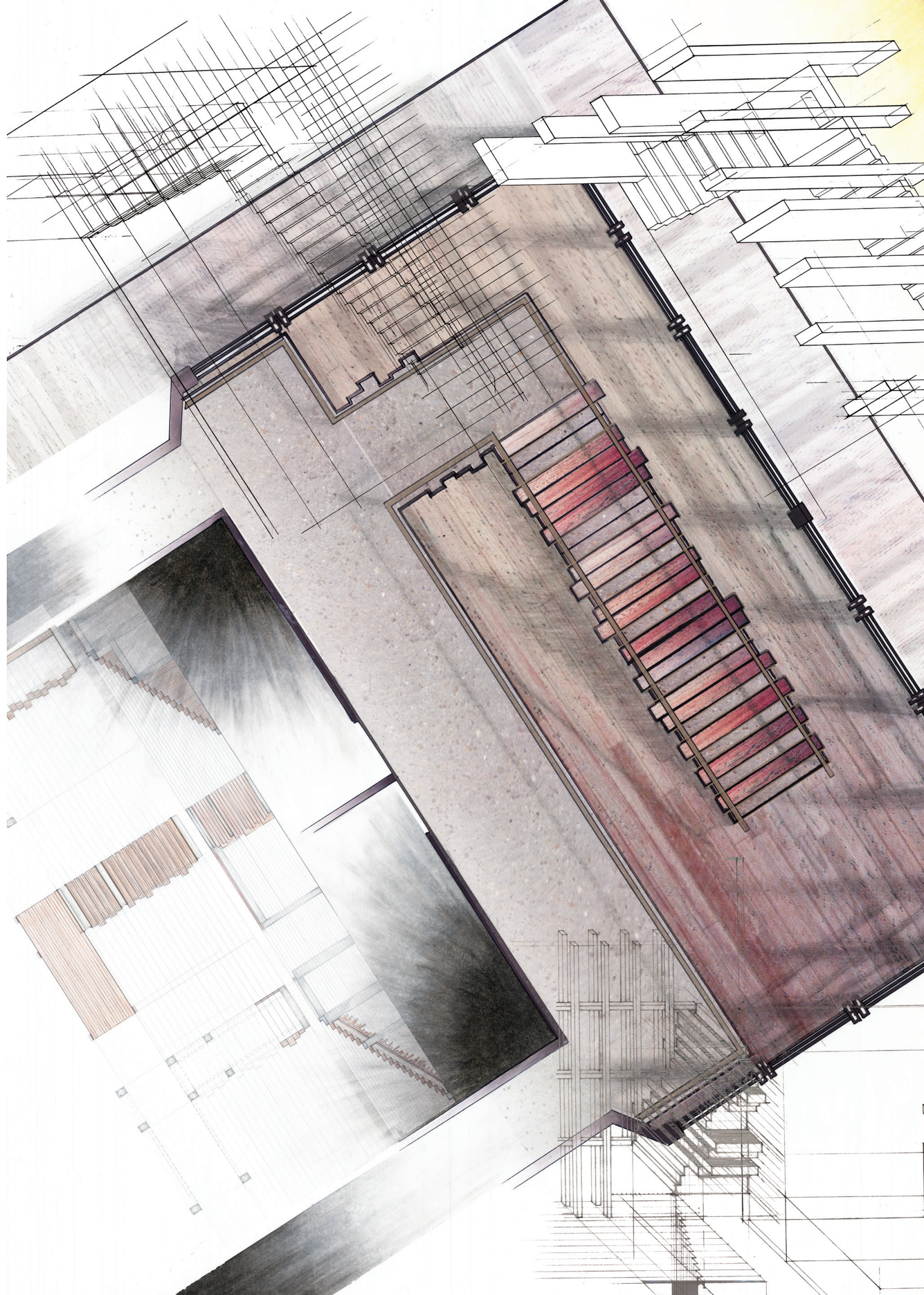
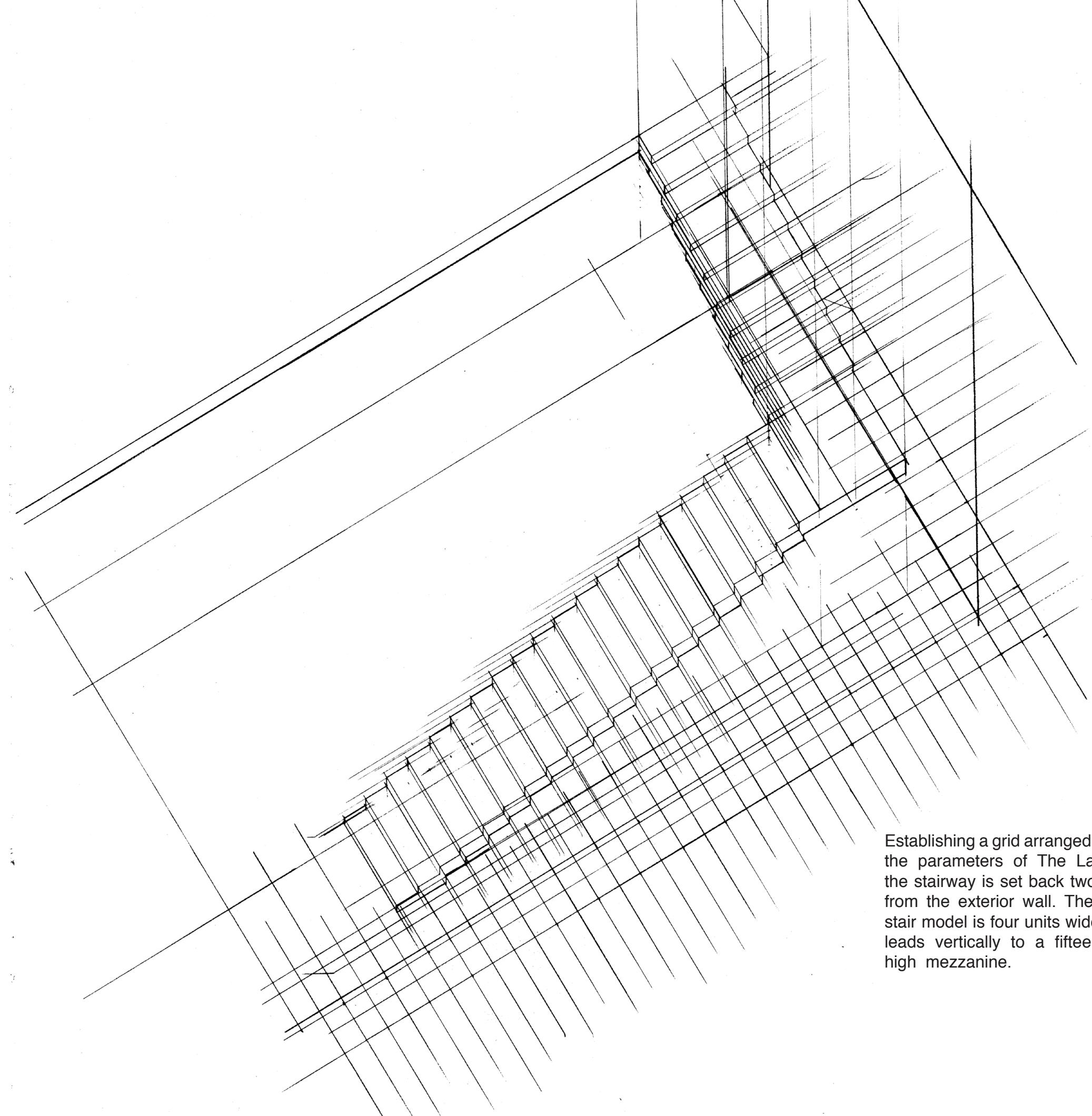
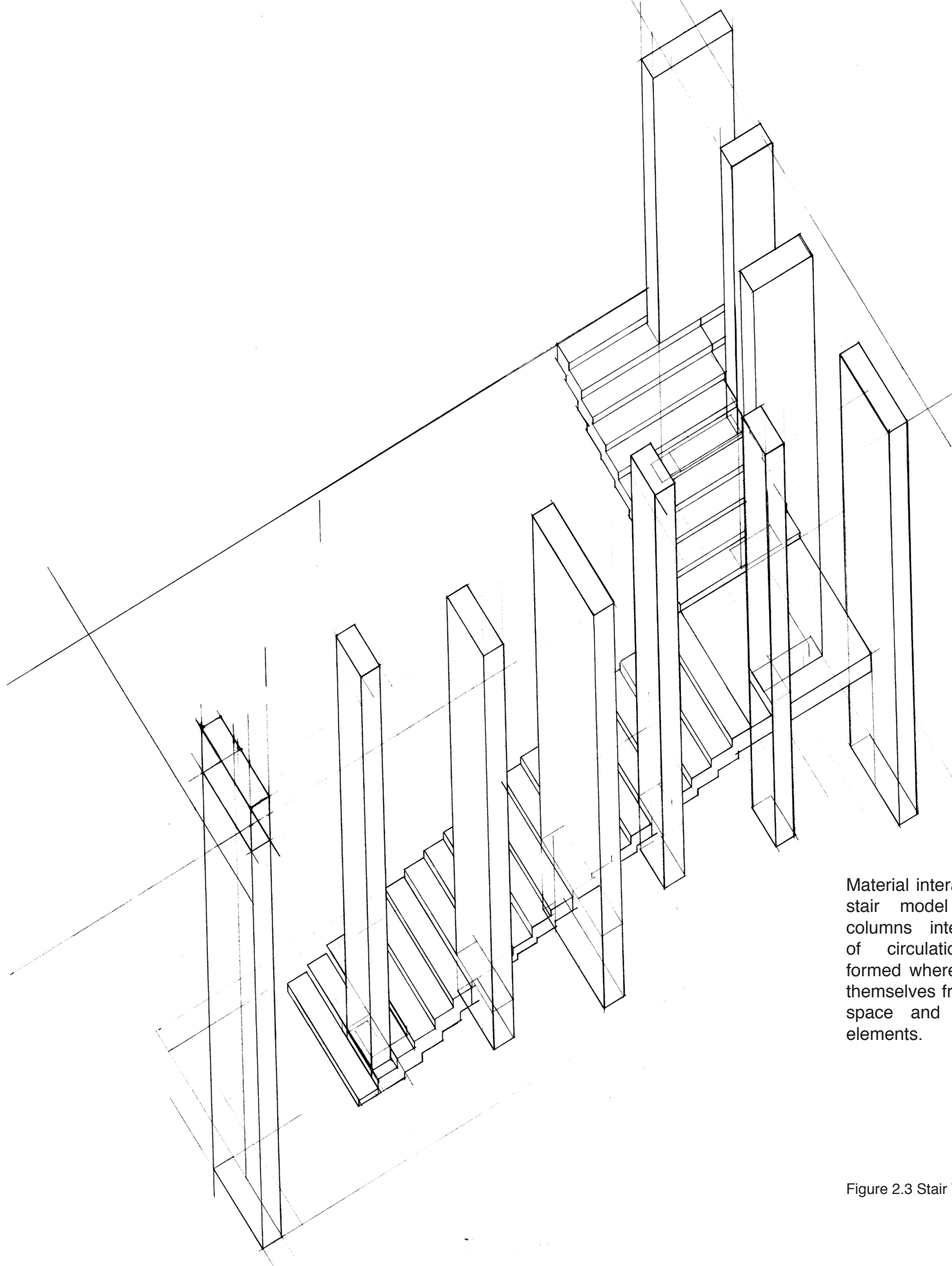


Figure 2.1 Stair Collage



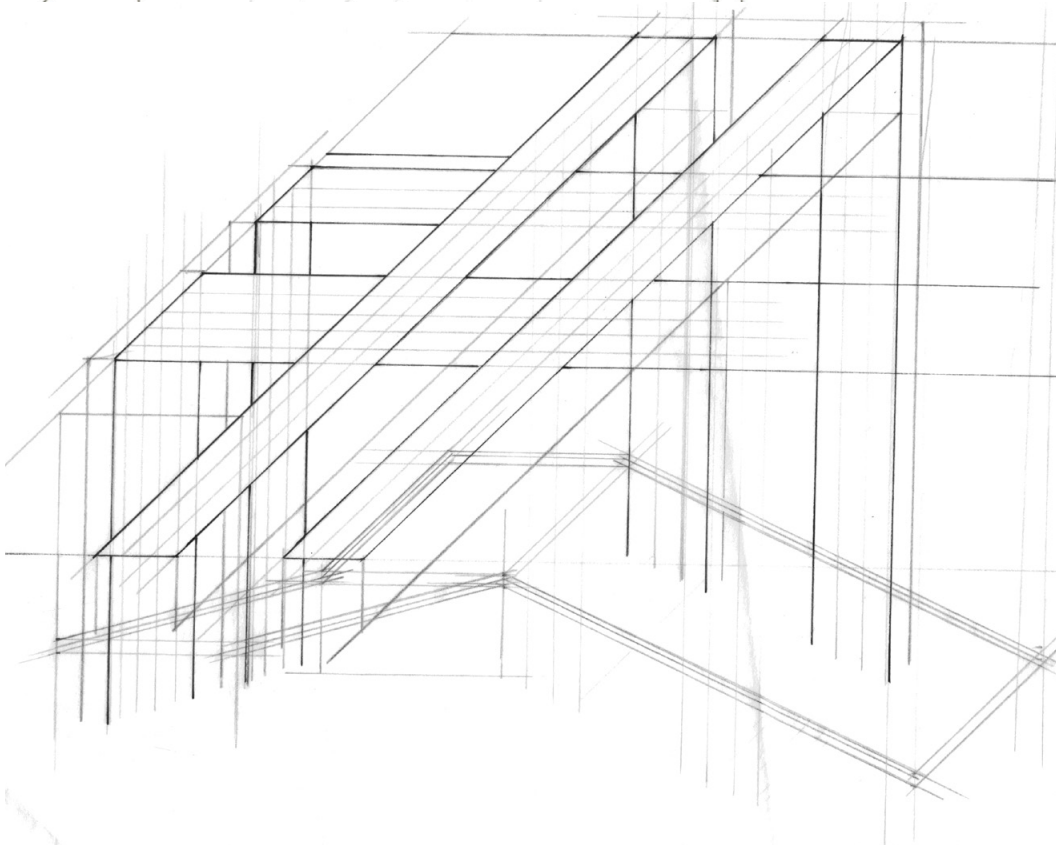
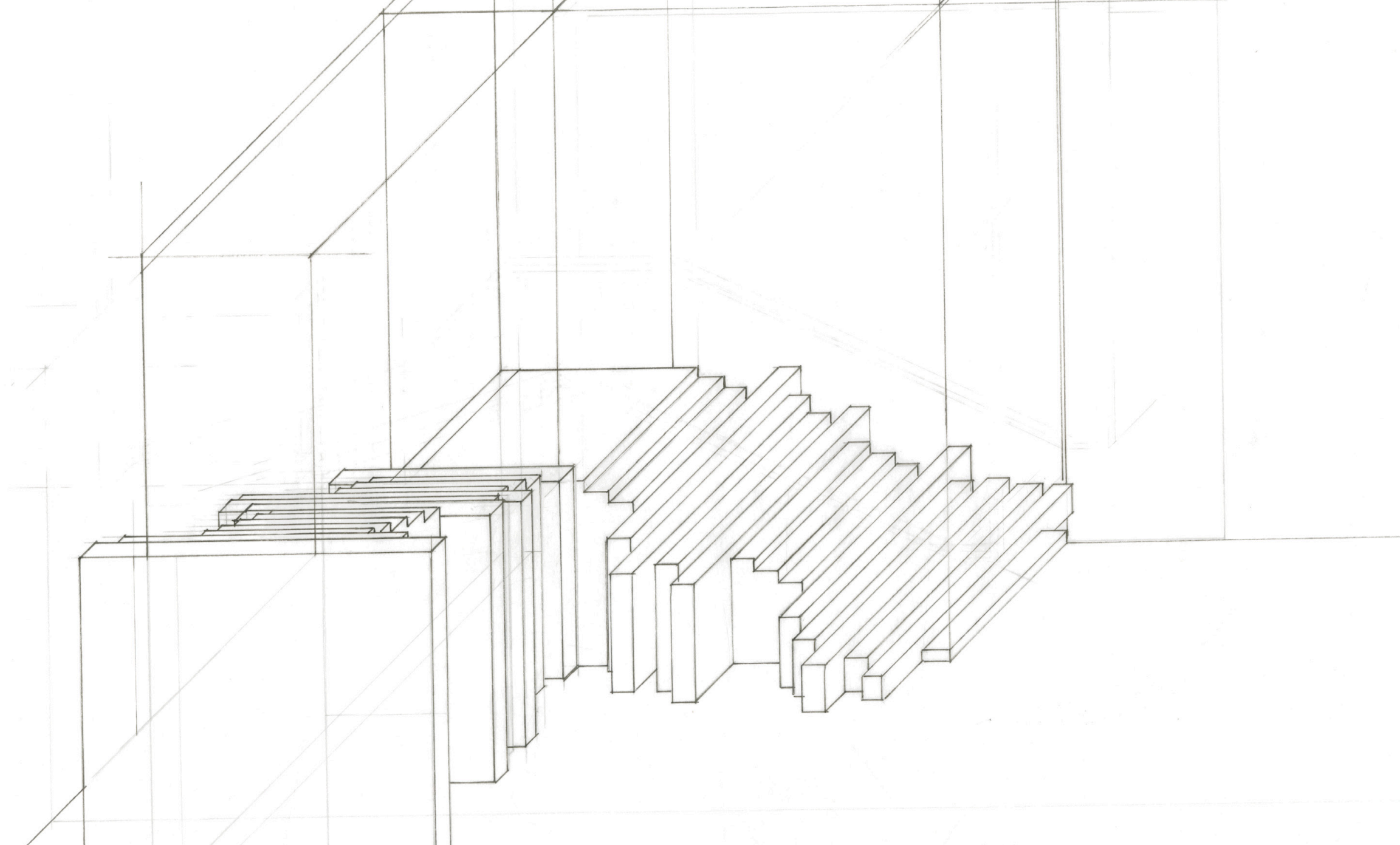
Establishing a grid arranged within the parameters of The Lantern, the stairway is set back two units from the exterior wall. The base stair model is four units wide, and leads vertically to a fifteen unit high mezzanine.

Figure 2.2 Stair to Mezzanine Study



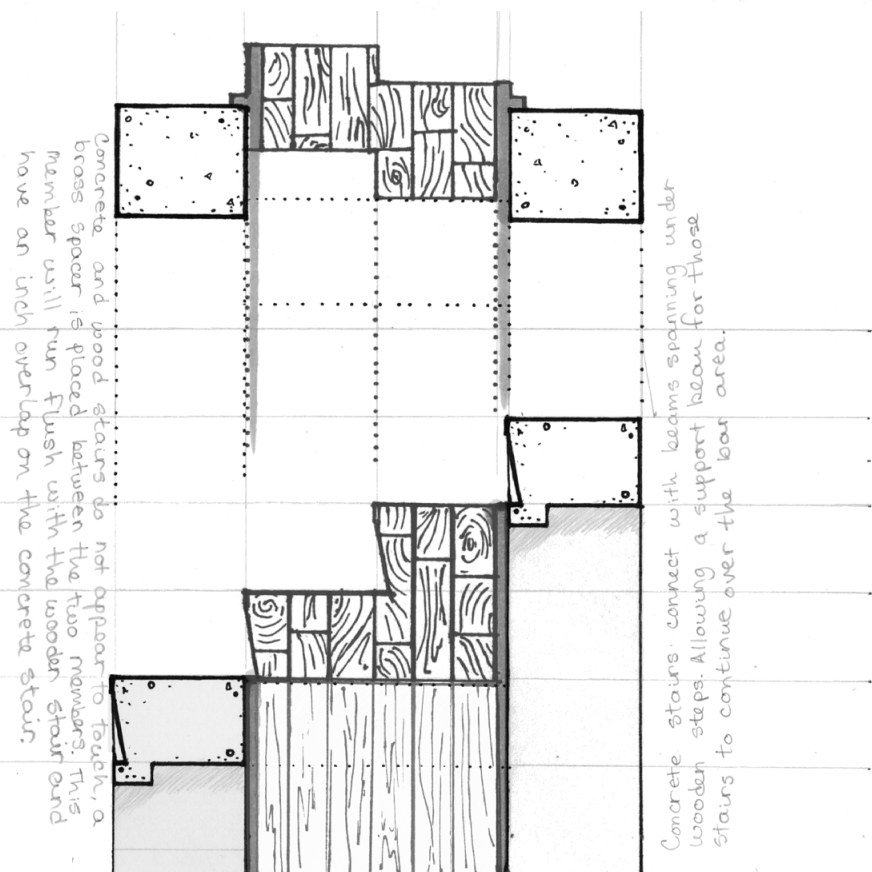
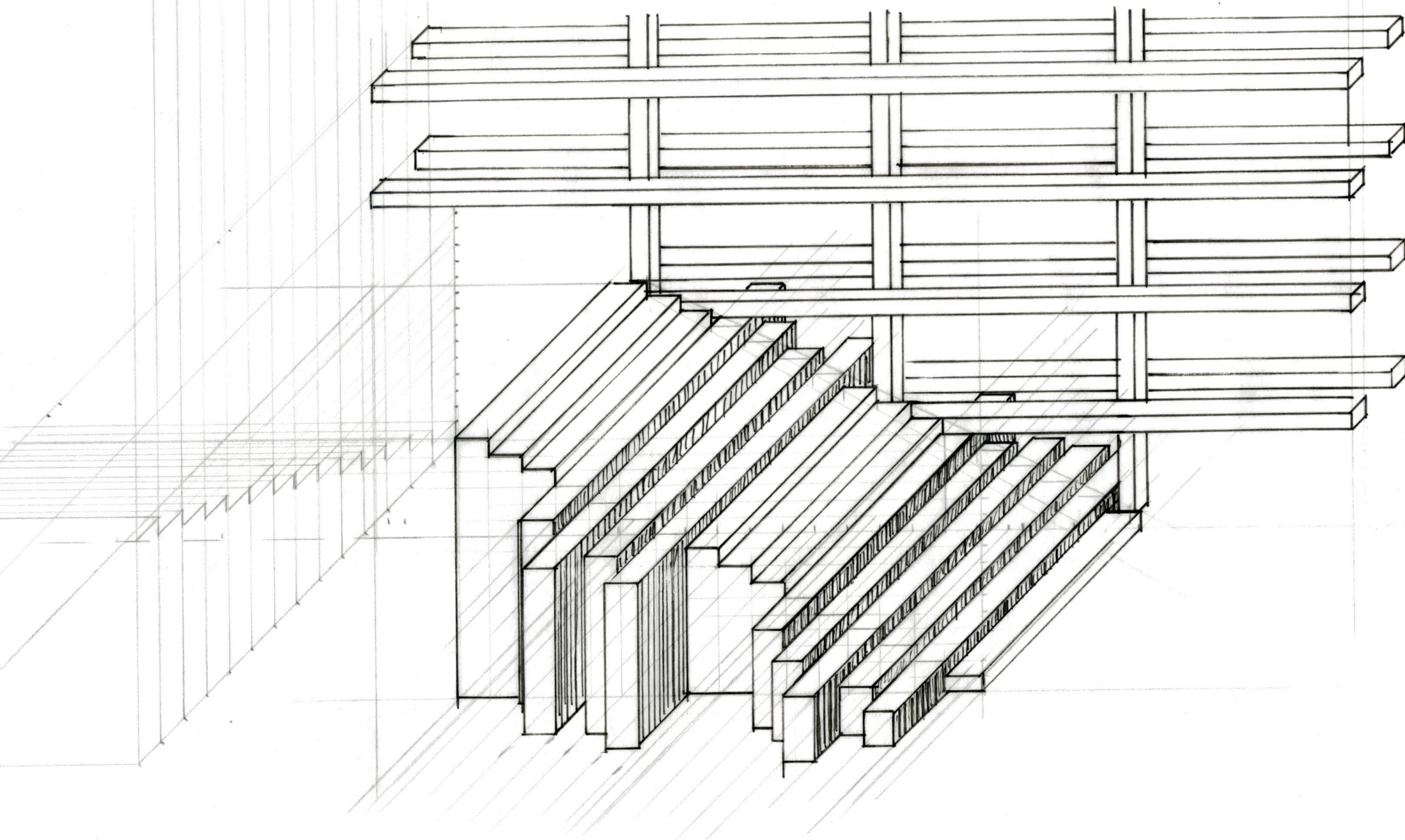
Material interaction with the base stair model depicts concrete columns interrupting the path of circulation. Pockets are formed where users can remove themselves from the main interior space and focus on exterior elements.

Figure 2.3 Stair With Concrete Columns



Material influence occurs when selective stairs remain within the boundary of the base grid, while others extend past in an undulating fashion. One material is assigned to those within the boundary and a different material is assigned to the protruding steps.

Figure 2.4 Undulating Stair Study
Figure 2.5 Corresponding Envelope/Rail



Material properties of concrete require boundaries in order to take form. Wood, having more movement, is nested between the concrete.

Figure 2.6 Undulating Stir/Latticing
Figure 2.7 Stair Detail Sketch

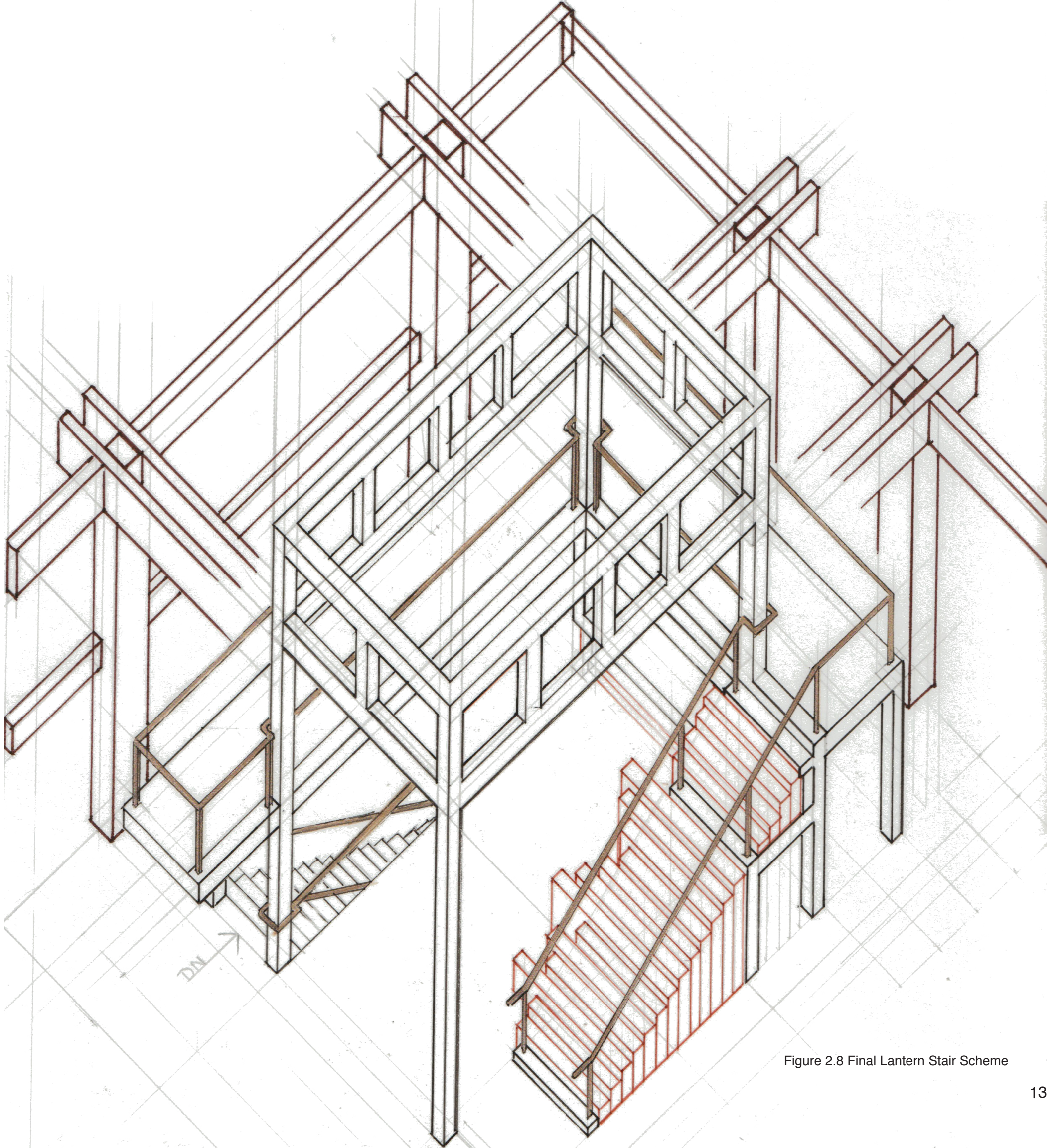
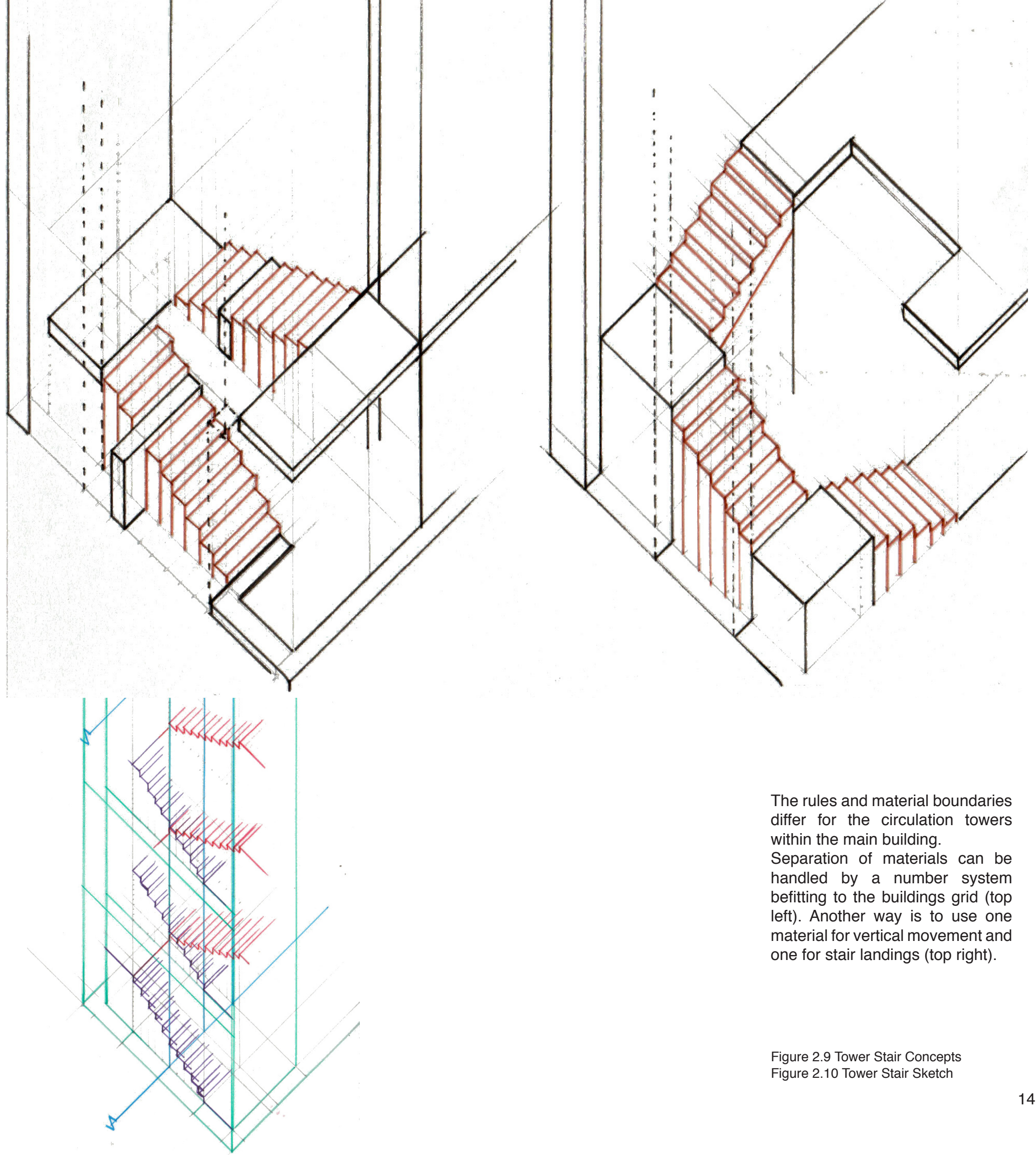
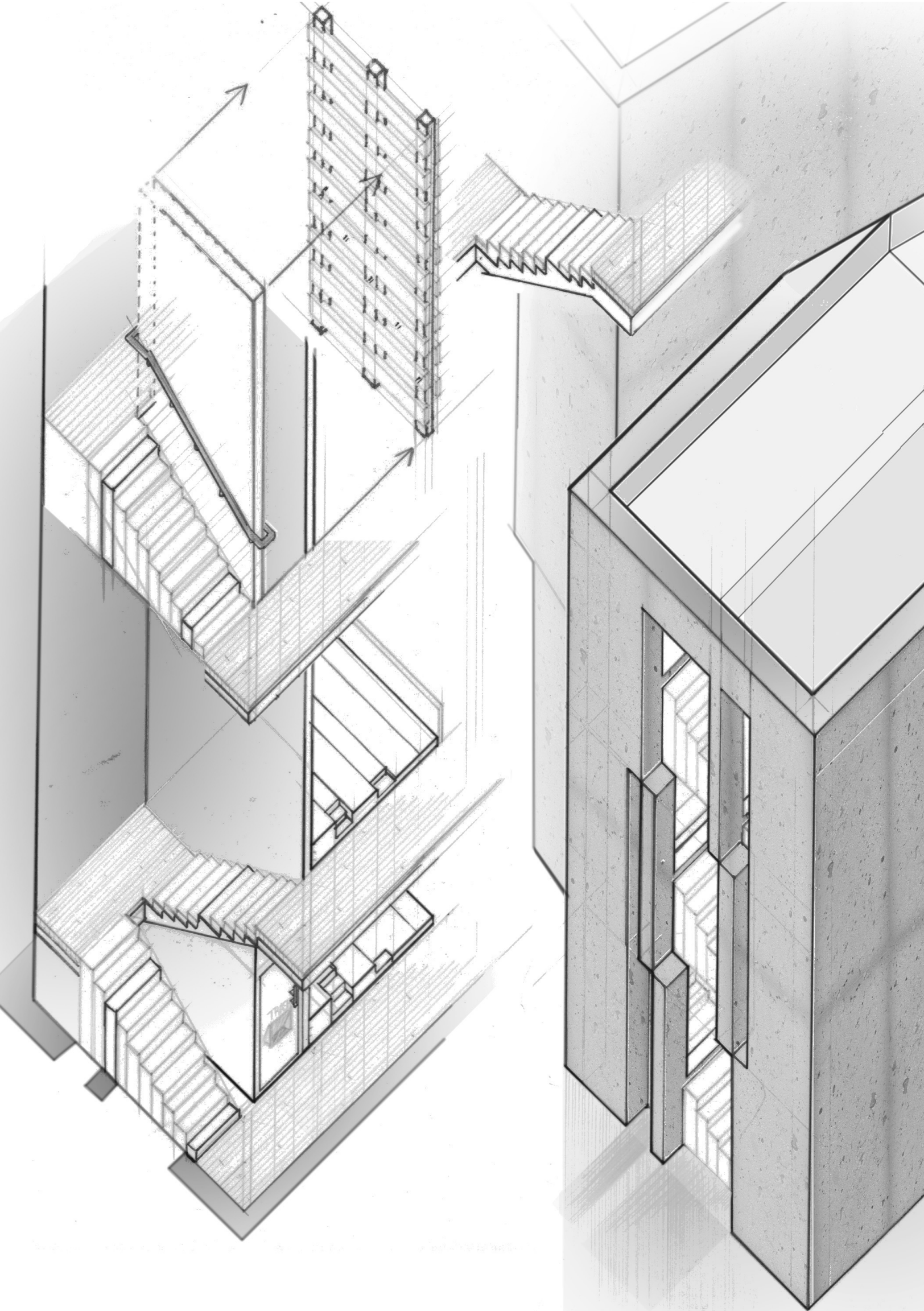


Figure 2.8 Final Lantern Stair Scheme



The rules and material boundaries differ for the circulation towers within the main building. Separation of materials can be handled by a number system befitting to the buildings grid (top left). Another way is to use one material for vertical movement and one for stair landings (top right).

Figure 2.9 Tower Stair Concepts
Figure 2.10 Tower Stair Sketch



To designate the first tower, the first step is concrete that protrudes from the wall of the tower, then every seventh step is concrete. The pattern continues with each tower having the corresponding number of stairs as the tower, cast in concrete, then every seventh. The window serves as the boundary for the wooden stairs, and the concrete stairs extend past that boundary.

Figure 2.11 Final Tower Stair Scheme

Lantern

As a guiding light for visitors, The Lantern serves not only as a lobby/box office, but can house small scale musical engagements as well as private events. The wood latticed enclosure utilizes large areas of glass linking interior and exterior activities. With three broad, corner doorways the building threshold becomes a variance creating spatial intrigue. Changing with the time of day the wood slats of the building filter light, shadow, reflections, and transparency. The natural wooded setting is brought to the interior during the day, and at night the lively social gathering is projected outside.

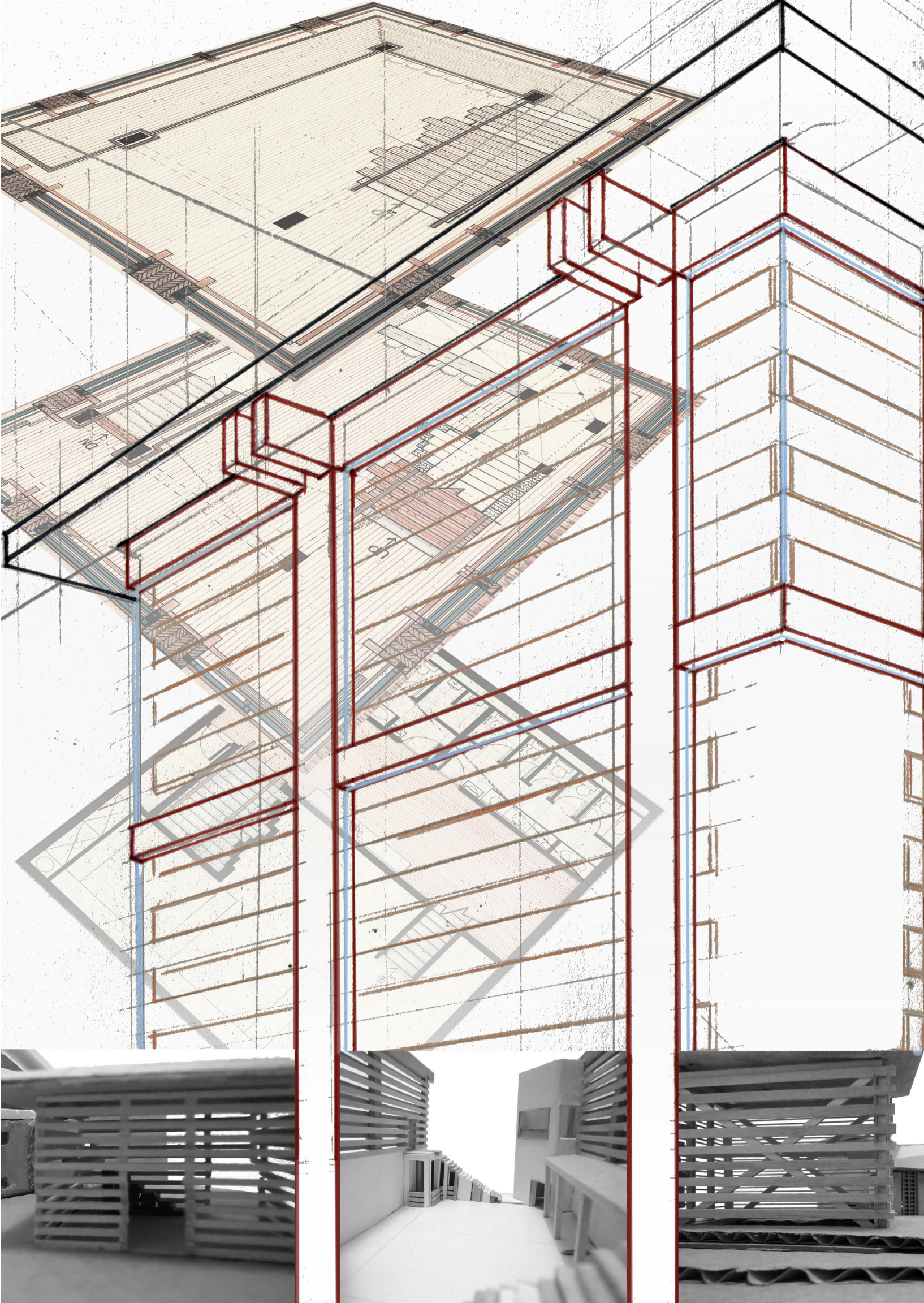
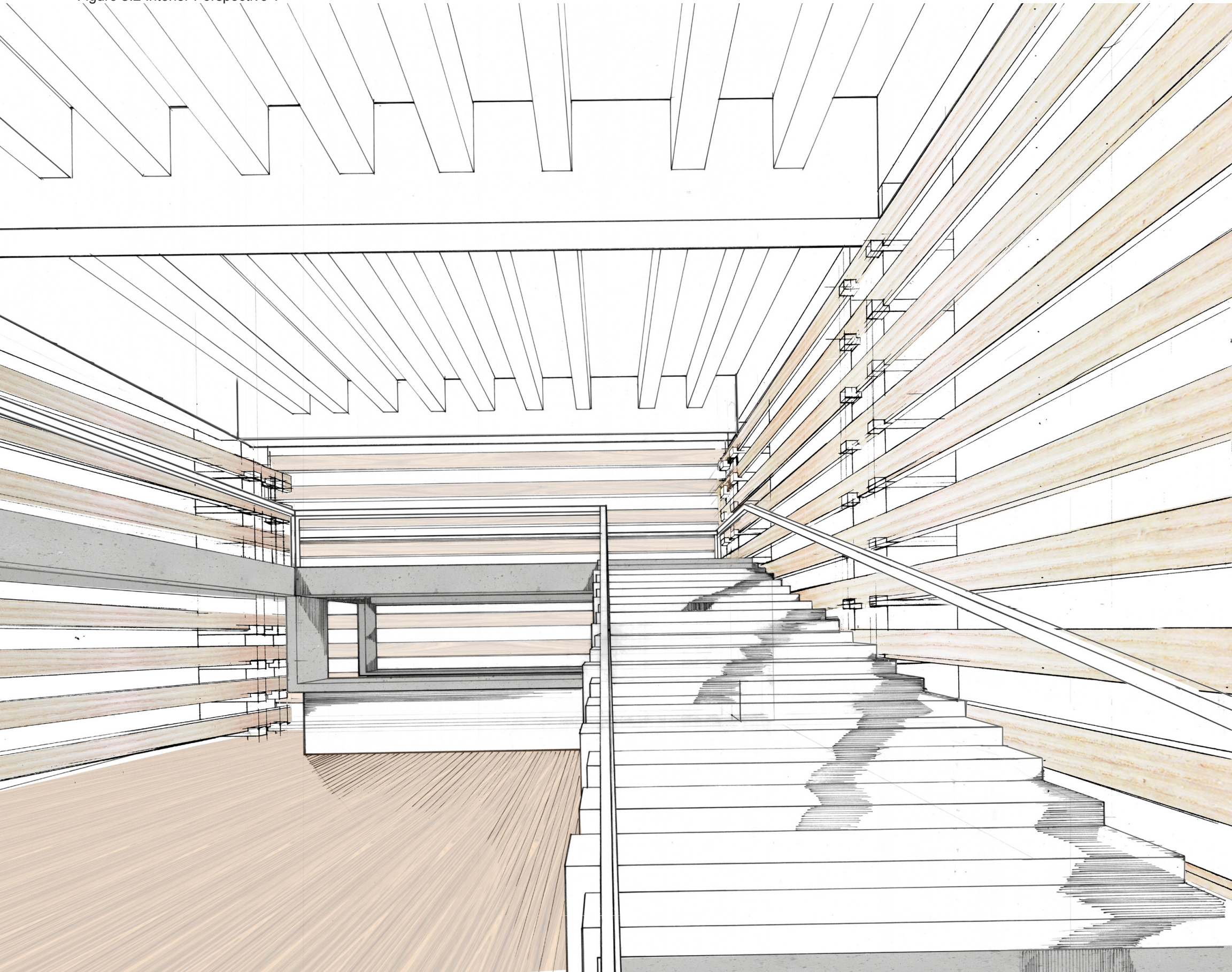
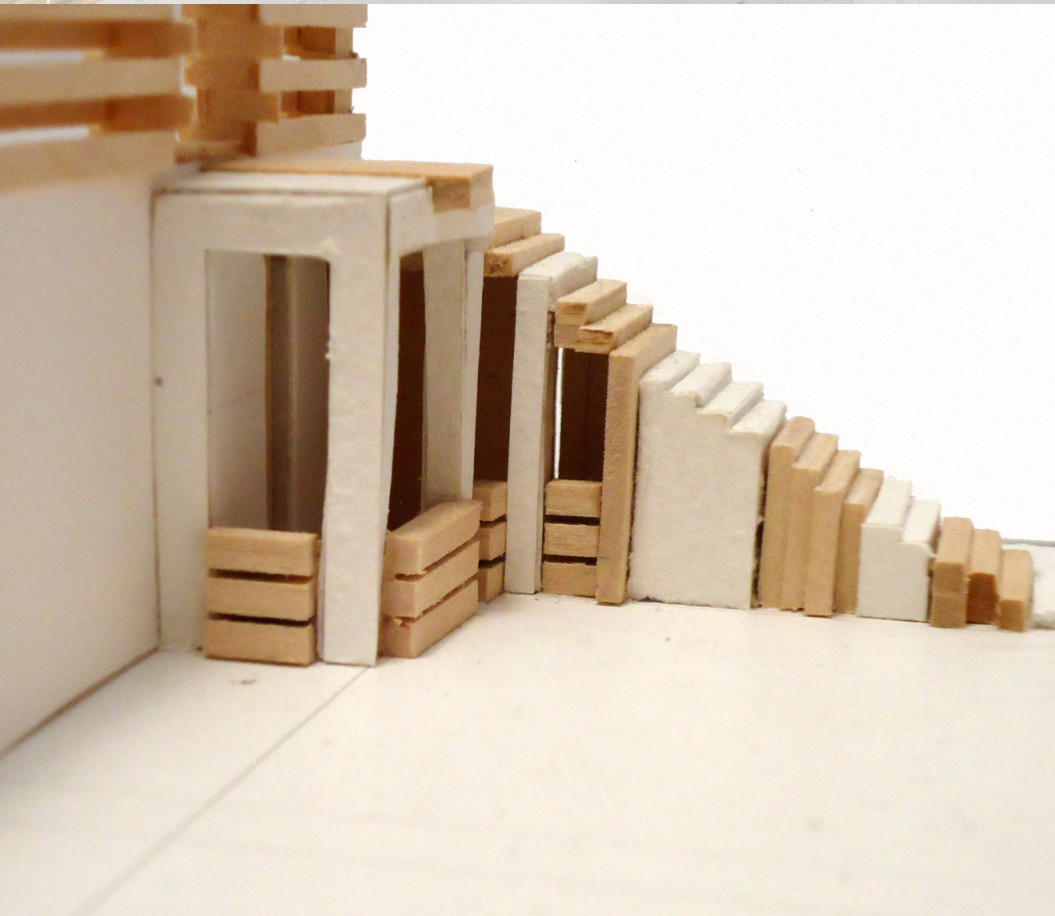
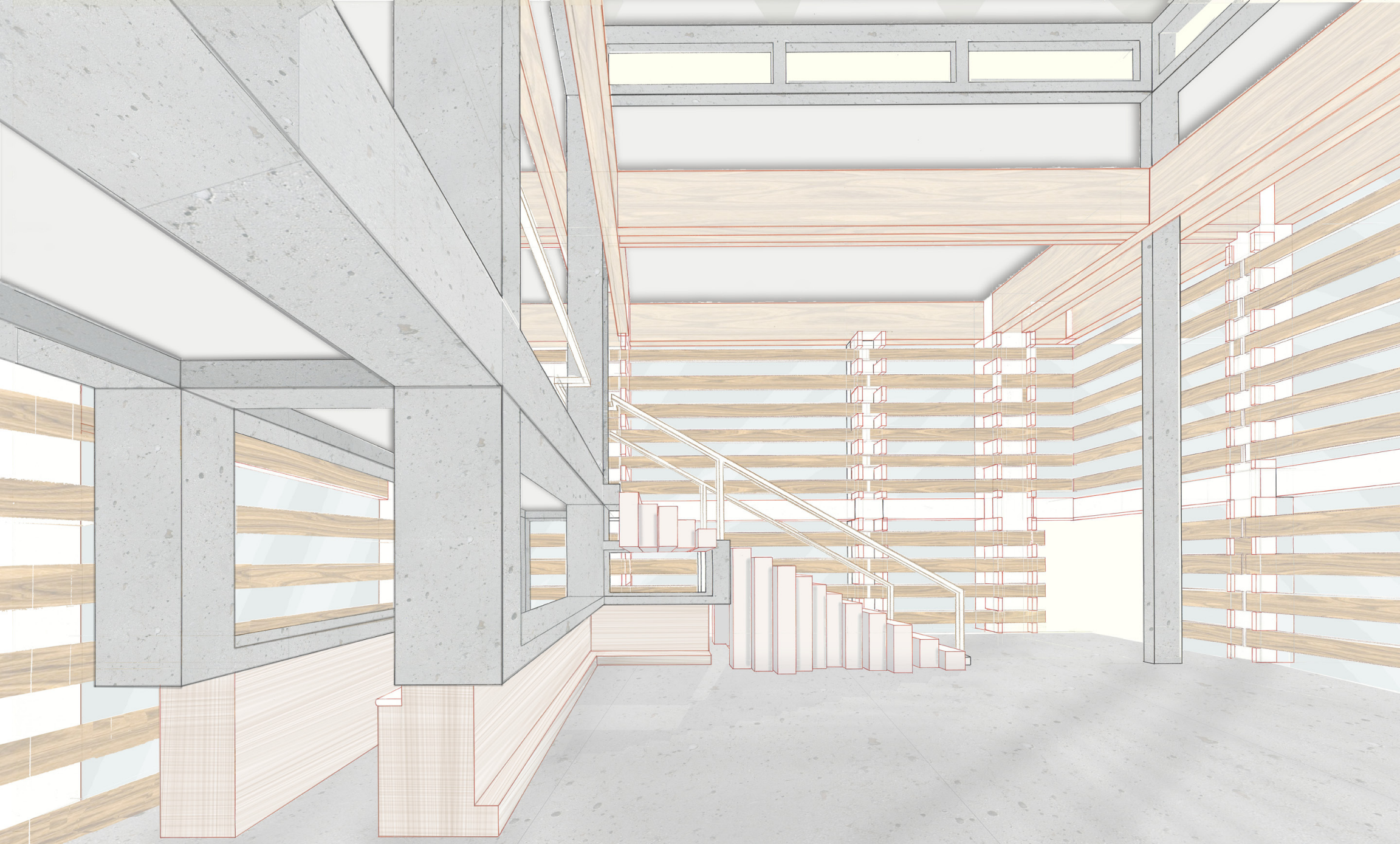


Figure 3.1 Lantern Collage

A free and open floor plan allows guests to utilize the downstairs lounge area or accent the stairs and gather on the open mezzanine. The mezzanine may also serve as a platform for performers.

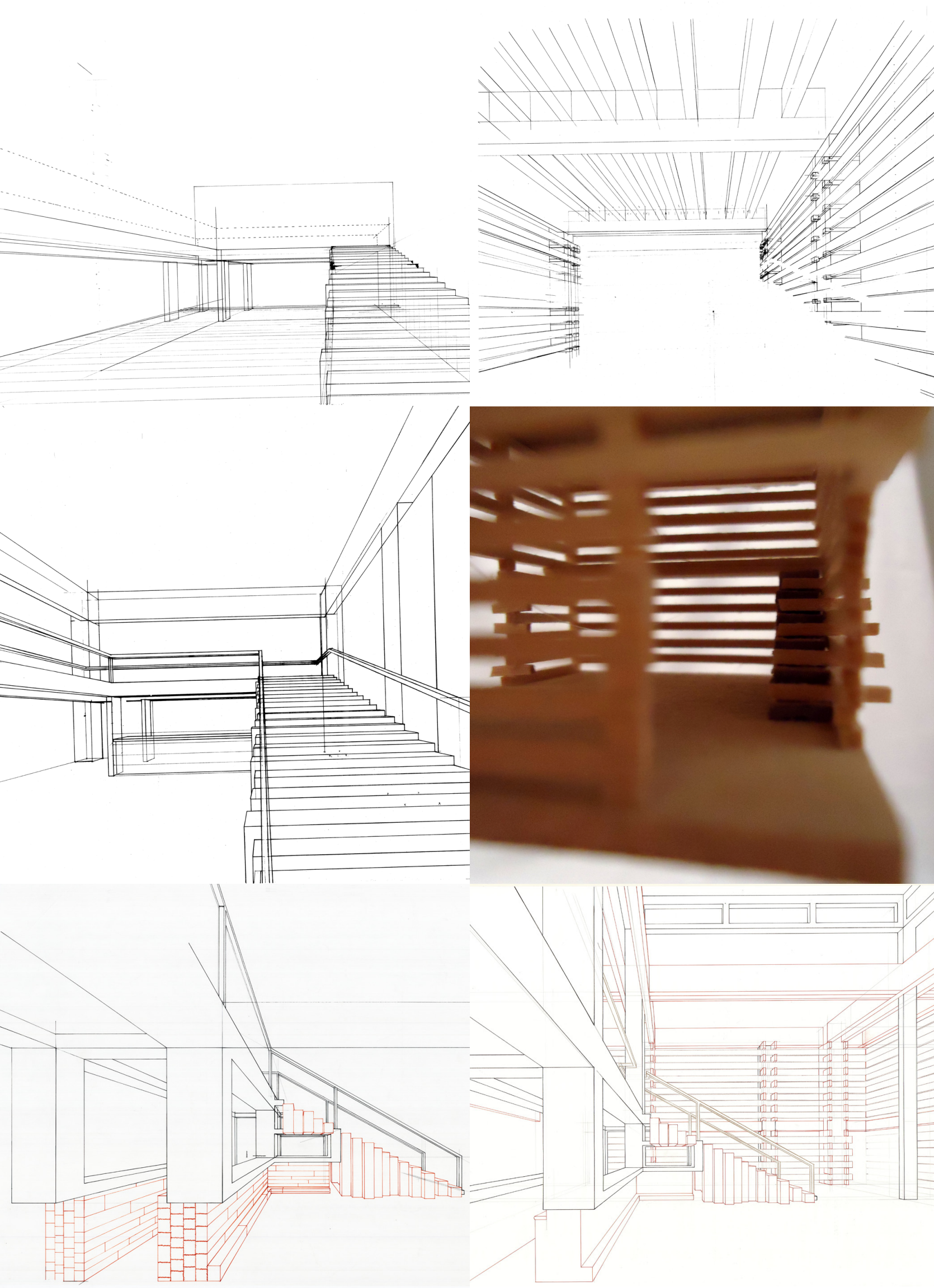
Figure 3.2 Interior Perspective 1





Located under the stairs and mezzanine is the bar that doubles as a ticket counter. Descending stairs are located opposite the lobby leading to public restrooms, leaving the central space open to the double height ceiling.

Figure 3.3 Interior Perspective 2
Figure 3.4 Concept Model Bar Image



Top

Figure 3.5 Interior 1 Stair

Figure 3.6 Interior 1 latticing

Center

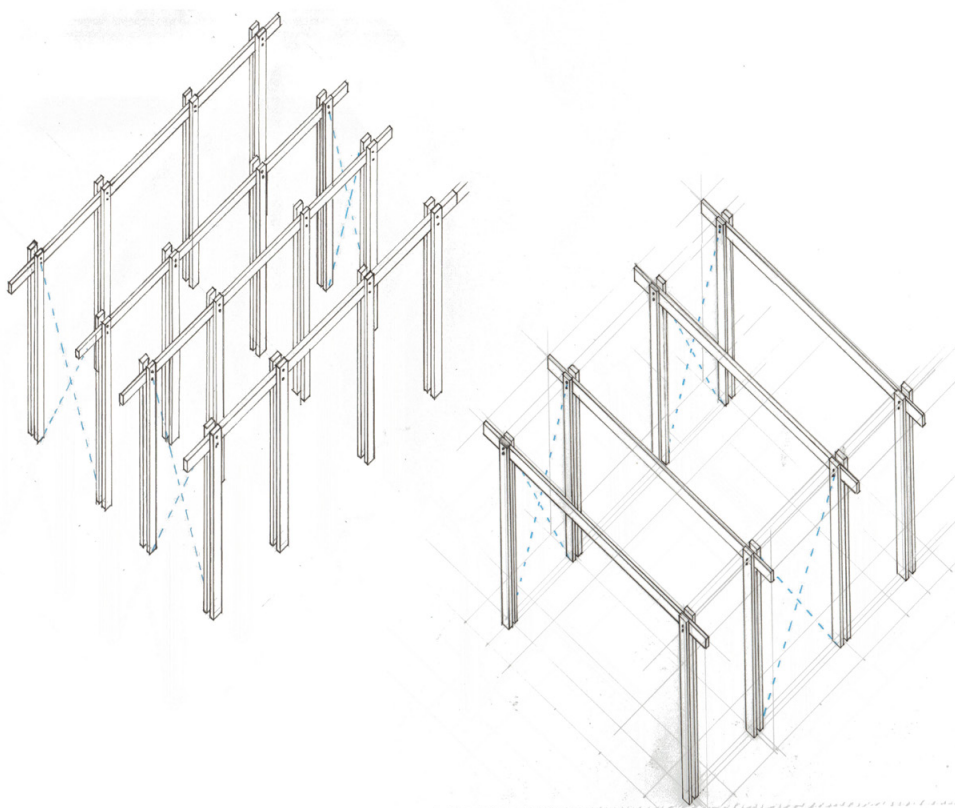
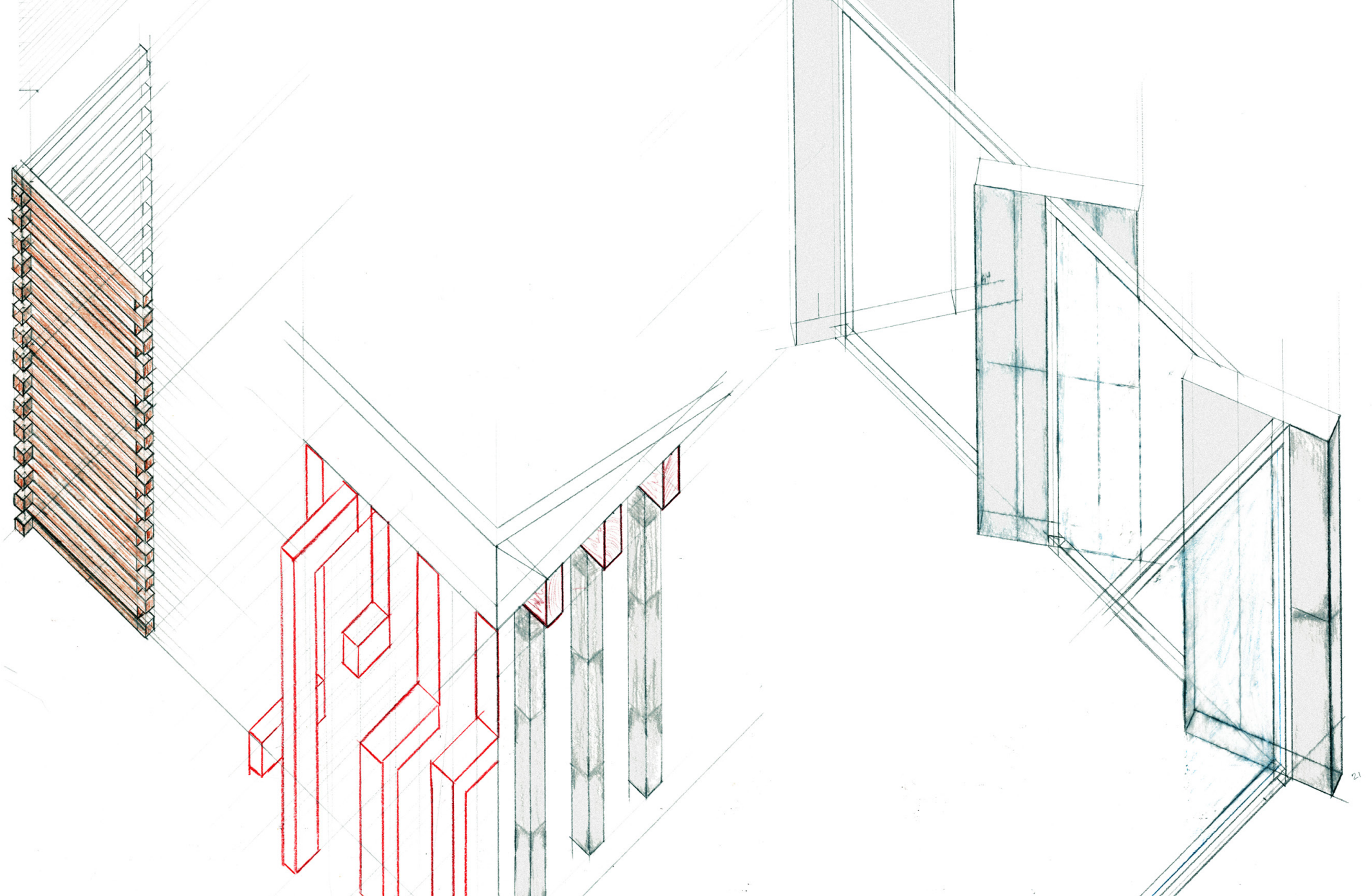
Figure 3.7 Interior 1 bar/railing

Figure 3.8 Concept Model Stair Image

Bottom

Figure 3.9 Interior 2 Bar

Figure 3.10 Interior 2 latticing



Prior to the development of a wood latticing system, many envelope and structural elements were tested. Choosing a material that could be both structural and provide an aesthetic quality compelled the envelope design.

Figure 3.11 Lantern Skin Study
Figure 3.12 Lantern Structural Study

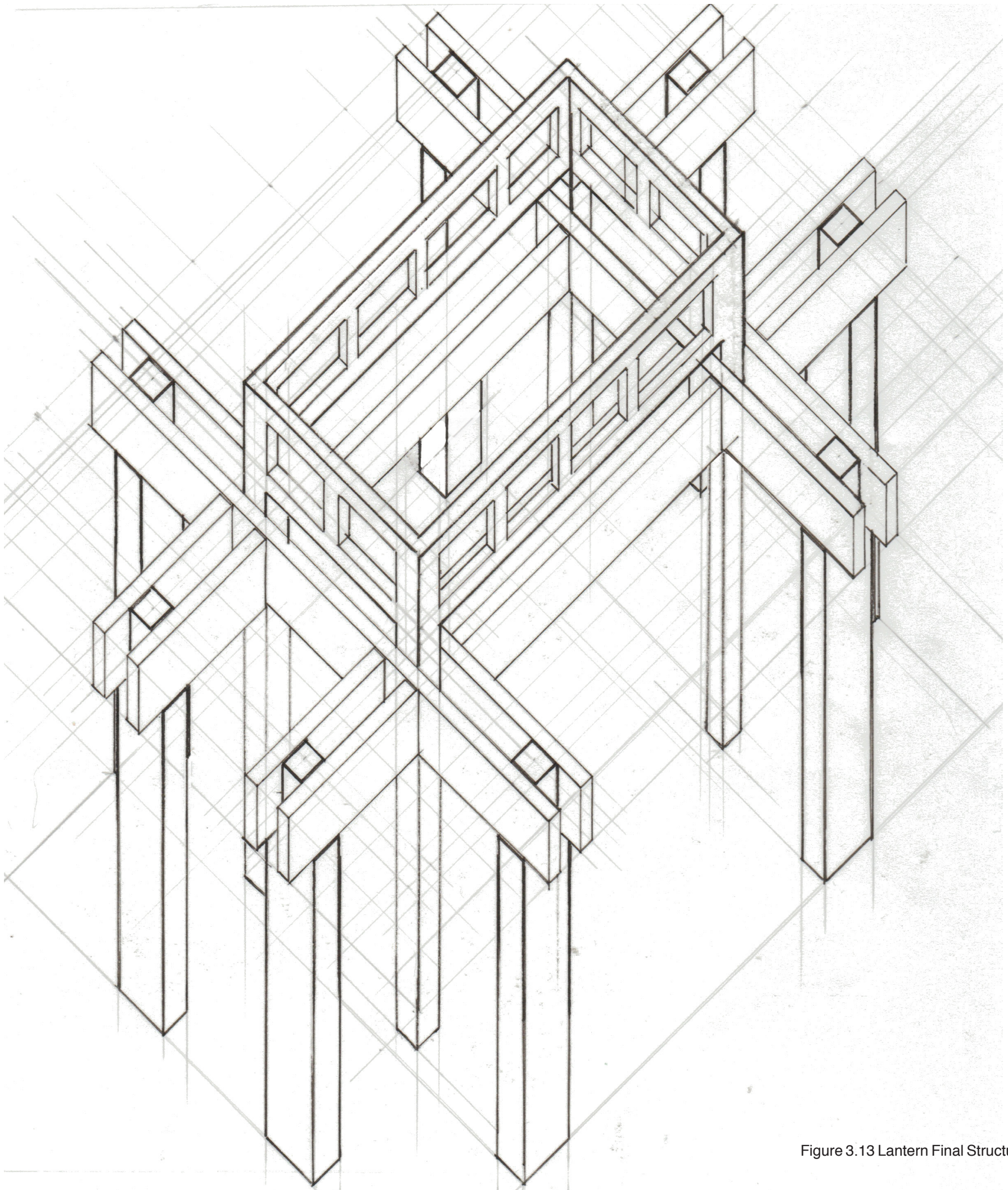


Figure 3.13 Lantern Final Structural Scheme

Towers

Located on the northwest side of the main venue are four protruding towers, serving as box seating and vertical circulation. Each level seats sixteen ticket holders, with their own means of circulation. A open walkway crosses each seating area allowing for easy access to the fourth tower. The third floor is the highest balcony seating into the performance space. The fourth tower contains emergency egress stairs and elevator shafts.

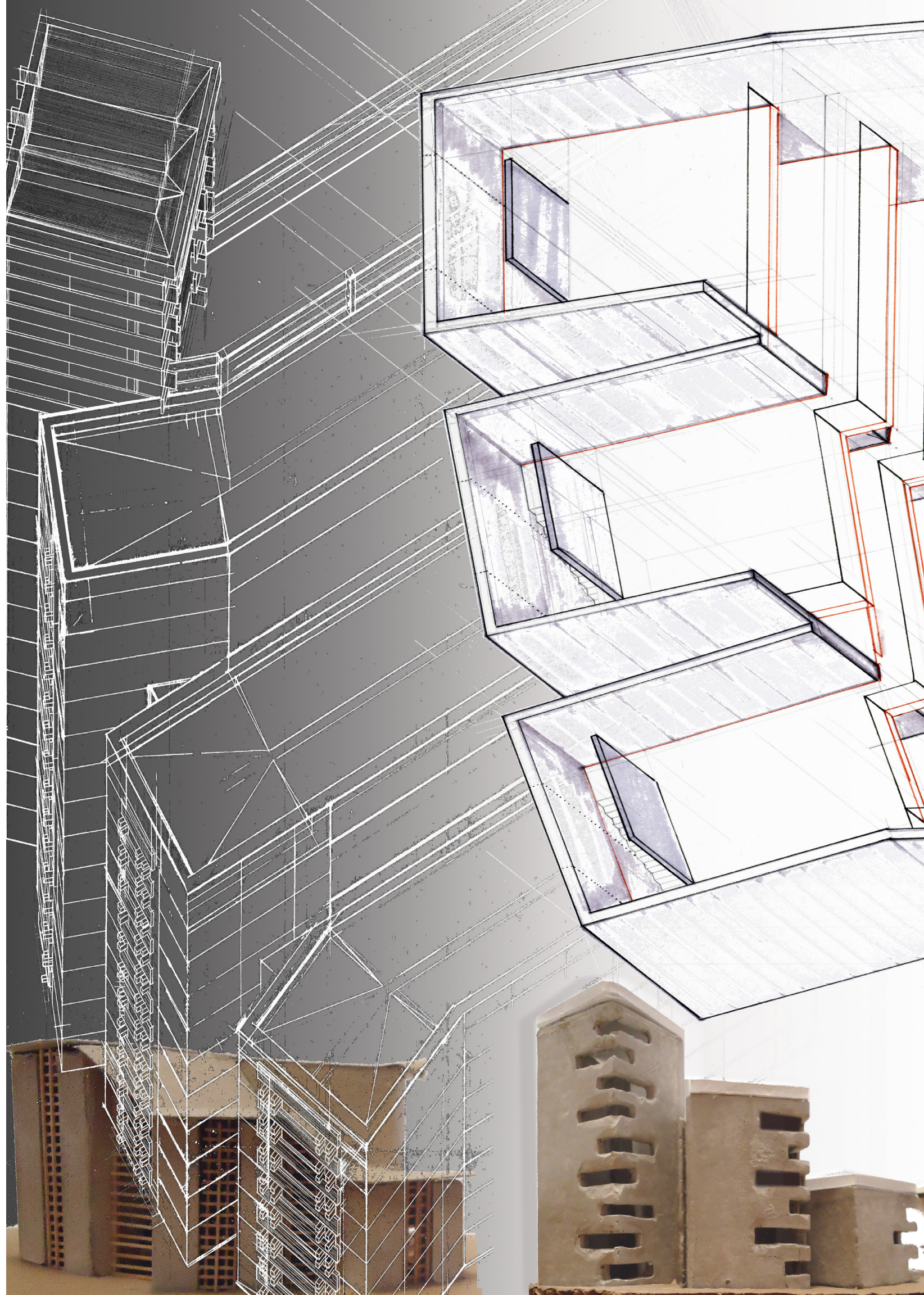
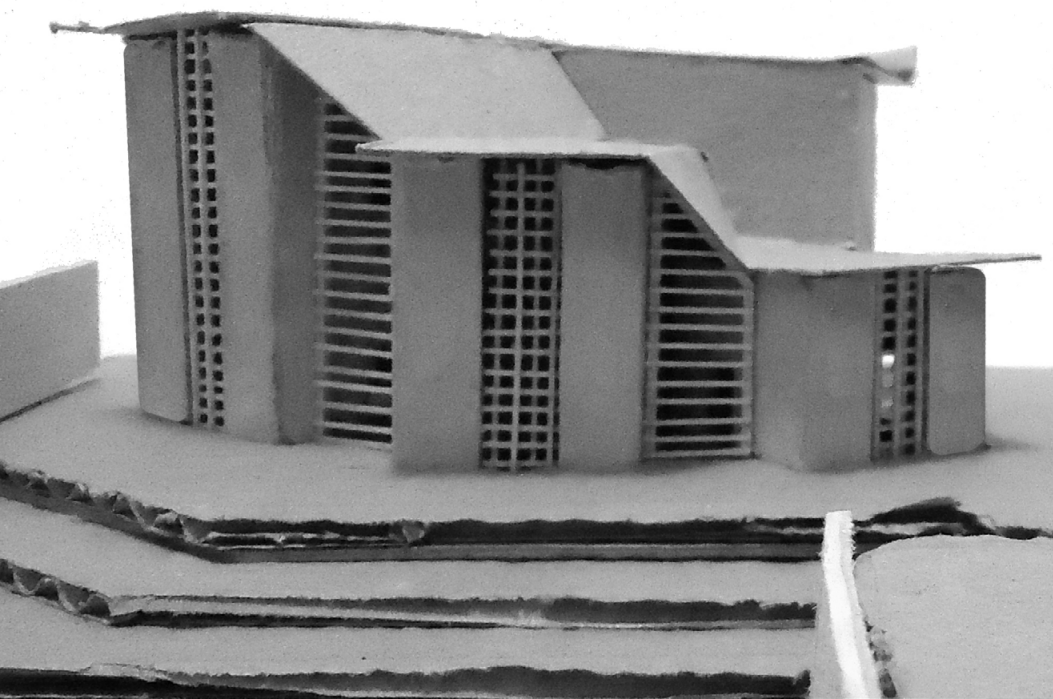
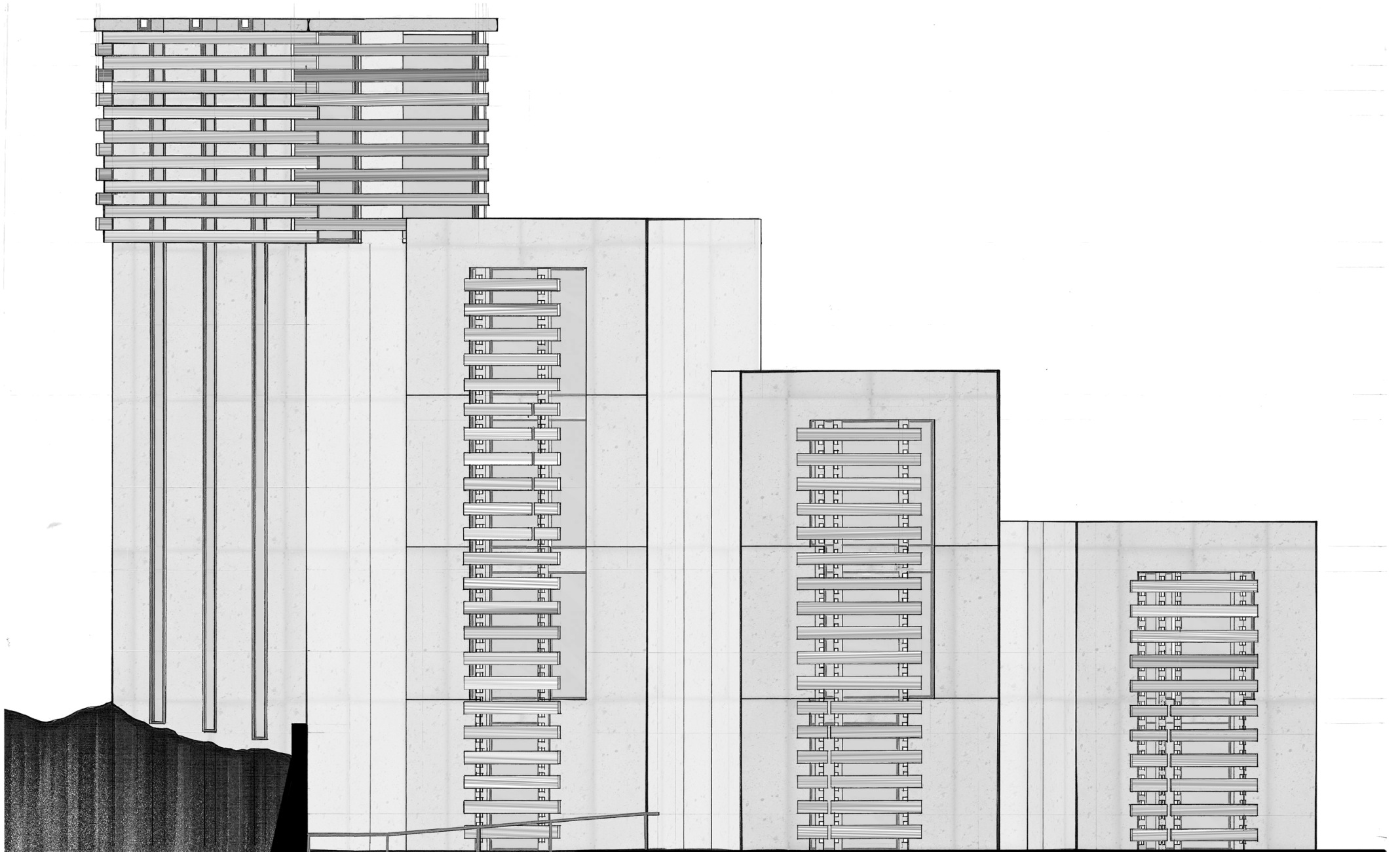
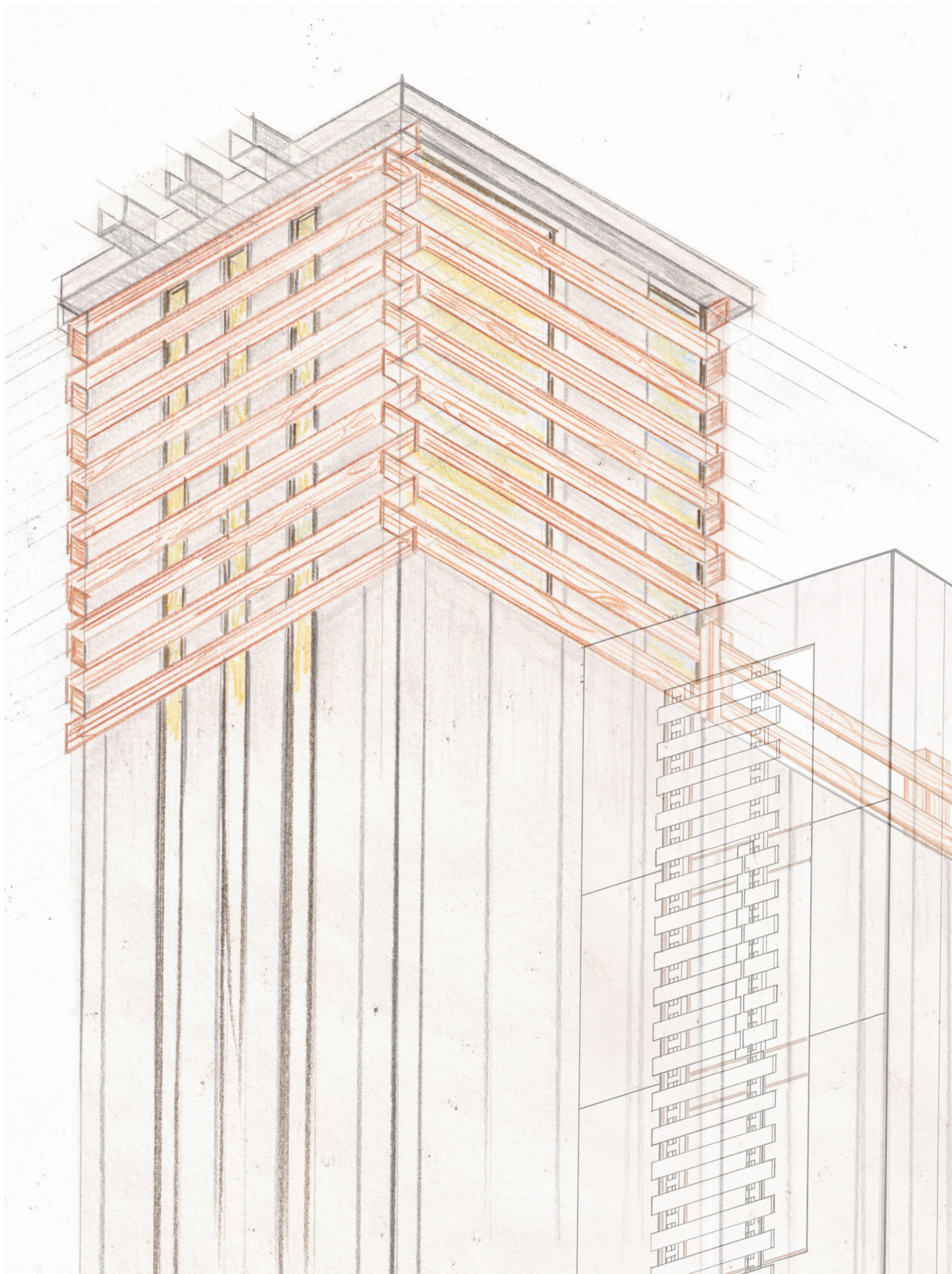


Figure 4.1 Tower Collage



Circulation stairs border the northwest facing windows of the towers, overlooking the outdoor amphitheater. Internal stairs influence the concrete envelope which in turn influence the wood latticing system.

Figure 4.2 Final Tower Facade
Figure 4.3 Tower Latticing Model Image



The fourth tower cladding closely resembles The Lantern to attract visitors to the rooftop terrace located on the fifth floor. Decking extends along the entirety of the bay providing sufficient space for patrons to survey the surrounding wooded hillsides.

Figure 4.4 The Beacon

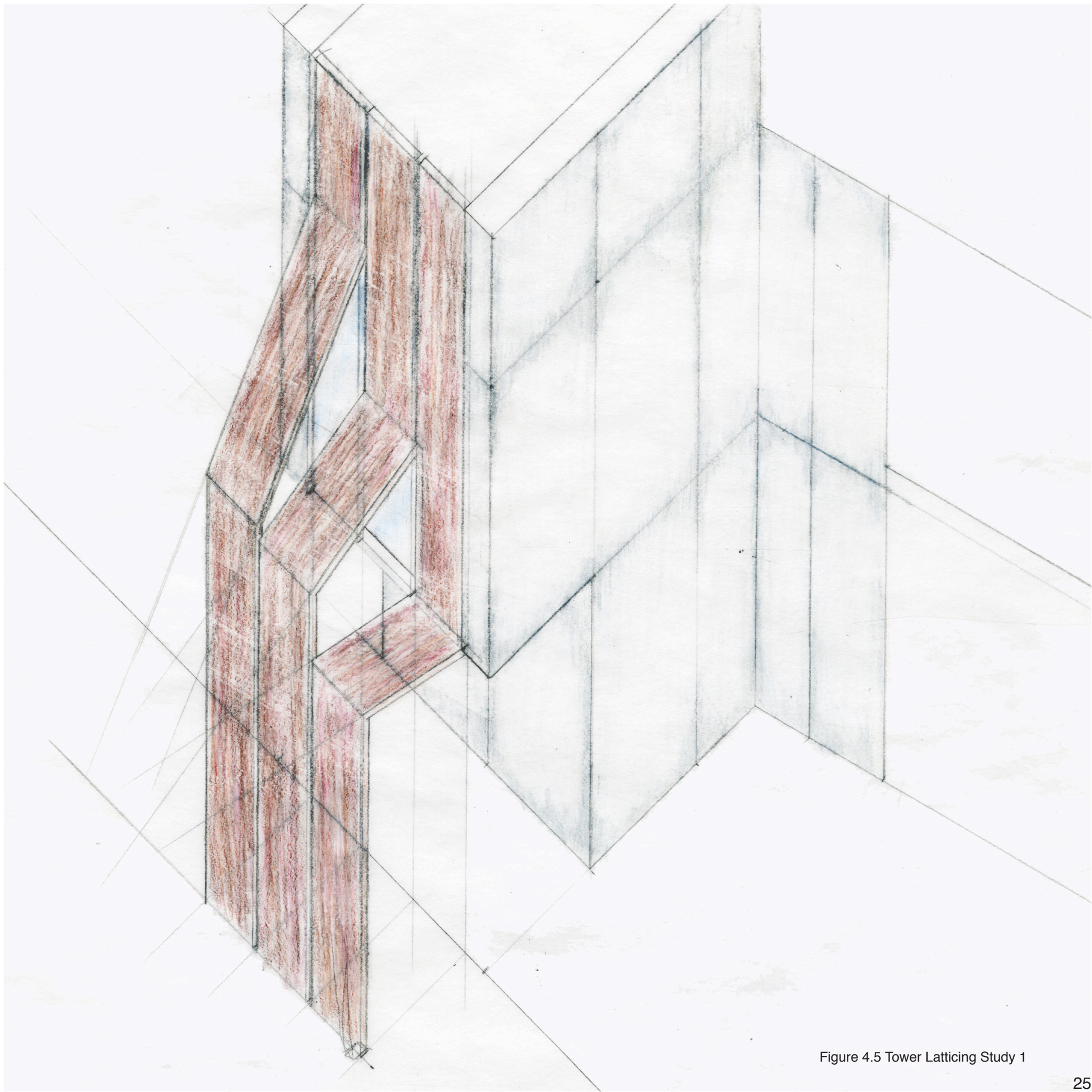


Figure 4.5 Tower Latticing Study 1

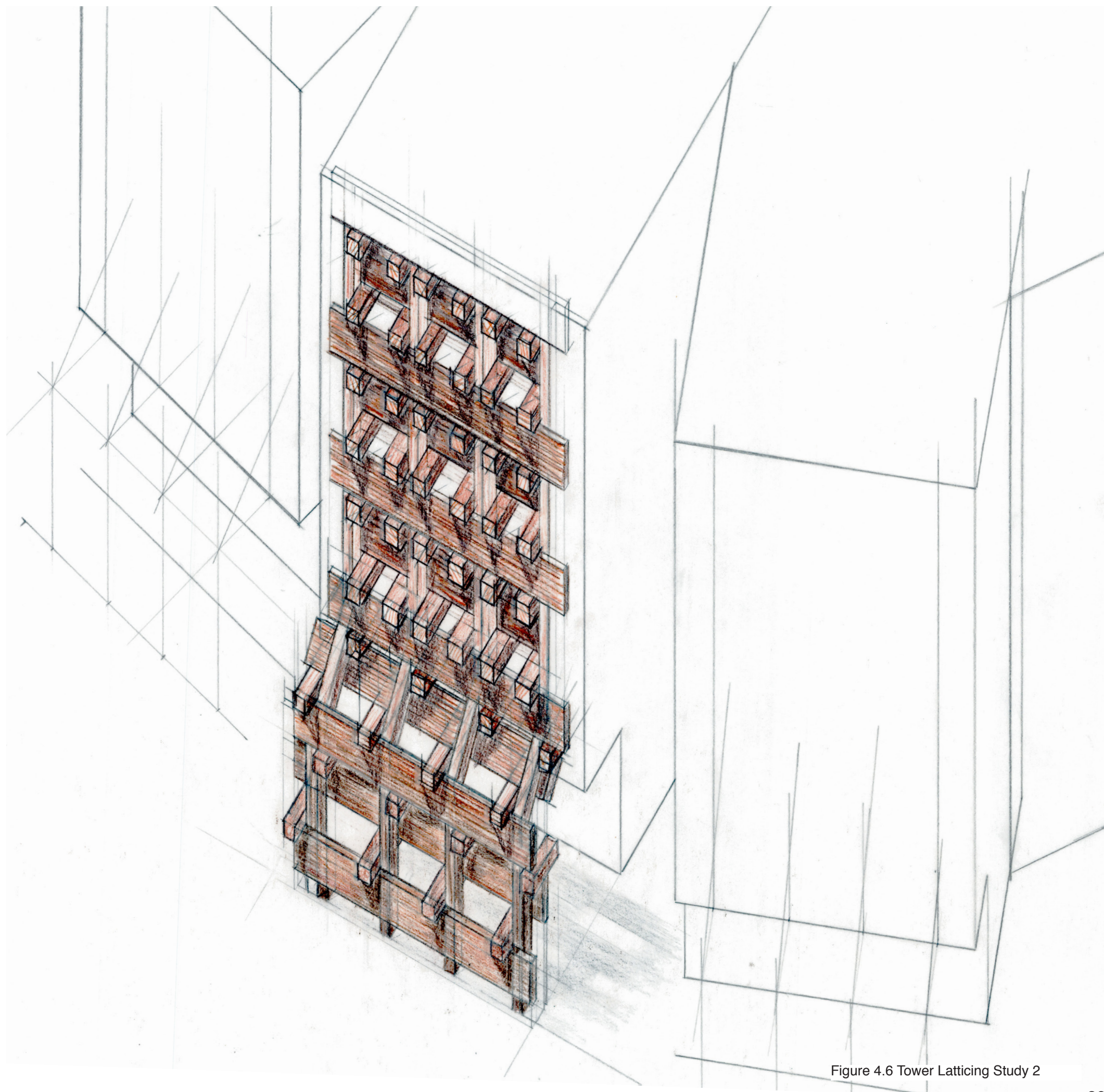
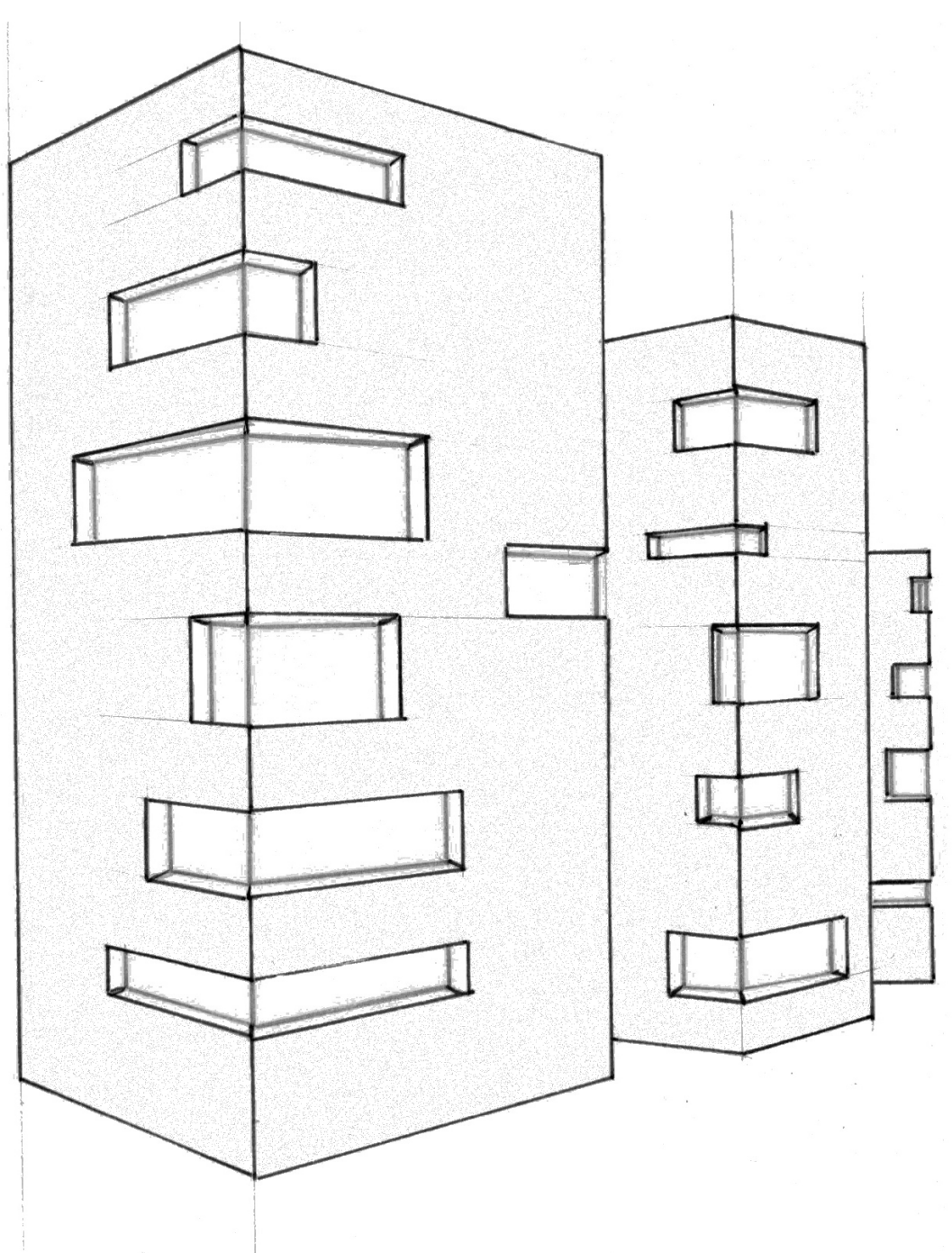
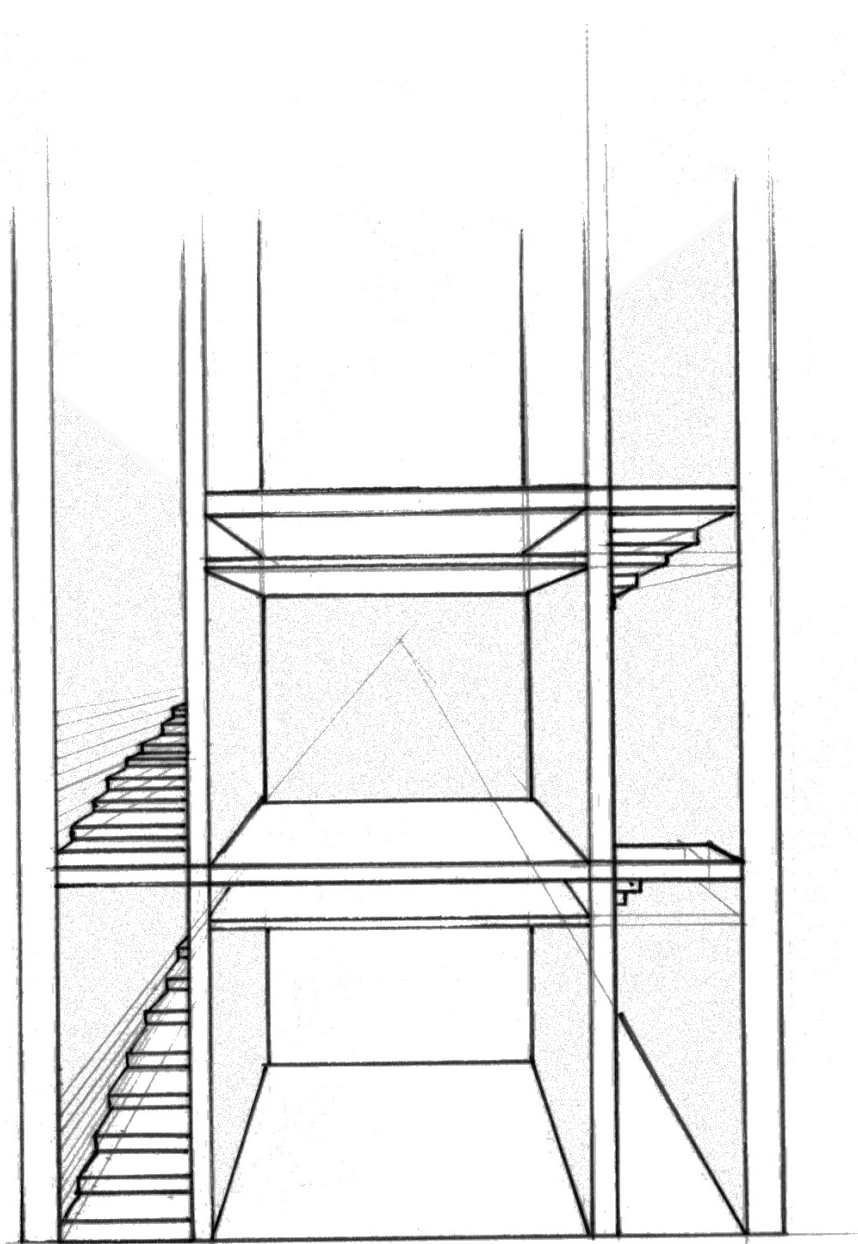
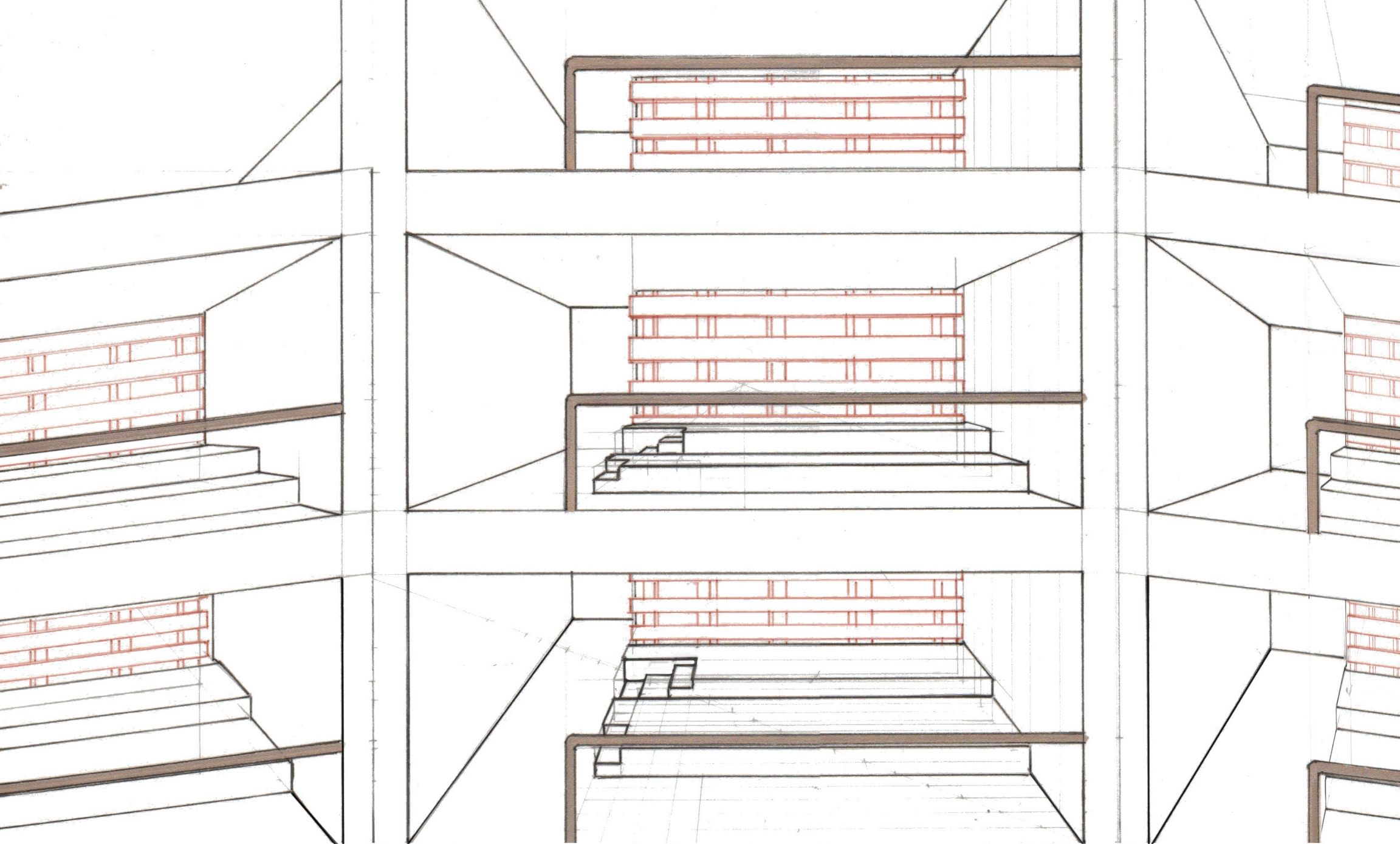


Figure 4.6 Tower Latticing Study 2



Directing vertical circulation elements within the wall cavity had a corresponding influence on how windows might be implemented. A users movement through the interior of the tower is portrayed with the exterior wrapping of the windows.

Figure 4.7 Tower Wall Stair Cavity
 Figure 4.8 Tower Corner Window Sketch
 Figure 4.9 Corner Window Model Image



Application of the wood latticing system extends to the interior of the music venue to assist with acoustic diffusion.

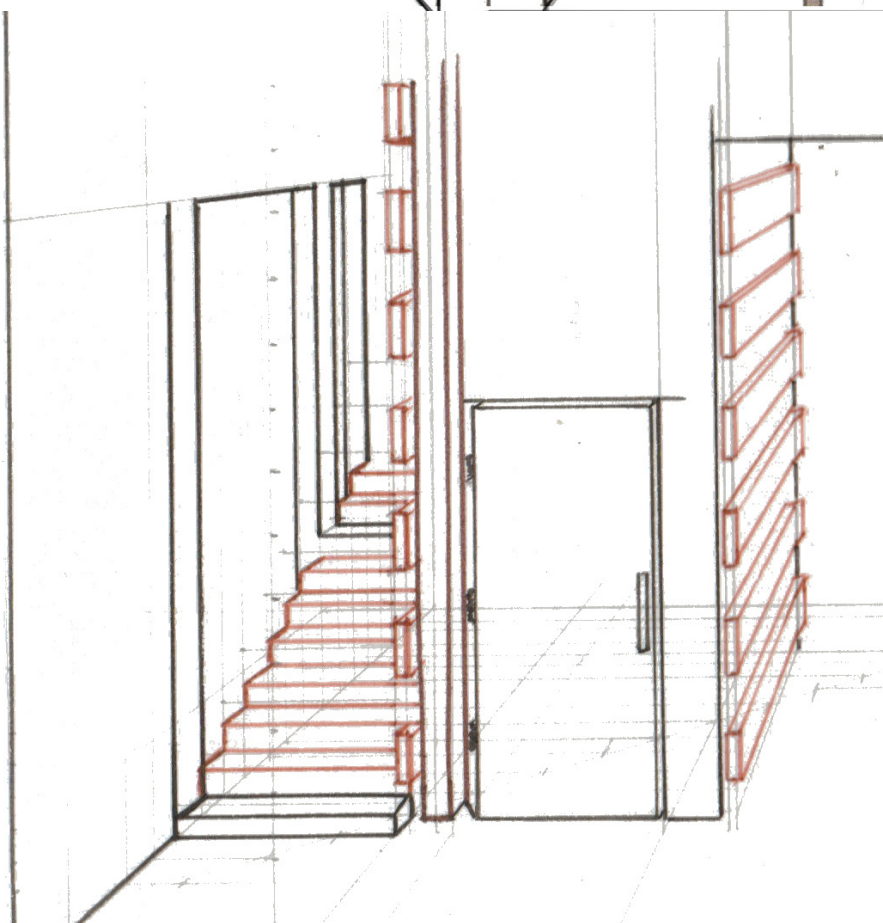


Figure 4.10 Tower Balcony Perspective
Figure 4.11 Tower One Stair

The Complex

The tension between the music venue and the lantern creates a graceful relationship that one without the other would not be complete.

Wood decking weaves between the venue and amphitheater and runs around the lantern embracing the complex.

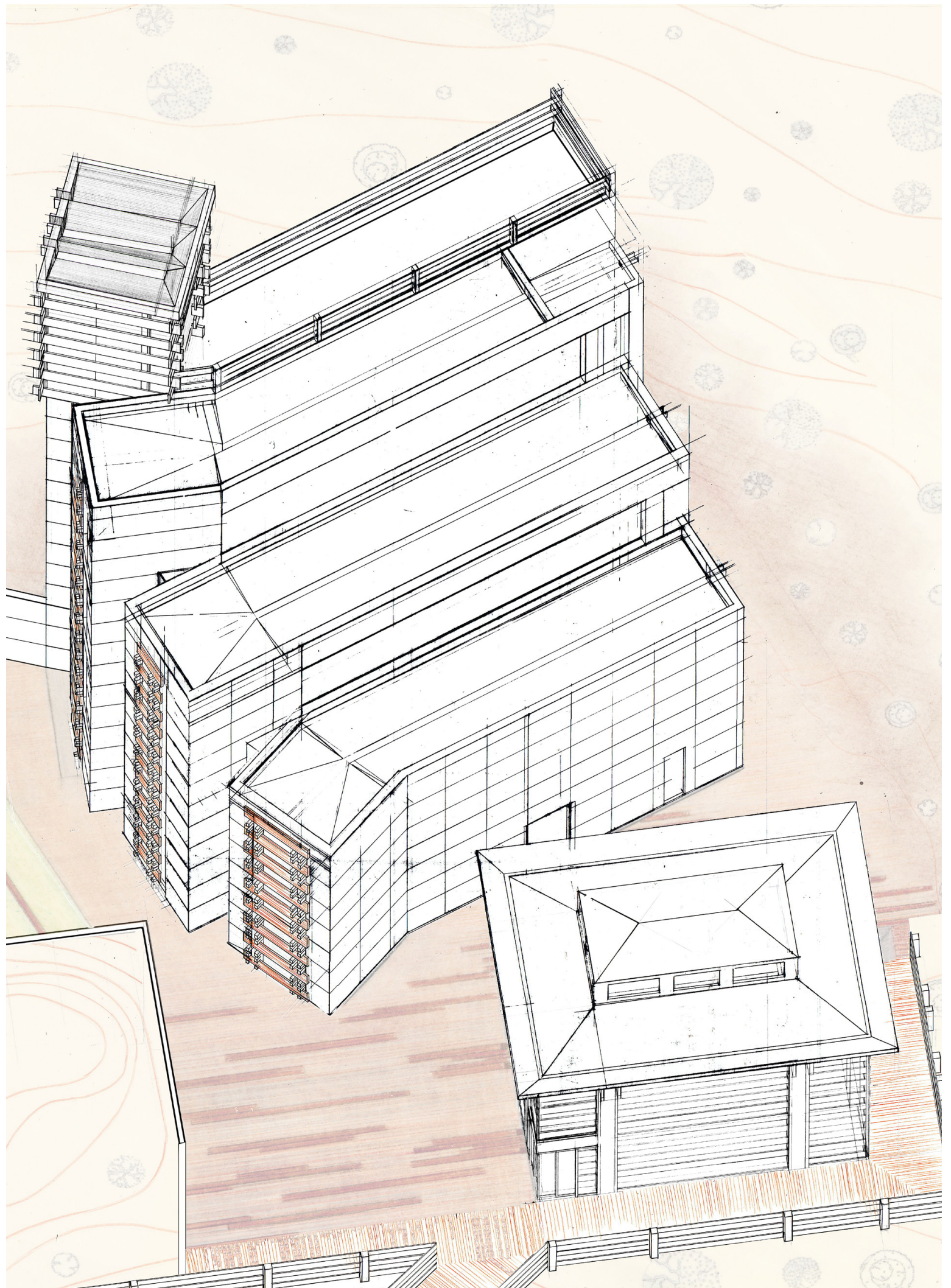


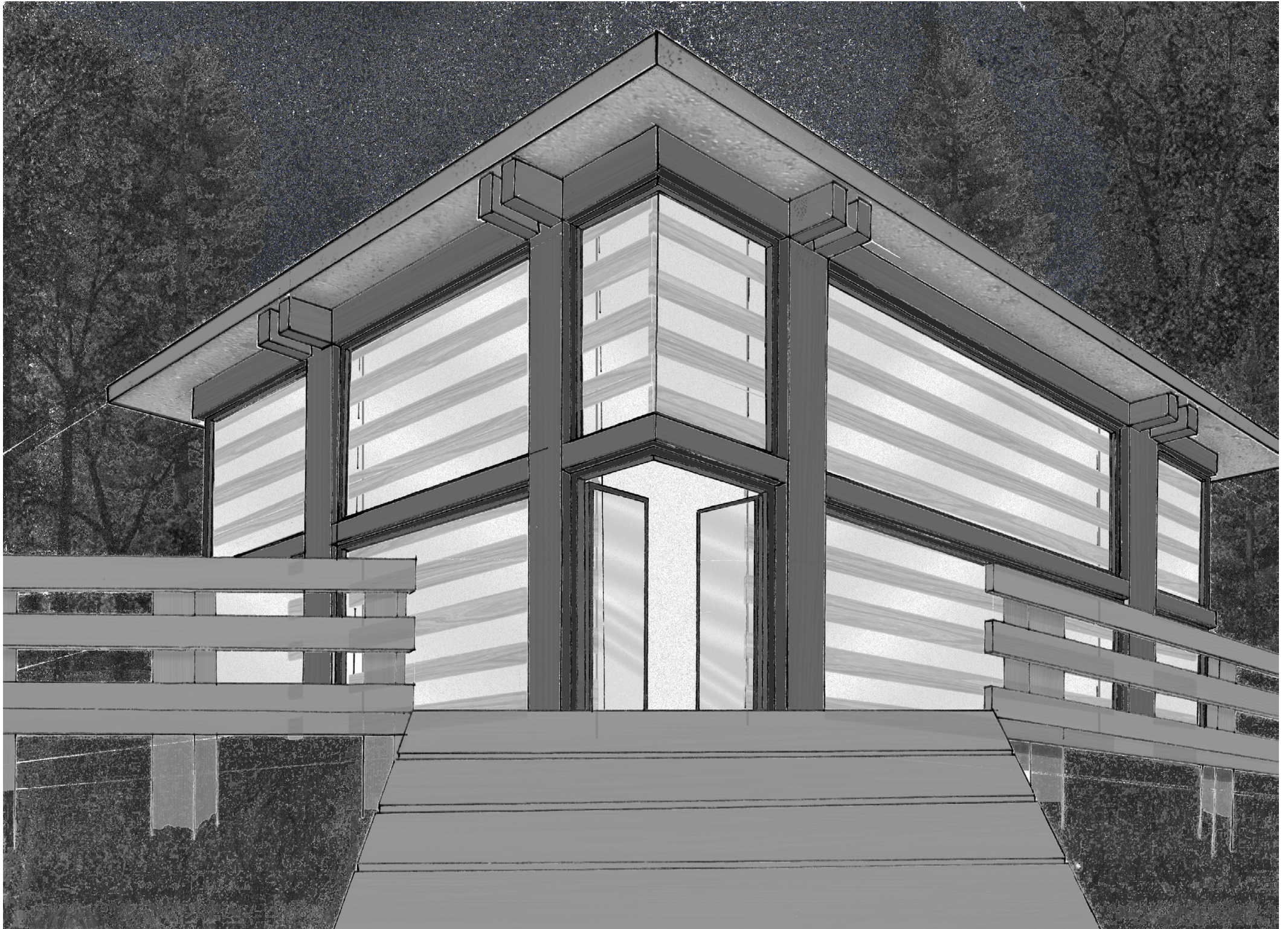
Figure 5.1 Complex Axon

The Beacon

From street level the only visible element visitors encounter is the beacon extending through the treetops, guiding visitors to the site.



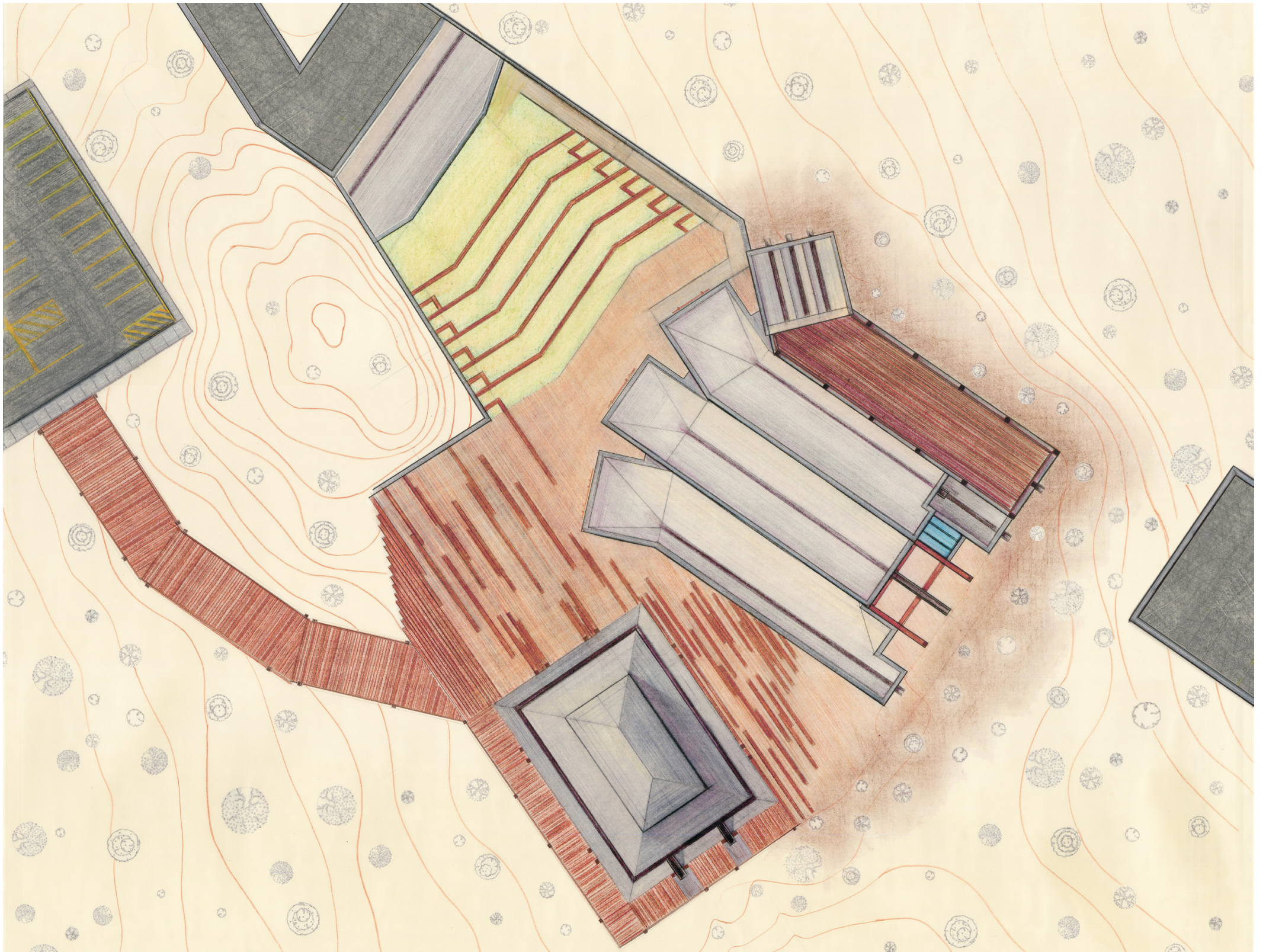
Figure 5.2 Beacon Render



The Lantern

Cresting the walkway from the parking lot, the glow of the lantern welcomes patrons. This glass clad latticed building serves as a lobby, box office, and lounge.

Figure 5.3 Lantern Render



Site Plan

The site is imbedded in a hillside surrounded with lush vegetation presenting visitors to visual moments while traversing the complex. Landscape slopes down from the southwest deck and climbs upward on the northeast side of the venue.

Figure 5.4 Site Plan

First Floor

Venue

Lower section seats 110 patrons with three box seating areas seating an additional 50 patrons. The fourth bay of the building consists of a circulation tower with egress stairs and two elevator shafts, along with public restrooms.



Figure 5.5 First Floor

Second Floor

Lantern

The undulating stairs lead to a mezzanine overlooking the interior space of the lantern. There are many uses for this building from a small music event to a reception space.

Venue

The back of each tower has its own set of stairs, a balcony walkway in front of each seating area, allowing for easier movement to each tower and the fourth bay. The fourth bay consists of a bar/ lounge area, private restrooms, and office space. A secondary emergency exit is located by the fourth tower, evacuating along the northeast side of the venue.



Figure 5.6 Second Floor

Third Floor

Lantern

The roof drainage slopes towards the southeast side of the building where it pours from two large scuppers. When raining the drainage will be seen through horizontal slats behind the bar.

Venue

There are two remaining box seating areas on this level as well as a second full bay of restrooms in the fourth bay. The catwalk and above stage circulation is accessible on this floor.



Figure 5.7 Third Floor

Fourth Floor

Venue

Closed to patrons this space is open for venue operations office space, with large views opening onto the southwest and northeast side of the complex.

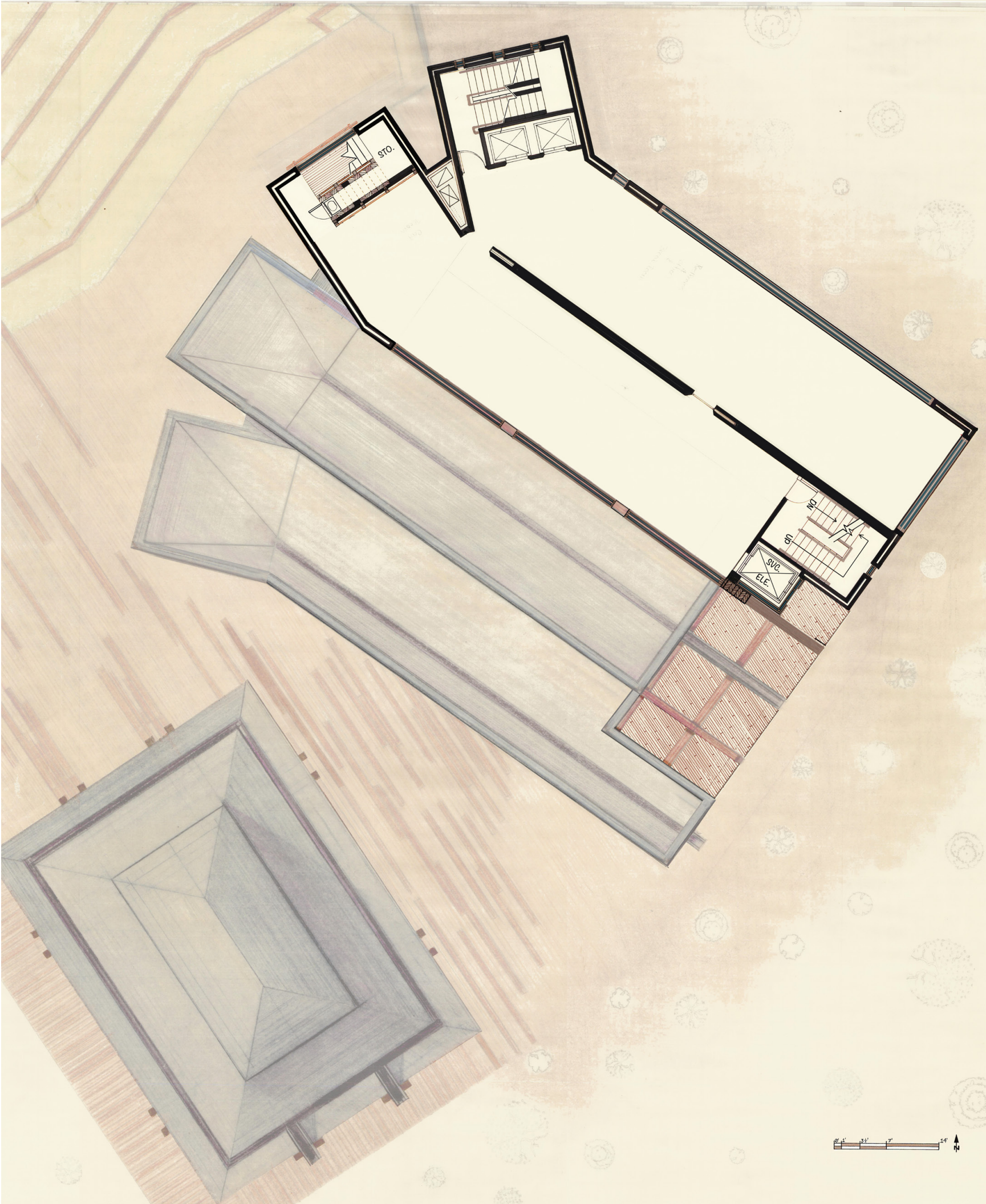


Figure 5.8 Fourth Floor

Fifth Floor

Venue

The fourth tower extends up to the rooftop terrace overlooking the surrounding hillsides, accessible to all patrons and staff.

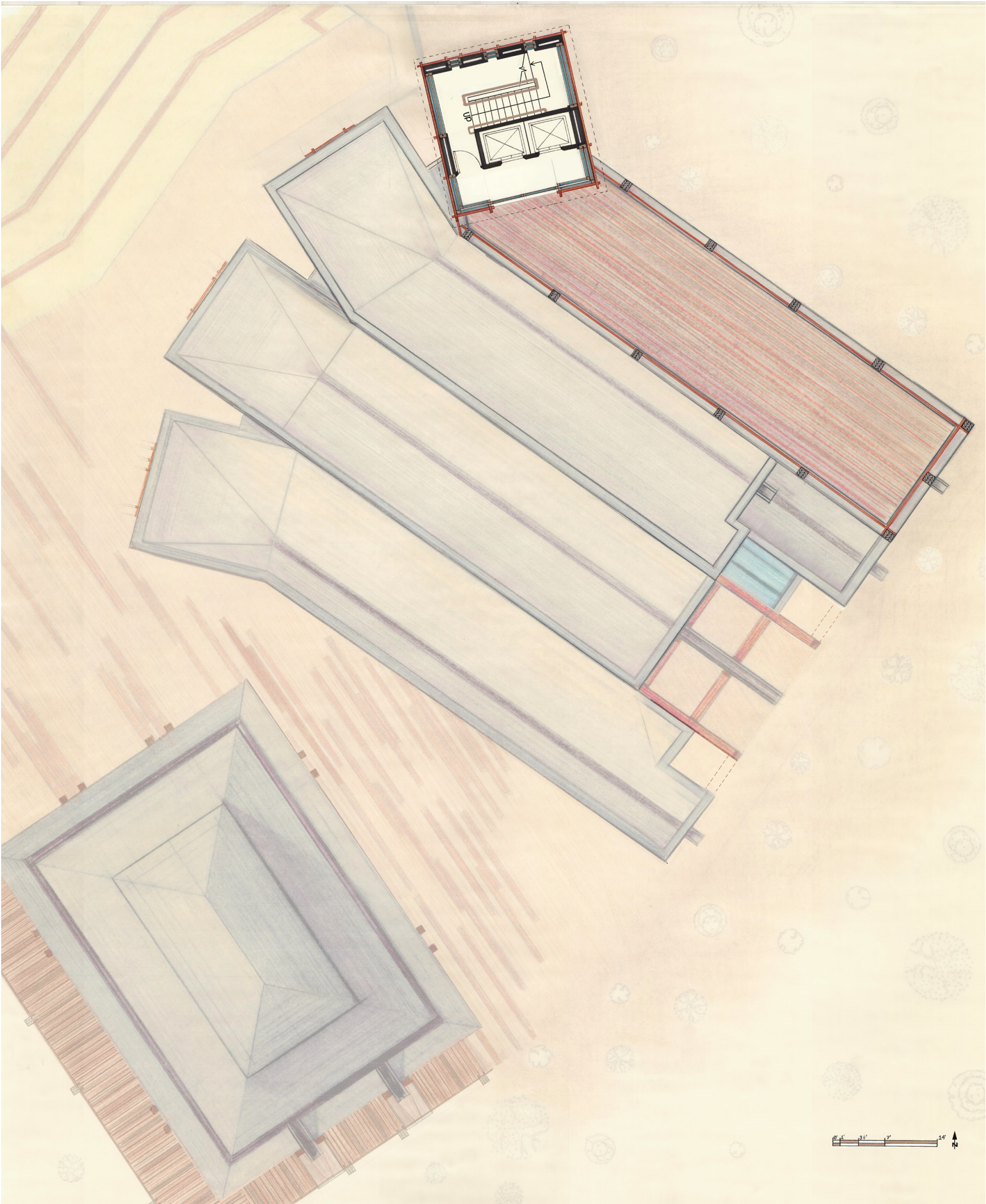


Figure 5.9 Fifth Floor

Basement

Lantern

The basement is split into two separate areas: one side is the public restrooms, the other side leads under the stairs from the bar for storage and mechanical equipment.

Venue

Situated in the basement underneath the stage is the greenroom. This underground location creates a quieter and more serene area overlooking a private patio that extends into the forest. Equipped with a kitchen, bar, dressing rooms, and private restrooms. Past the performer amenities is a large loading bay, storage area, and mechanical equipment rooms.



Figure 5.10 Basement

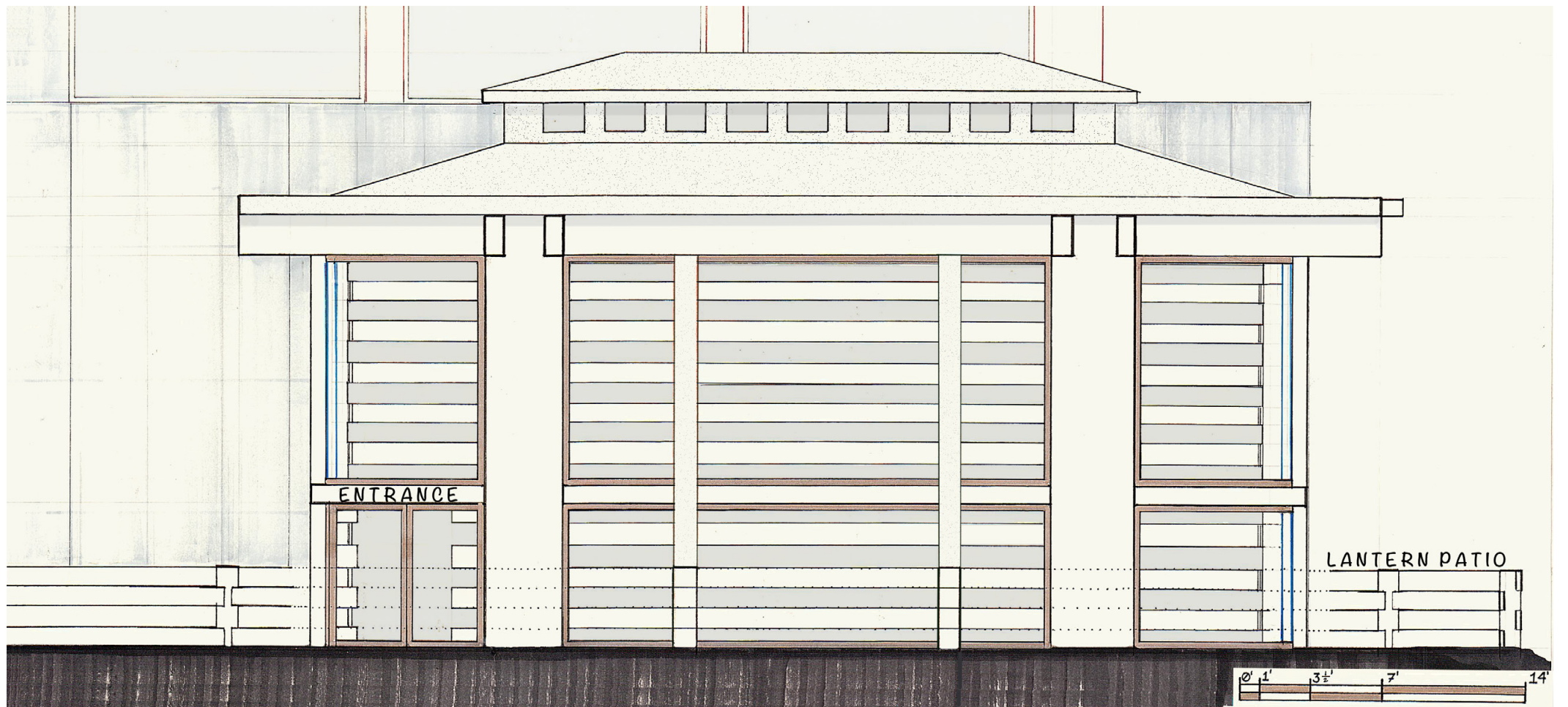


Figure 6.1 Lantern Southwest Elevation



Figure 6.2 Lantern Northeast Elevation



Figure 6.3 Lantern Northwest Elevation



Figure 6.4 Lantern Southeast Elevation

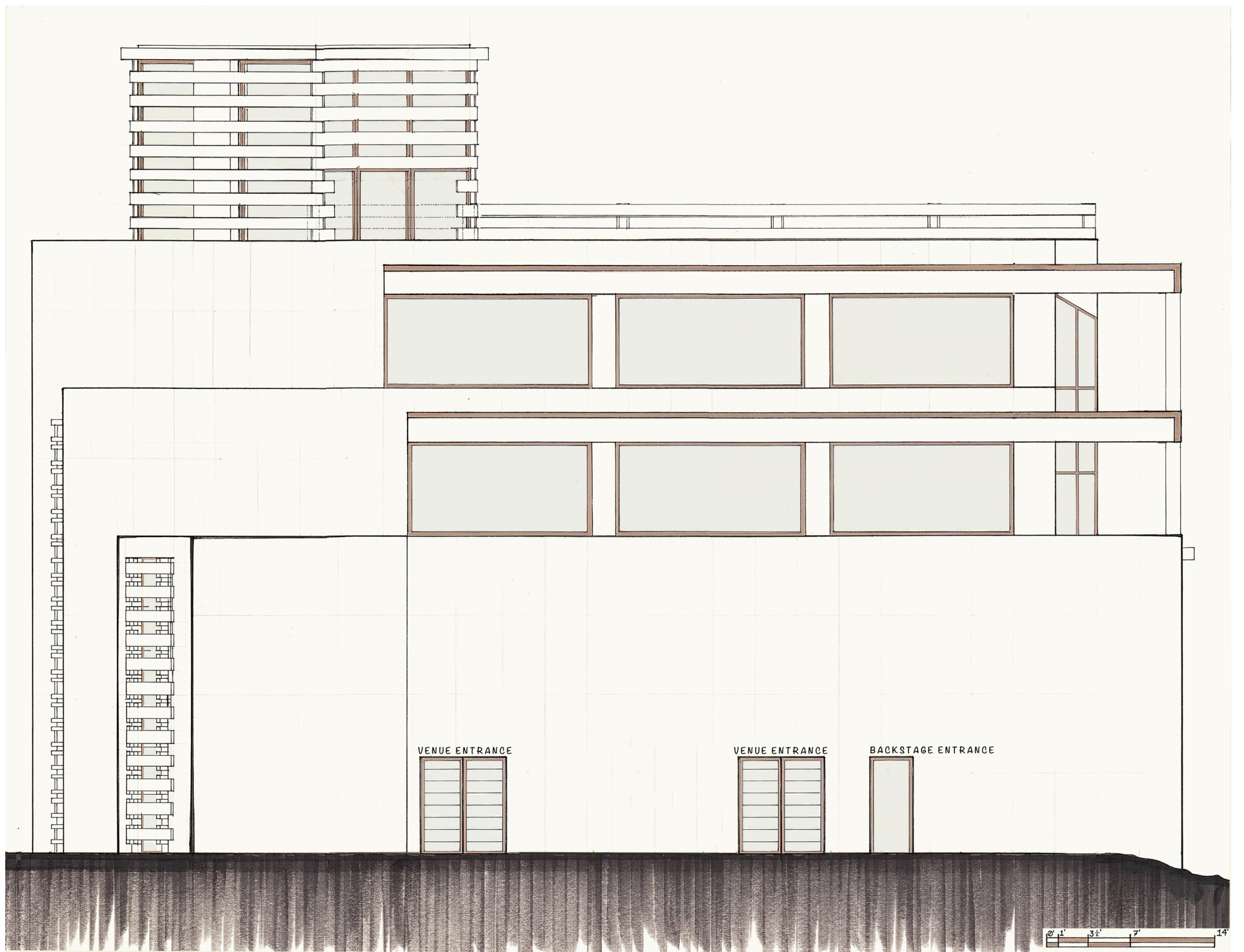


Figure 6.5 Venue Southwest Elevation

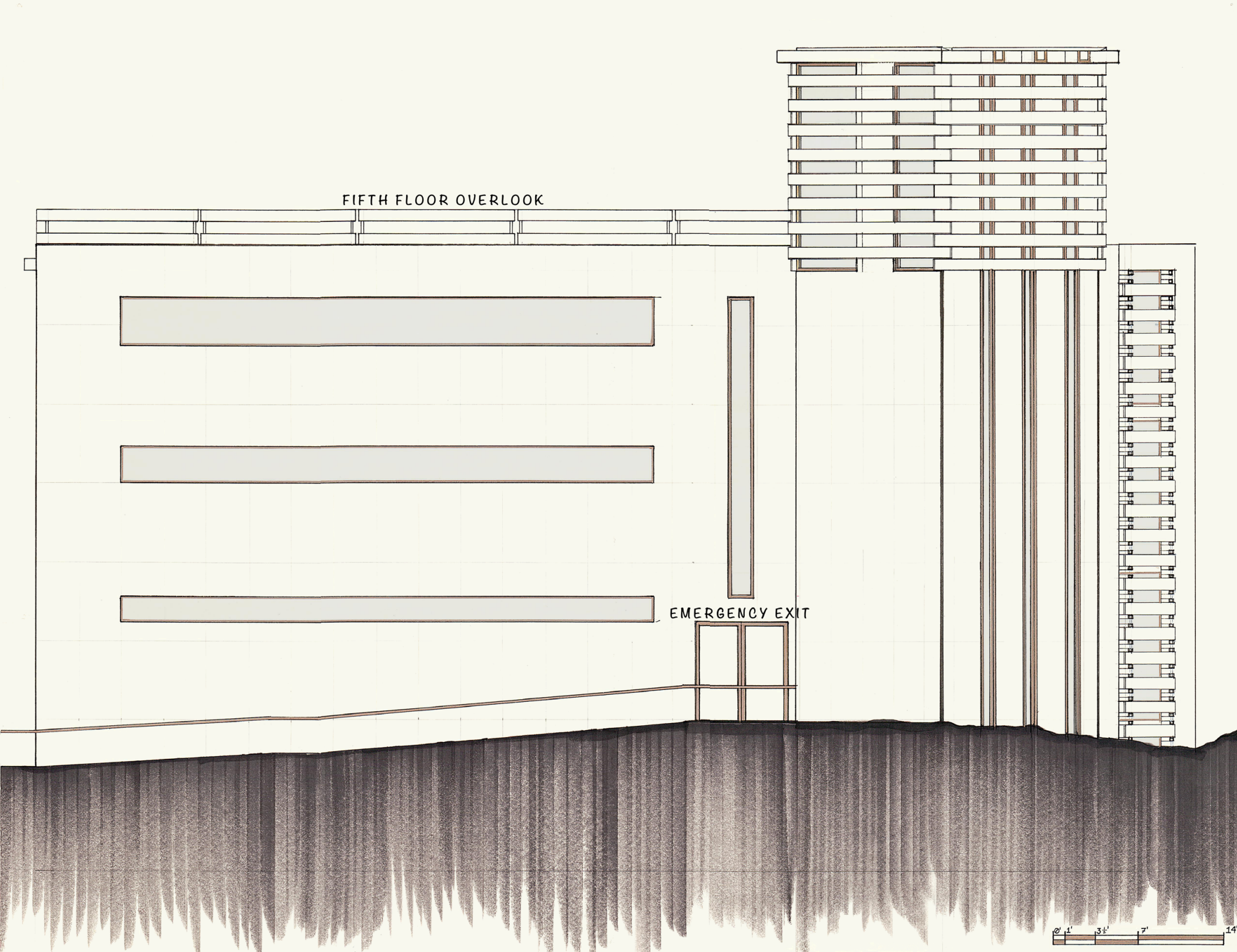


Figure 6.6 Venue Northeast Elevation

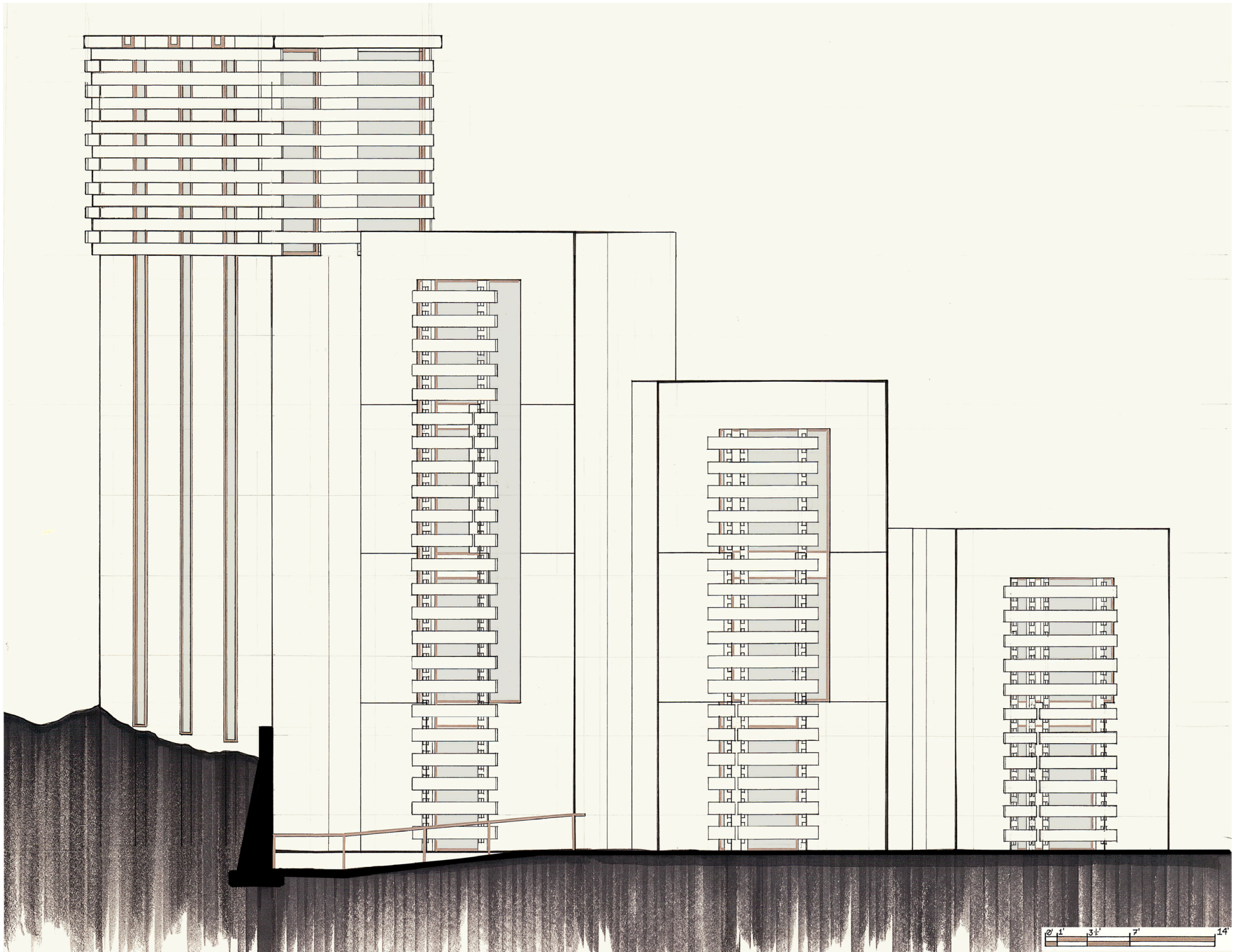


Figure 6.7 Venue Northwest Elevation

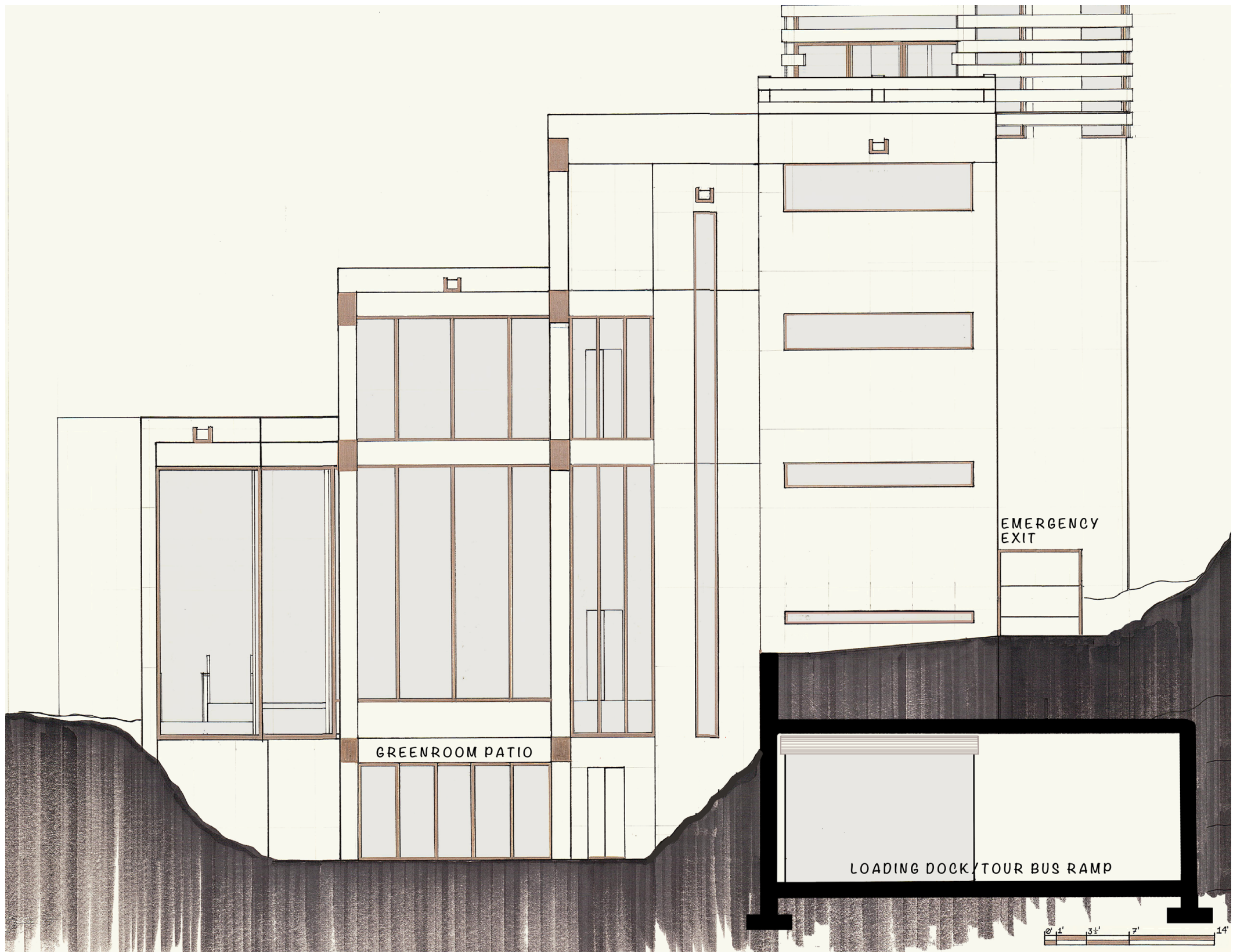
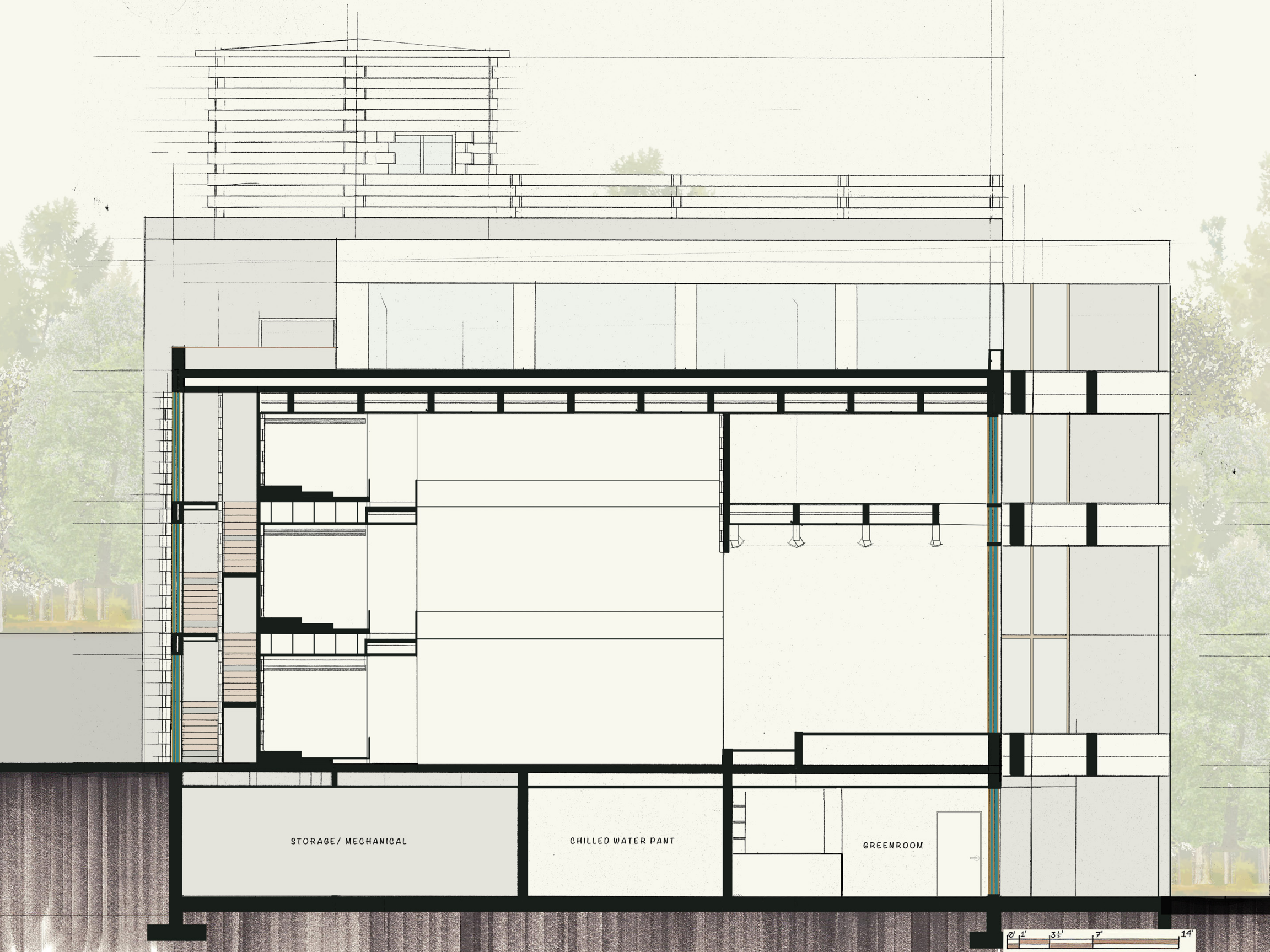


Figure 6.8 Venue Southeast Elevation



Stage backdrop frames exterior elements.

Figure 7.1 Transverse Southwest Section Cut



Structural beams extend past building envelope making a quadruple-height, massive pergola over the private patio.

Figure 7.2 Longitudinal Southeast Section Cut

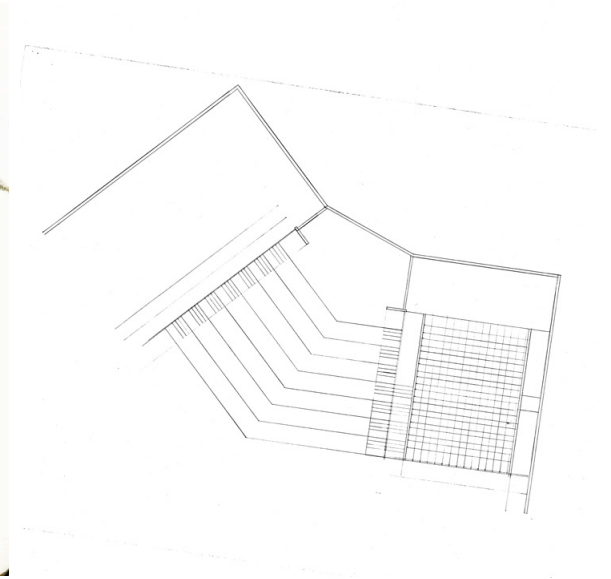
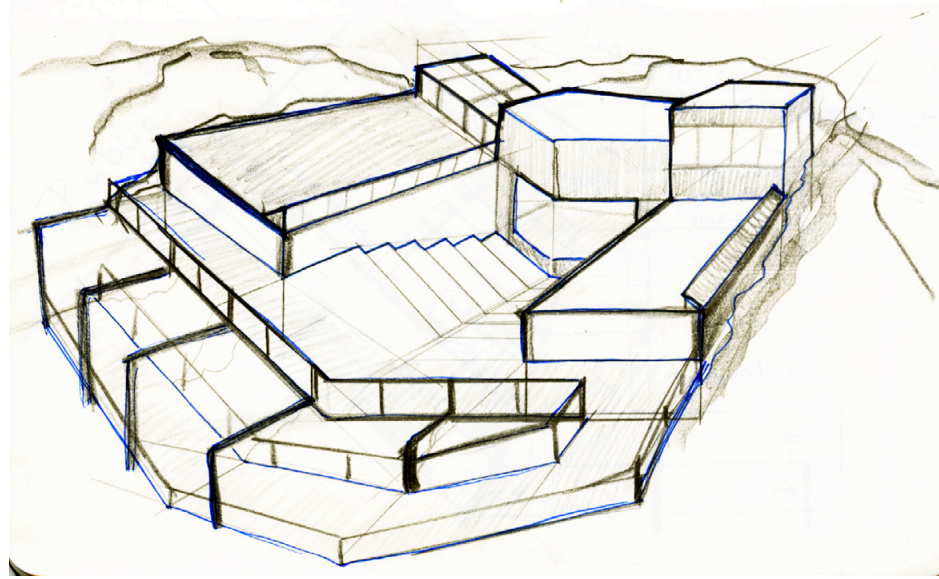
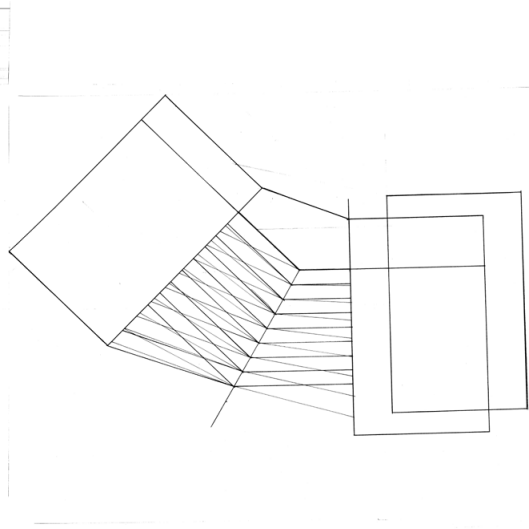
Design concept places three different venue types on one site a concert hall, an outdoor amphitheater and a live house.

Design concept influenced by the Japanese underground venue where patrons prefer to attend solely for the love of music instead of the social and drinking scene.

Design concept with an intricate balcony seating arrangement, focused on symmetry, a lobby that has a separate feel than the interior of the concert hall.

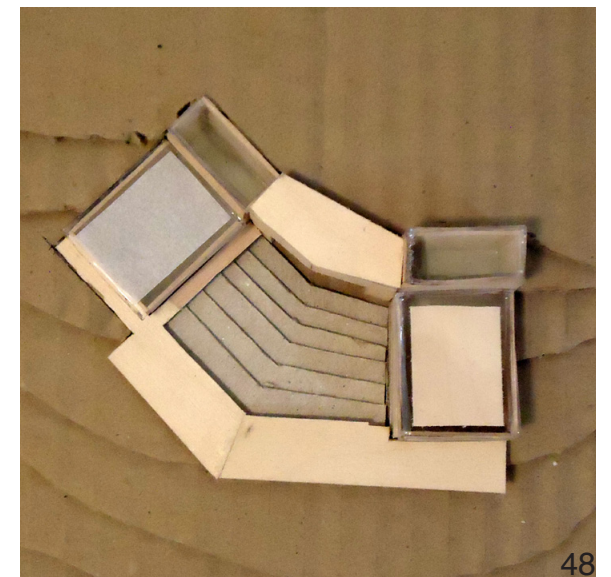
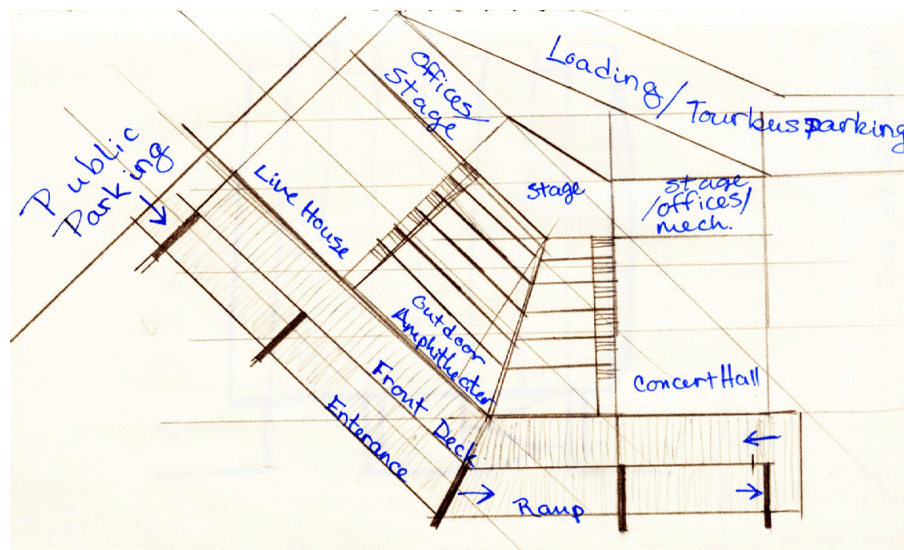
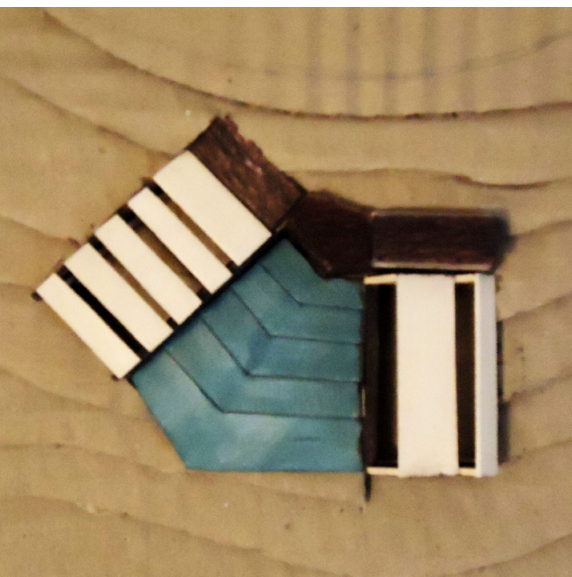
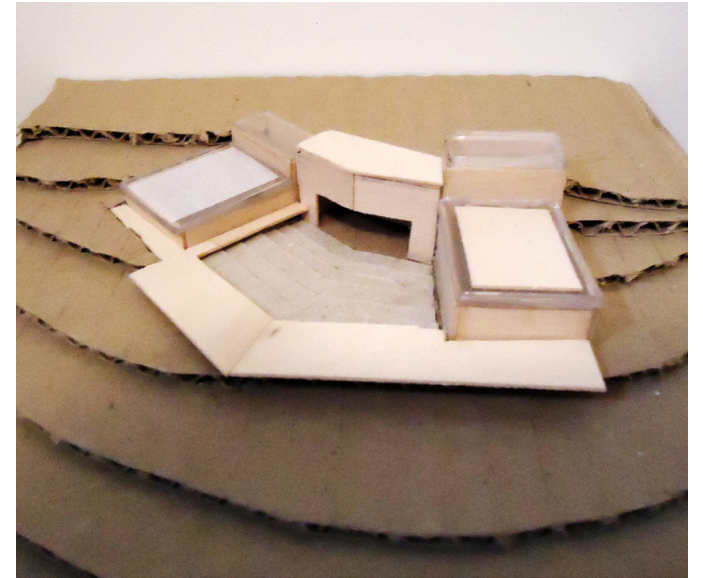
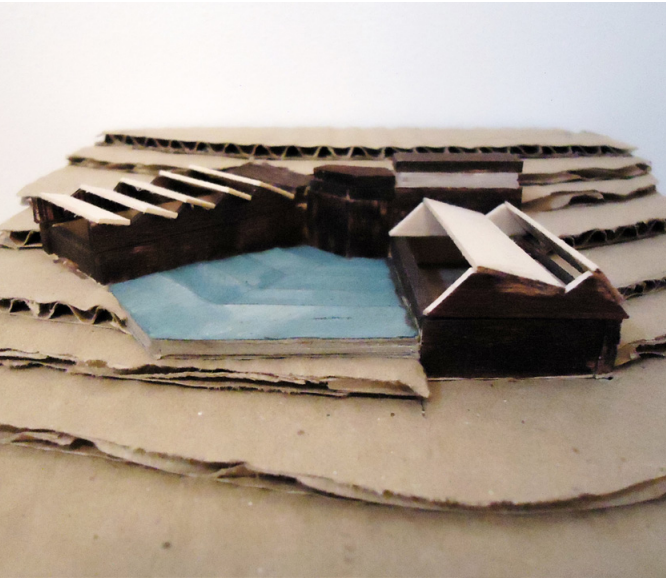
Design concept separates the lobby from the main venue. Any symmetry is removed and towers extend into bays of the performance space.

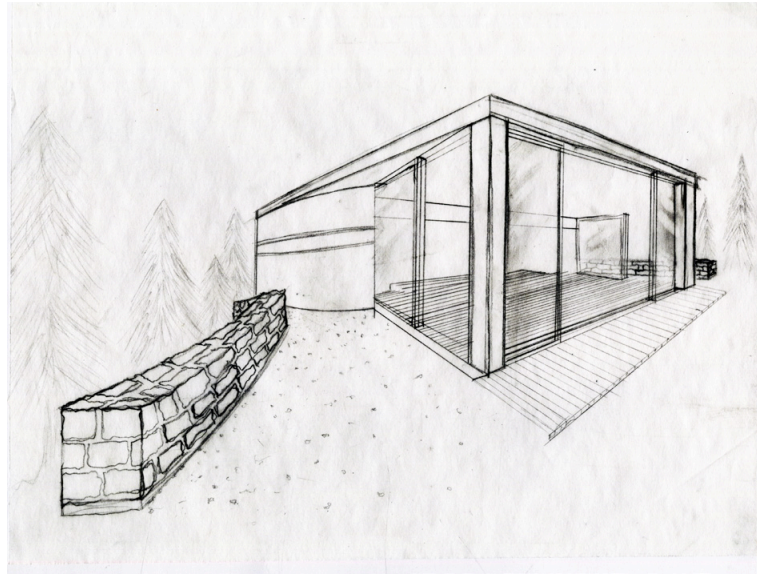
Figure 8.1 Concept 1 Collage



Tri-Design

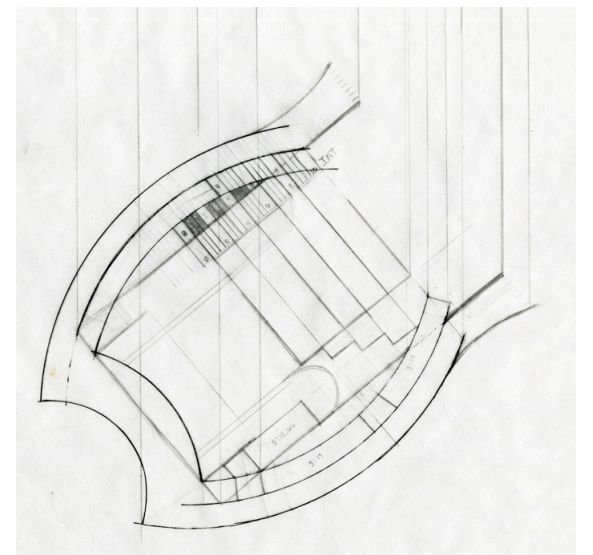
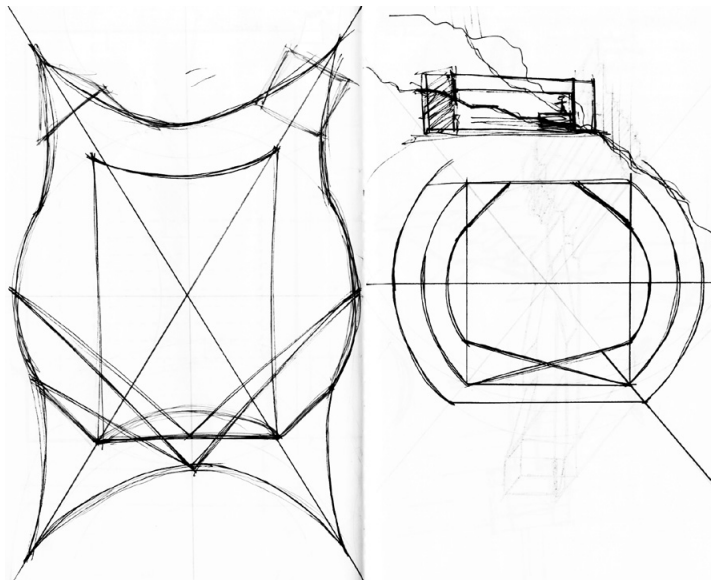
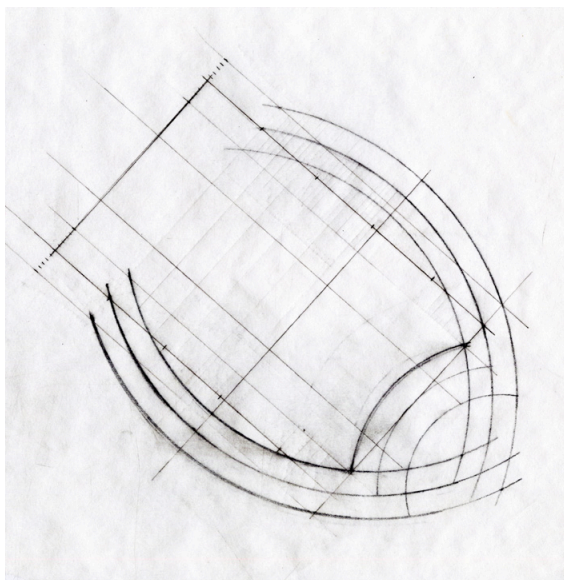
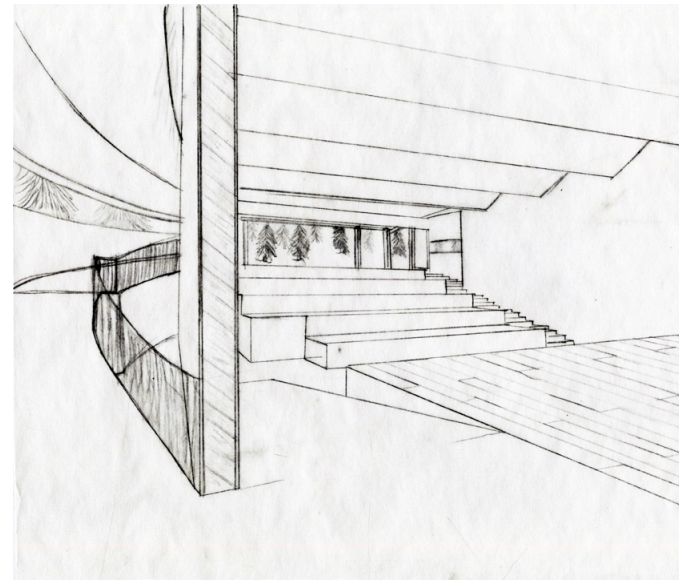
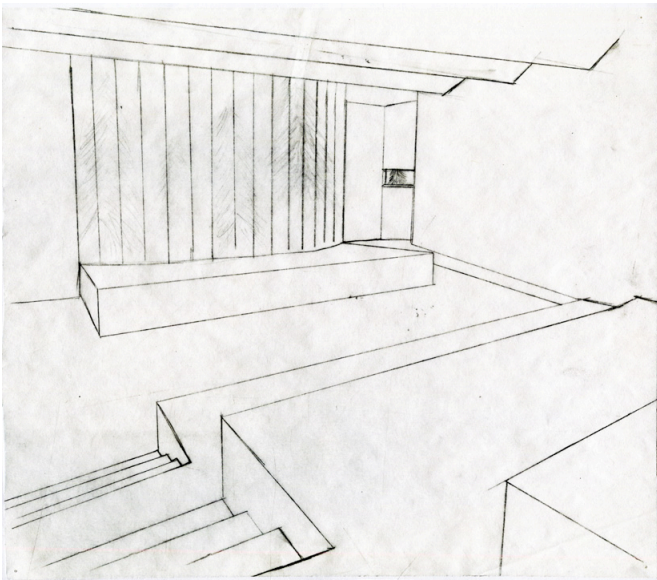
- Figure 8.2 Site Grid
- Figure 8.3 Exterior Perspective
- Figure 8.4 Preliminary Floor Plan
- Figure 8.5 Study Model 1 Image
- Figure 8.6 Study Model 2 Image
- Figure 8.7 Study Plan 1 Image
- Figure 8.8 Floor Plan
- Figure .9 Study Plan 2 Image





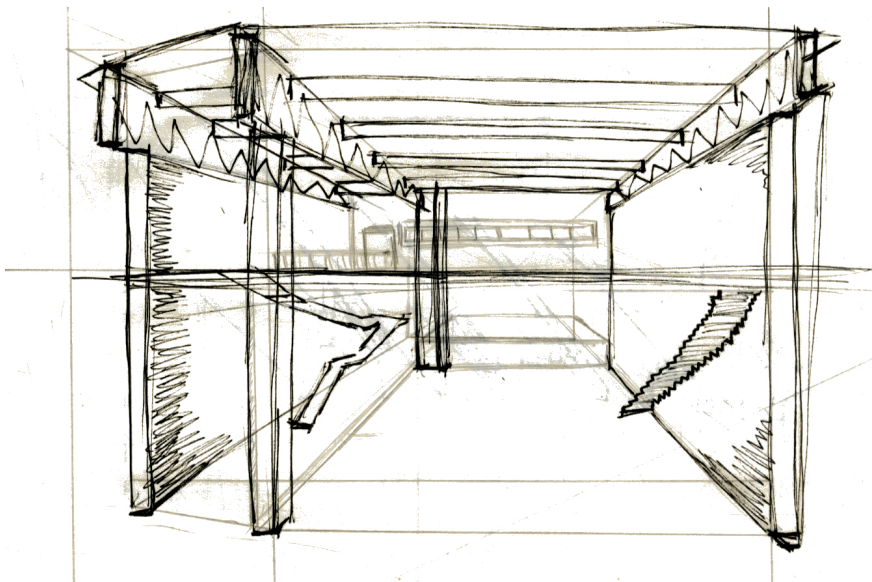
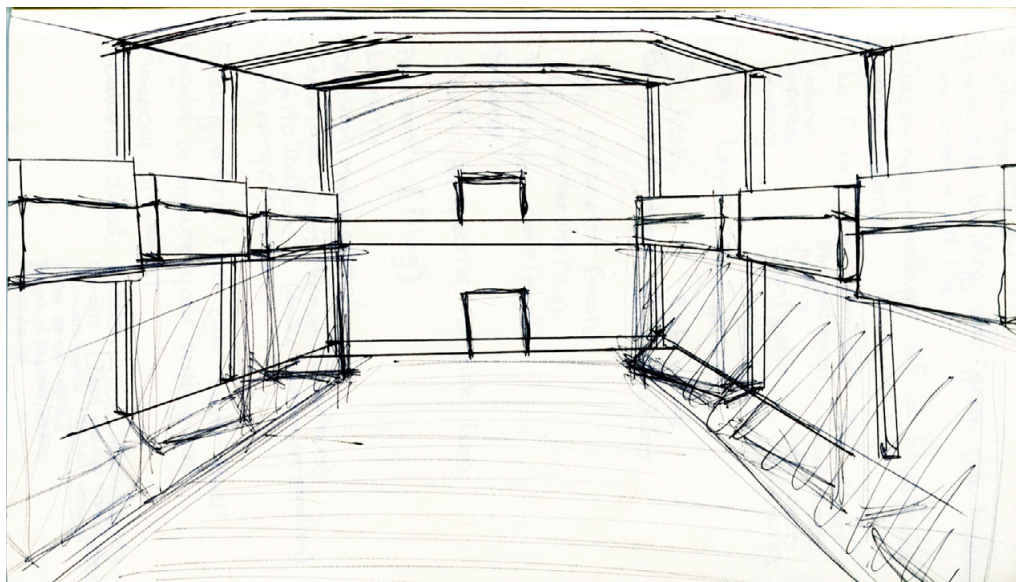
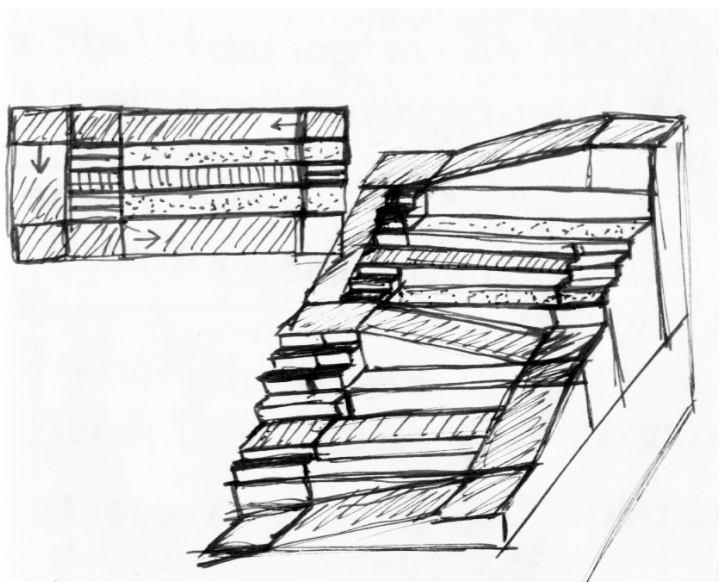
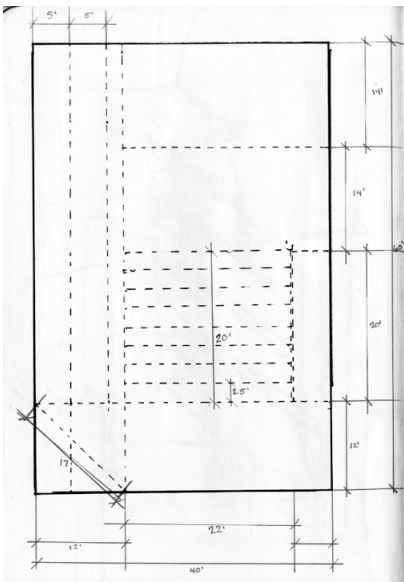
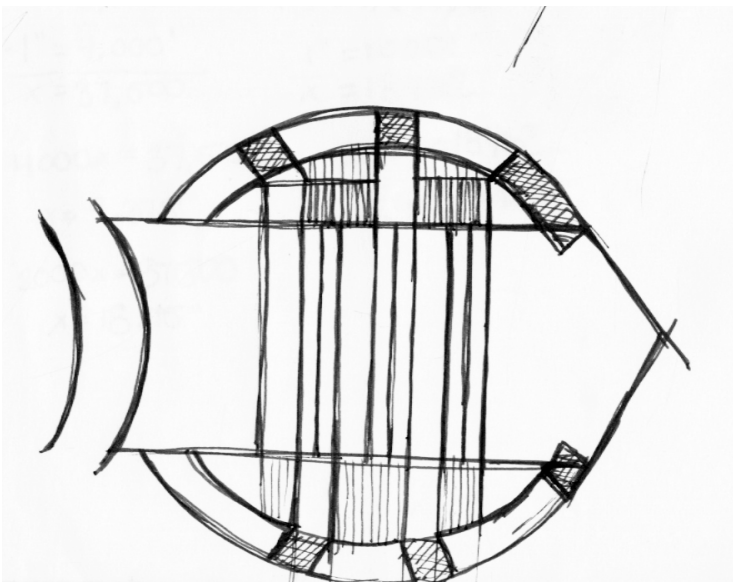
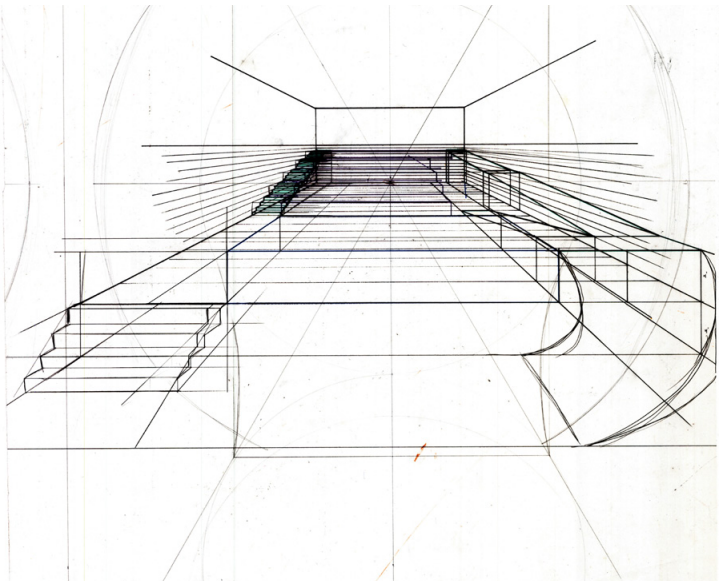
Live House

Figure 9.1 Exterior Perspective With Stone Wall
 Figure 9.2 Interior Perspective Towards Stage
 Figure 9.3 Interior Perspective Towards Seating
 Figure 9.4 Prelim Floor Plan
 Figure 9.5 Building Plan Sketches
 Figure 9.6 Floor Plan



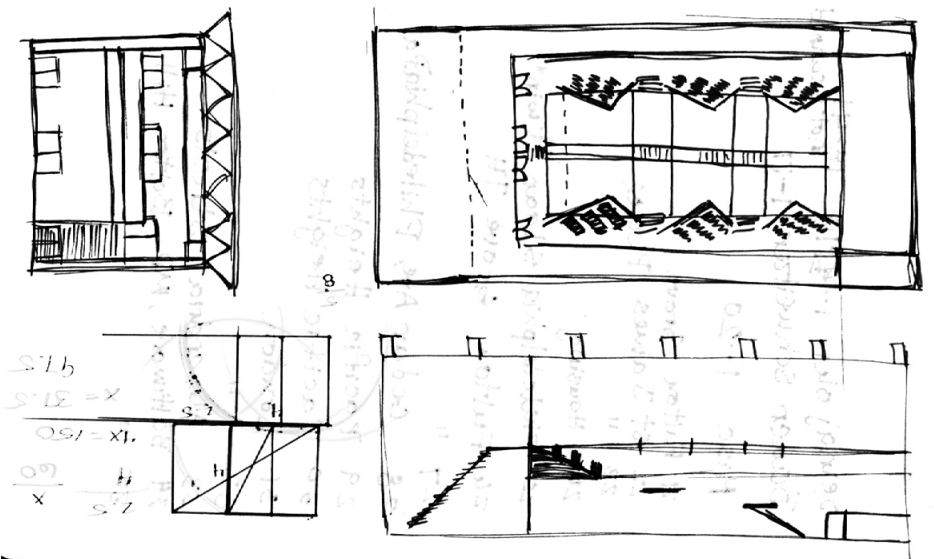
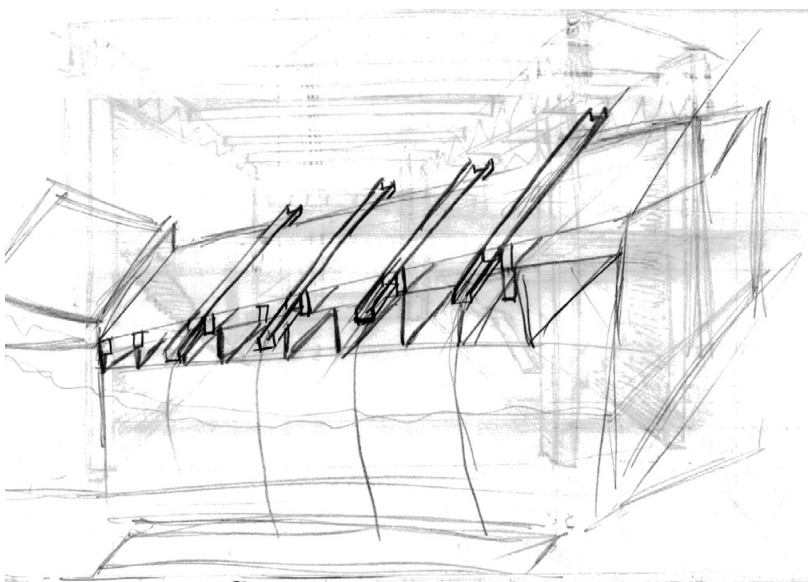
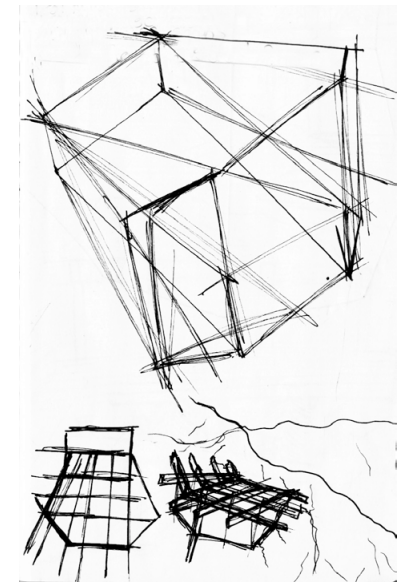
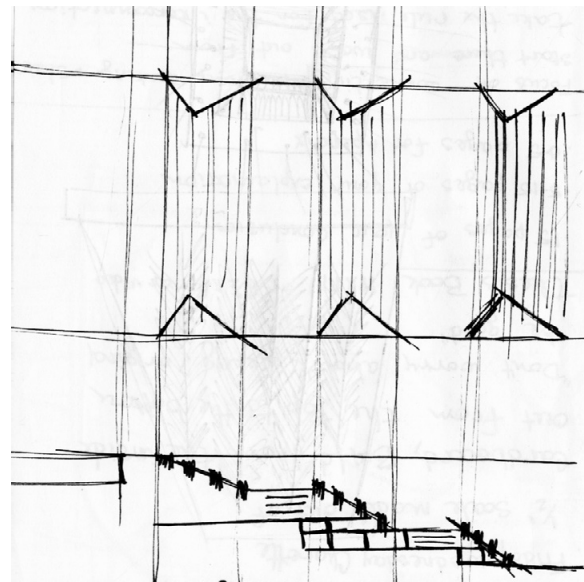
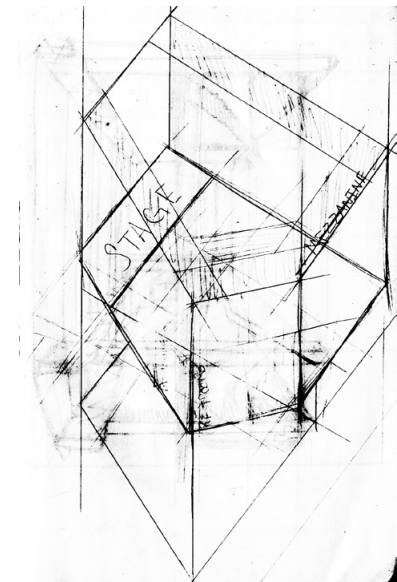
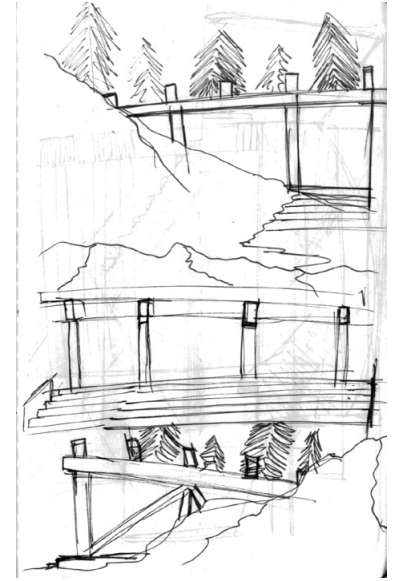
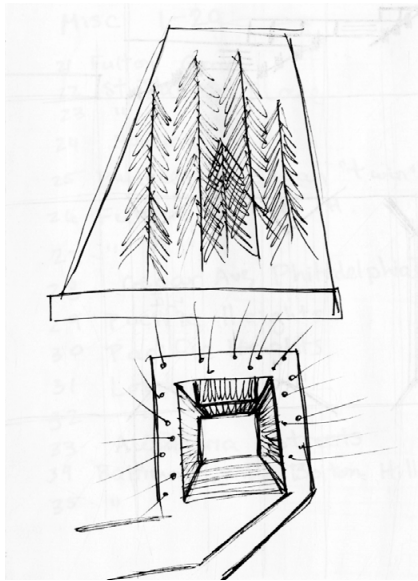
Live House

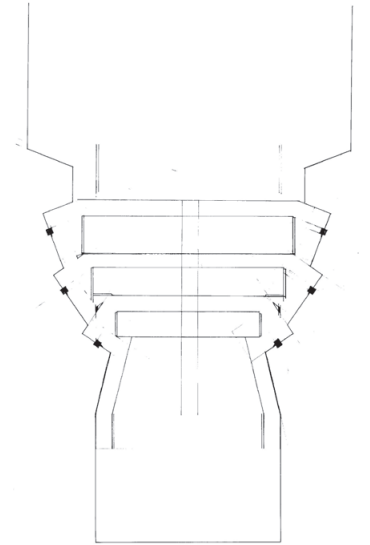
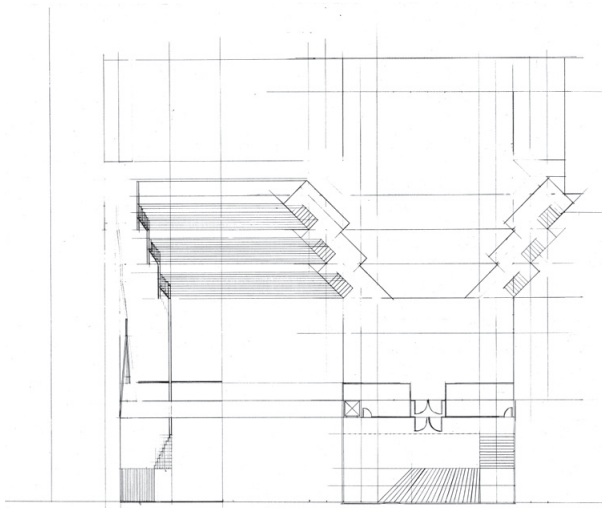
Figure 9.7 Interior Stair/Ramp Layout
Figure 9.8 Floor Plan Sketch
Figure 9.9 Square Floor Plan Sketch
Figure 9.10 Square Stair/Ramp Scheme
Figure 9.11 Balcony Perspective
Figure 9.12 Structural/Circulation Sketch



Live House

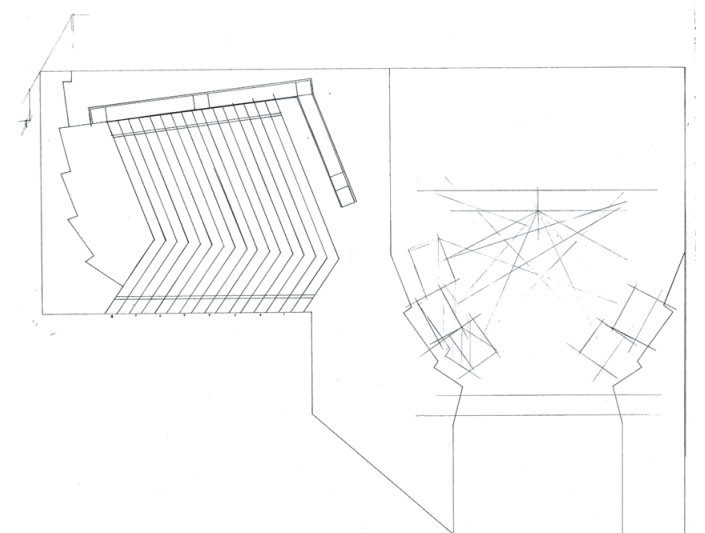
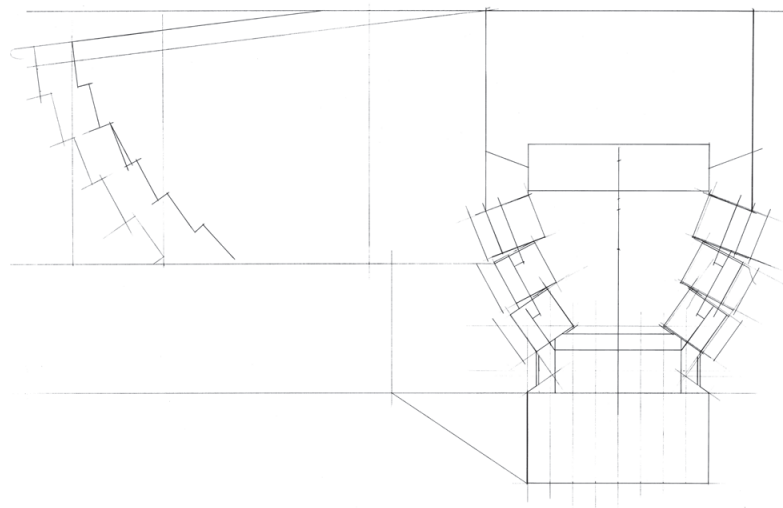
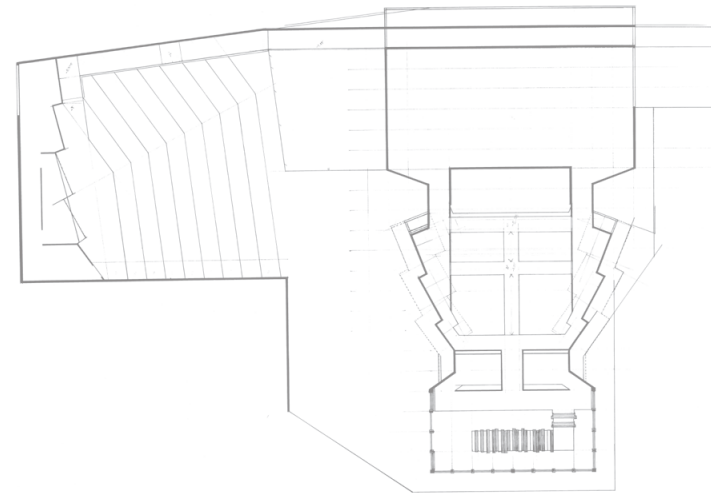
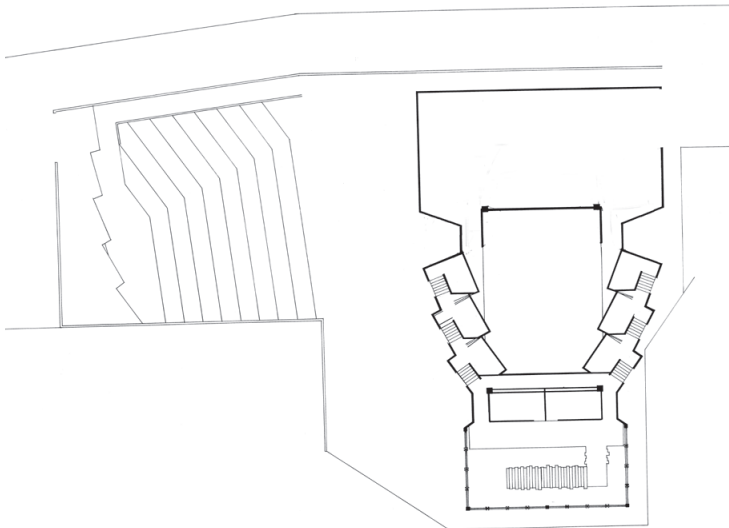
Figure 9.13 Forest Integration Sketch
 Figure 9.14 Building Submersion
 Figure 9.15 Building Layers Sketch
 Figure 9.16 Interior Plan Stair/Balcony
 Figure 9.17 Building Axon Sketch
 Figure 9.18 Roof Drainage Sketch
 Figure 9.19 Plan and Section Sketches

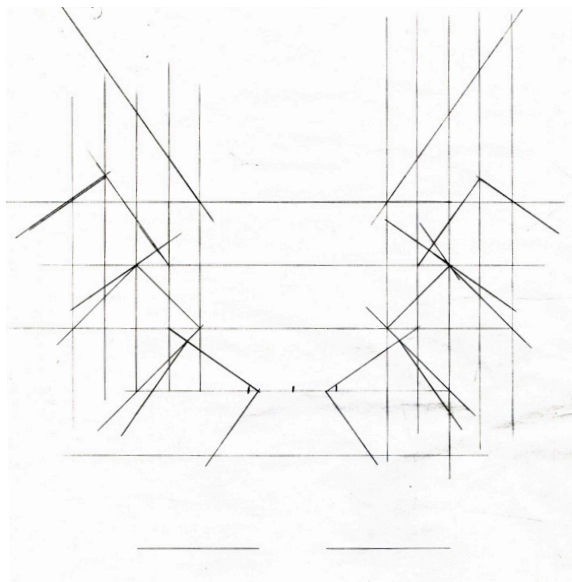




Concert Hall

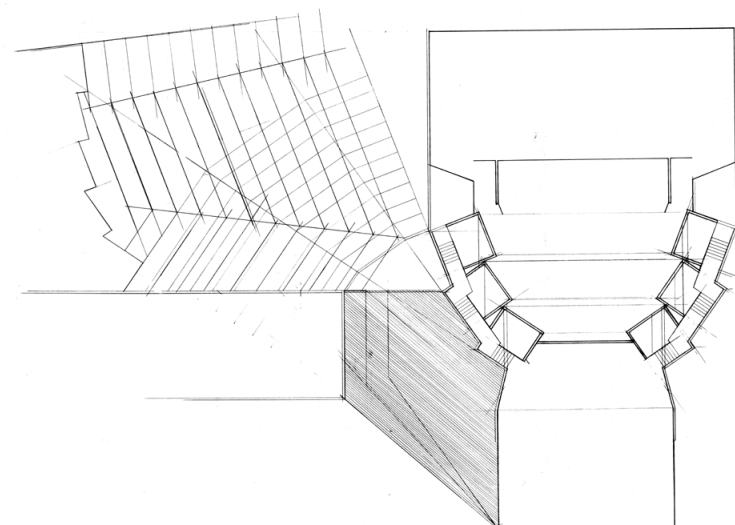
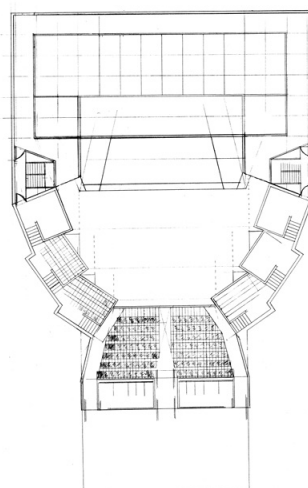
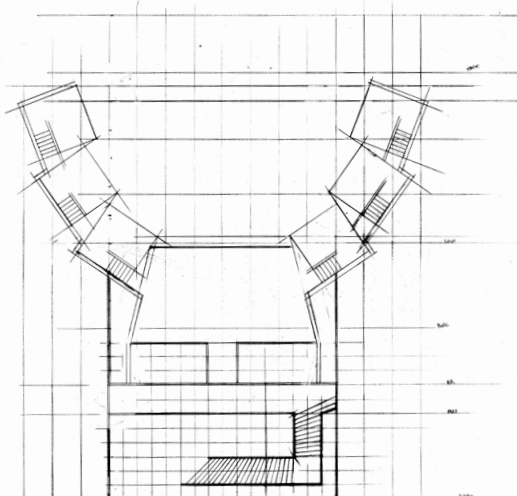
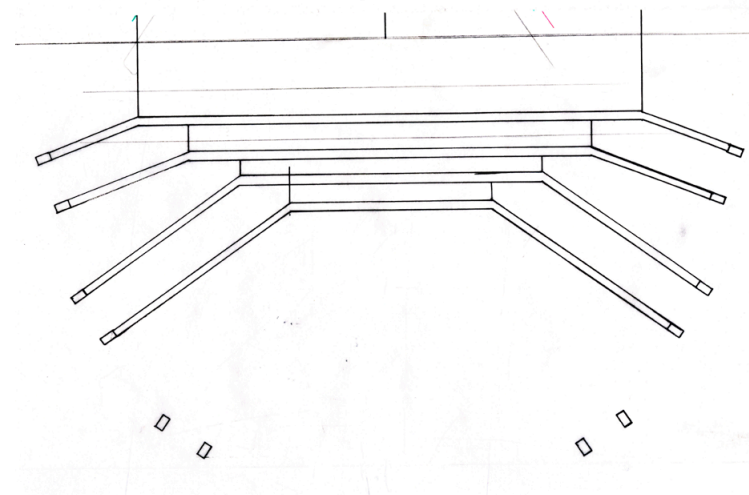
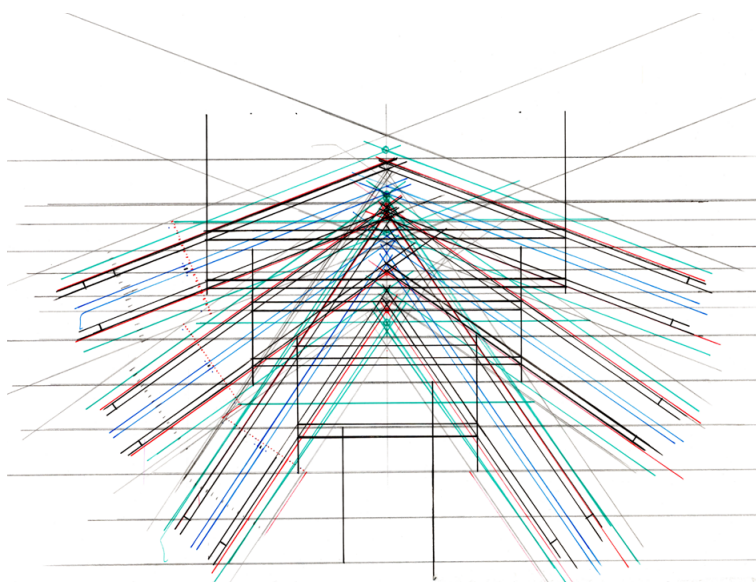
- Figure 10.1 Angled Lobby Stair/Second Floor 7°
- Figure 10.2 Tapered Transitions/First Floor 7°
- Figure 10.3 Central Lobby Stair/Second Floor 14°
- Figure 10.4 Central Lobby Stair/1st Floor 14°
- Figure 10.5 Preliminary Plan Sketches
- Figure 10.6 Preliminary outdoor seating Sketch





Concert Hall

Figure 10.7 Balcony Angle Sketch
 Figure 10.8 Structural Angle Sketch
 Figure 10.9 Balcony Beam Concept
 Figure 10.10 Angled Lobby Stairs/Robust Hall
 Figure 10.11 Second Floor Seating/Robust Hall
 Figure 10.12 Concert Hall & Amphitheater Layout



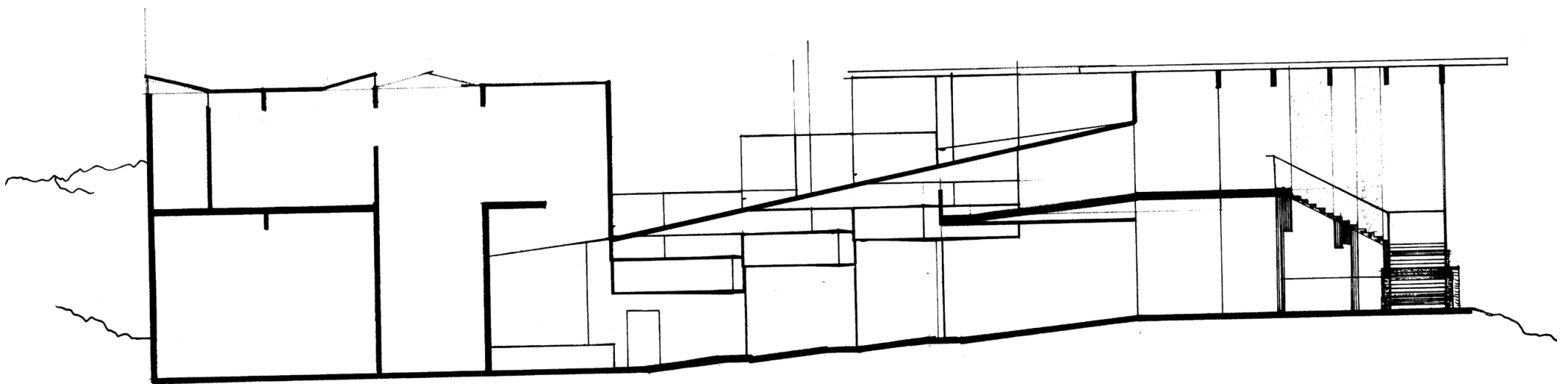
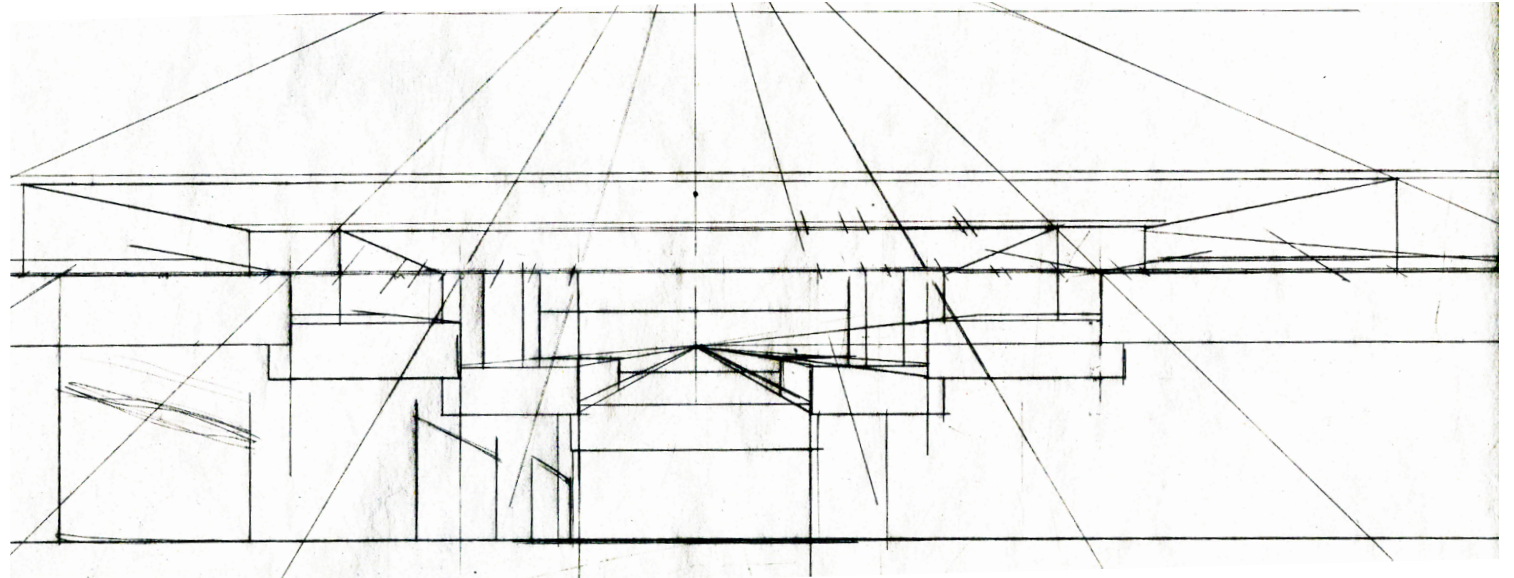
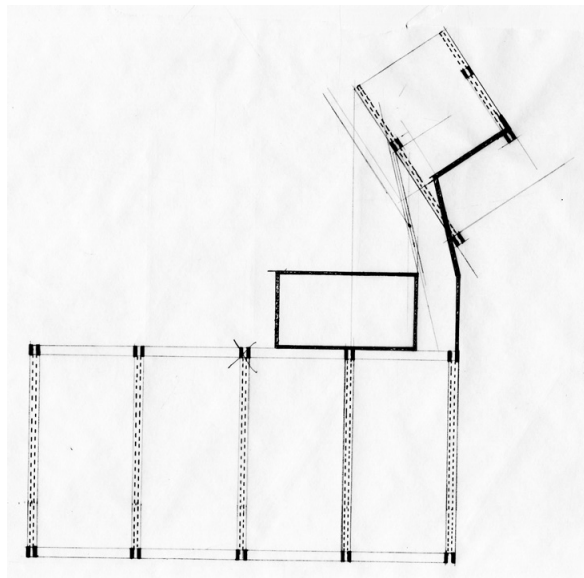
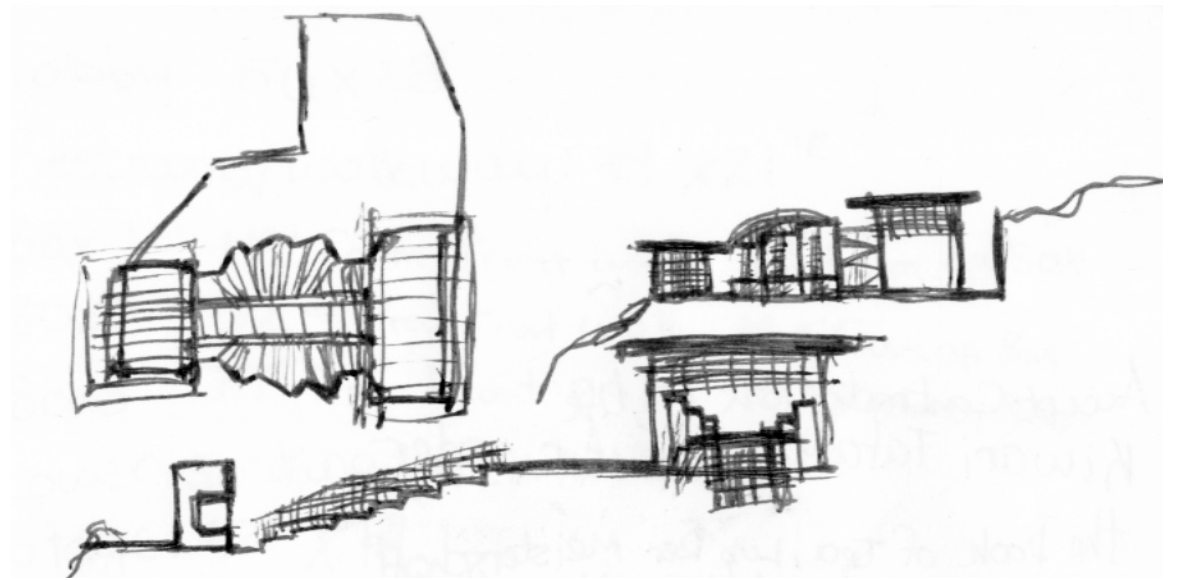
Concert Hall

Figure 10.13 Concert Hall & Amphitheater Concepts

Figure 10.14 Structure Connection Lobby to Hall

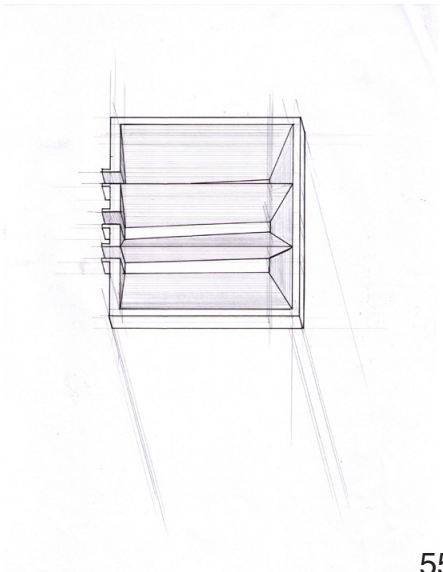
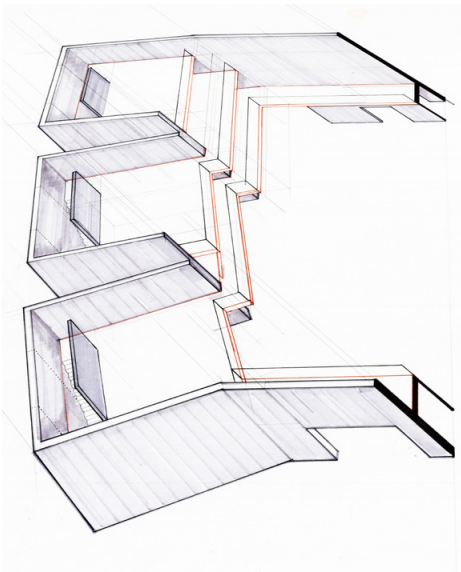
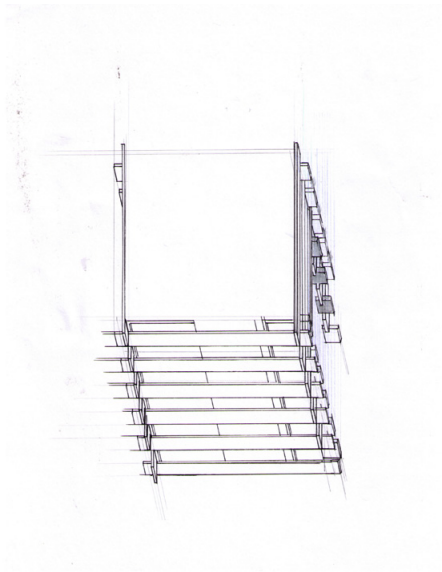
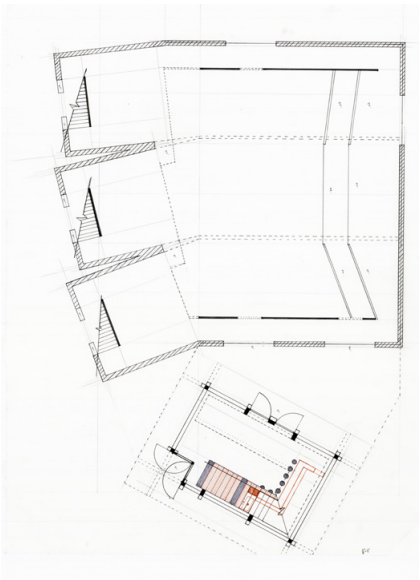
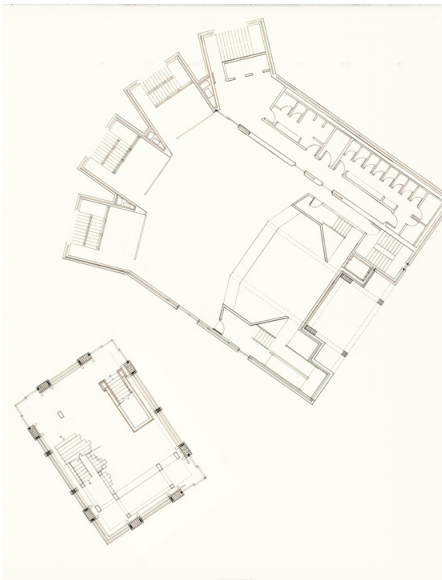
Figure 10.15 Interior Perspective from Stage Sketch

Figure 10.16 Longitudinal Section Cut Sketch



Final Complex

Figure 11.1 Four Tower Design Axon
Figure 11.2 Four Tower First Floor Final Scheme
Figure 11.3 Four Tower First Floor Concept
Figure 11.4 Three Tower Design Concept
Figure 11.5 Tower 4 Beacon Latticing
Figure 11.6 Three Tower Interior Axon
Figure 11.7 Tower 4 Beacon Roof Drainage



Final Complex

Figure 11.8 Full Site Plan
Figure 11.9 Basement Concept
Figure 11.10 First Floor Concept
Figure 11.11 Second Floor Concept
Figure 11.12 Third Floor Concept
Figure 11.13 Fourth Floor Concept
Figure 11.14 Fifth Floor Concept

