

FOUR BLACK BOXES AND A BEACON
a theater for roanoke, virginia

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meredith leigh barker

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

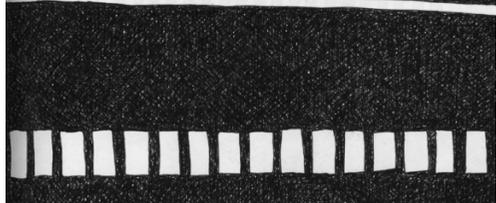
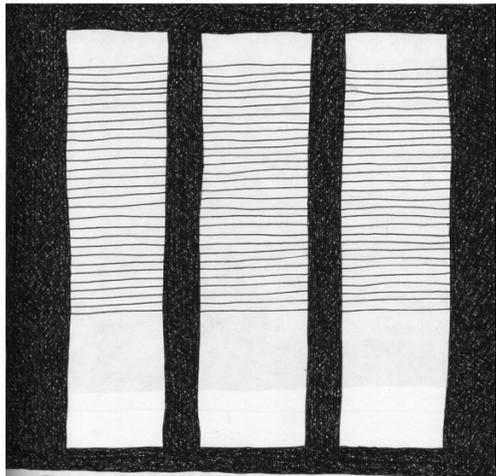
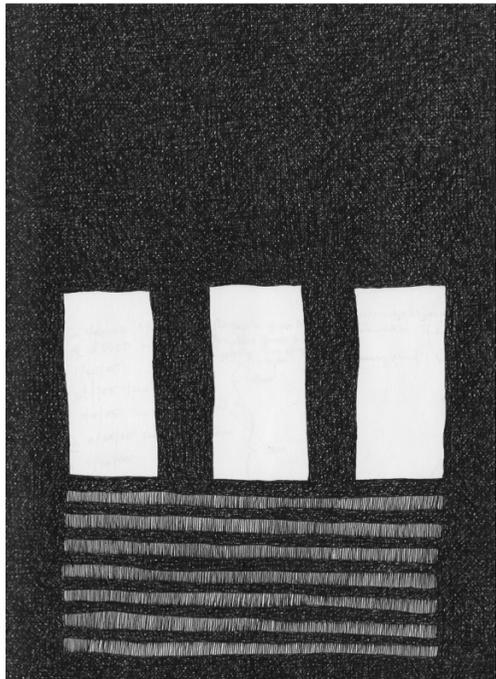
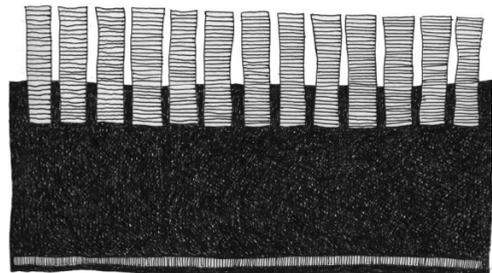
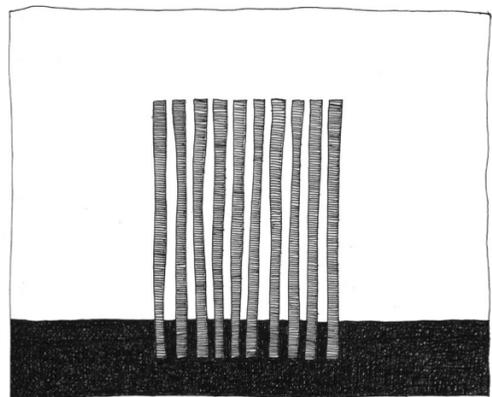
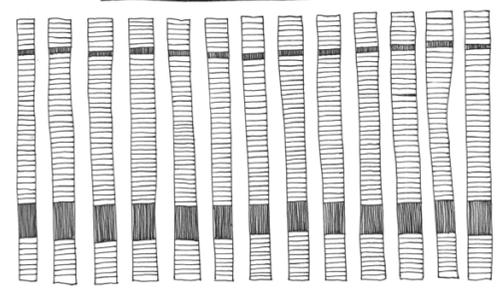
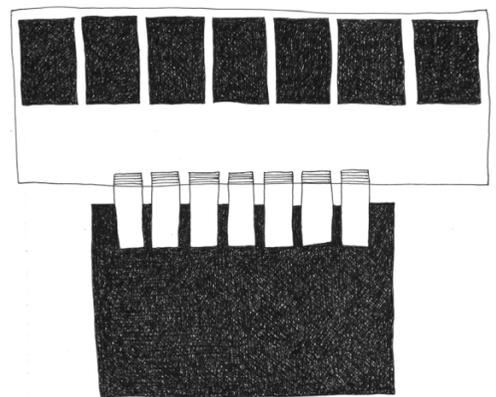
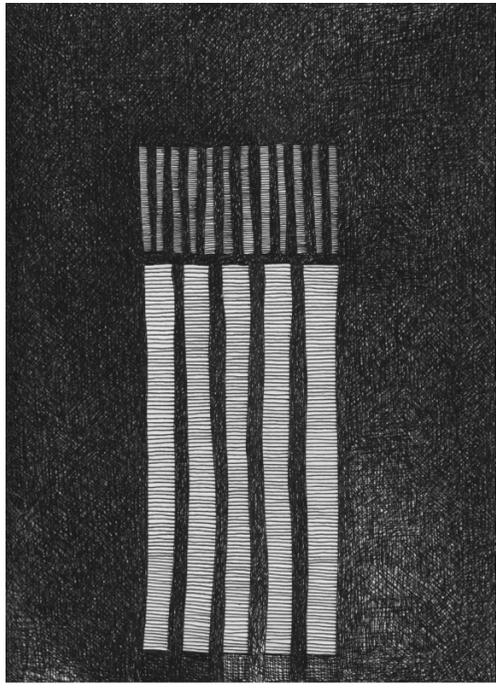
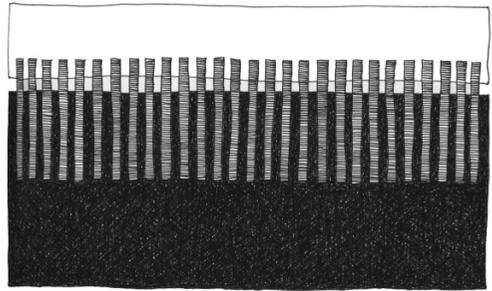
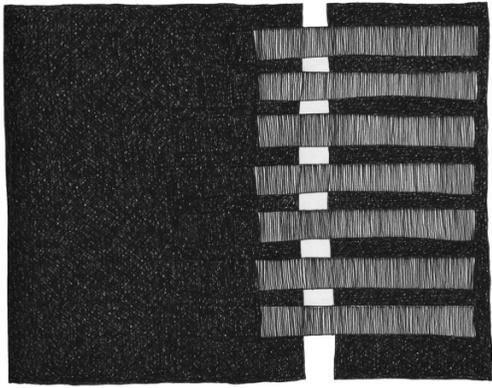
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December 18, 2008
Blacksburg, Virginia

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ABSTRACT

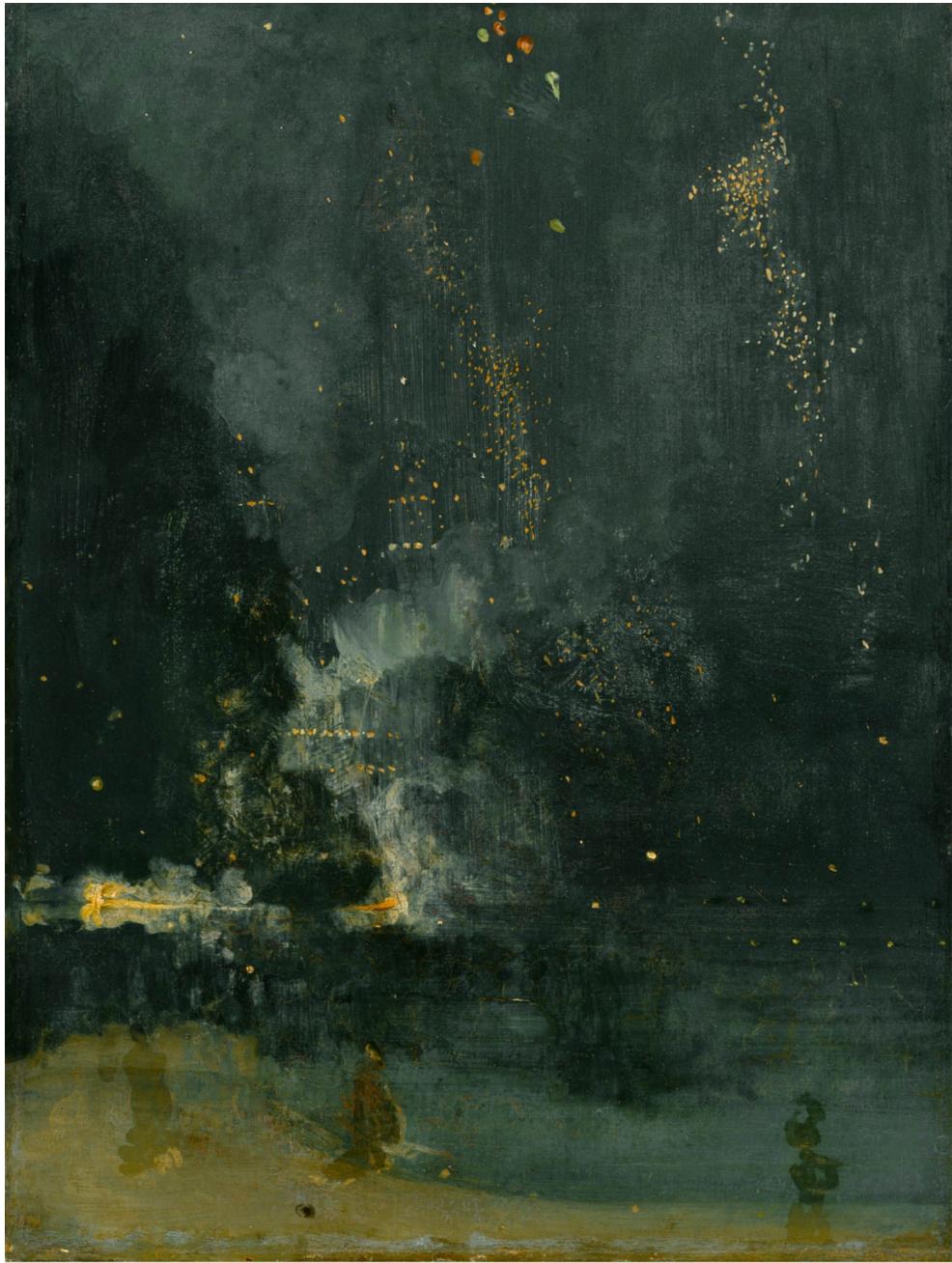
A proposition for a theater in Roanoke, Virginia is the vehicle for the exploration of architectural ideas on space, form, materiality, and atmosphere. The thesis developed through a series of models and drawings that studied oppositions in mass, scale, transparency, opacity, and most importantly, light vs. dark and day vs. night.

thank you to my family

for patrick

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James Abbott McNeill Whistler, *Nocturne in Black and Gold: The Falling Rocket*, c. 1875

INTRODUCTION

Mr. Bowen (defense attorney for John Ruskin): "Now, take the 'Nocturne in Black and Gold: The Falling Rocket,' is that in your opinion a work of art?"
Mr. Burne-Jones (witness for the defense): "No, I cannot say that it is. It is only one of a thousand failures that artists have made in their efforts to paint night."
(Whistler v. Ruskin trial, November 25/26, 1878)¹

Artists, architects, and writers have long been fascinated with capturing the spirit and mystery of the night. For architects, this attraction manifests itself as a fascination for the nocturnal illumination of the built environment. At night, light begins to shape and form the city - editing, simplifying, and dramatizing the urban landscape.² The theatrics of the illuminated city come alive in the playful dance of flickering windows, glowing facades, and luminous architectural illusions - all contributing to the fantasy of the night. As a primarily nocturnal event, the theater is a player in the night's performance. The wonder and beauty of the luminous city goes hand in hand with the magic, mystery, and fantasy of *going to the theater* - a statement in itself that garners nostalgic images of romanticized dark nights, glowing lobbies, and crystal chandeliers.

Typically a place of civic pride and a cultural focal point for the community, the theater often stands as an icon in its city as the "centre of artistic and intellectual life."³ Programmatically, the theater must house the auditorium, provide a place for people to gather, support various events and programs, and fulfill the many necessities of a functioning theater company. The success of a theater relies on these tangible requirements, however; it is the intangible atmospheric qualities of magic, mystery, and anticipation that make the theater come alive.

Historically, theaters have created a richer and more fanciful environment than almost any other building, with the possible exception of churches to which they are genetically related in engaging life's spirit.⁴

Juhani Pallasmaa noted space, place and atmosphere play a seminal role in the architectural experience - "as we enter a space, the space enters us." For a theater, the architecture must awaken the creative imagination, enhance the wonder of the night, nurture the anticipation of the event to occur, and celebrate the collective experience. *Four Black Boxes and a Beacon* became the formal representation of these immeasurable architectural conditions. The thesis's form, materiality, spatial relationships, and atmospheric qualities developed through a series of models and drawings that studied oppositions in mass, scale, transparency, opacity, and most importantly, light vs. dark and day vs. night.



Site photos

THE SITE

The site is located in Roanoke, Virginia, a small city surrounded by the Appalachian Mountains in the heart of southwest Virginia. Settled in the 1730s, Roanoke began as a small thriving farm community.⁵ In 1882 the newly formed Norfolk and Western Railway made Roanoke their headquarters - a decision that shaped the history of the small town and sparked the birth of a city. Throughout the late 19th century and early 20th century Roanoke grew swiftly into a major railroad hub. Today, Roanoke is Virginia's largest city west of Richmond with a population of approximately 100,000.⁶ The city is the regional center of southwest Virginia and supports the area's economic, cultural, health care, transportation, finance, industry, and trade operations. Norfolk Southern (Norfolk & Western), while no longer headquartered in Roanoke, still has a significant presence in the city.⁷

Roanoke's architecture is historically conservative and dominated by late 19th century and early 20th century masonry buildings.⁸ The most prominent structures in the Roanoke skyline are the Wells Fargo Tower standing 364 feet tall and the 90-foot tall illuminated star sitting high atop Mill Mountain.

Downtown Roanoke is compact with a fairly regular street grid.⁹ Jefferson Street and Campbell Avenue are the main downtown north/south and east/west arteries, respectively. The project site is located approximately four blocks west of the center of downtown. It is an area just outside of downtown's dense pedestrian activity that has recently seen renewed interest by developers, residents, artists, and businesses.¹⁰ The theater, together with the site's prominent neighbors, the Roanoke Times Building, the Roanoke City Municipal Building, the Transportation Museum, and the City Jail and Sheriff's Offices, could create a secondary node of pedestrian activity - extending and expanding the boundaries of downtown.

Bounded by Salem Avenue, Third Street, and Campbell Avenue, the theater emerges from a sunken platform, a safe enclosure, formed by the significant topographic change in the north / south direction. Campbell Avenue to the south rises to an elevation up to eighteen feet higher than Salem Avenue to the north. The building's front entrance is located on Salem Avenue across from the Transportation Museum. Parking for the theater is shared with the Transportation Museum's parking lot, or alternatively, in a newly constructed parking garage just west of the site.

Due to its larger scale and civic prominence the building has a deeper setback than typical downtown buildings. The building sits within an excavated plaza of gray slate. This lowered placement grounds the building to its site and emphasizes the height of the beacon rising to the sky. Retaining walls of black slate clearly delineate the boundaries of the theater and offer privacy, protection, and a sense of enclosure from the street.

The change in material, texture, and pattern from sidewalk to plaza immediately signals the crossing of a threshold, giving the audience a visual, physical, and mental division from street to theater. The plaza, together with the site walls, provide outdoor rooms for people to gather before and after performances and during intermission. On the north side, the plaza's wide gradual steps guide the visitor to the main entrance. The first floor glazing responds to the streetscape at a pedestrian scale, engaging passers-by to view the happenings within the building. Layers of light, movement, and reflection invite the public into the theater.

SITE PLAN





CAMPBELL AVE

THIRD ST

SALEM AVE

THE PROJECT

Two primary elements define the formal character of the thesis: a series of four rectangular boxes clad in black slate and a thin inhabitable tower (the beacon) clad in frosted glass. The apparent simplicity of the building belies a much more complex and rigorous interweaving of forms, spaces, and functions. The dense floor plans and saturated sections are precise and exacting. Due to its constrained site and significant programmatic needs, the building's spatial relationships and circulation routes are organized vertically.

The building stands resolutely in its place. The visual solidity and mass of the black boxes anchor the building to the site and provide the necessary counterpoint to the soaring beacon. The orthogonal, direct, and monumental forms play to the drama of the theater - opposing each other in apparent weight, material, light, opacity, and scale.

The luminous beacon in the nocturnal city became the monumental force behind the thesis. It is the start of the procession, the calling light, and the serene, stable glow welcoming patrons to the theater. The power of light to enchant and the shadows of night were embraced as an architecture of the day and an architecture of the night arose.

The beacon is at once monolithic and transparent. During the day, it casts long shadows on the city below. The play of light and shade on the beacon's translucent façade is constantly transformed with the changing atmosphere. Degrees of transparency, translucency, and opacity change with the reflections of the sky, the clouds, and the sun. Daylight reveals the stone pattern of the black boxes and subtle variations in color and pattern.

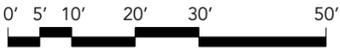
At night, the building transforms into an architecture of light and motion - awakening from inanimate to animate object. The black boxes recede into the dark, the building materials begin to dissolve, and the building is reduced to planes of light and dark.¹¹ The exaggerated contrast of the brilliantly glowing beacon against the black night sky heightens the atmospheric qualities of mystery, fantasy, and magic.¹² Light extends past the boundaries of the building pouring into space and forming the night sky. The glowing beacon transforms into a living curtain. It comes alive with silhouettes of the pre-show audience and reveals and celebrates the skeletal steel structure and the delicate translucent skin and fixings. Night unveils the happenings and movement within the black boxes. Lit from within, the building appears more knowable - its spatial ordering, organization, and internal path are revealed.¹³

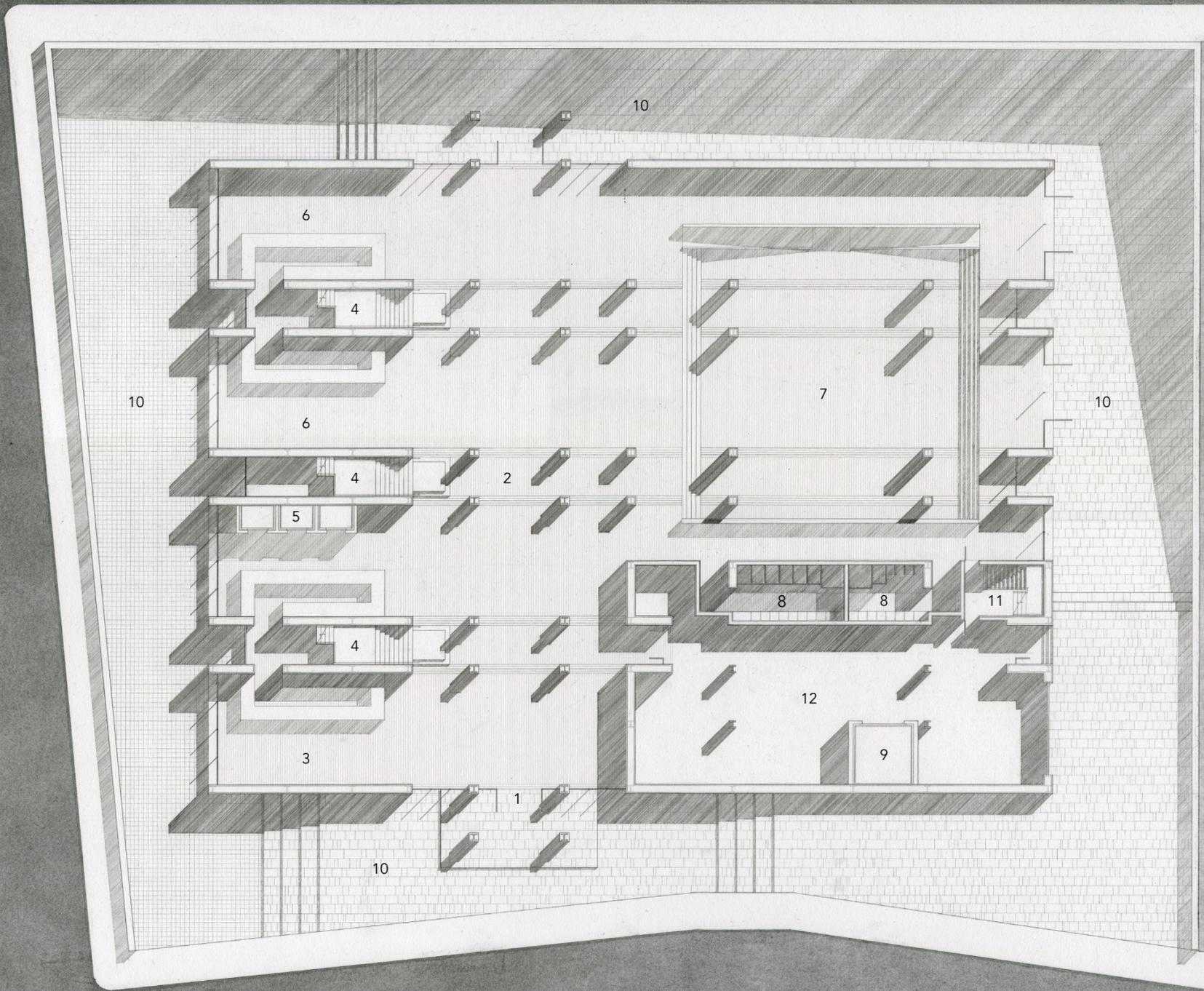
An inescapable presence, the beacon is viewable from almost any place in the building - inside or out. It is the spine of the complex, tying the black boxes together and lightly joining the east and west sides of the building. It is the mediator, the divider, and the greeter. Visitors pass under, through, and into the beacon following its luminous path and basking in its glow. Patrons enter the complex under the beacon - the enveloping light overhead marking the threshold to the theater and "transmitting" them from one world to another. With the beacon as their guide and point of reference, visitors seamlessly flow between spaces, from floor to floor, up the glass stair towers, to the auditorium, and finally to the open-air observation deck. The vertical layering of staggered floor openings and alternating balconies accentuates the upward procession and allows light to filter from level to level.

The beacon's observation deck provides a pause from the world of the theater. The building reaches out to the city. The city is embraced from the observation point. From high atop the beacon the city is still - unified into a calm mass of twinkling lights. The beacon becomes part of the theater of the night and the theater of the city. When all other buildings disappear in the dark, the luminous beacon is a constant, reassuring presence. It stands peacefully in the nocturnal landscape - its glowing light a vertical monument in the skyline.

FIRST FLOOR PLAN

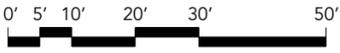
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|---|-------------------------|---|------------------|----|----------------------|
| 1 | entry | 5 | public elevators | 9 | prop lift |
| 2 | main hall | 6 | bookstore / café | 10 | plaza |
| 3 | ticketing / information | 7 | main lobby | 11 | back-of-house stairs |
| 4 | main stairs | 8 | toilets | 12 | prop / set workshop |

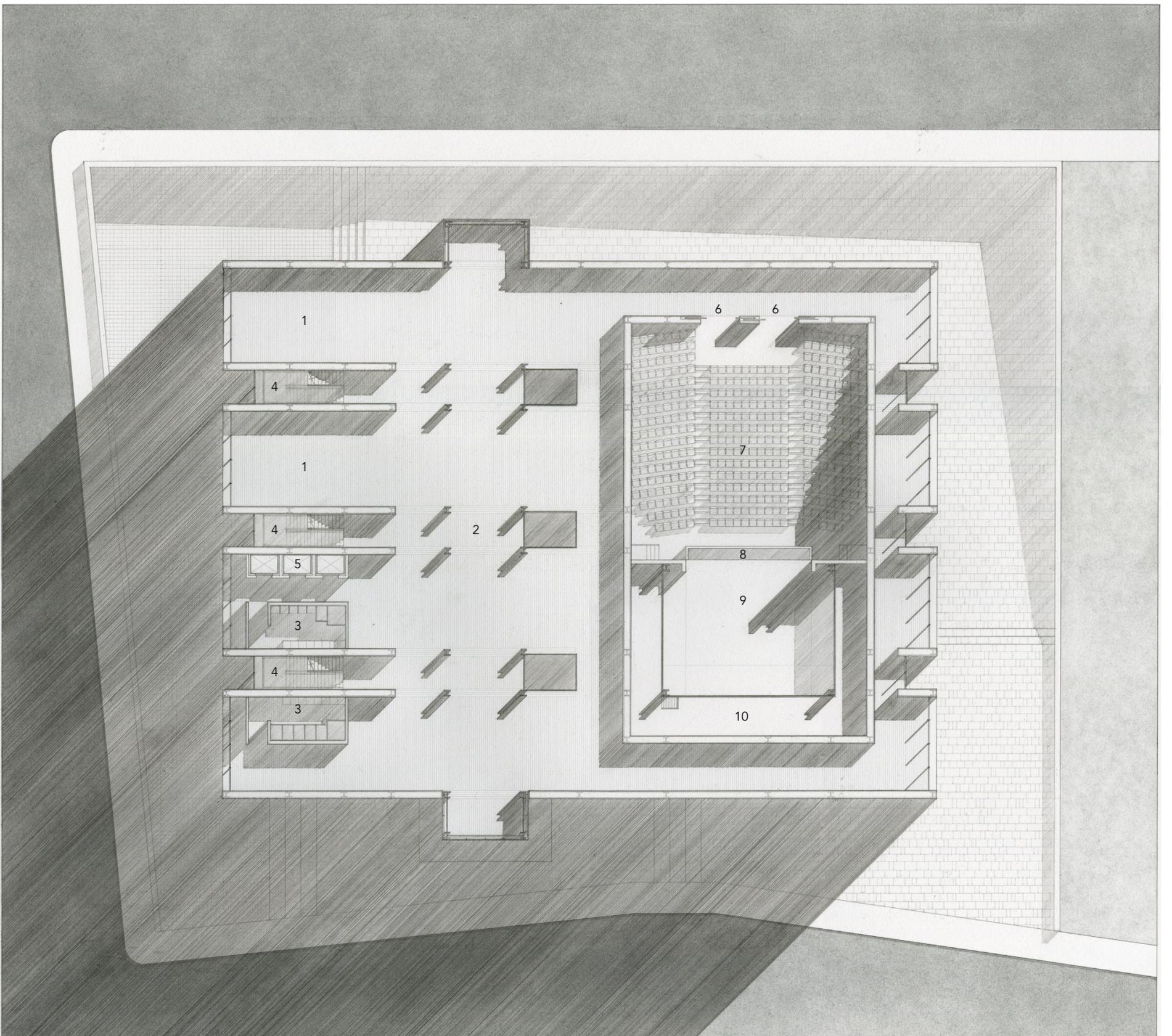




FOURTH FLOOR PLAN

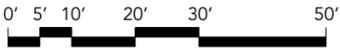
- 1 intermission space
- 2 intermission hall
- 3 toilets
- 4 main stairs
- 5 public elevators
- 6 auditorium entrance
- 7 auditorium
- 8 orchestra pit below
- 9 stage below
- 10 stage mezzanine

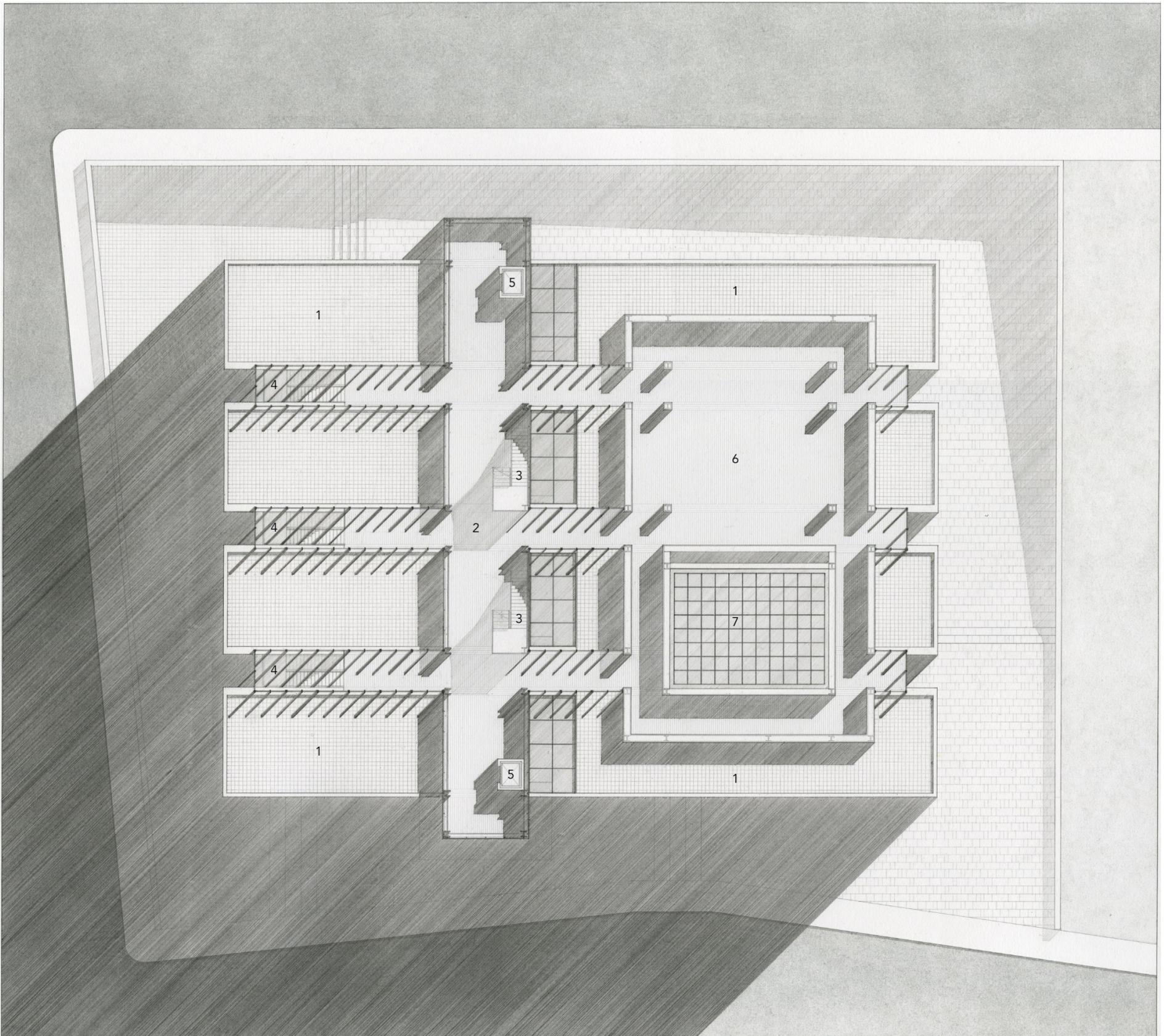




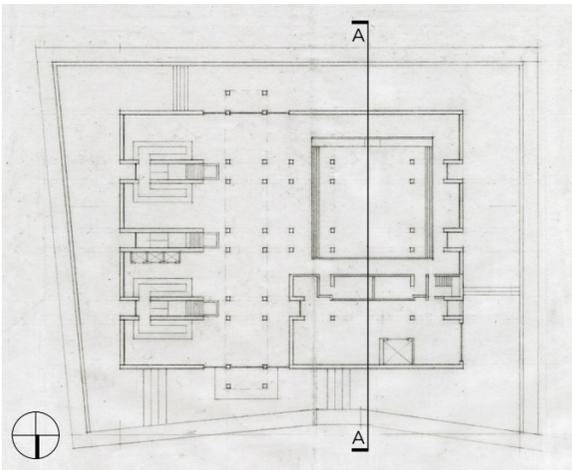
SIXTH FLOOR PLAN

- 1 rooftop
- 2 beacon hall / lobby
- 3 beacon stairs
- 4 main stairs
- 5 beacon elevators
- 6 rehearsal space
- 7 fly tower / stage below



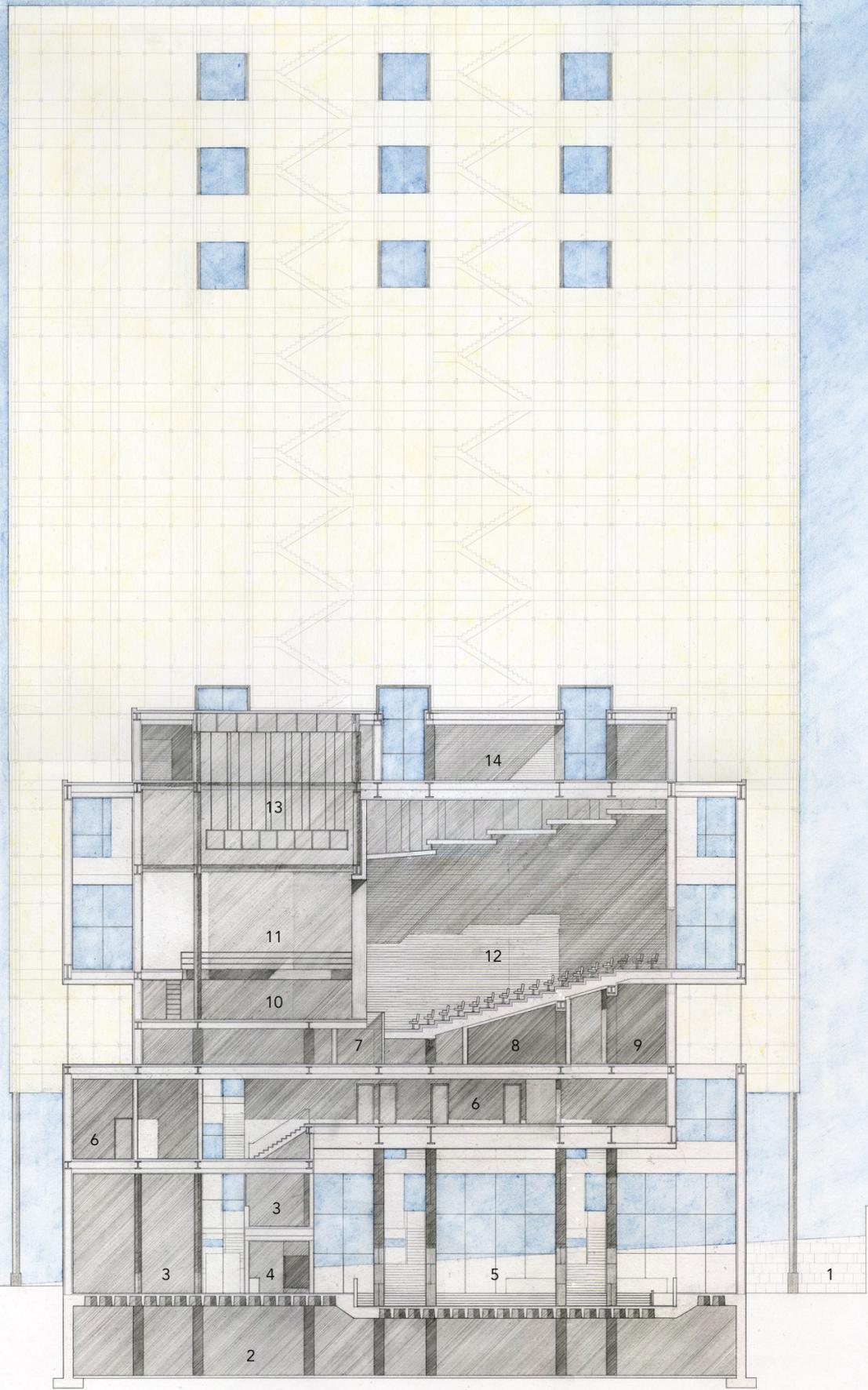


SECTION A-A

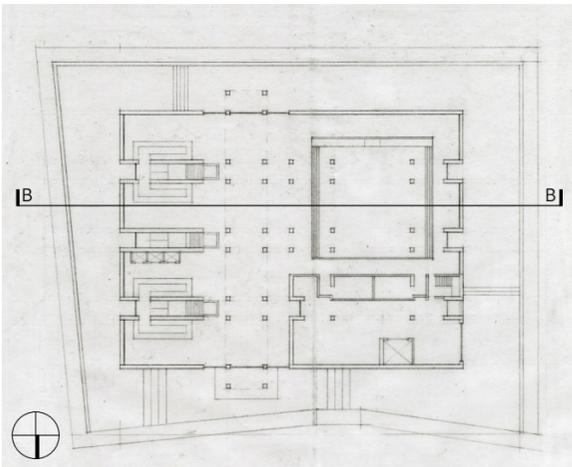


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|---|----------------------|----|----------------|----|-----------------|
| 1 | plaza | 6 | dressing rooms | 11 | stage mezzanine |
| 2 | mechanical / storage | 7 | orchestra pit | 12 | auditorium |
| 3 | prop / set workshop | 8 | green room | 13 | fly tower |
| 4 | toilets | 9 | storage | 14 | rehearsal space |
| 5 | main lobby | 10 | stage | | |

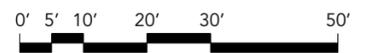


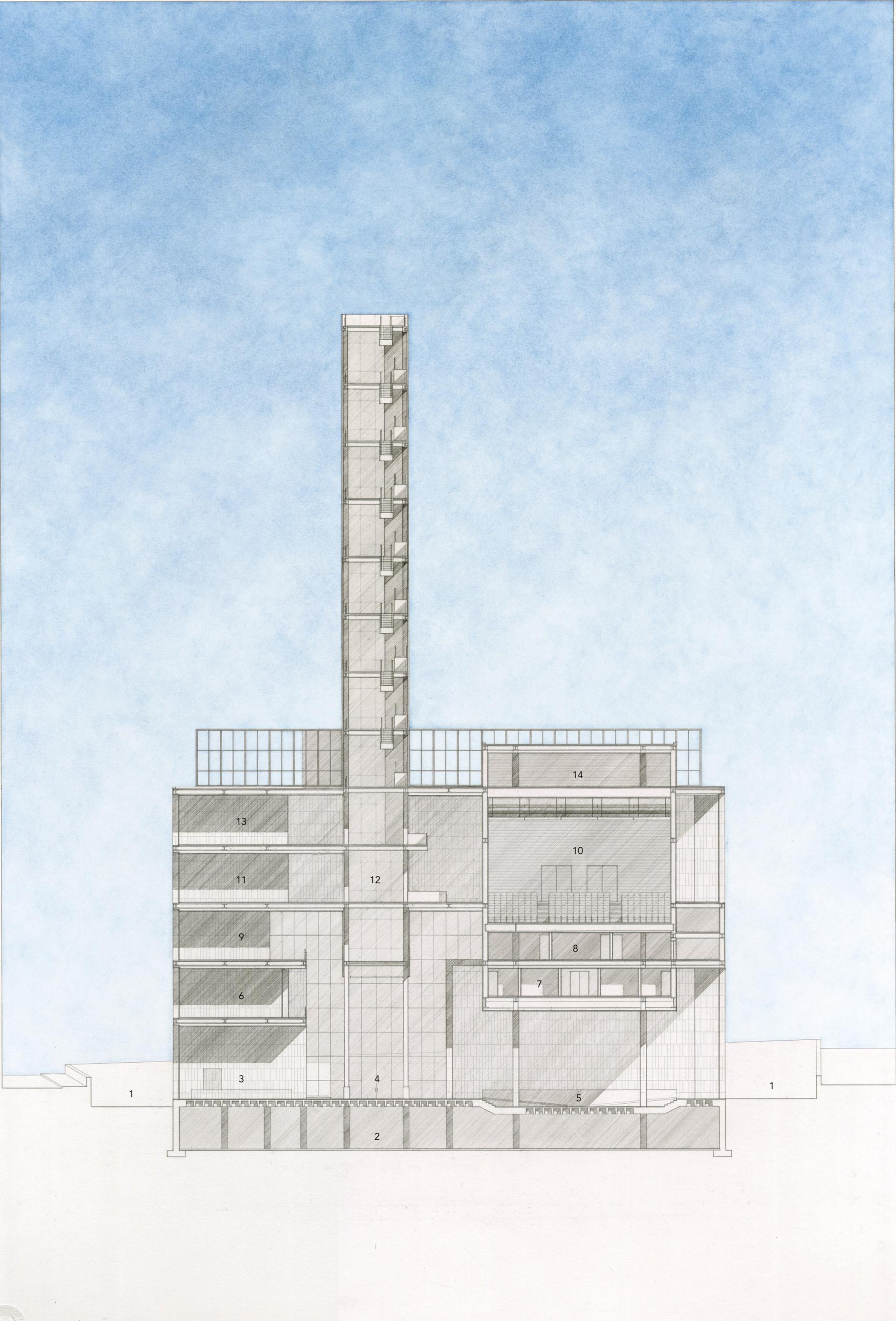


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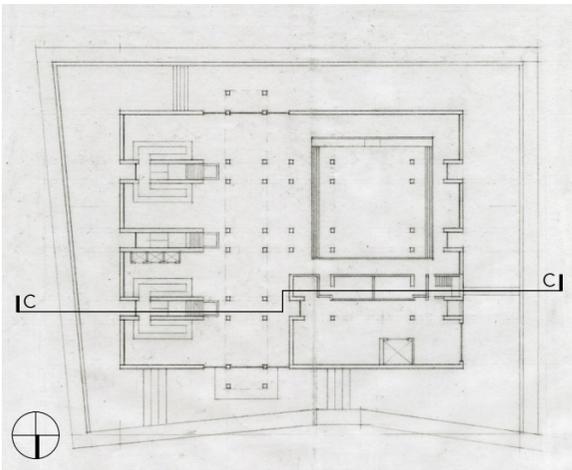


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|---|----------------------|----|-----------------|----|--------------------|
| 1 | plaza | 6 | education space | 11 | intermission space |
| 2 | mechanical / storage | 7 | dressing rooms | 12 | intermission hall |
| 3 | bookstore / café | 8 | green room | 13 | gallery space |
| 4 | main hall | 9 | administration | 14 | rehearsal space |
| 5 | main lobby | 10 | auditorium | | |

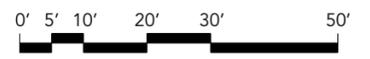


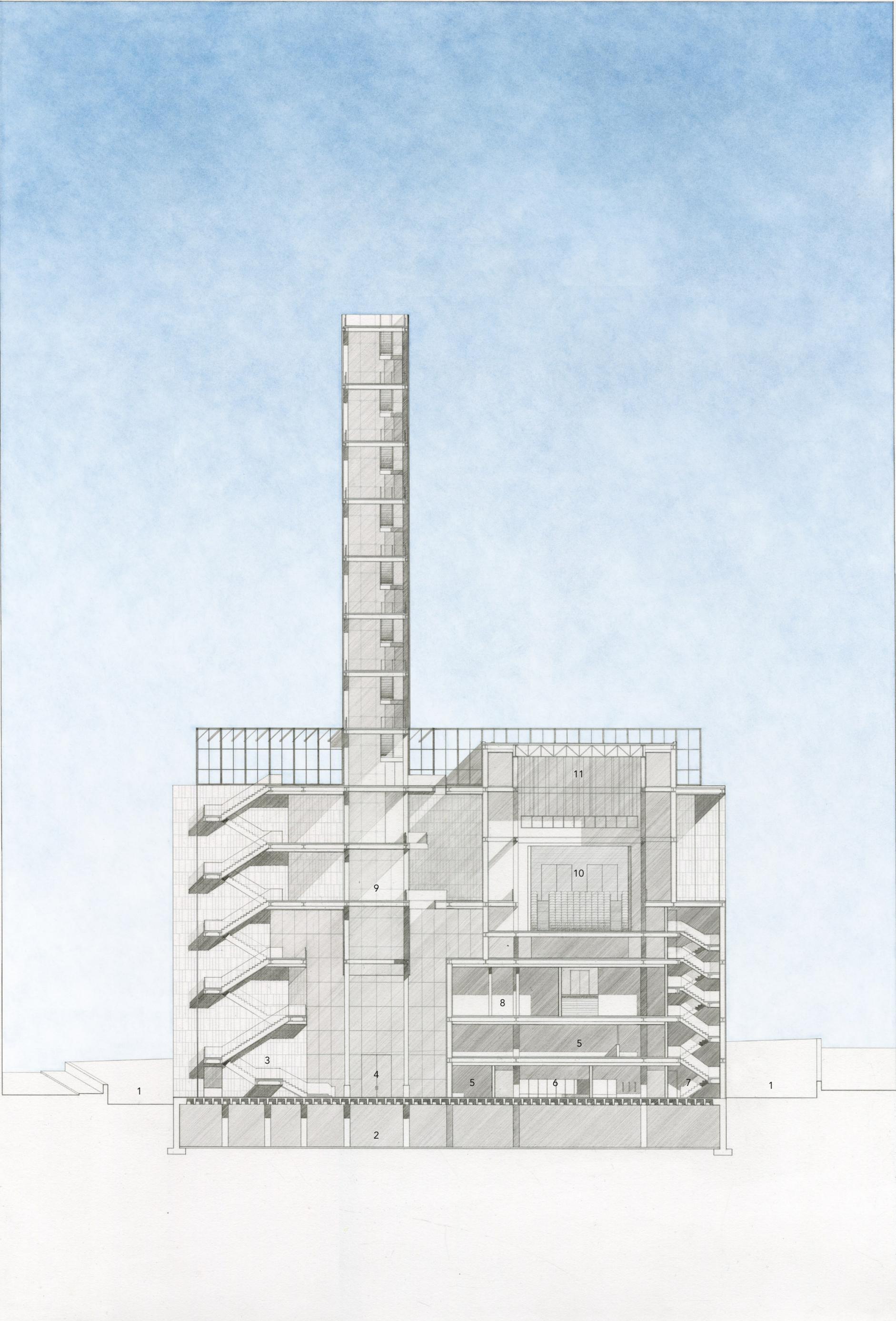


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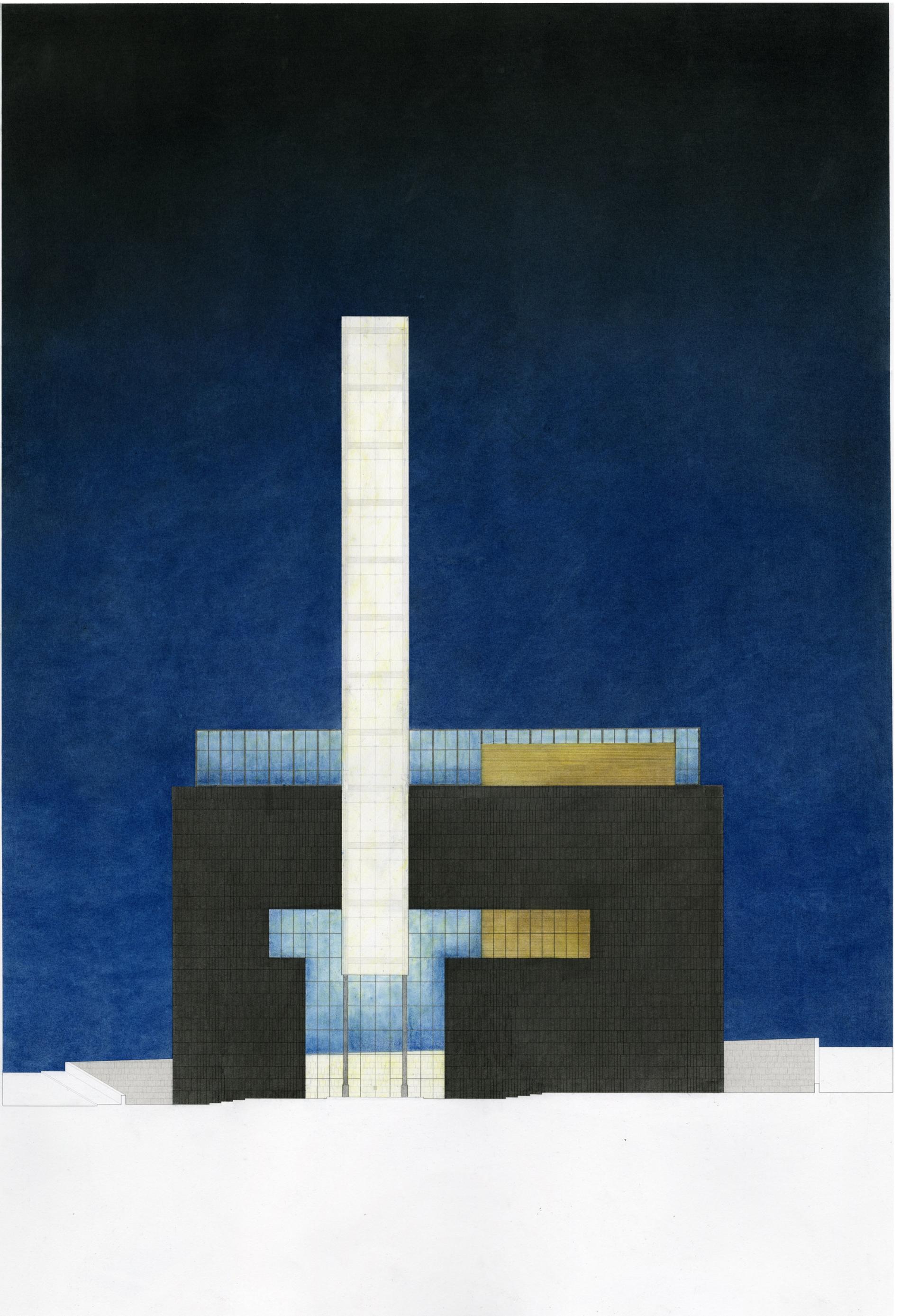


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|---|----------------------|---|----------------------|----|-------------------|
| 1 | plaza | 5 | prop / set workshop | 9 | intermission hall |
| 2 | mechanical / storage | 6 | toilets | 10 | auditorium |
| 3 | main stairs | 7 | back-of-house stairs | 11 | fly tower |
| 4 | main hall | 8 | dressing rooms | | |

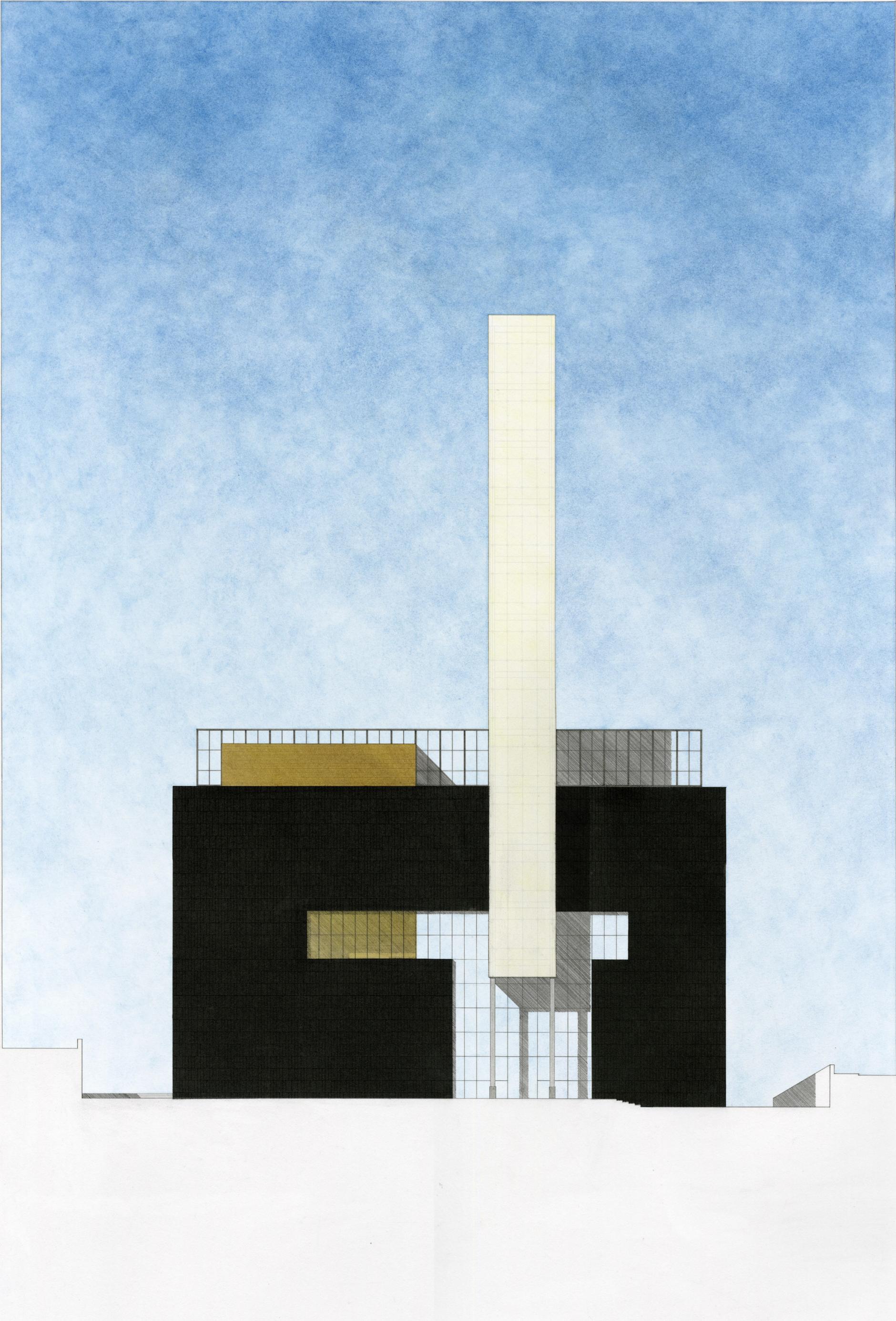




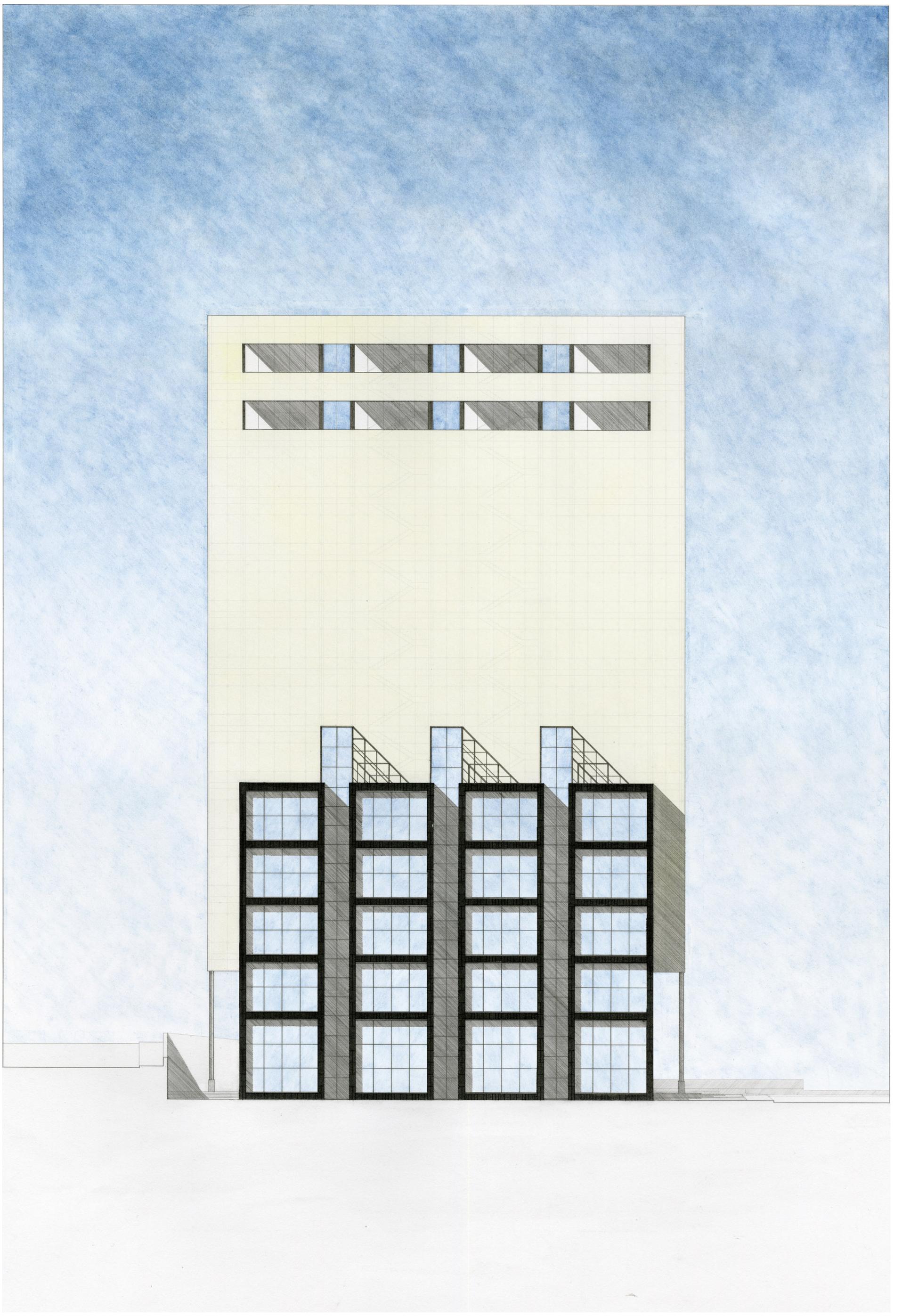
NORTH ELEVATION



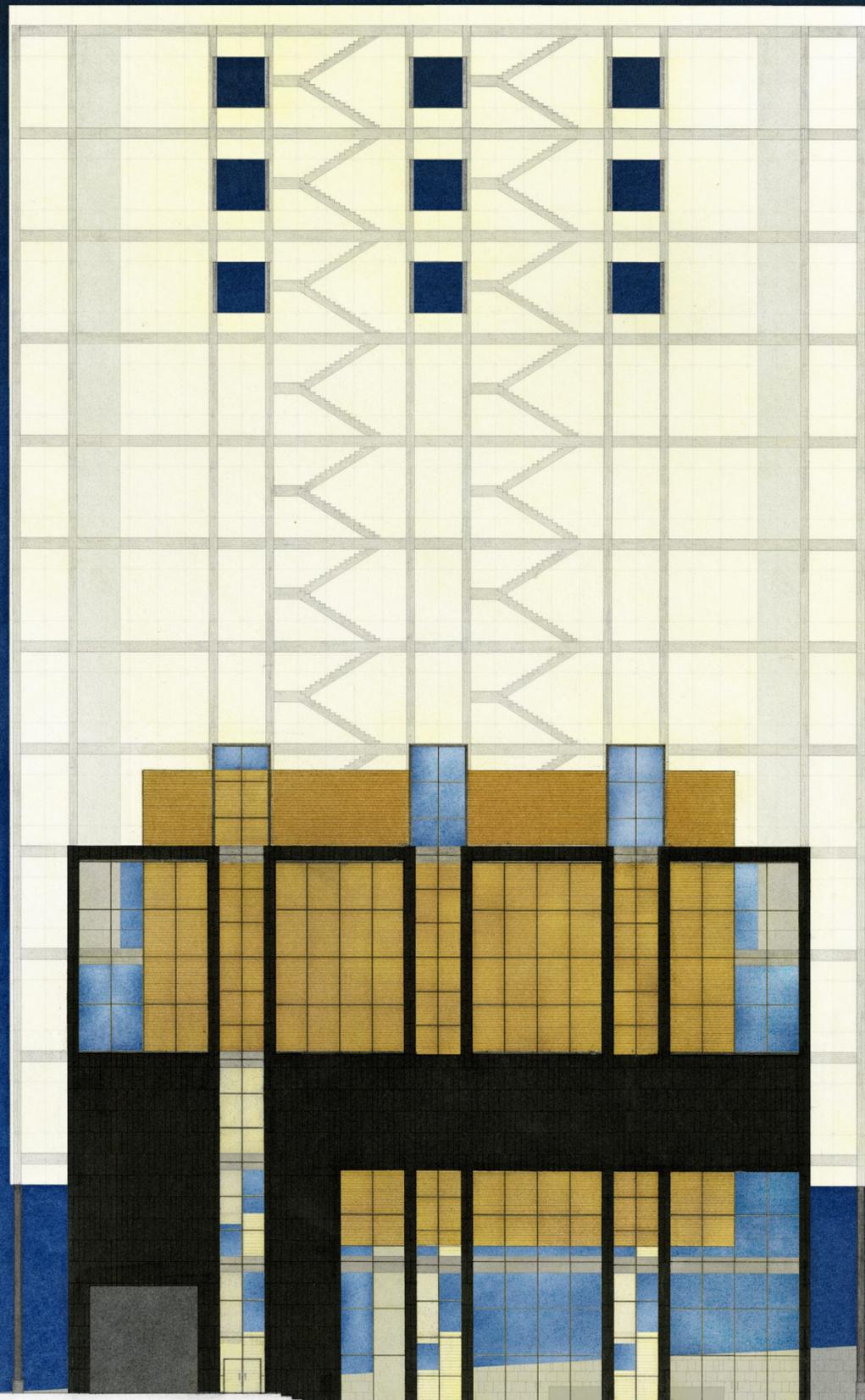
SOUTH ELEVATION



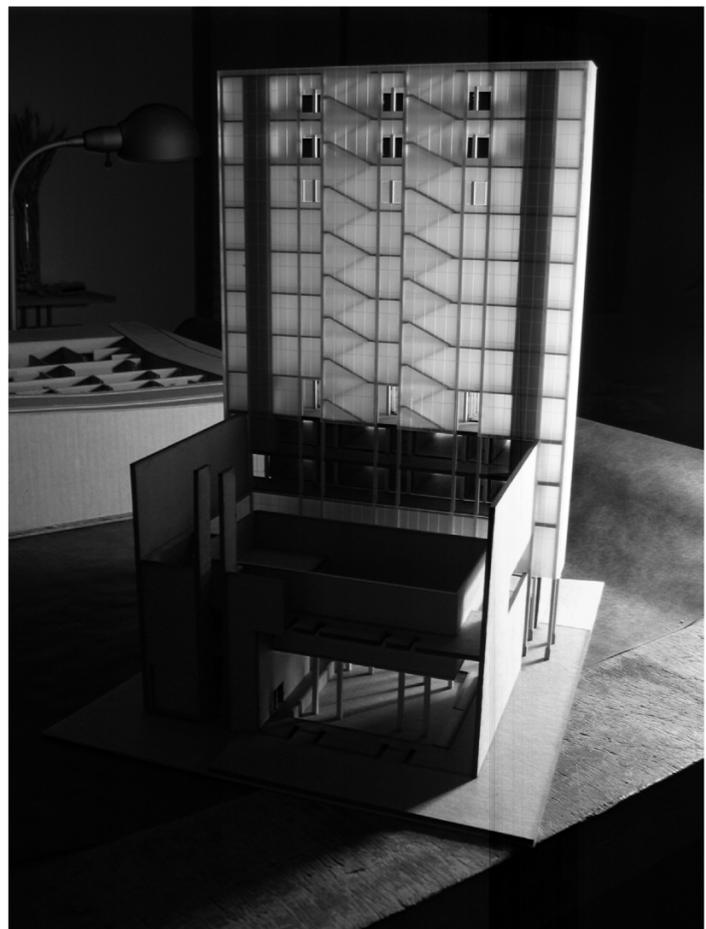
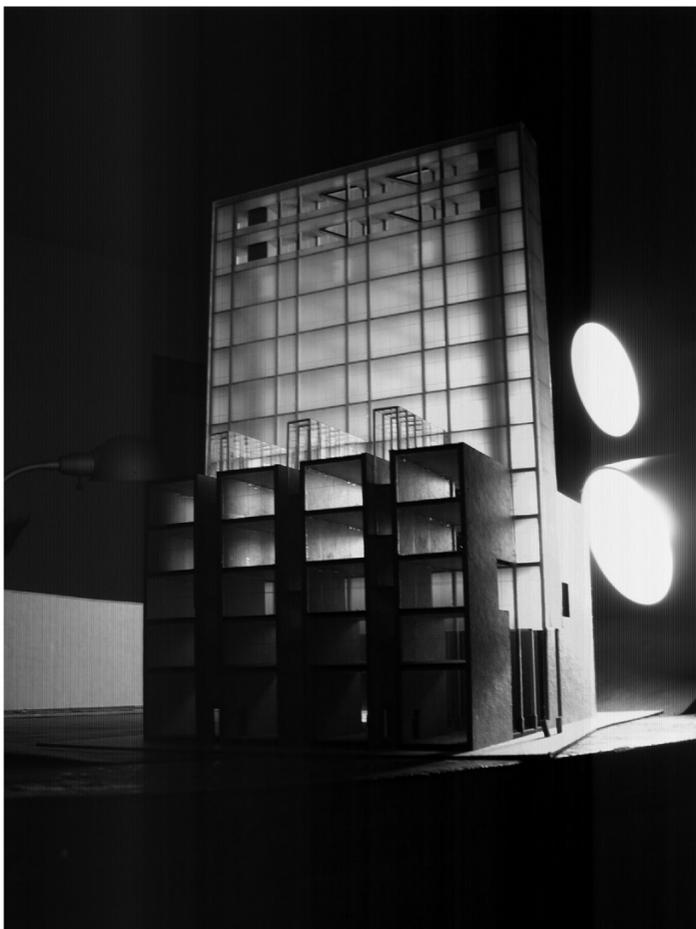
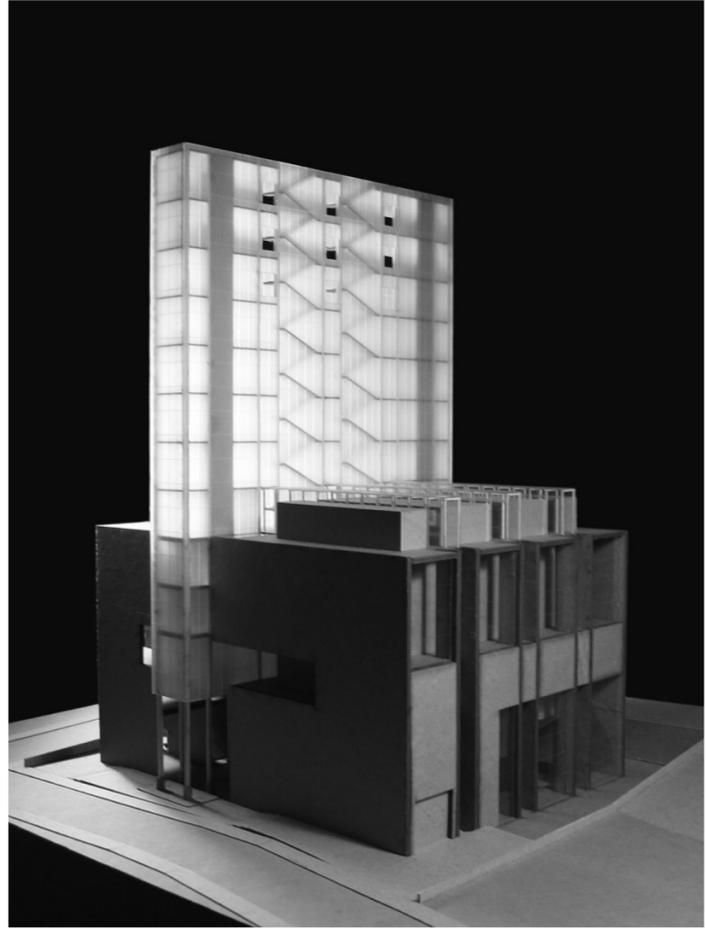
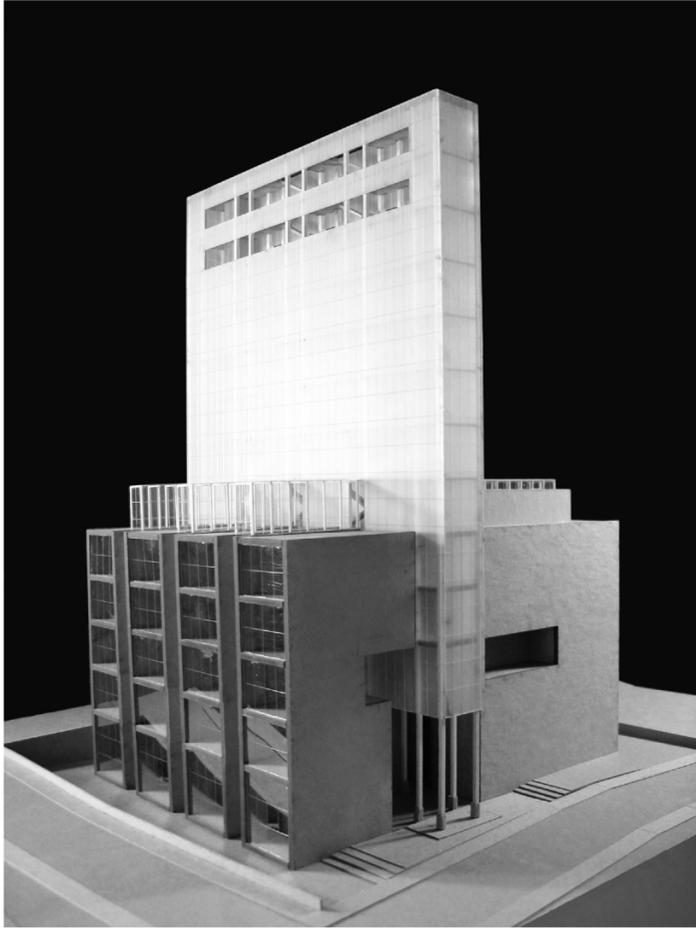
EAST ELEVATION

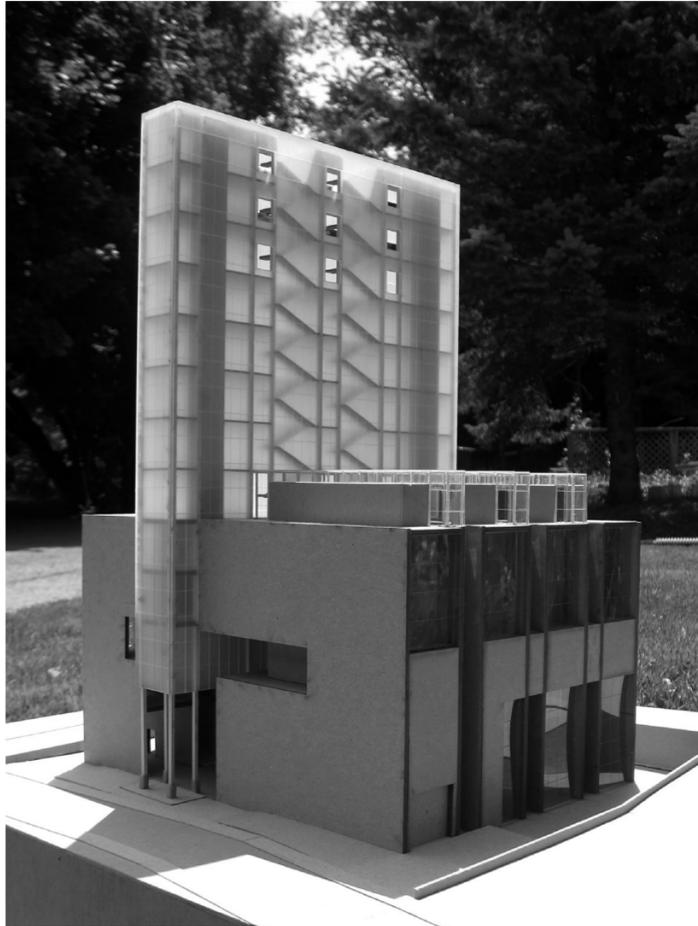
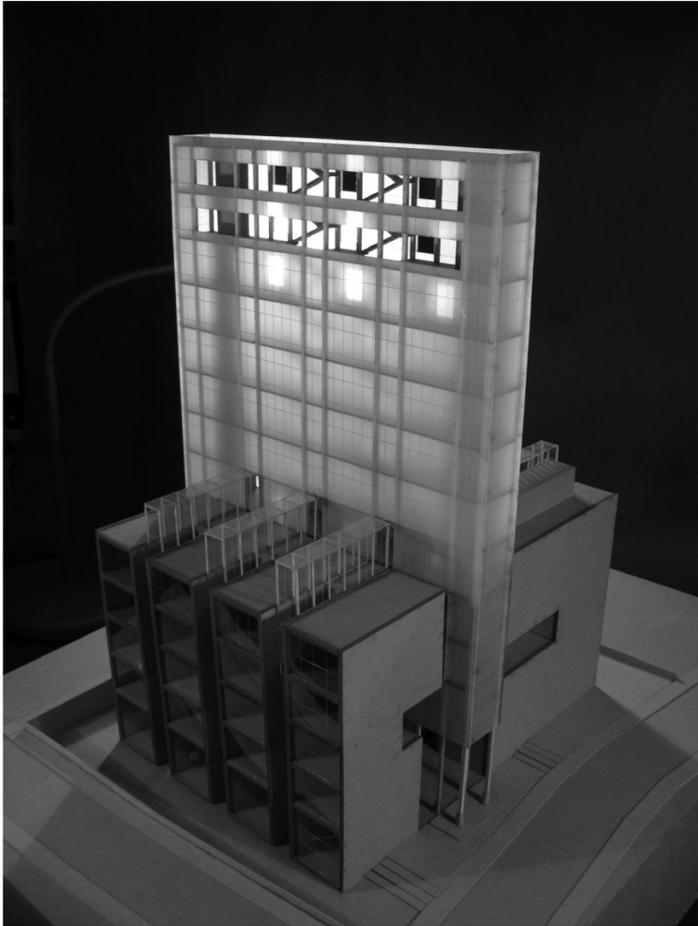


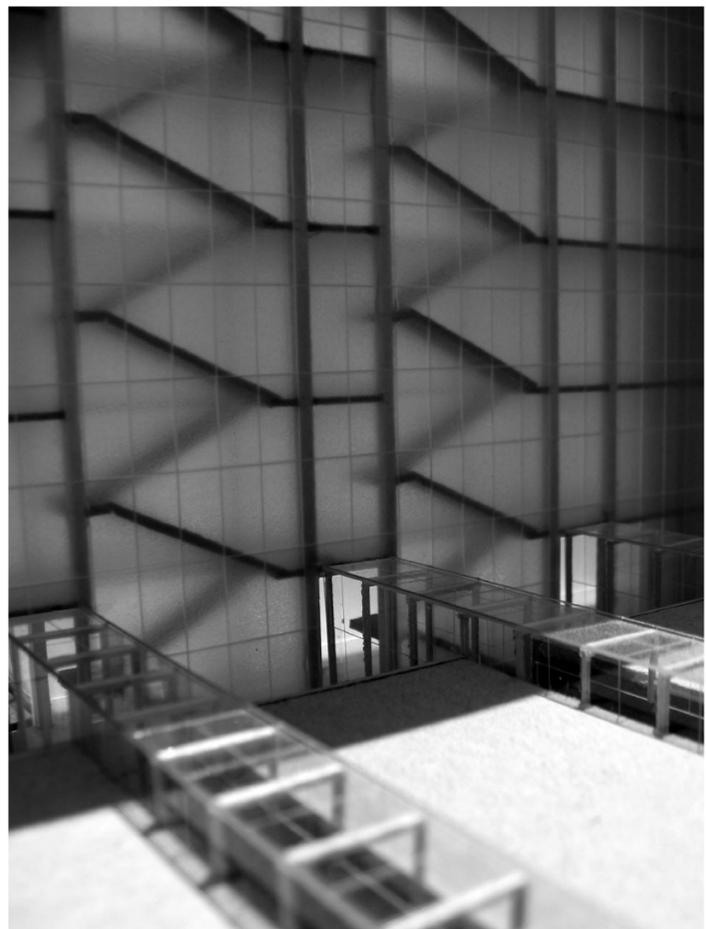
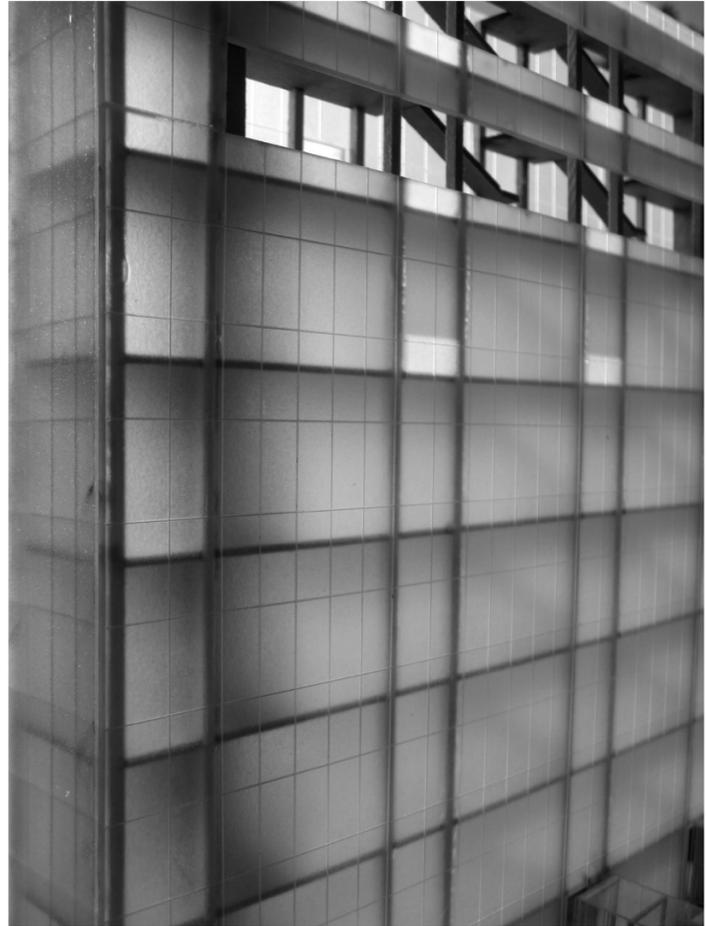
WEST ELEVATION

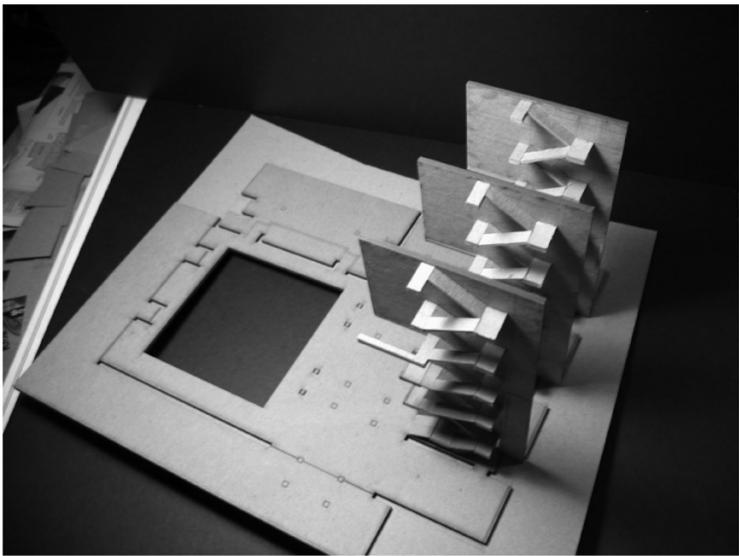
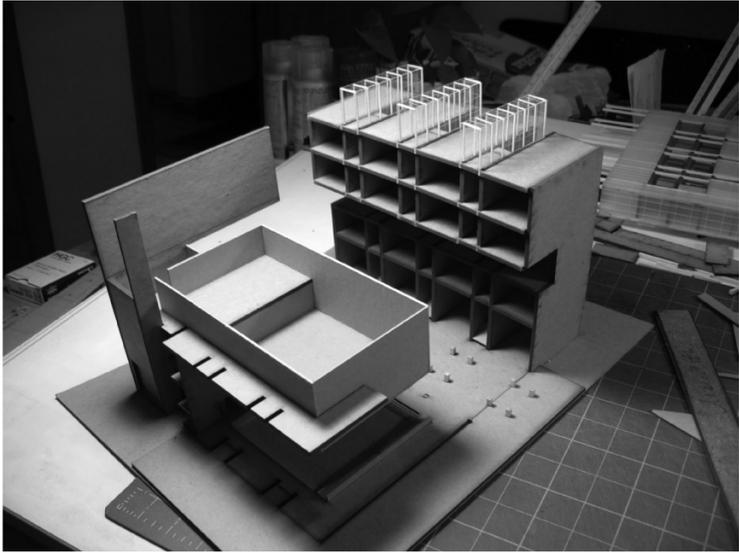


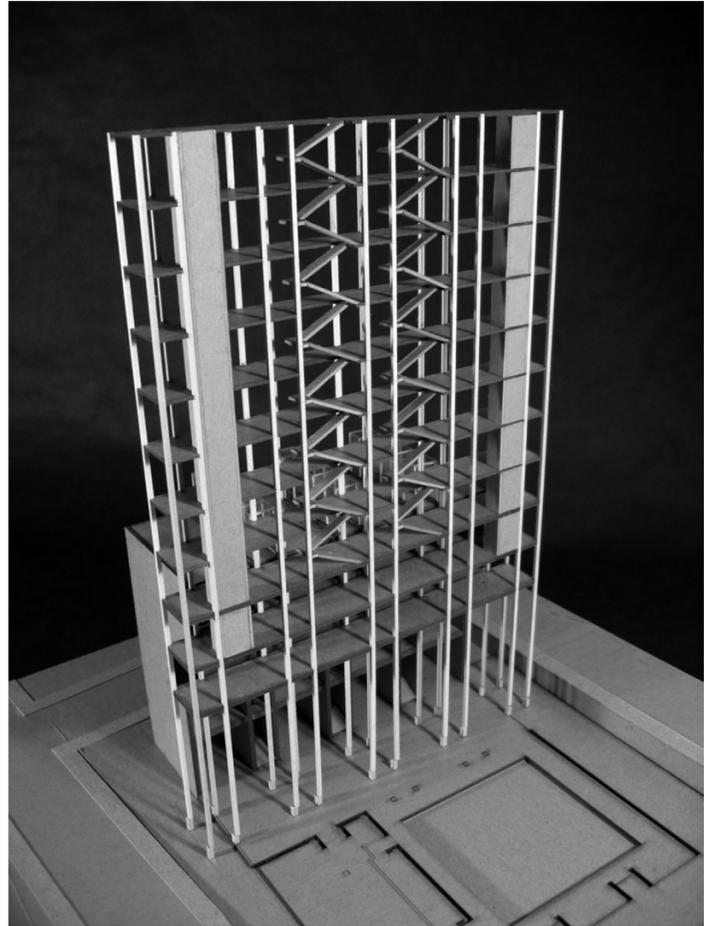
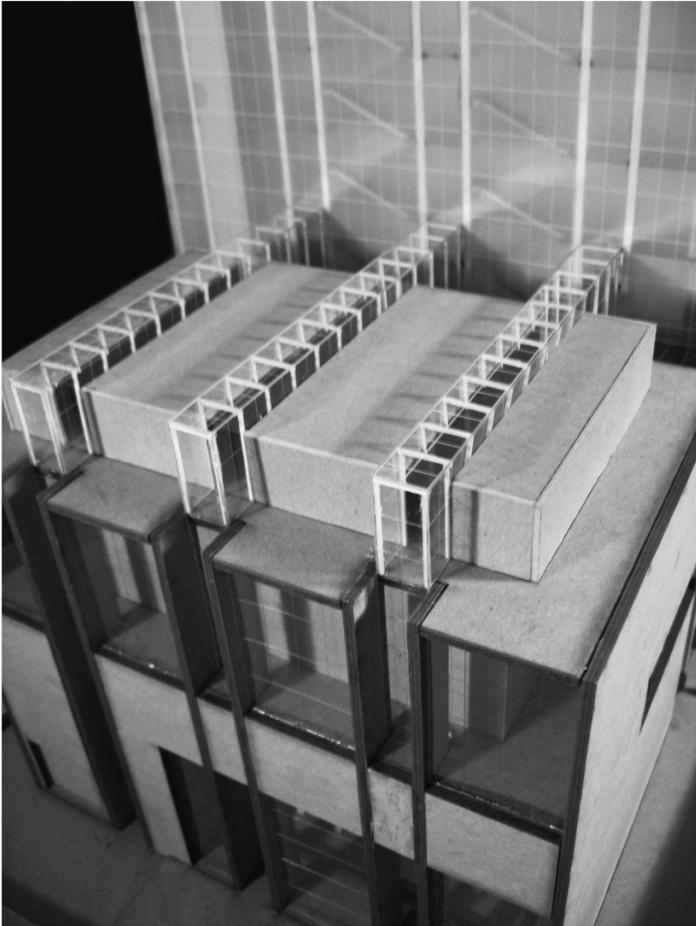
FINAL MODEL

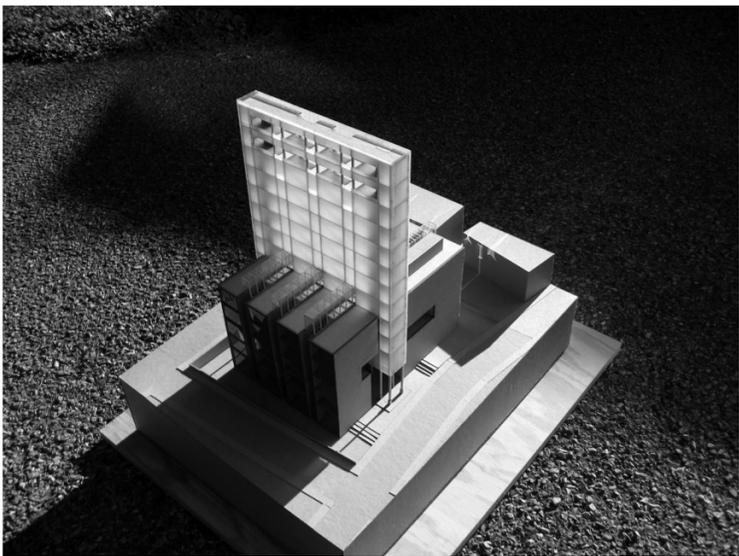
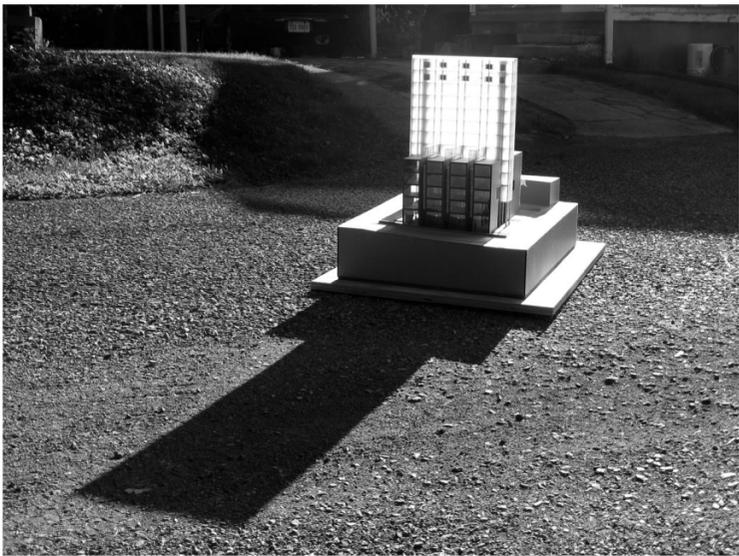
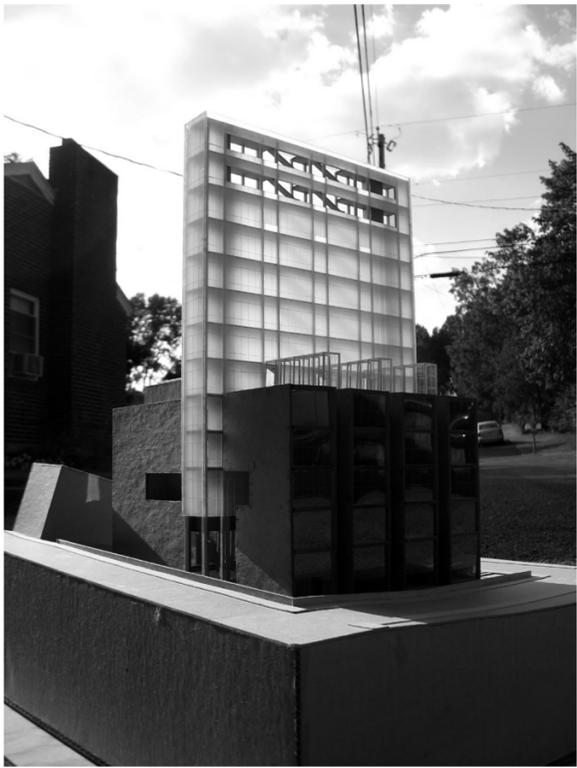
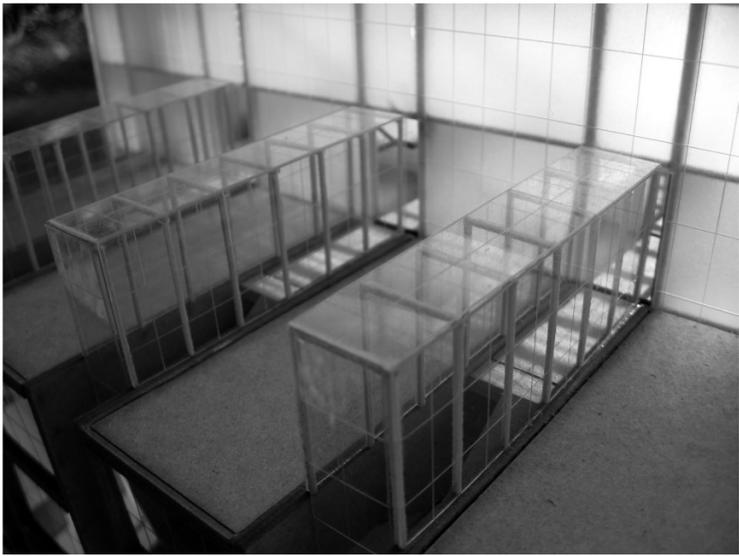


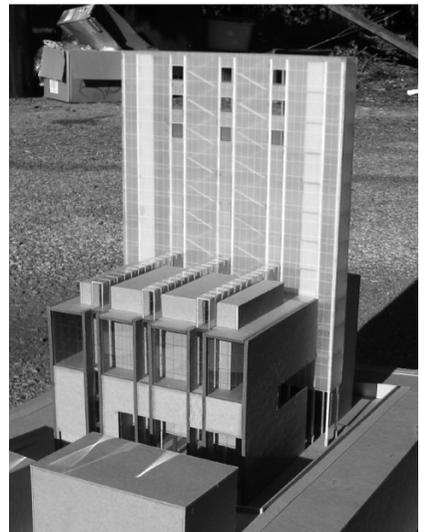
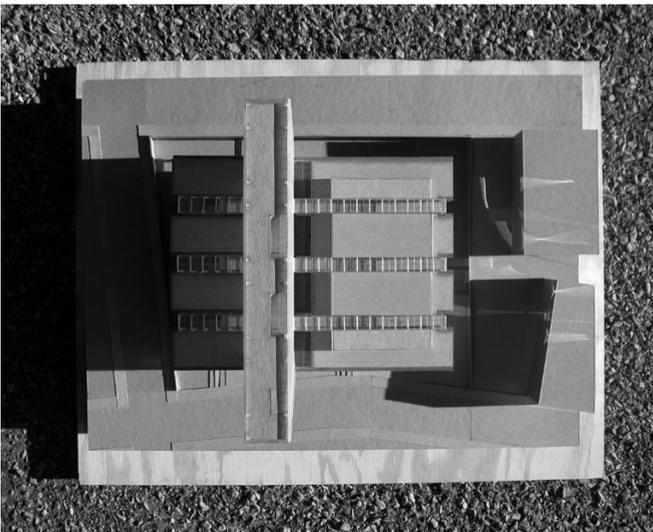
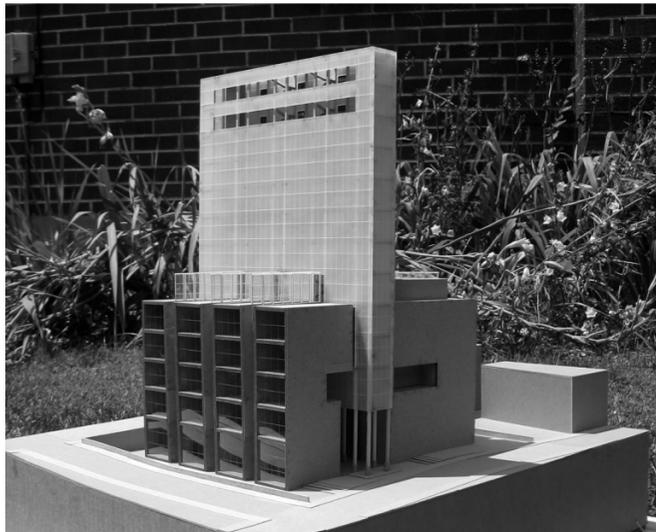
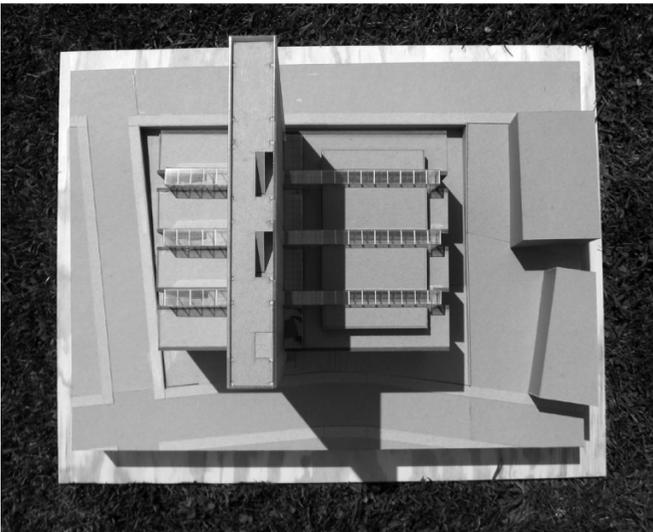
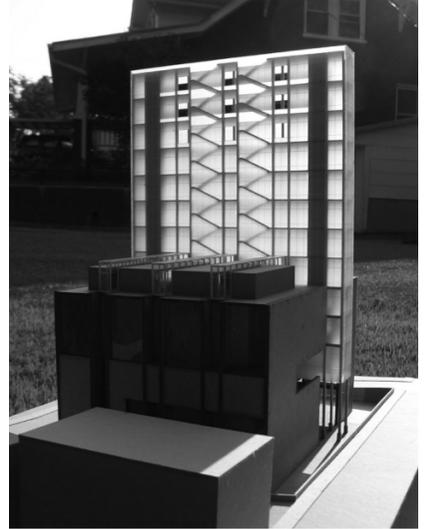
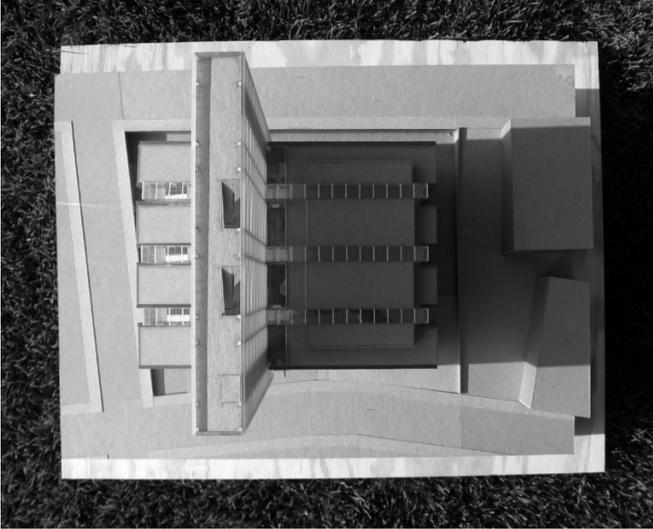






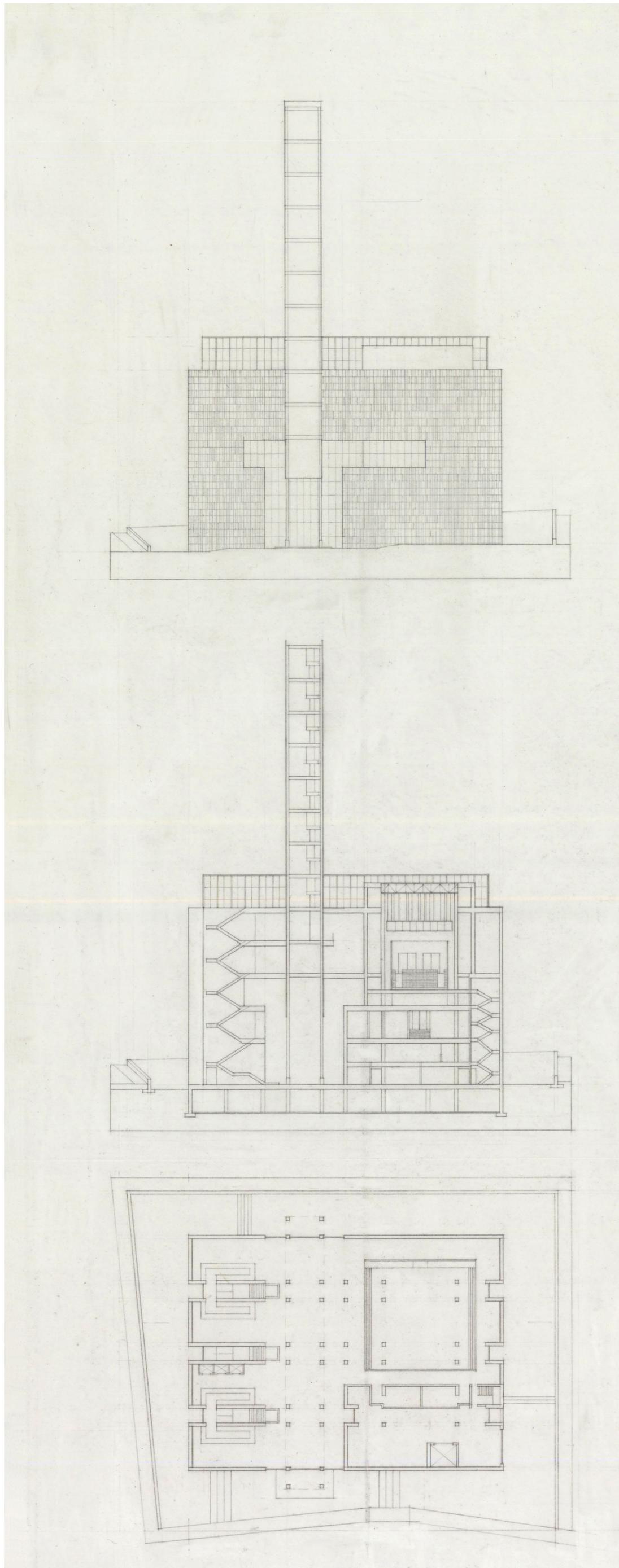


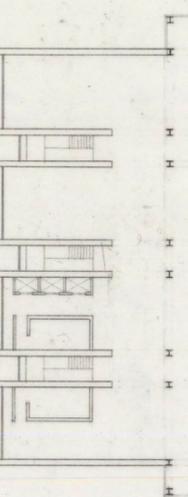
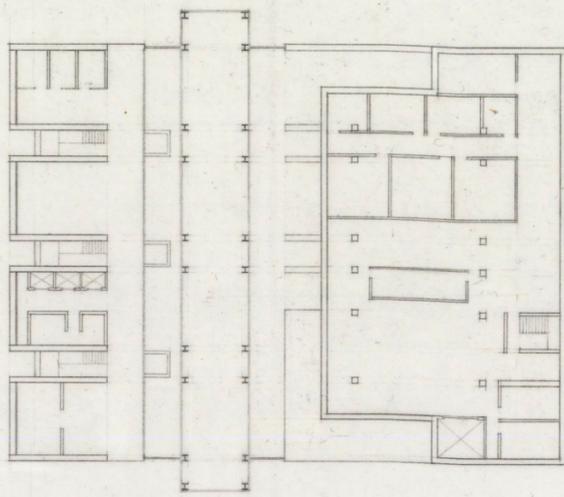
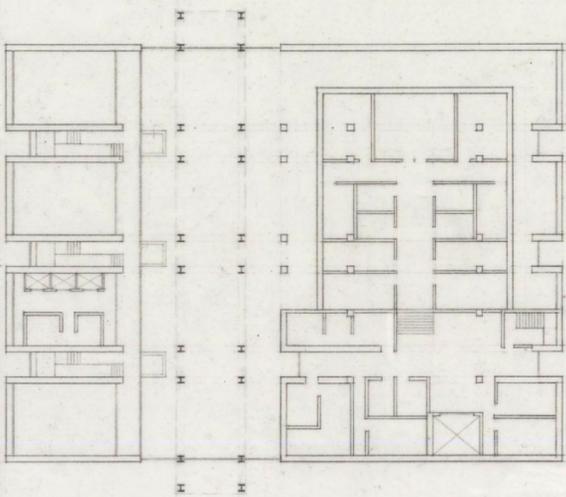
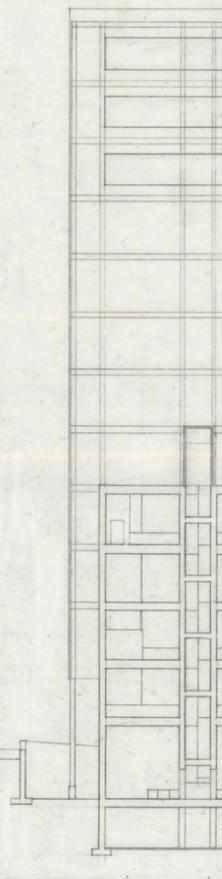
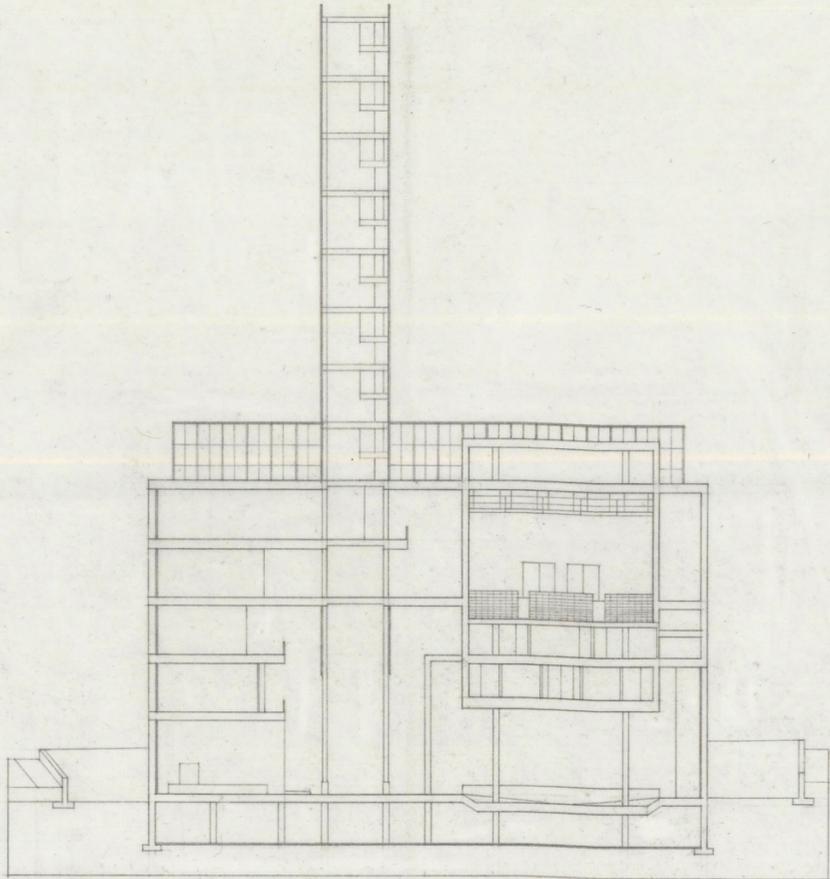
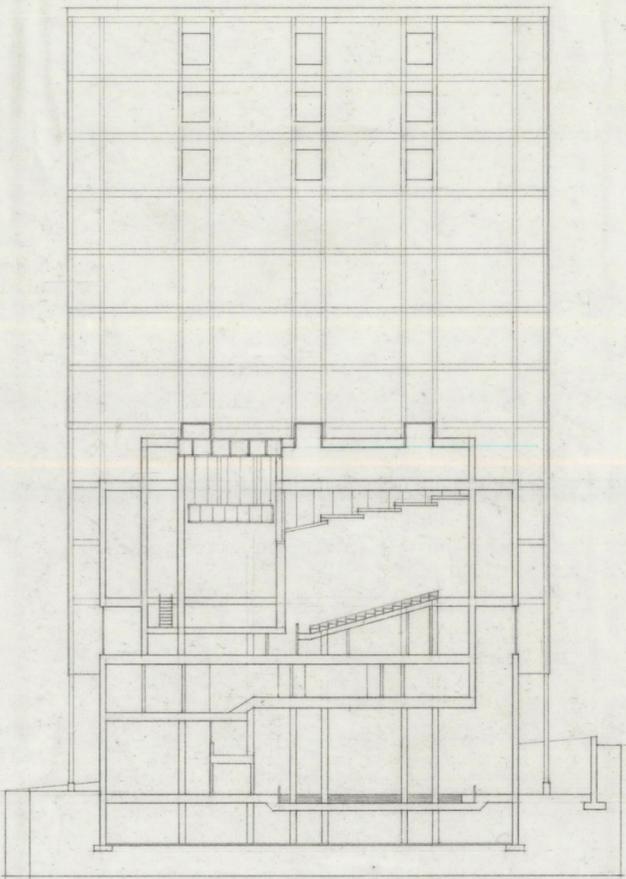
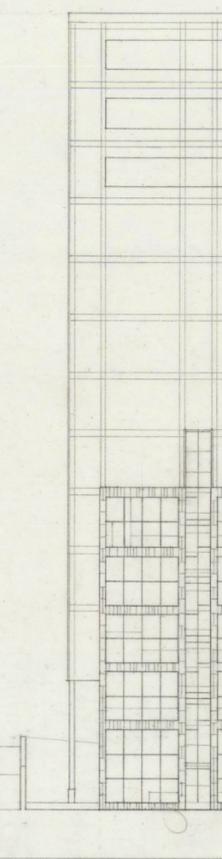
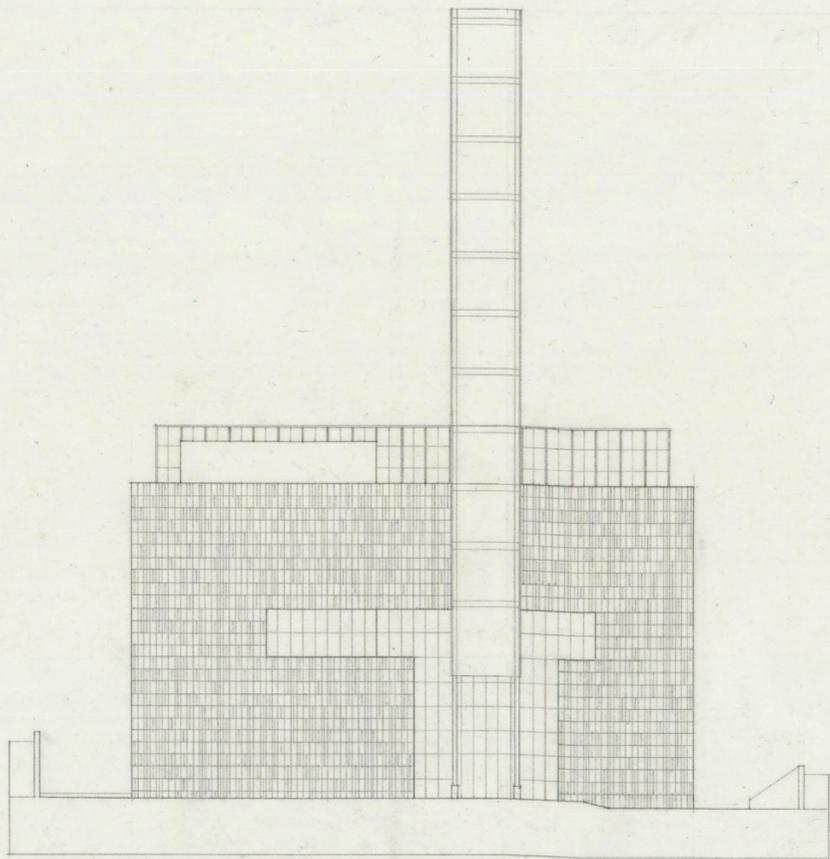
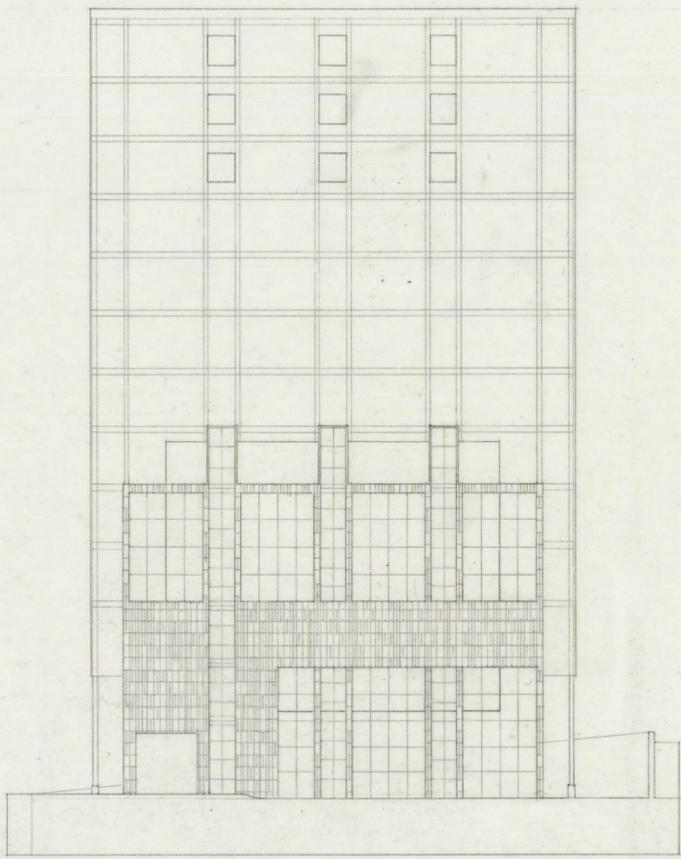


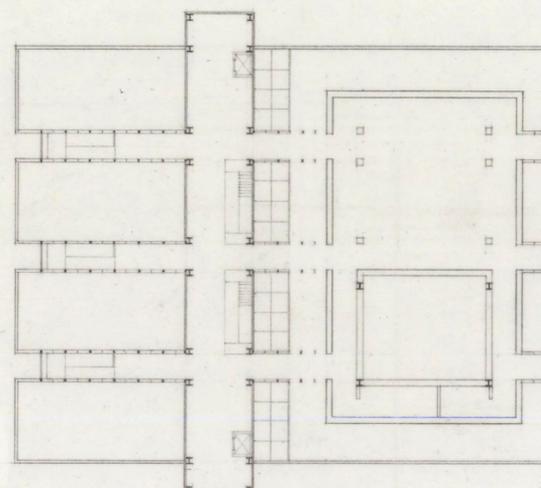
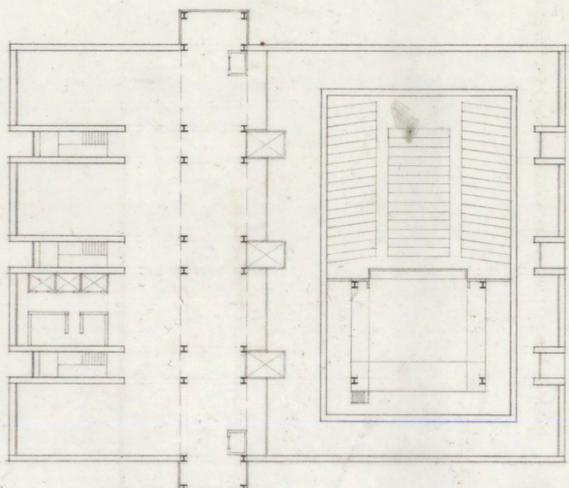
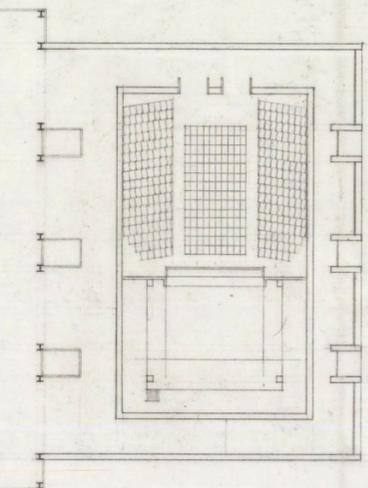
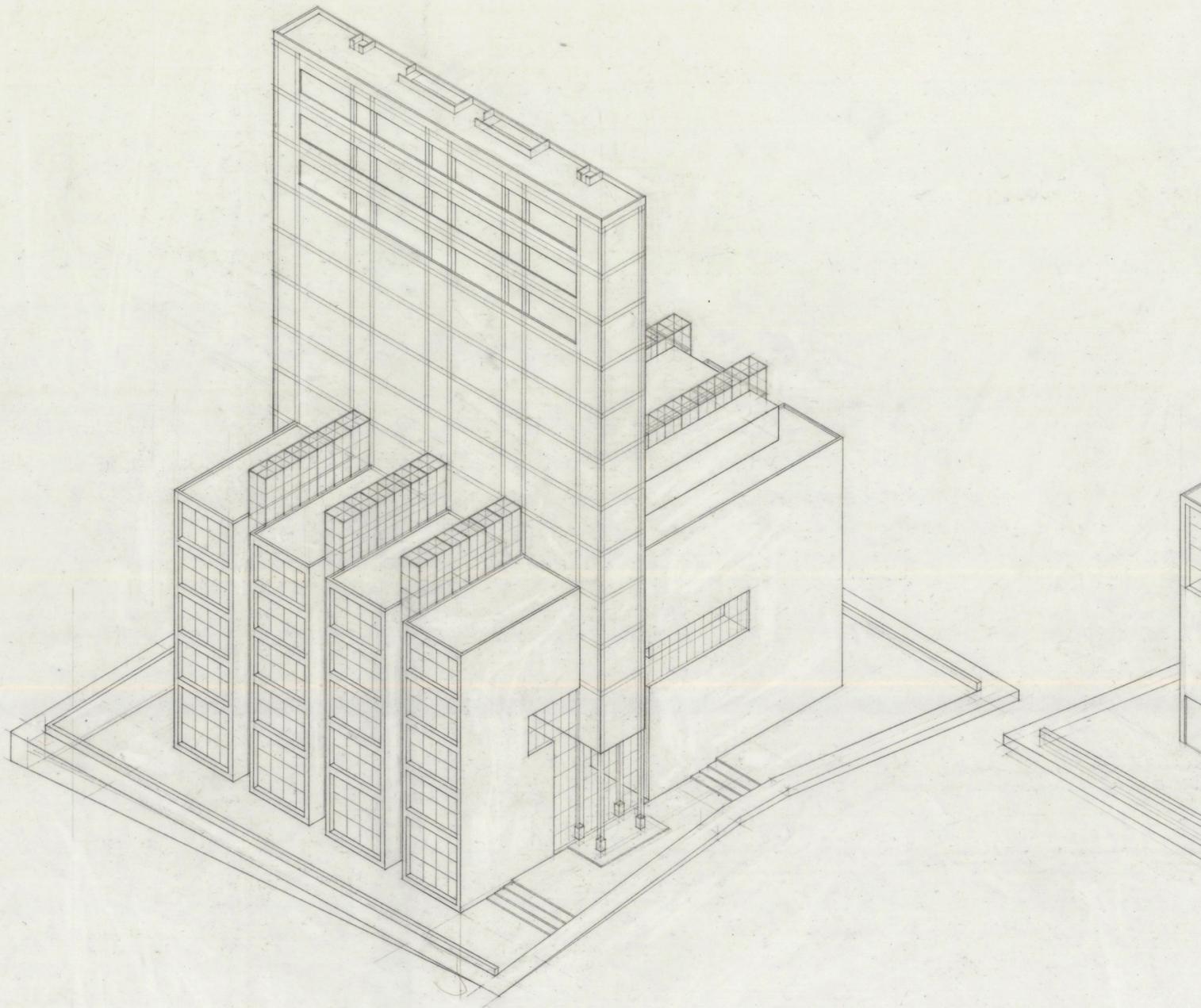
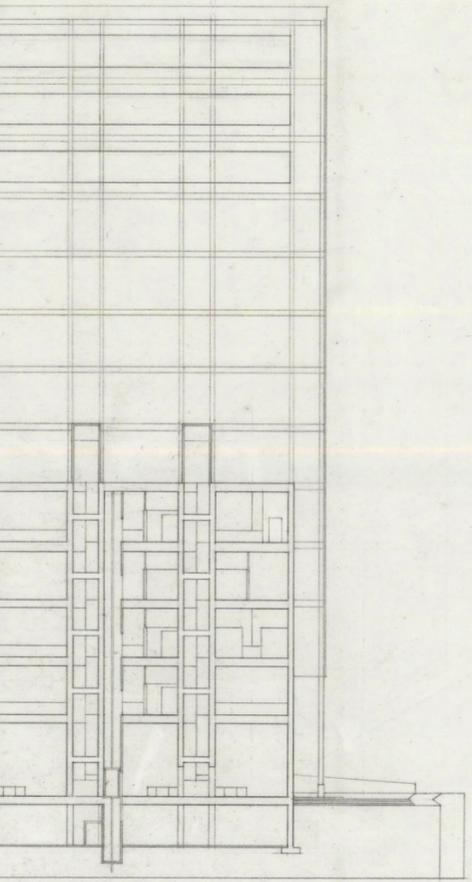
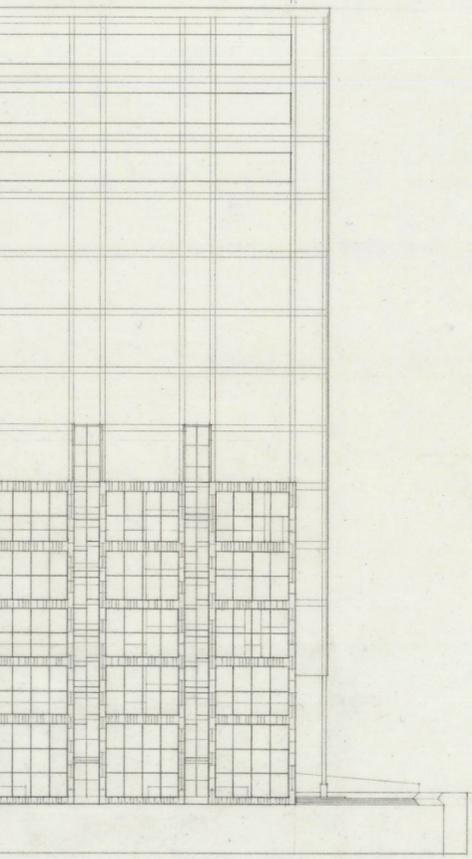


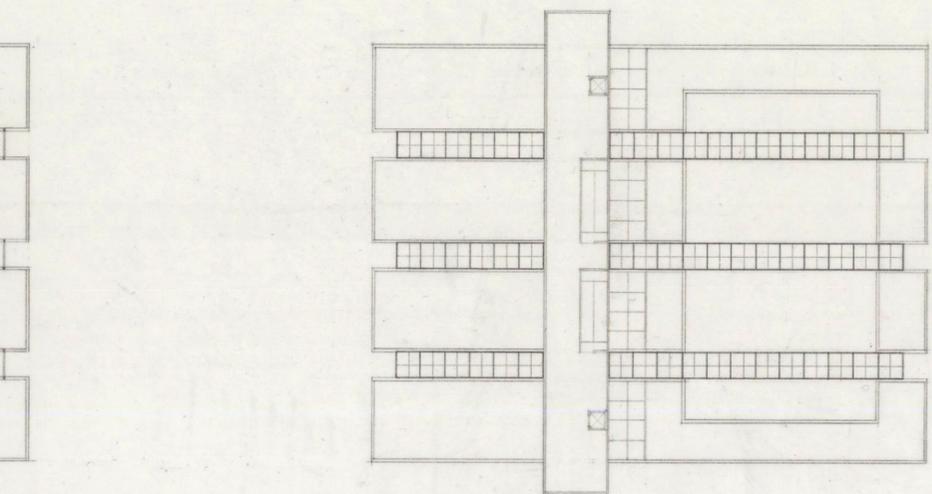
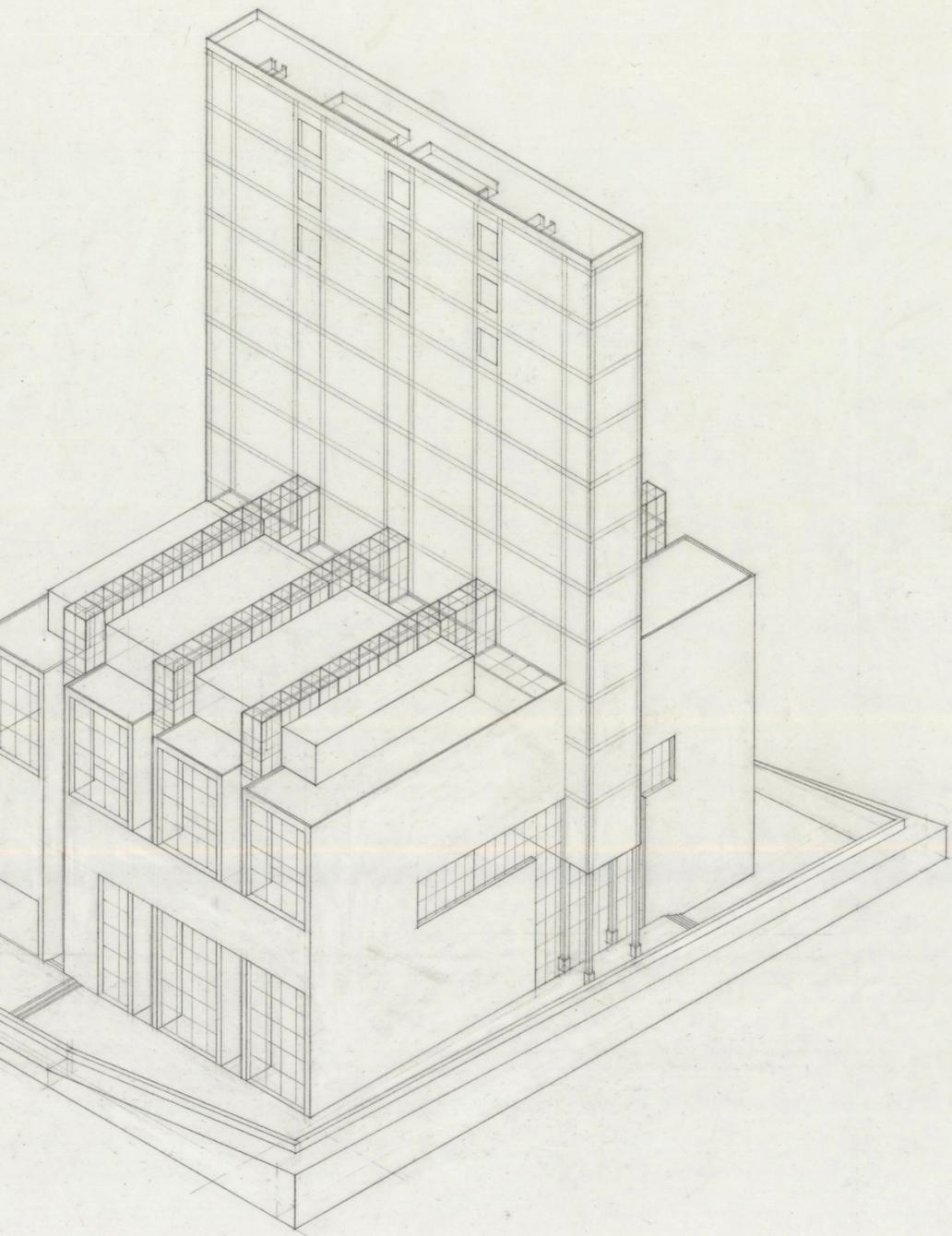
top: Final model at 8 am
middle: Final model at 12 pm
bottom: Final model at 6 pm

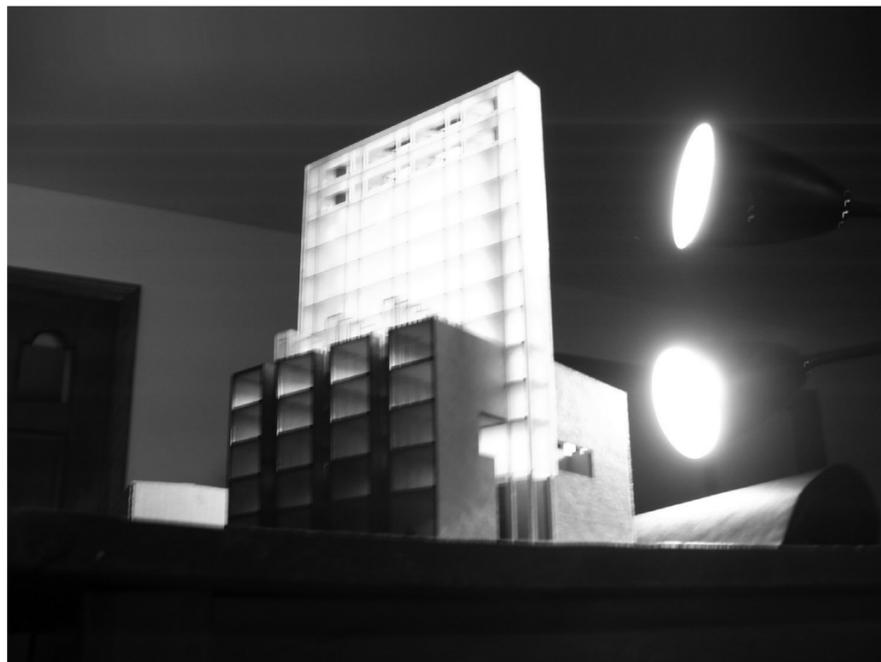
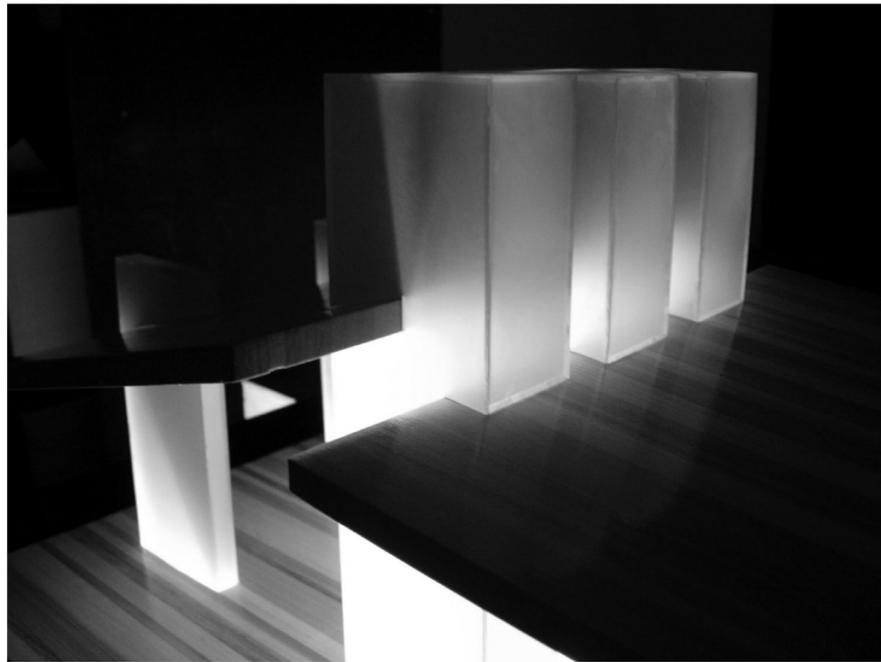
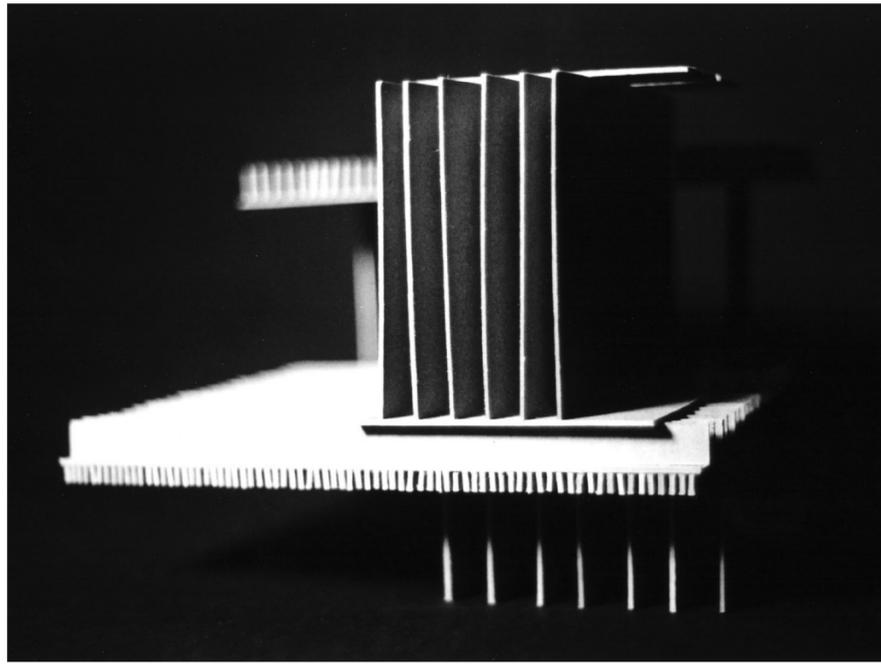
KEY DRAWING











top: First year graduate studio, model
middle: Second year graduate studio, model
bottom: Thesis, final model

THE PROCESS

Paul Valery said to Degas of a painting by Theodore Rousseau: "How superb... but what a bore, to make all those leaves...It must have been fearfully tedious." "Rubbish," said Degas. "If there were no tedium, there'd be no enjoyment in it."'¹⁴

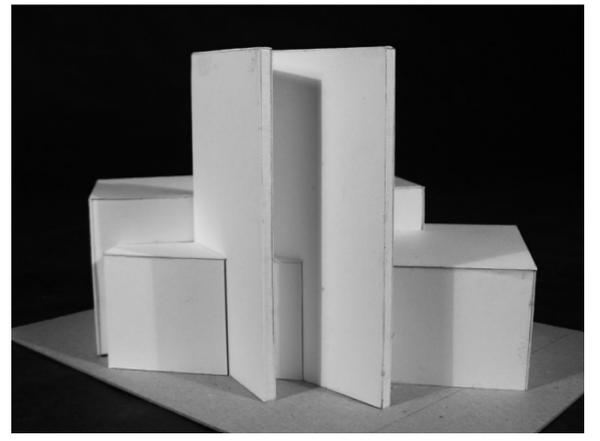
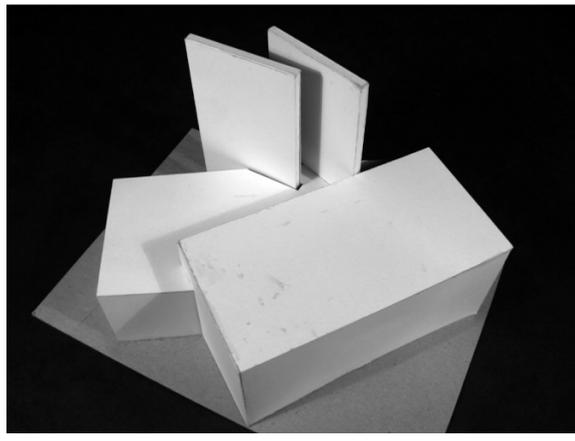
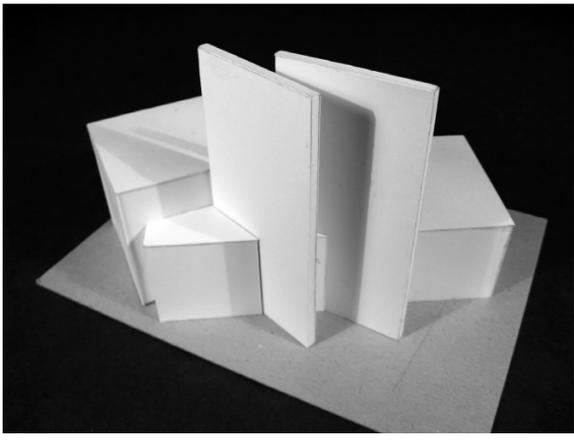
...anything done at first was bound to be dissatisfying because what was unaltered was unexamined.¹⁵

The work that follows is the development of the thesis that eventually became *Four Black Boxes and a Beacon*. It is ordered chronologically to most accurately represent the progression of the project - from the very first models to the last drawing.

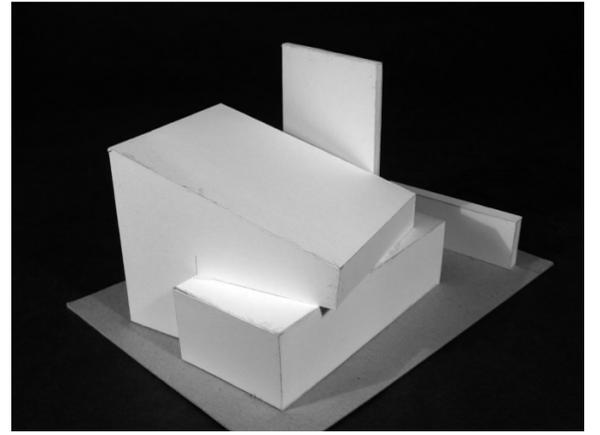
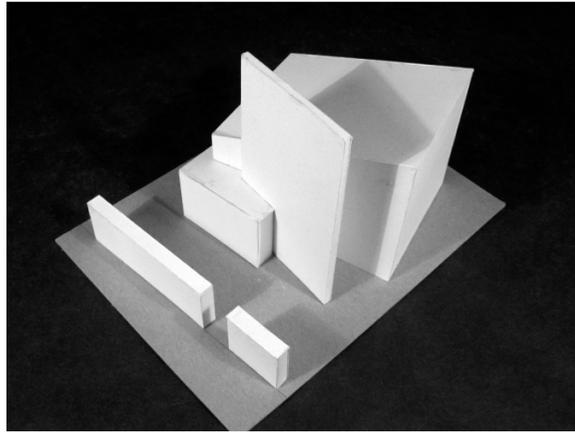
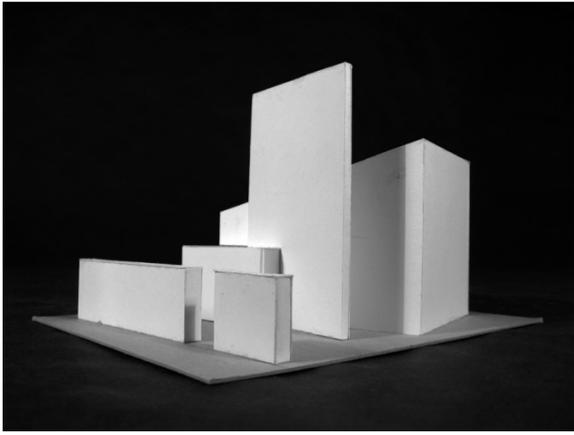
The thesis developed primarily through a series of model iterations. Drawings and sketches were used to support the model discoveries and to further investigate the search. Models were built and rebuilt - continually being edited and adjusted. With each model revision the thesis became increasingly less complicated in form, but stronger, more monumental, and more concise in concept. The relationships between forms, spaces, atmospheric qualities, and programmatic necessities became clear.

The path of the thesis was often marked with doubt, tedium, and struggle. Louis Kahn stated, "I once learned that a good question is greater than the most brilliant answer."¹⁶ There were times when neither the answers nor the questions were apparent. Detours, alternatives, and indecision plagued the process from start to finish. A commitment to the thesis and persistence (simply building from what came before with no clear direction) were often the driving forces behind the project. The search for a natural, genuine conclusion culminated in its final expression as *Four Black Boxes and a Beacon*.

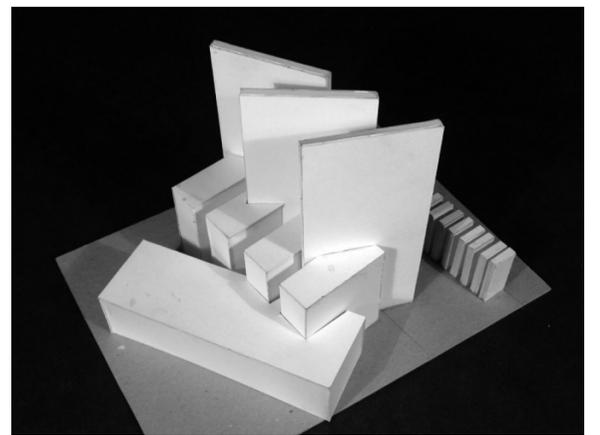
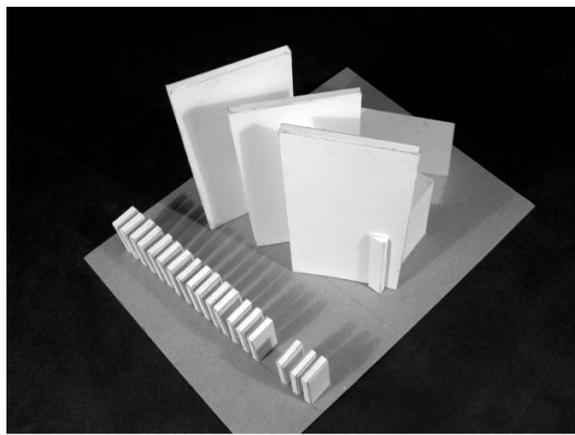
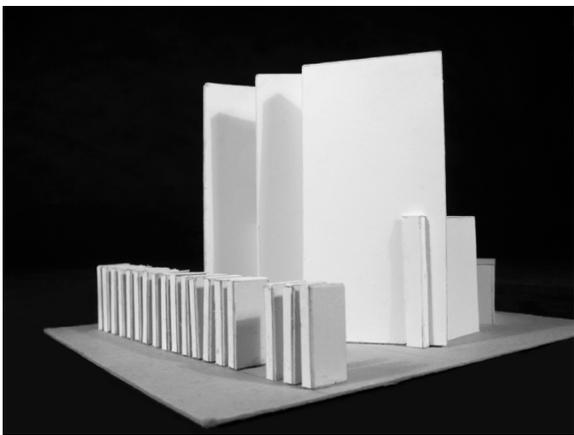
And your doubt can become a good quality if you train it. It must become knowing, it must become criticism. Ask it, whenever it wants to spoil something for you, why something is ugly, demand proofs from it, test it, and you will find it perhaps bewildered and embarrassed, perhaps also protesting. But don't give in, insist on arguments, and act in this way attentive and persistent, every single time, and the day will come when, instead of being a destroyer, it will become one of your best workers - perhaps the most intelligent of all the ones that are building your life.¹⁷



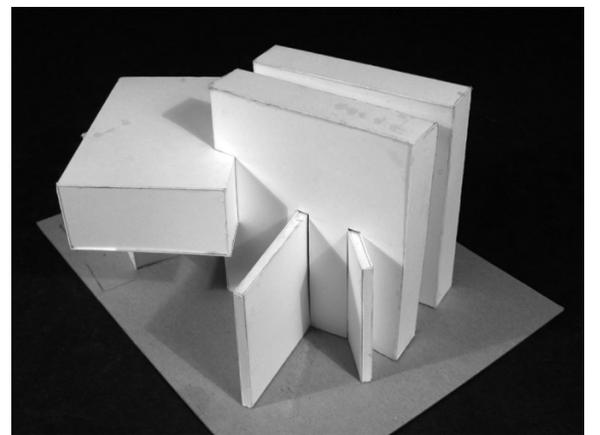
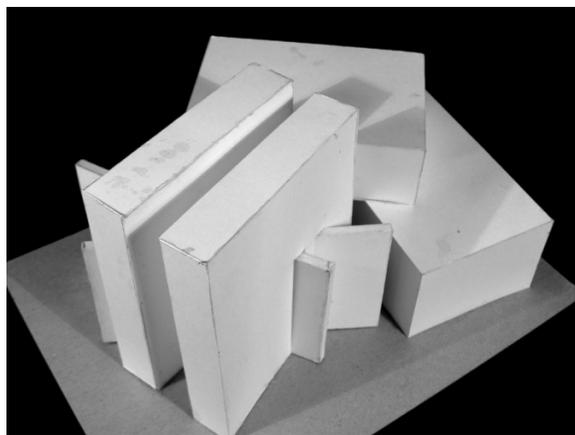
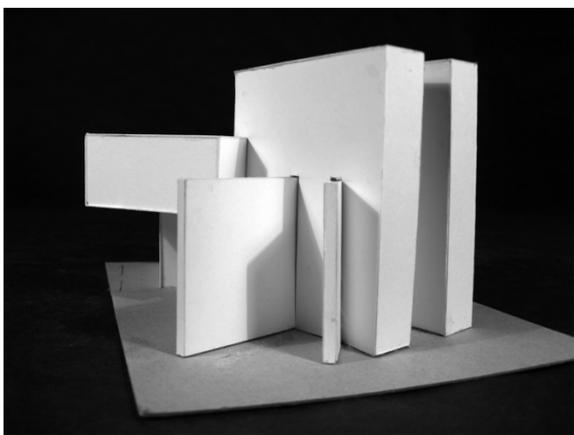
Study model 1



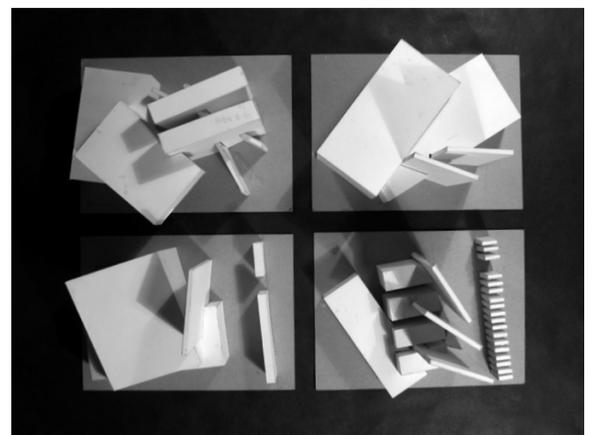
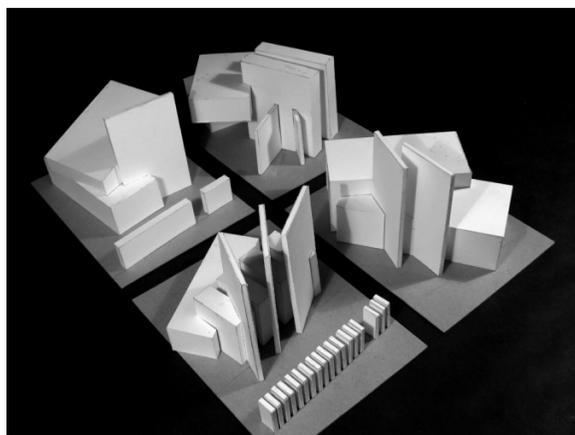
Study model 2



Study model 3

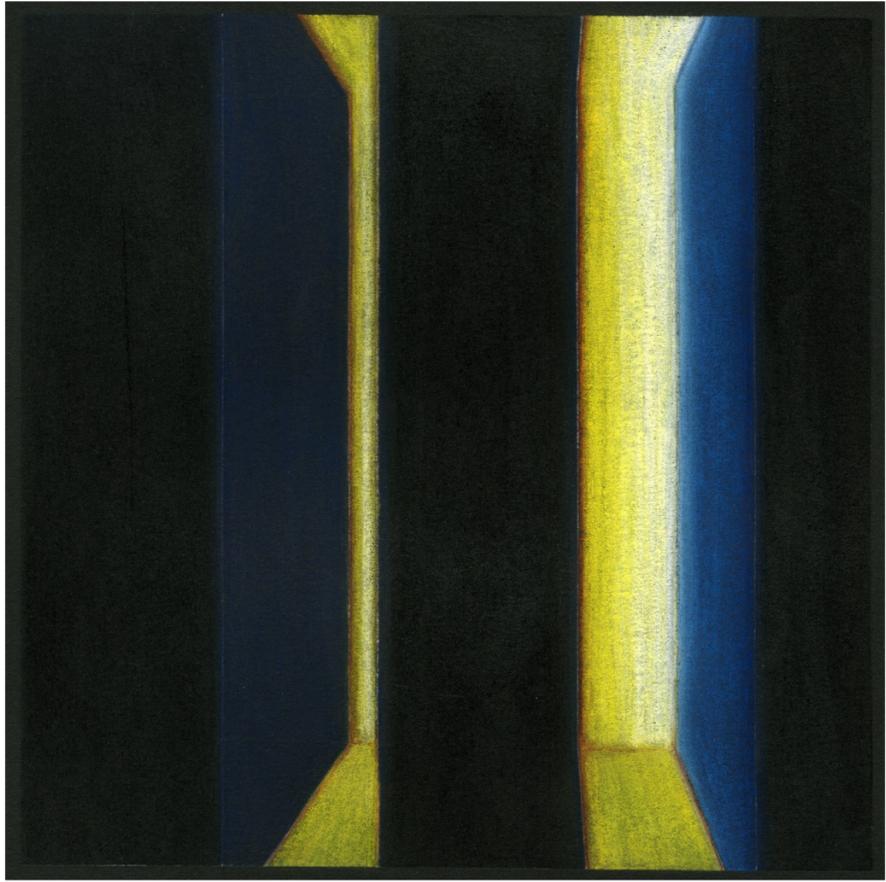
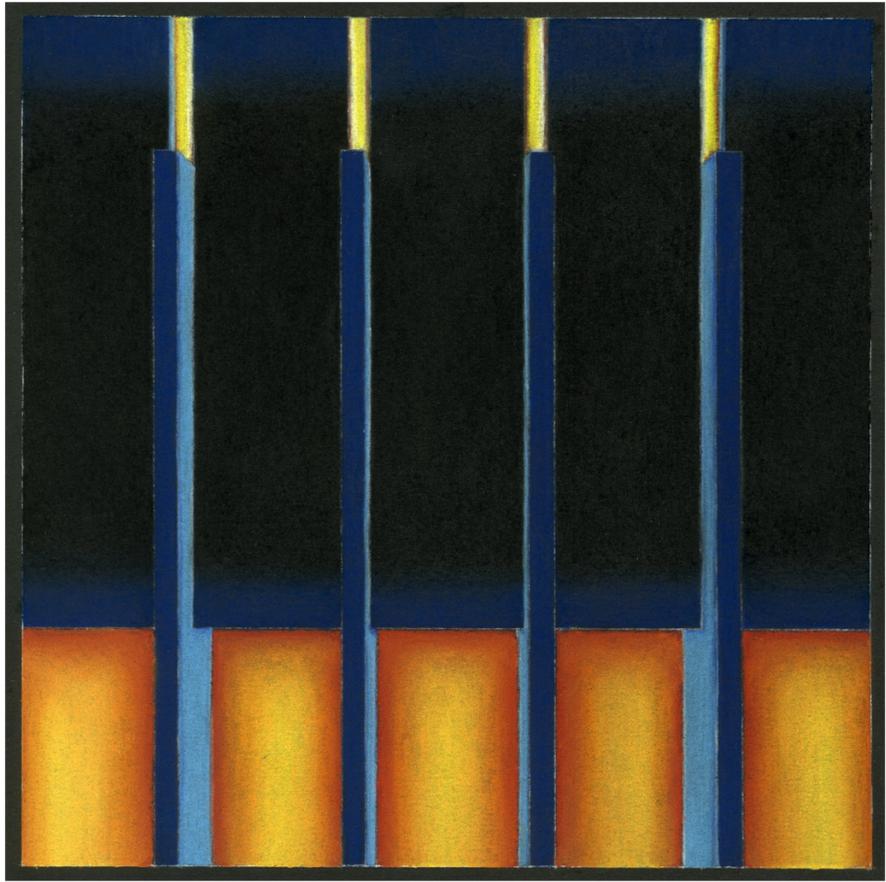


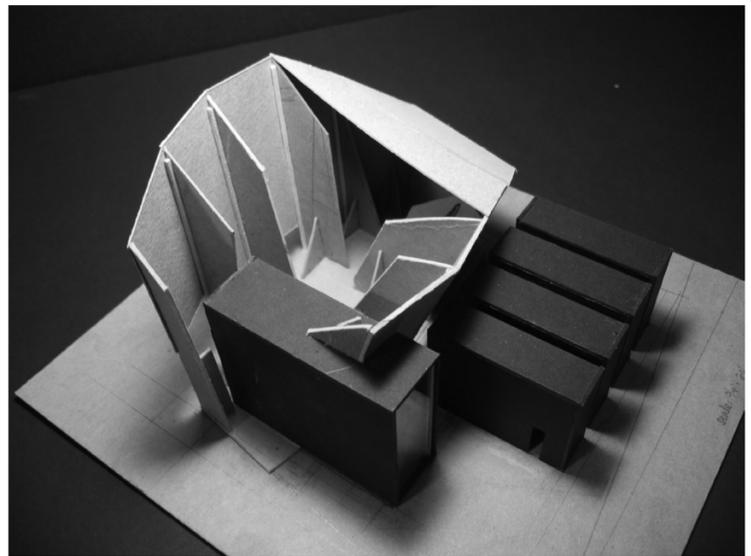
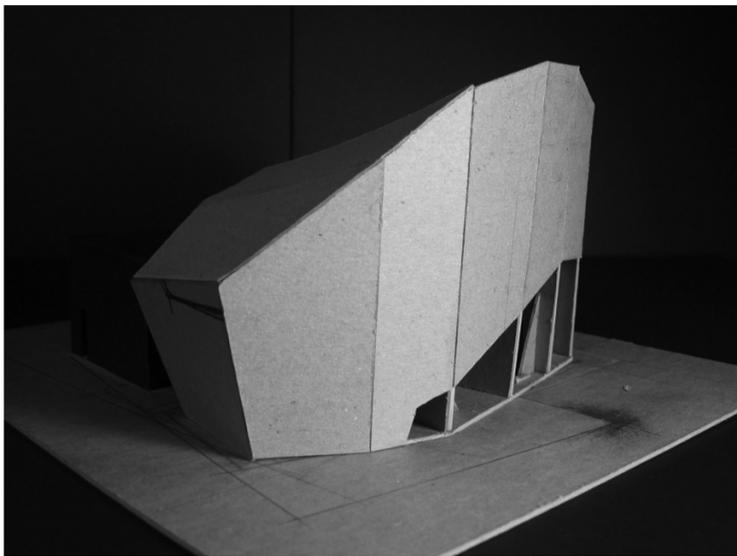
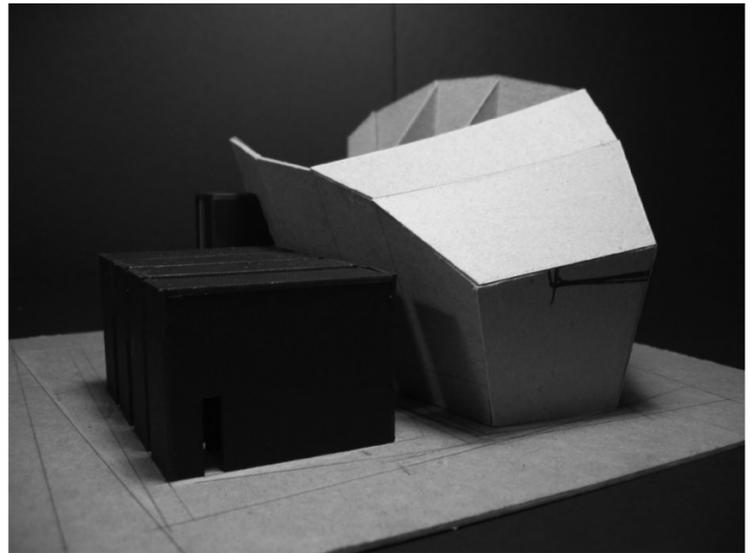
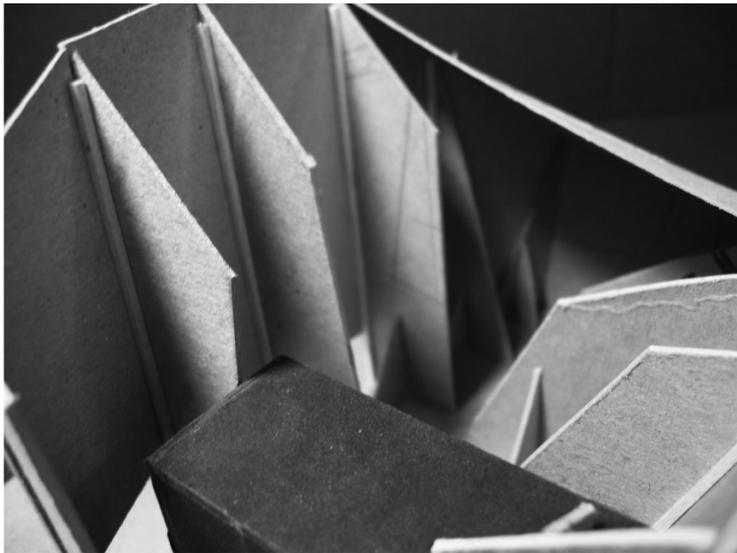
Study model 4



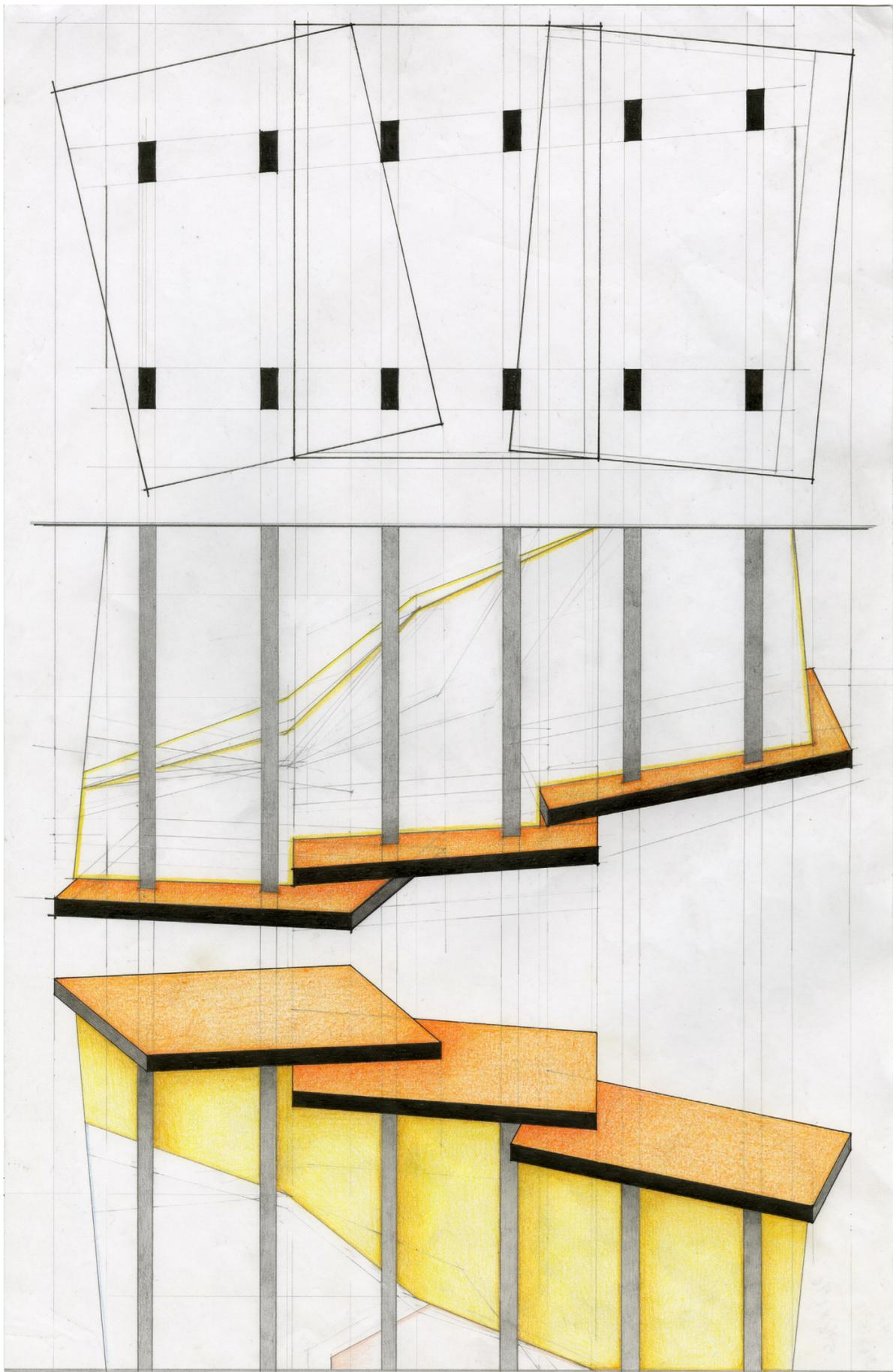
Compilation of study models 1-4

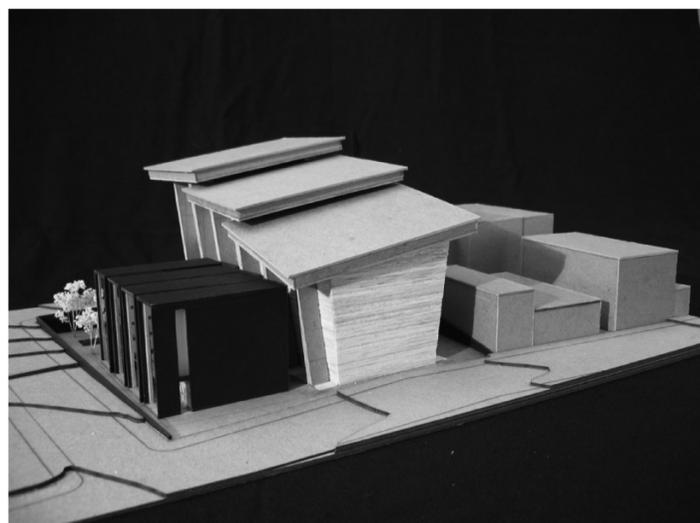
opposite page: Sketches



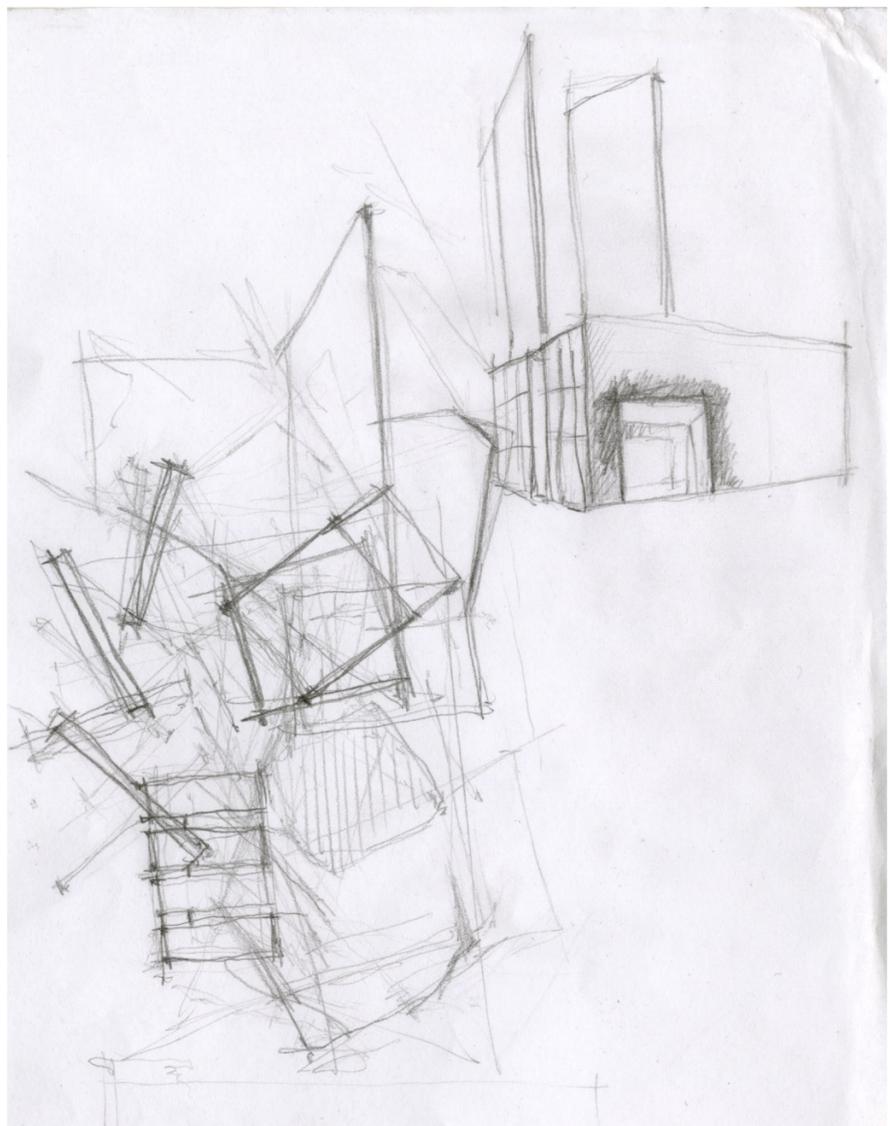
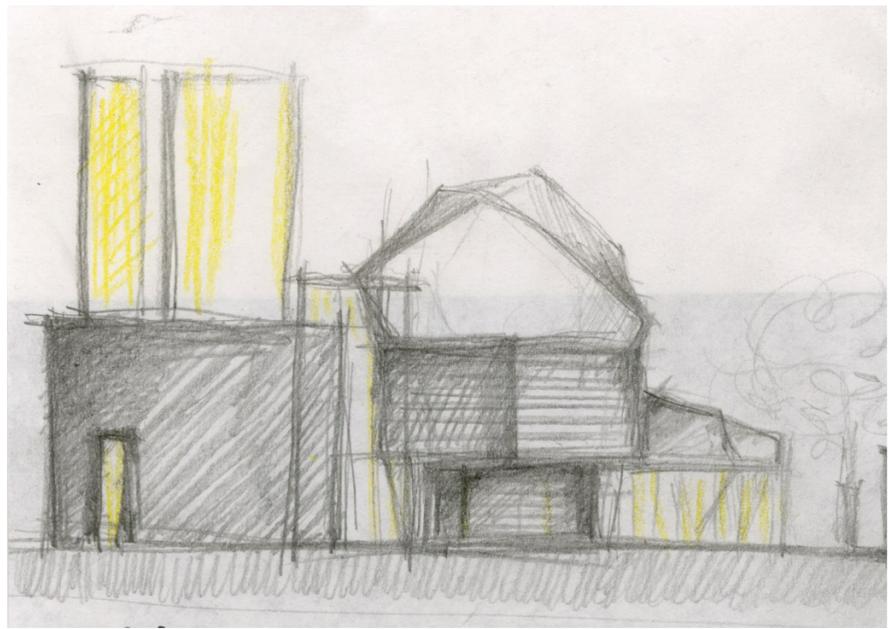
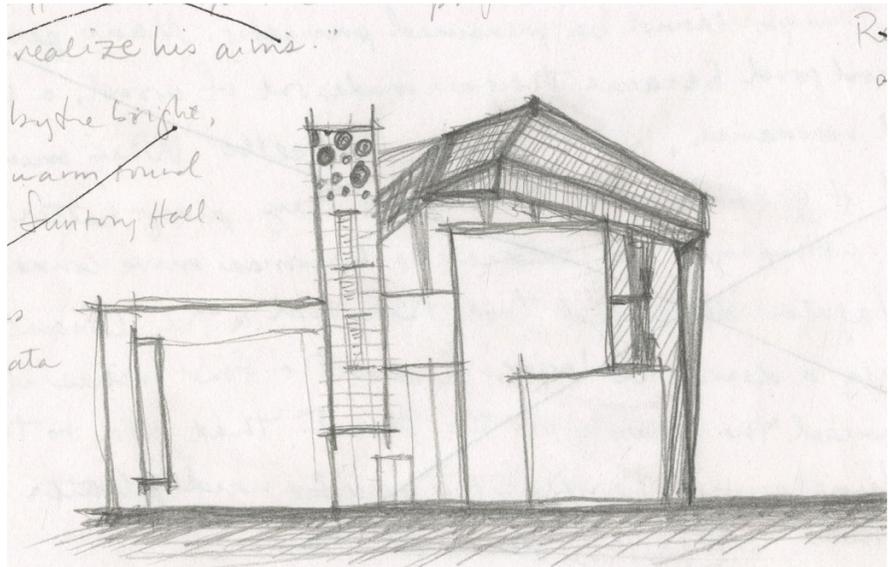


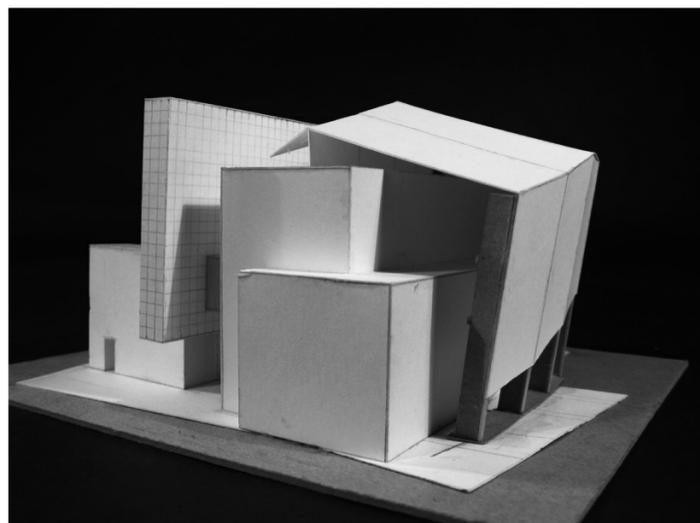
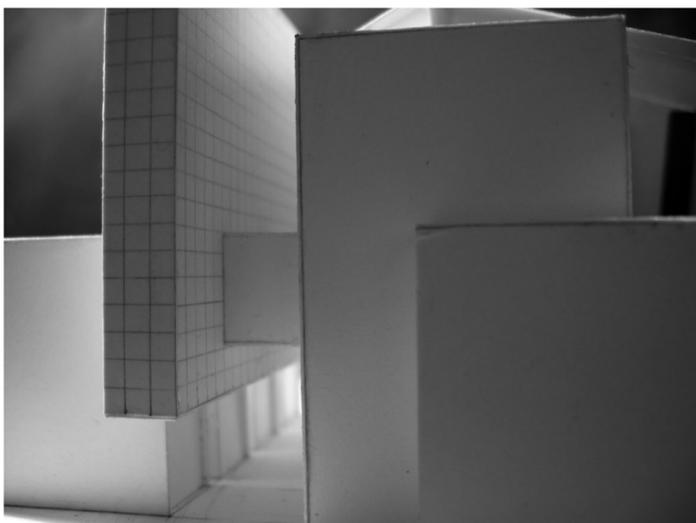
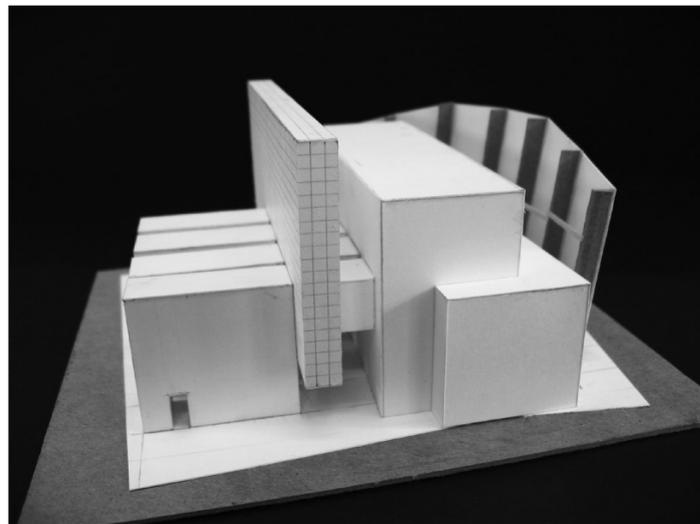
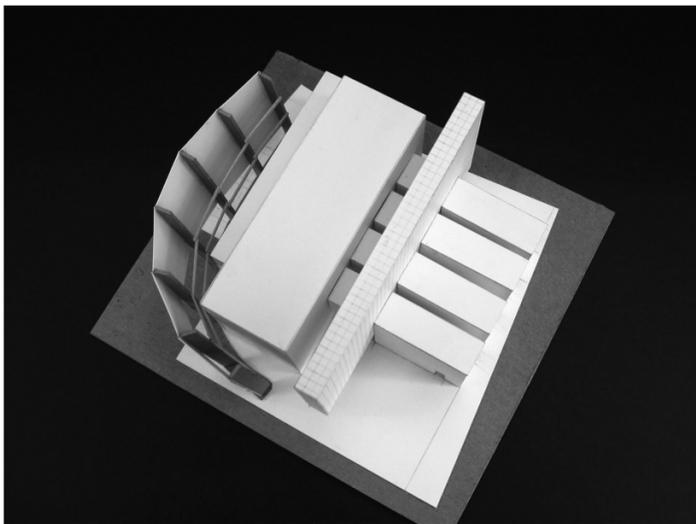
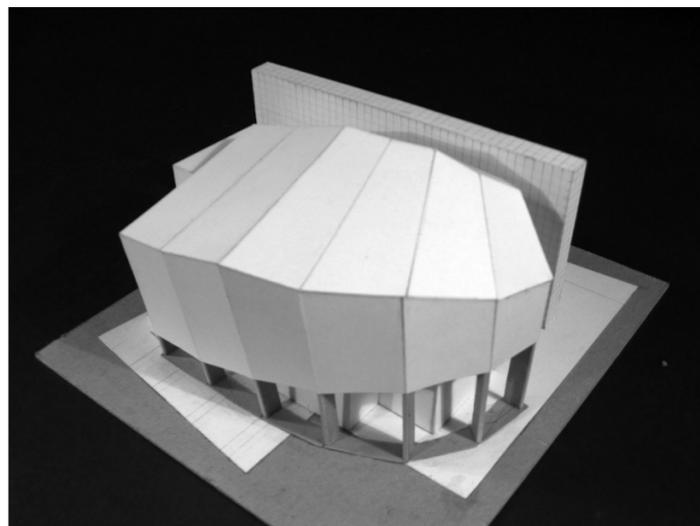
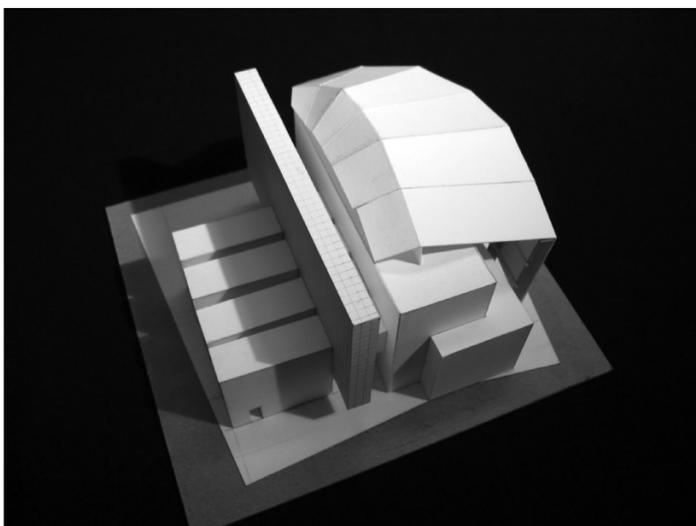
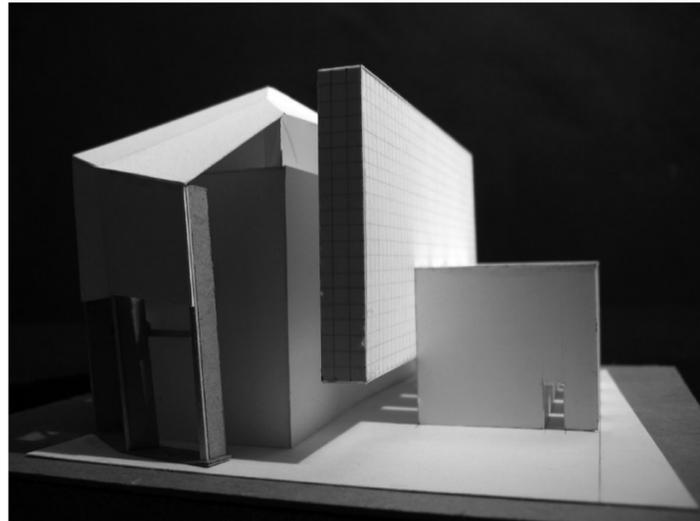
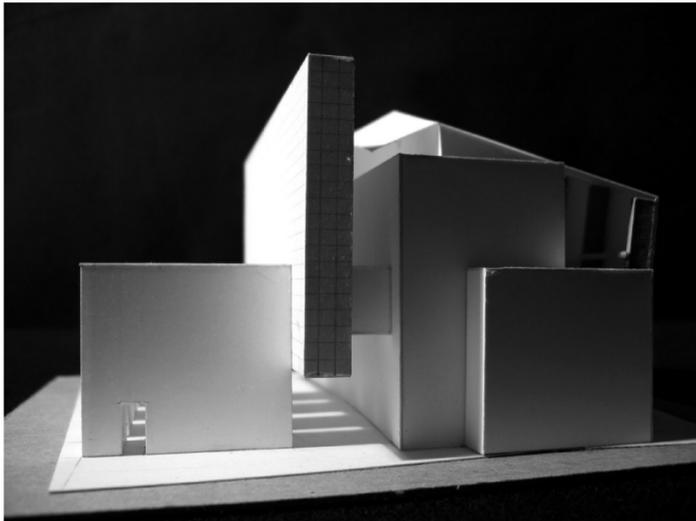
Study model 5
opposite page: Sketches



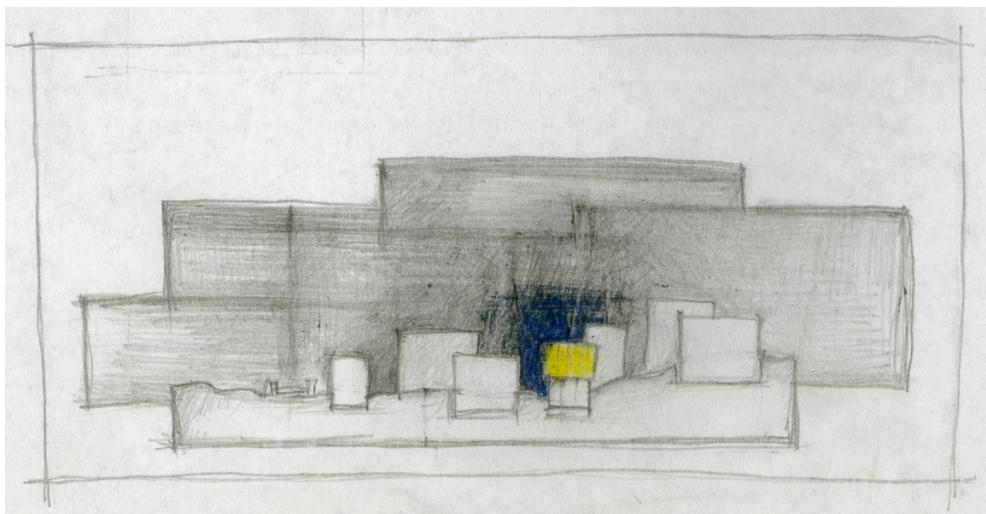
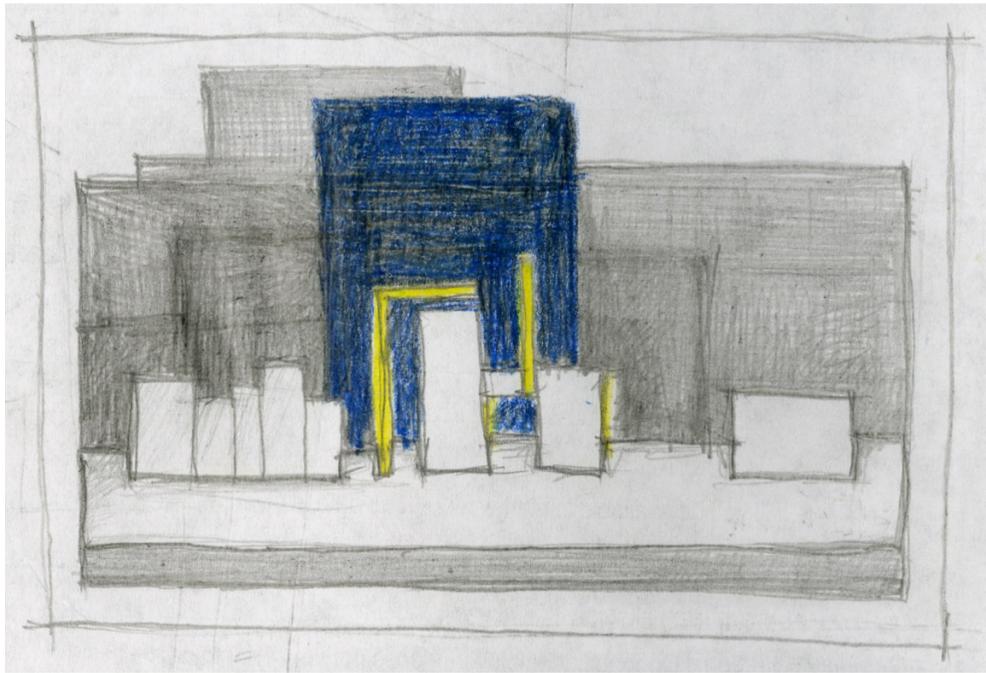
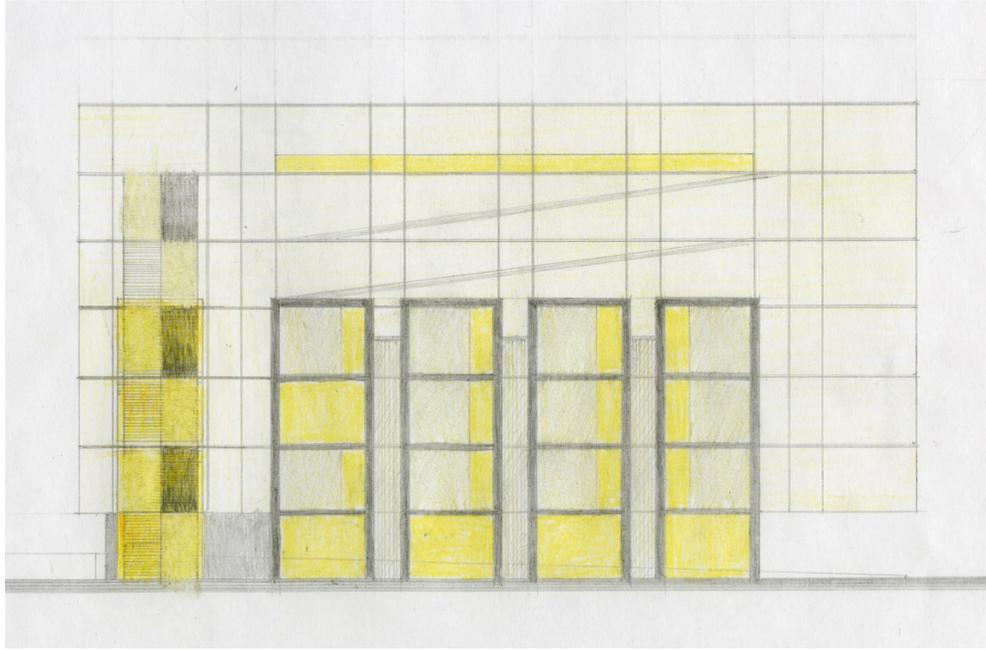


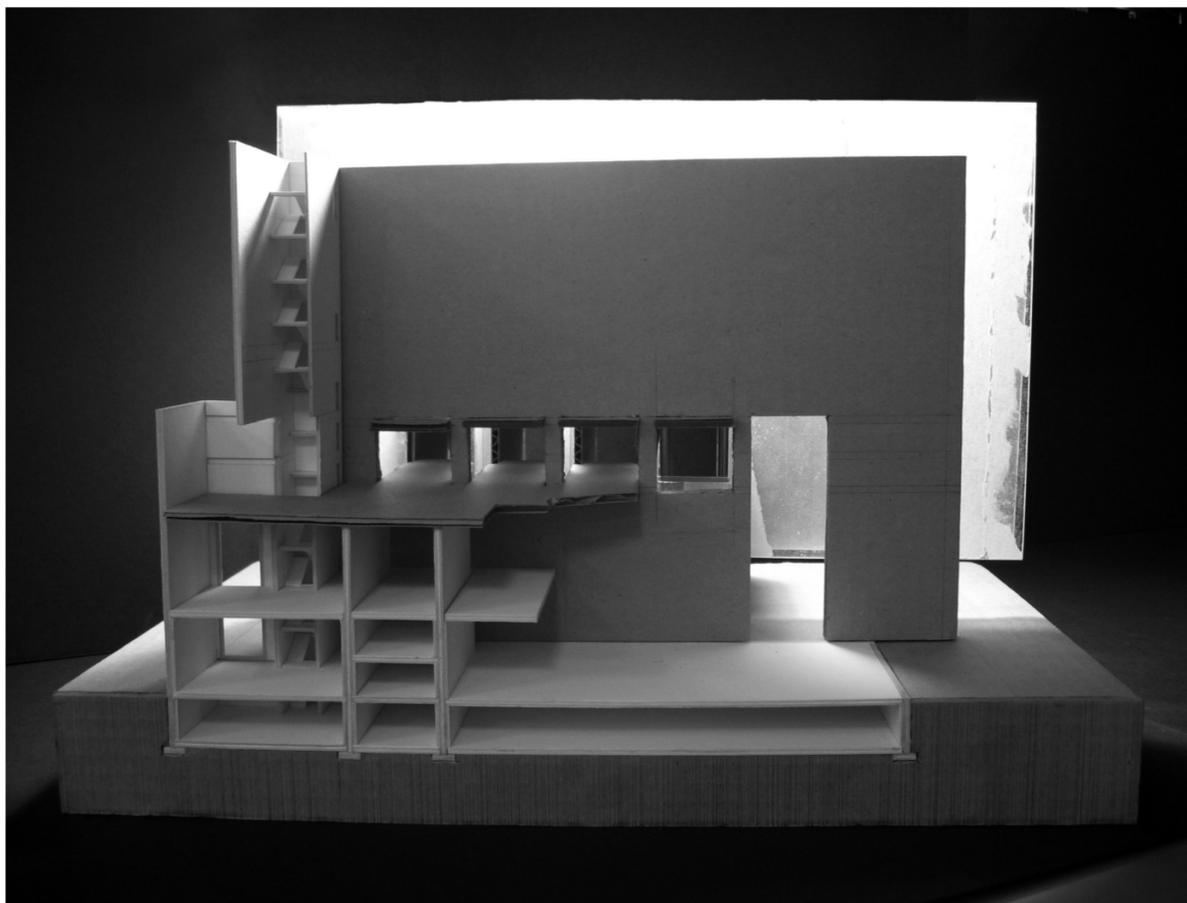
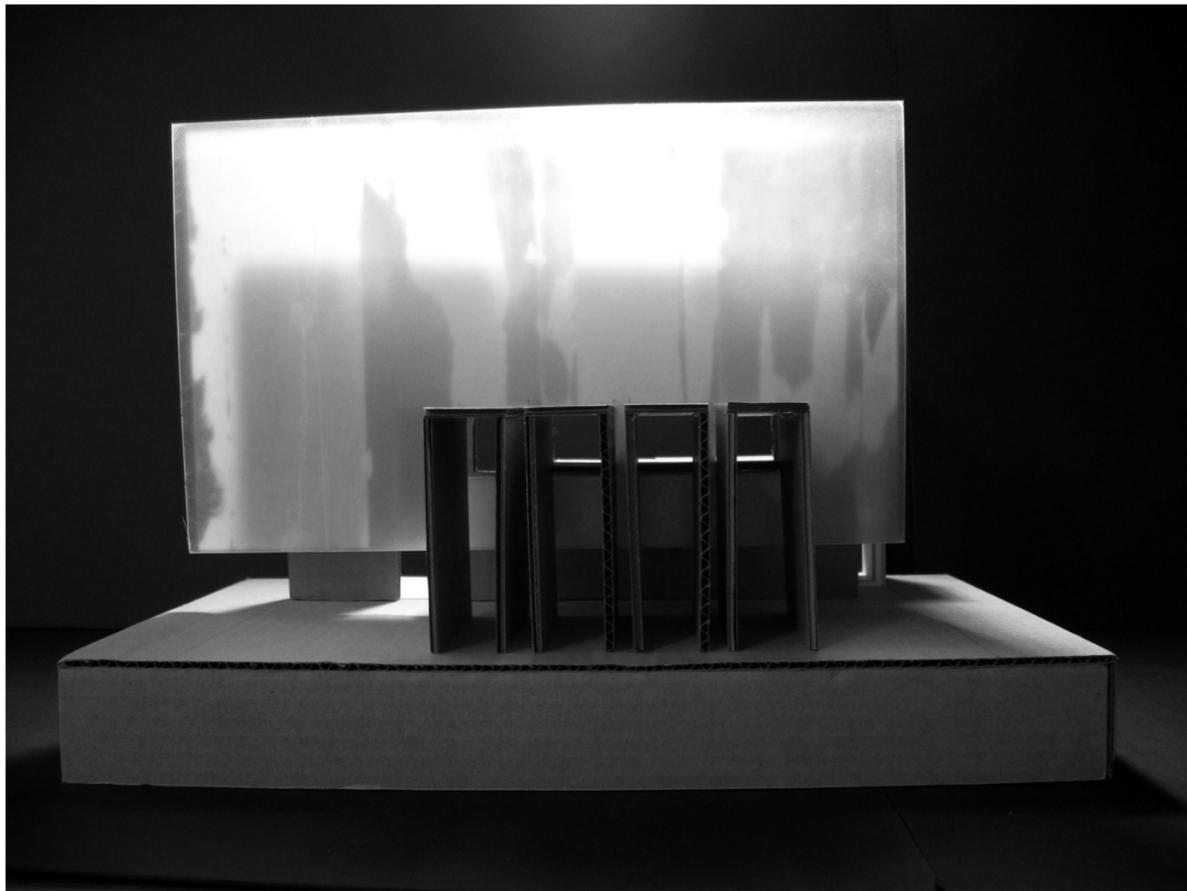
Study model 6
opposite page: Sketch



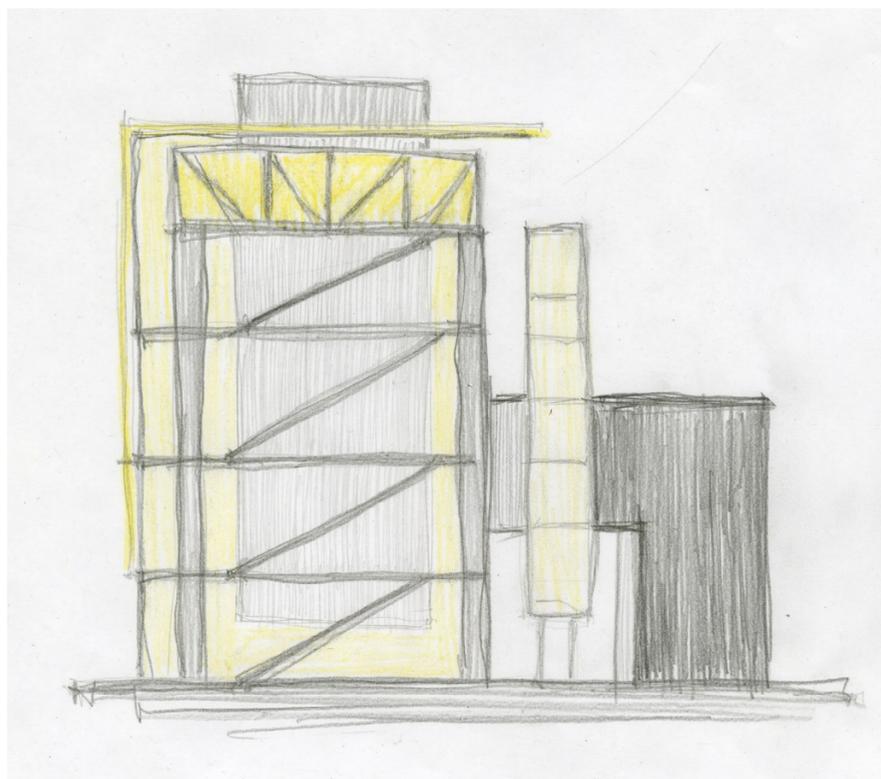
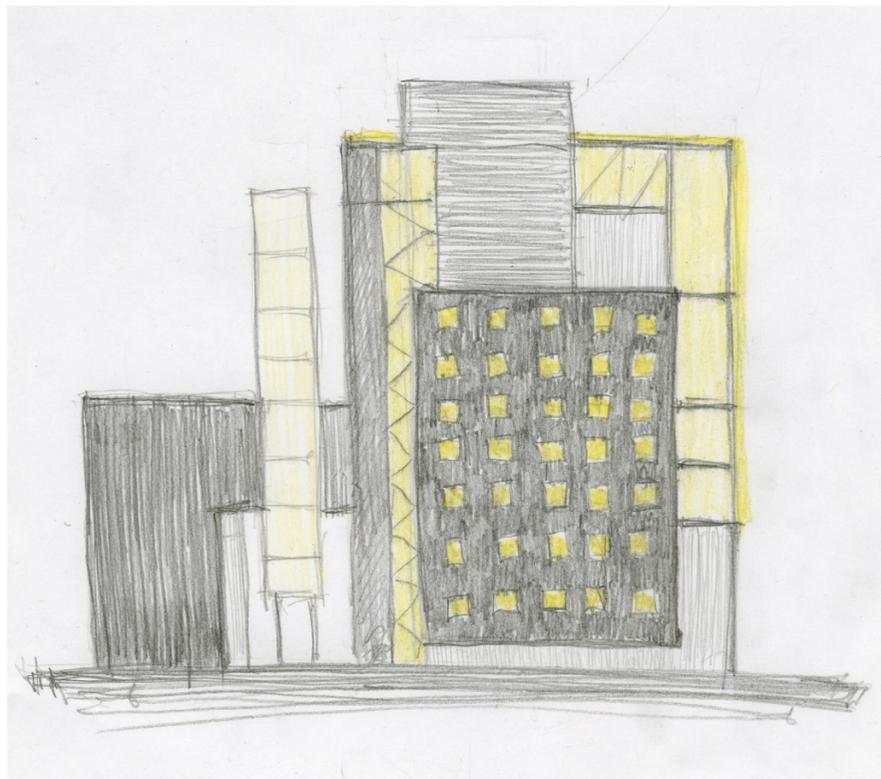
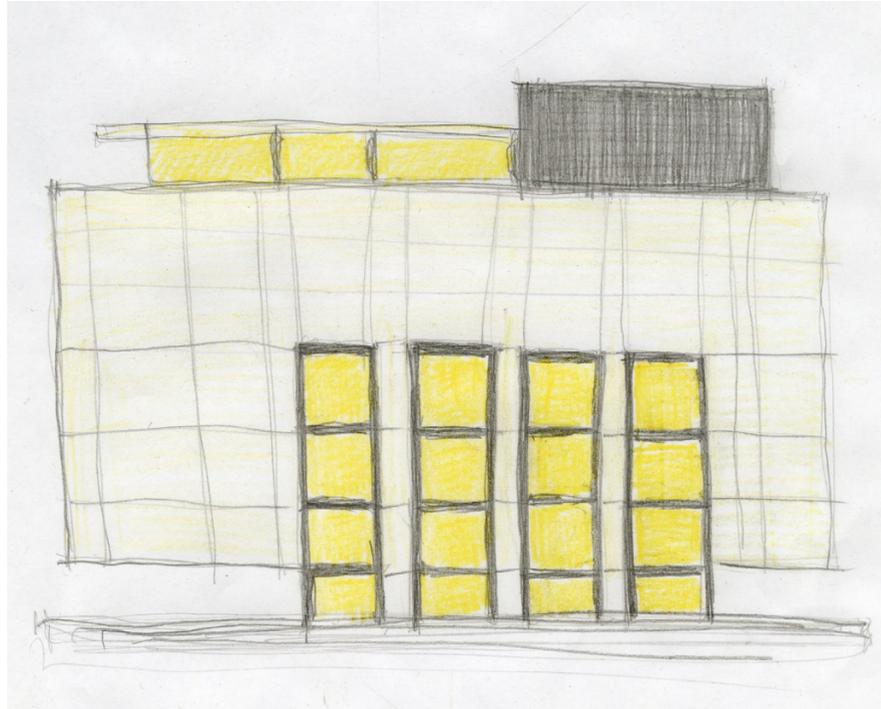


Study model 7
opposite page: Sketches



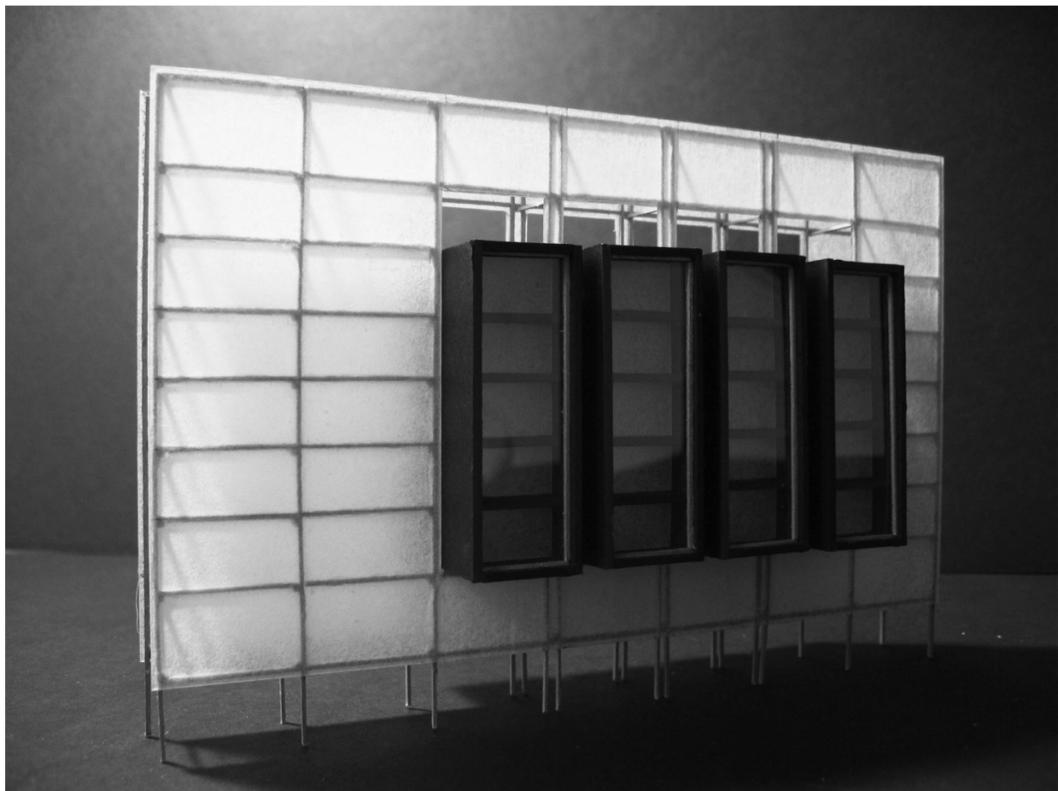


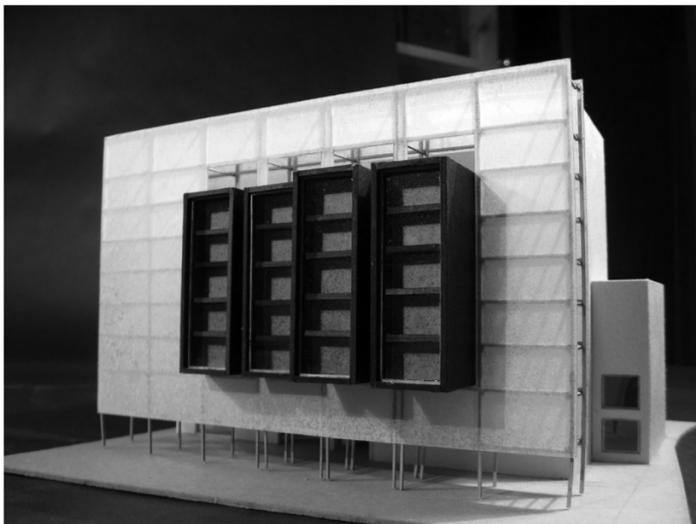
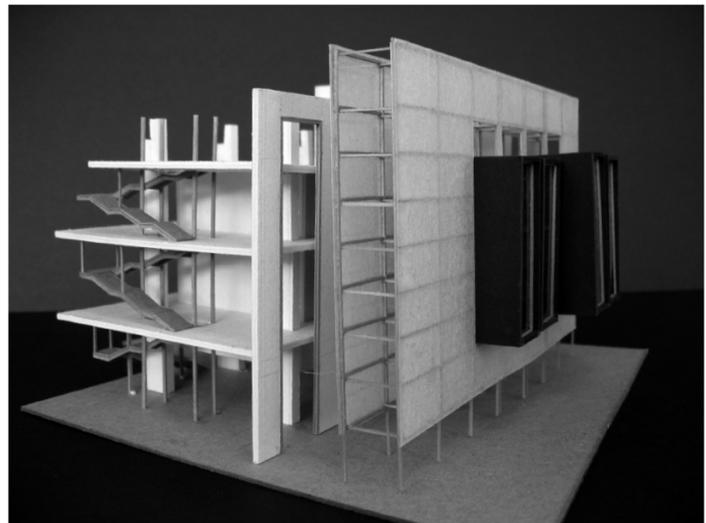
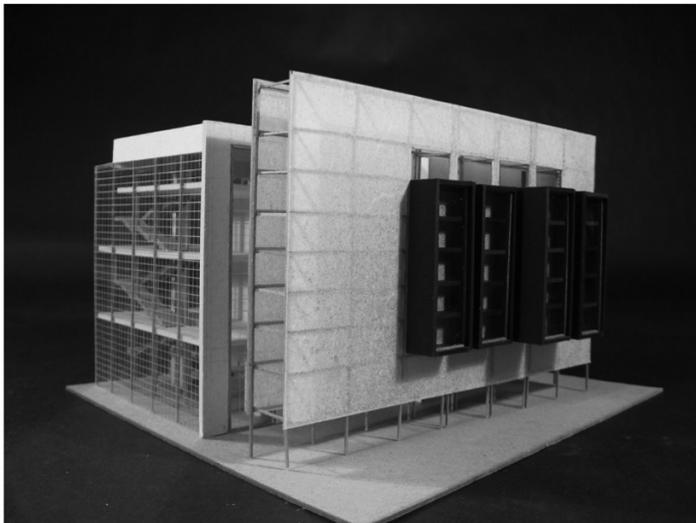
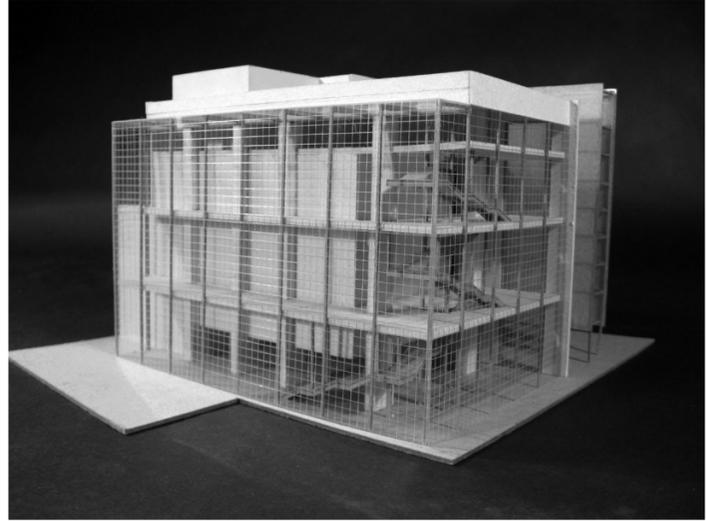
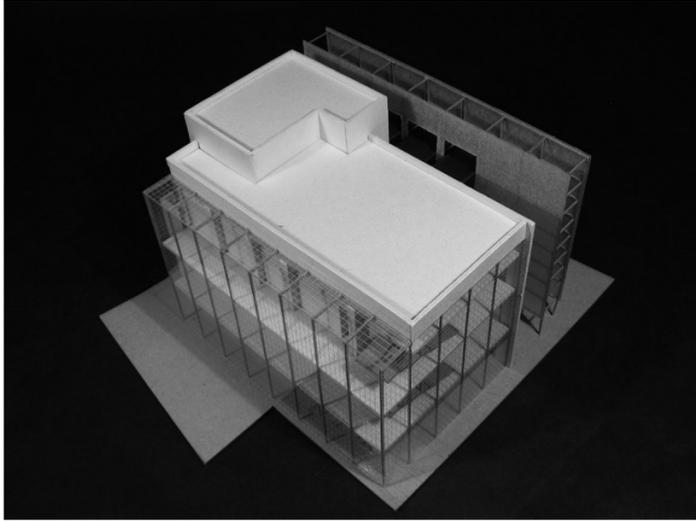
Study model 8
opposite page: Sketches



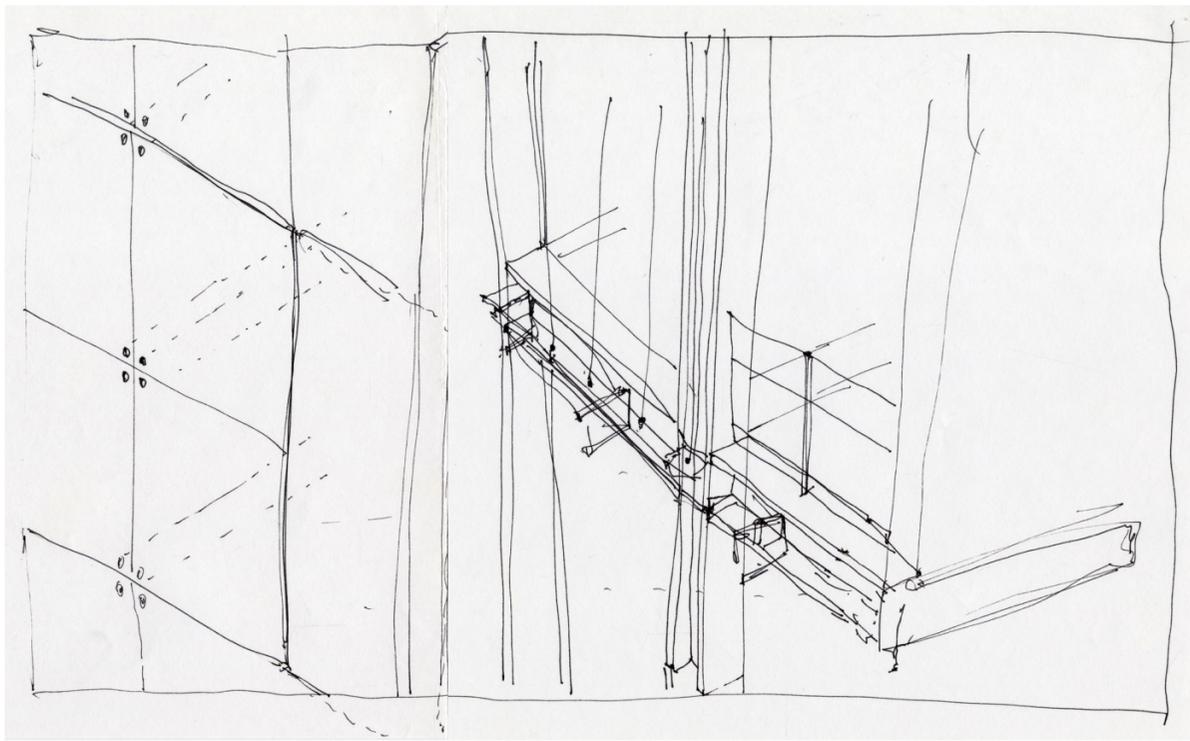
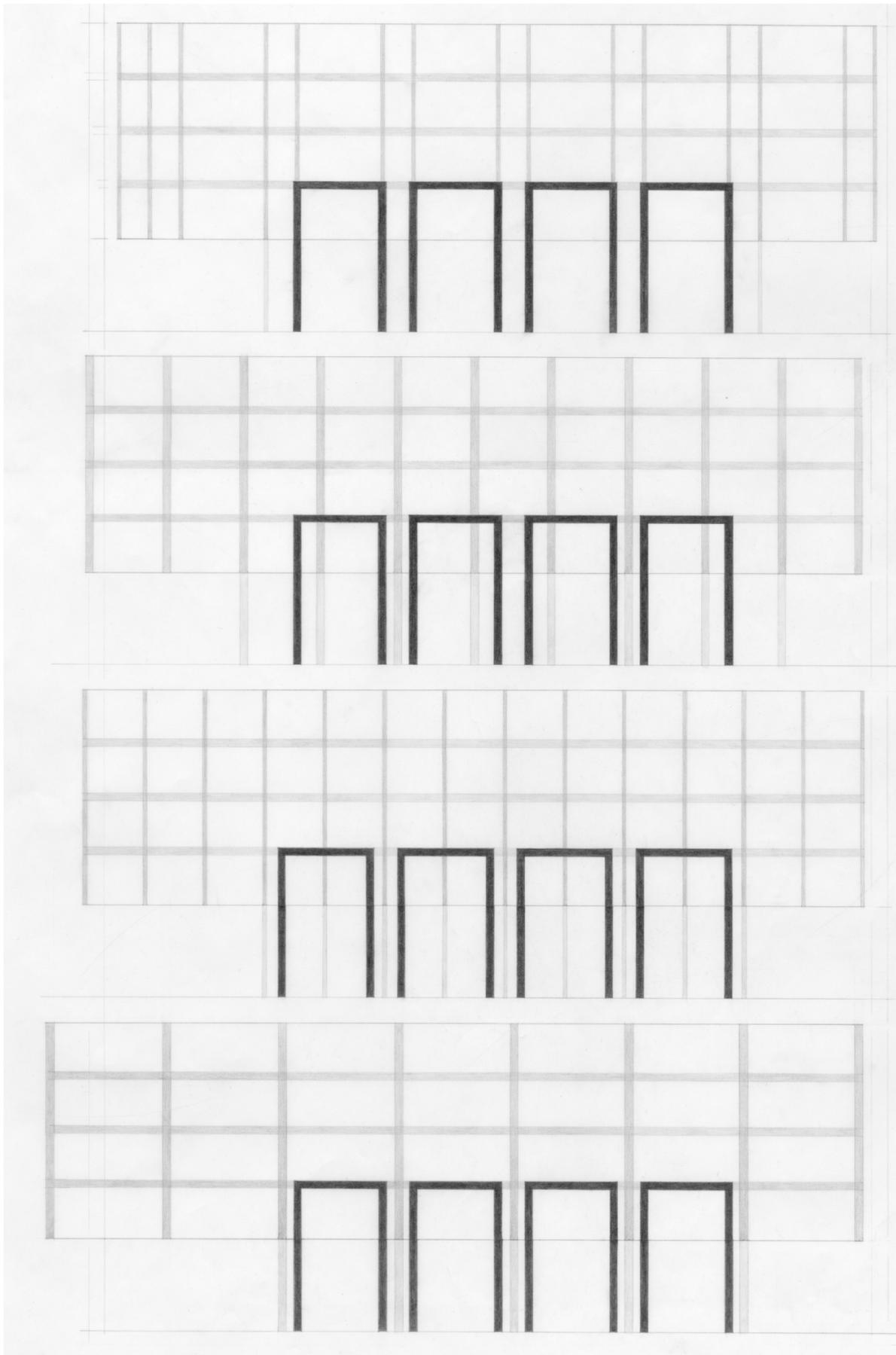
Sketches

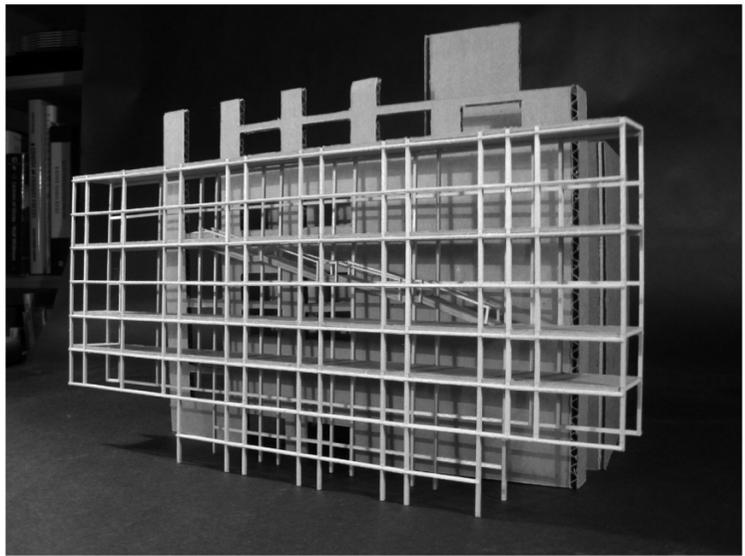
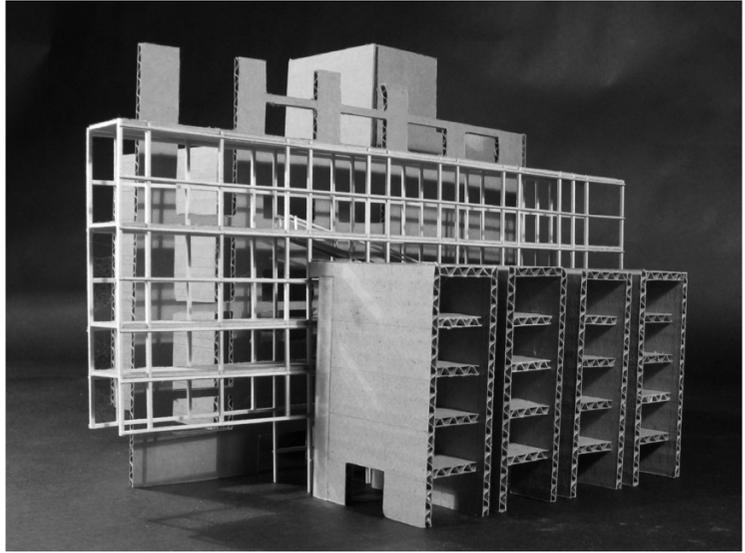
opposite page: Progress drawings



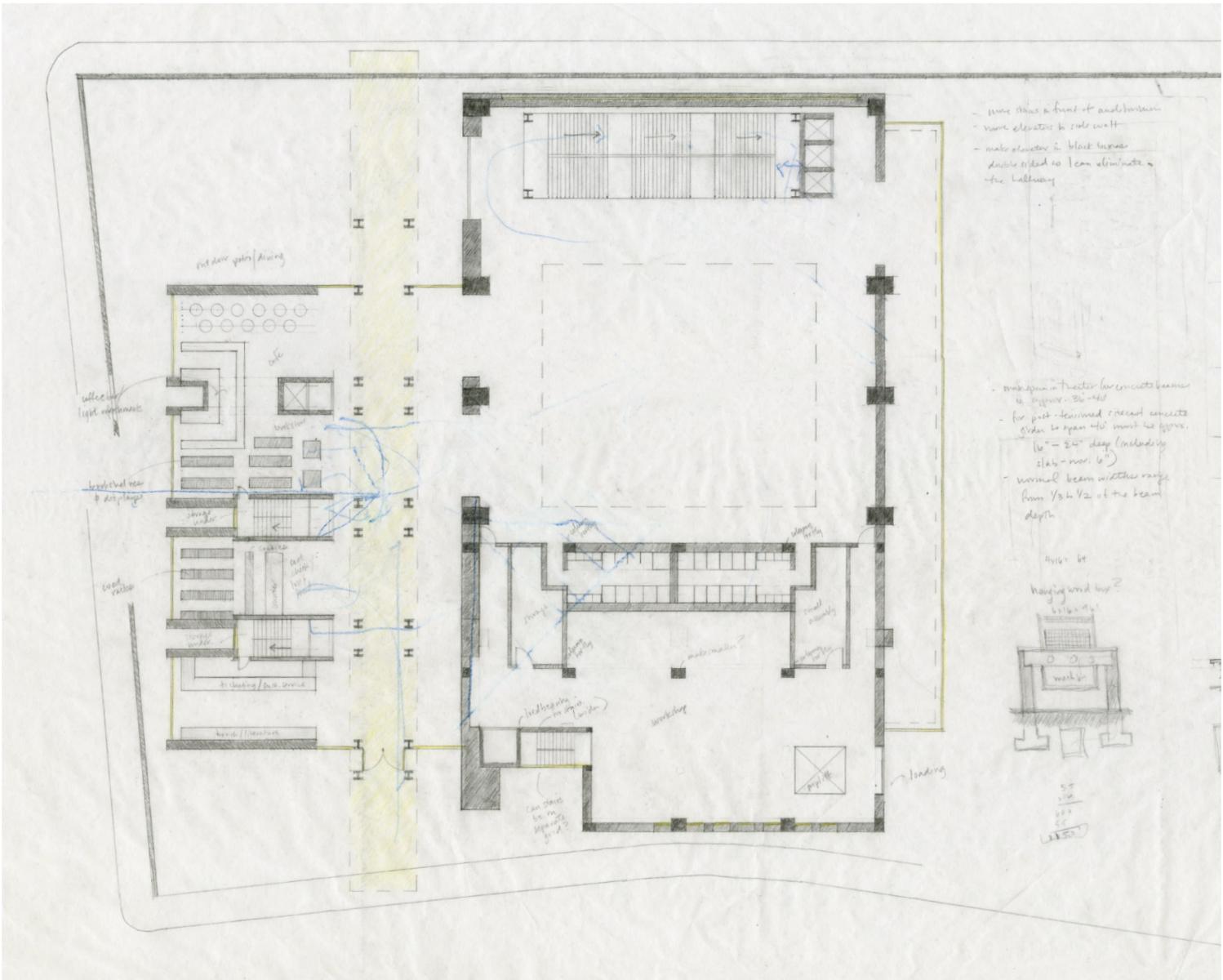
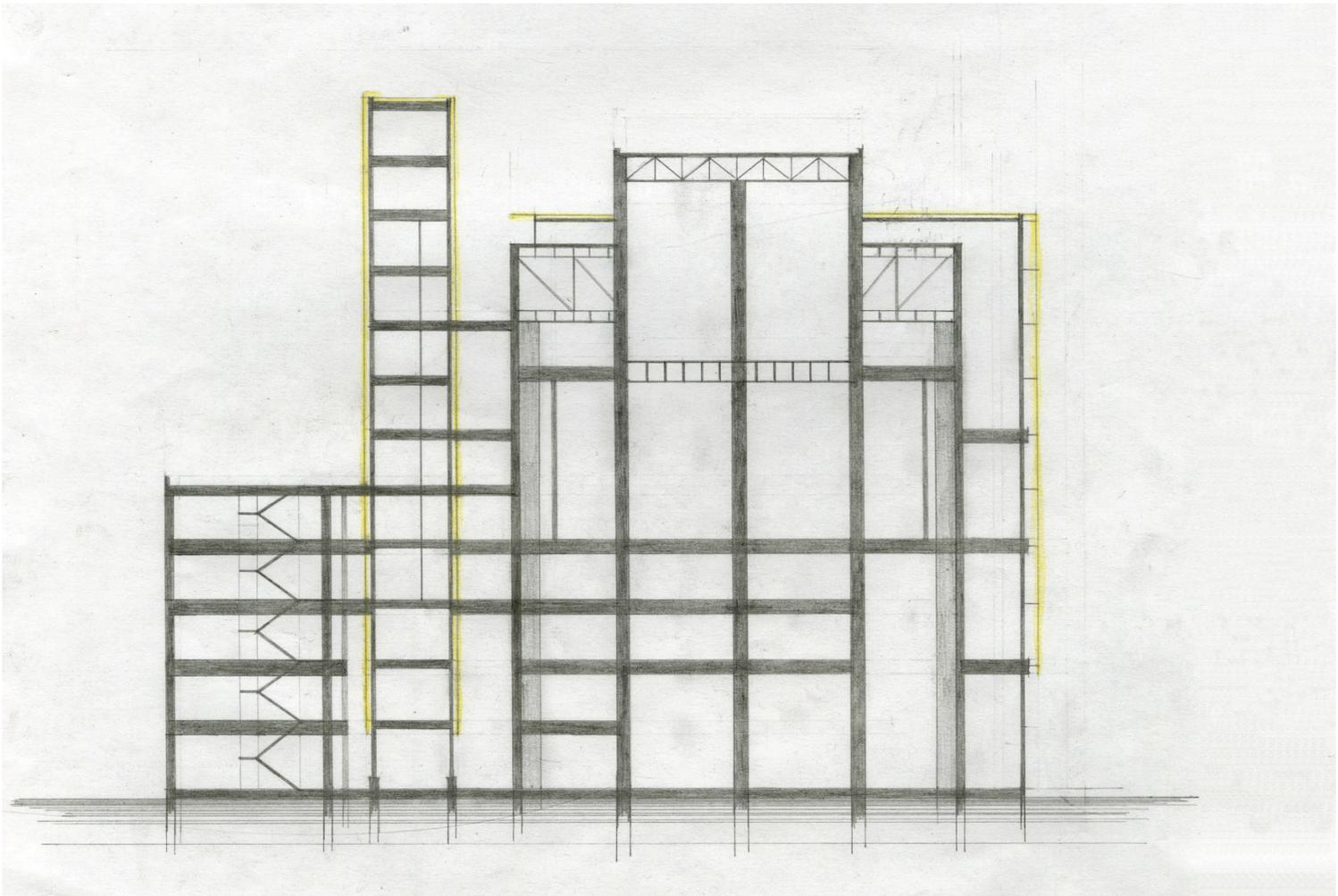


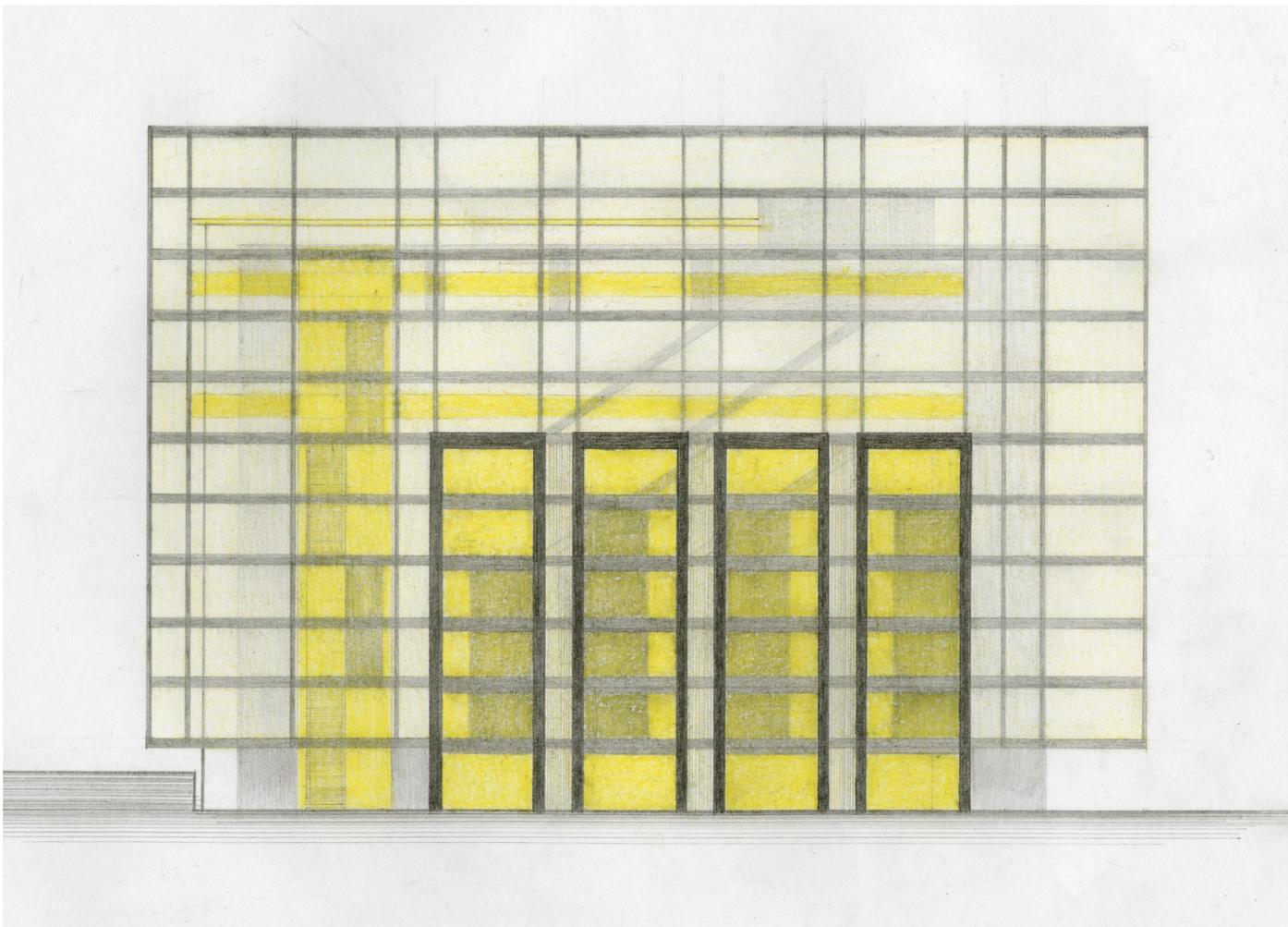
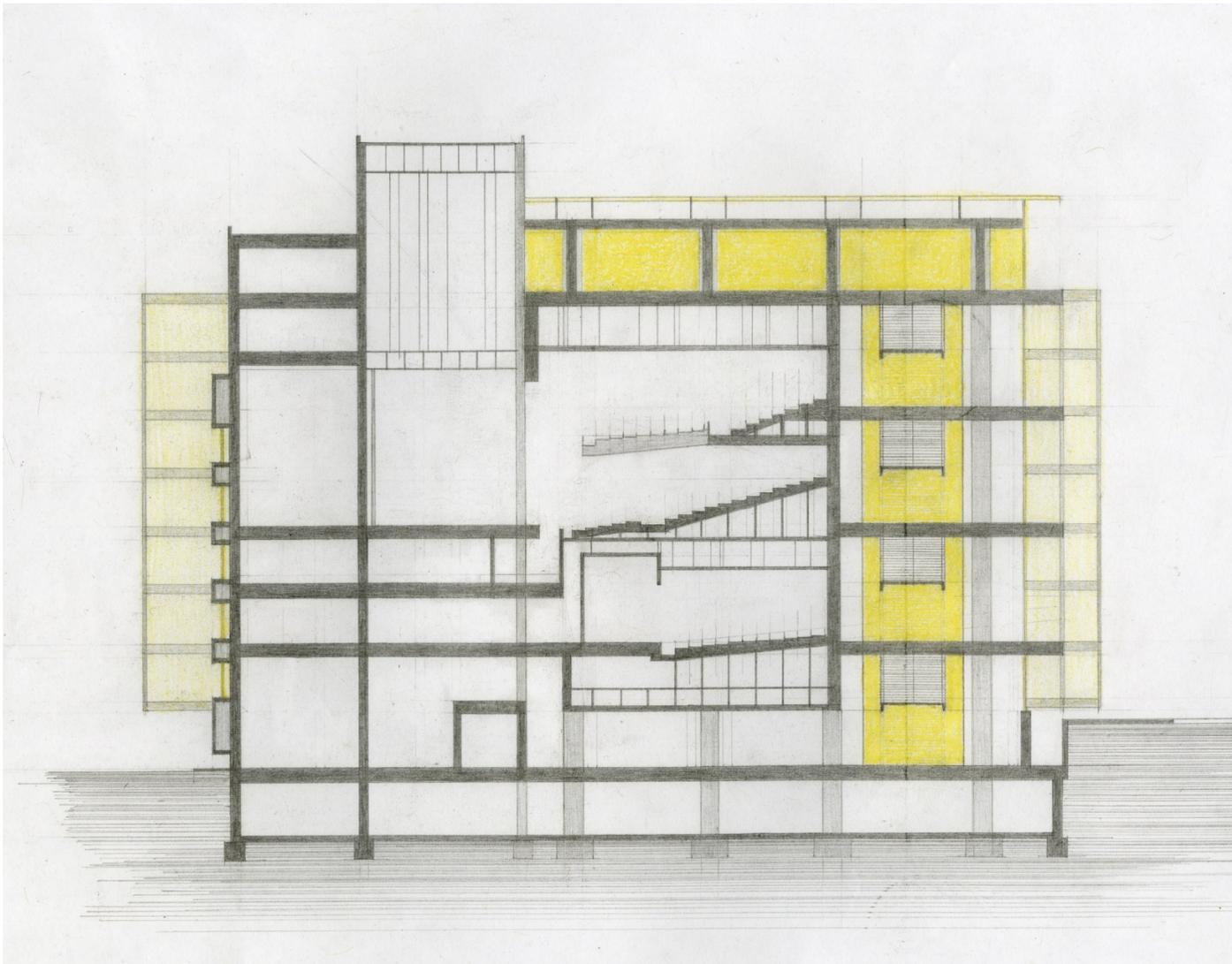
Study model 9
opposite page: Study model 9



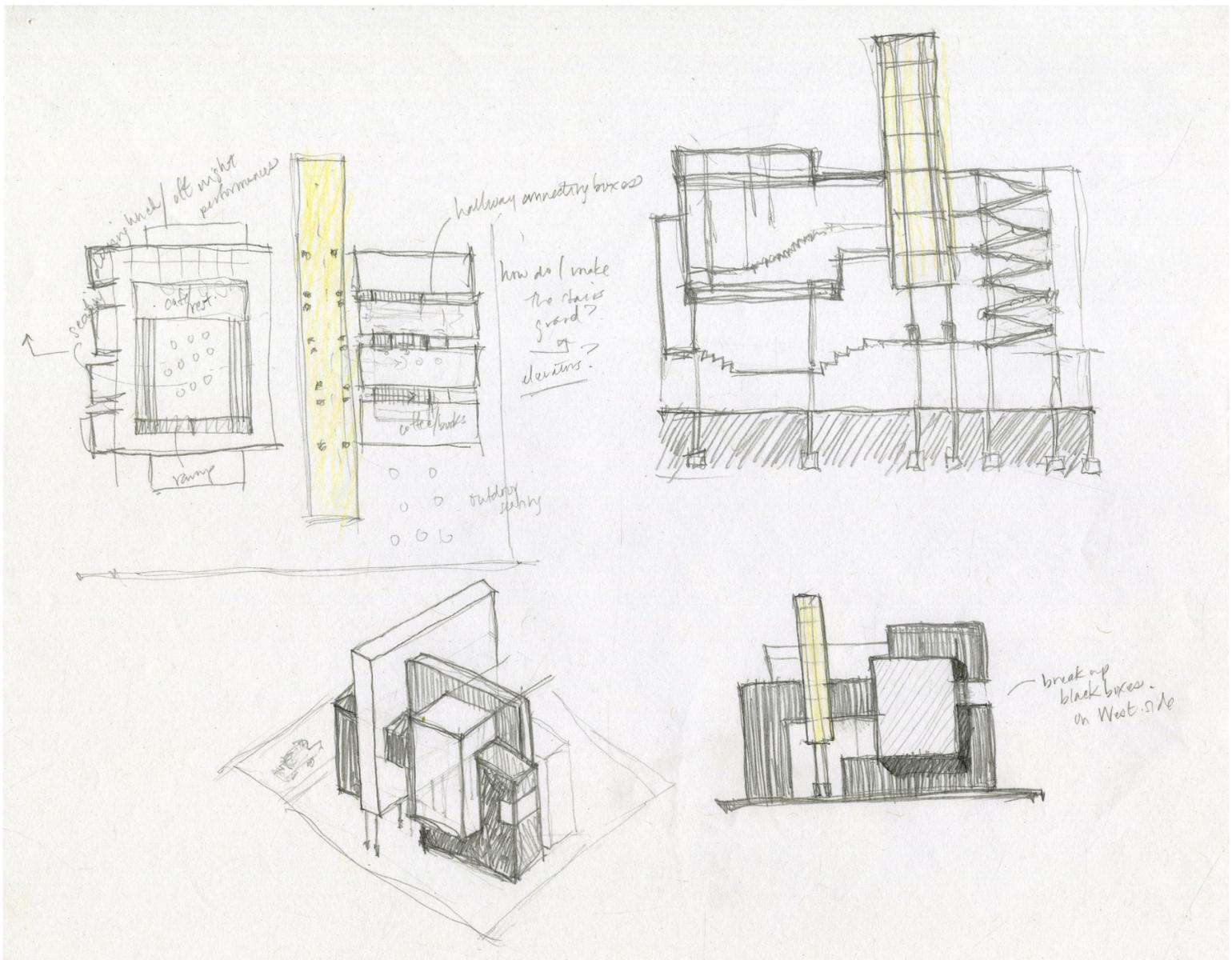
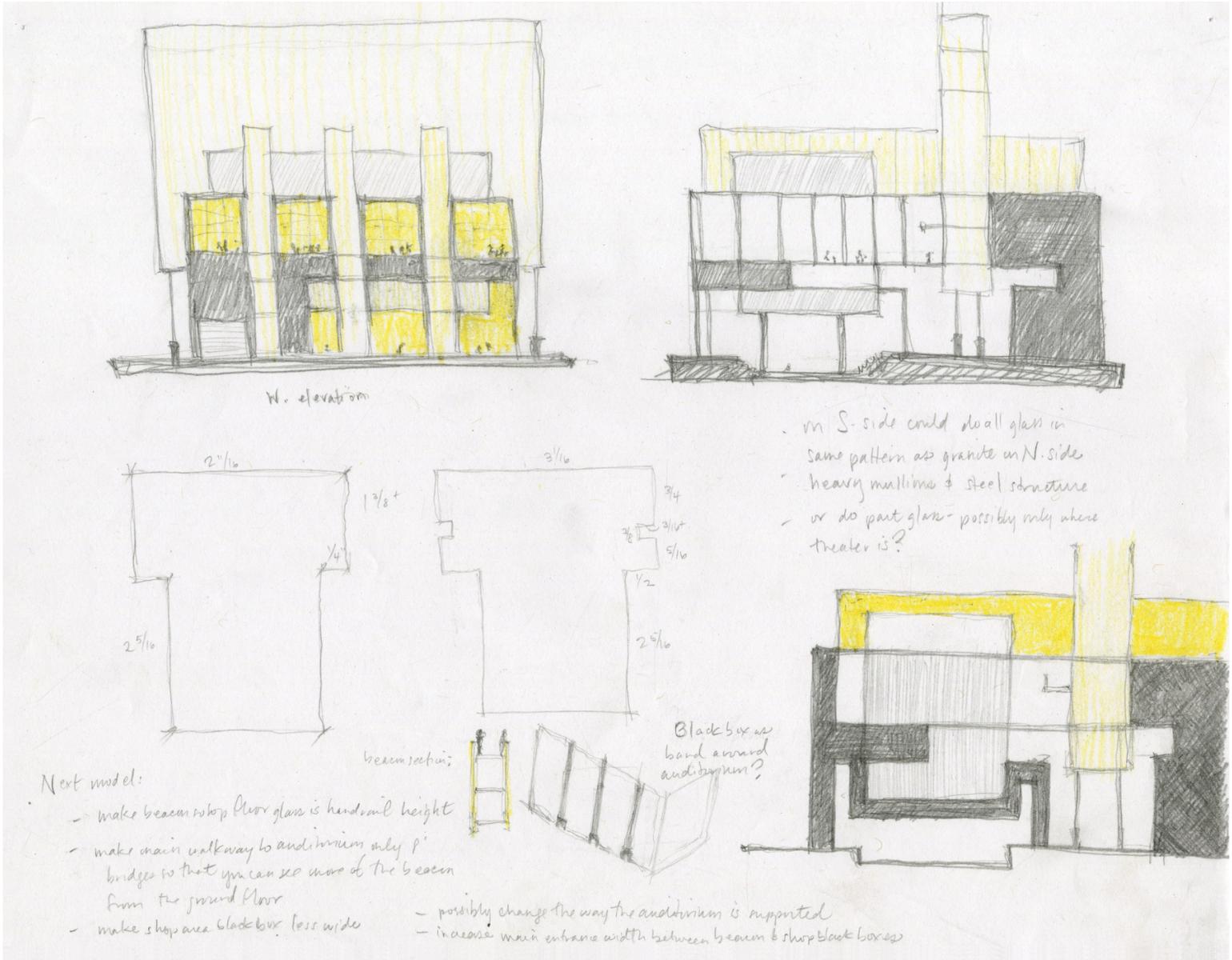


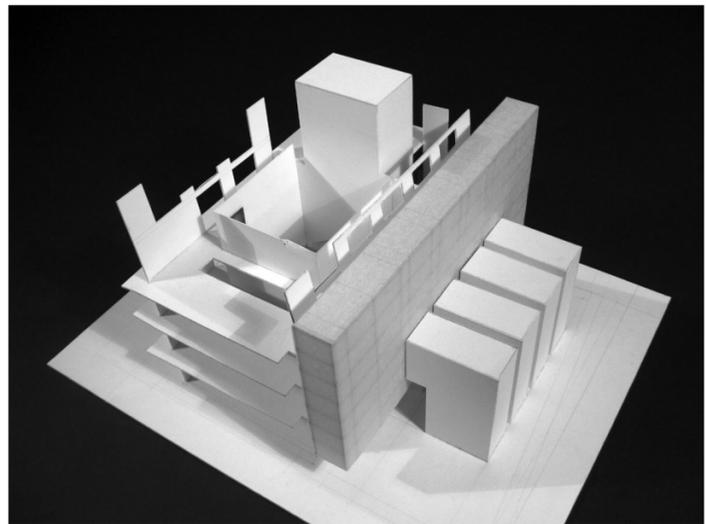
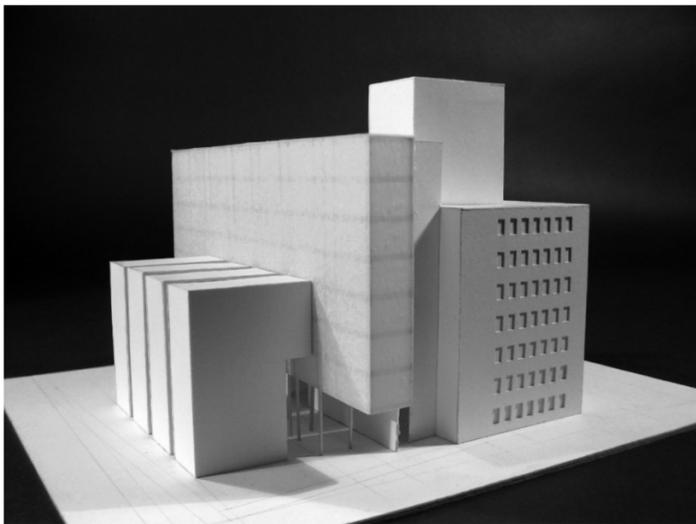
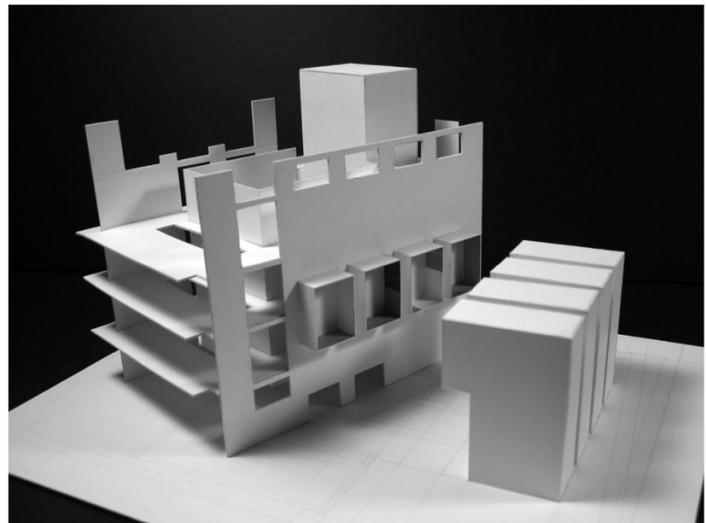
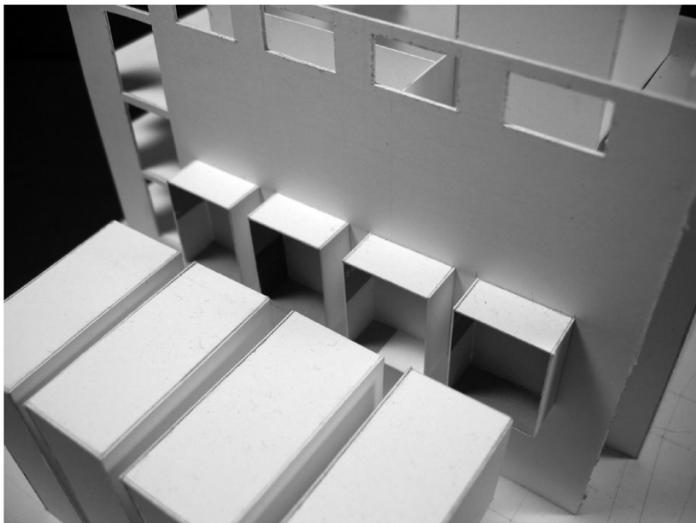
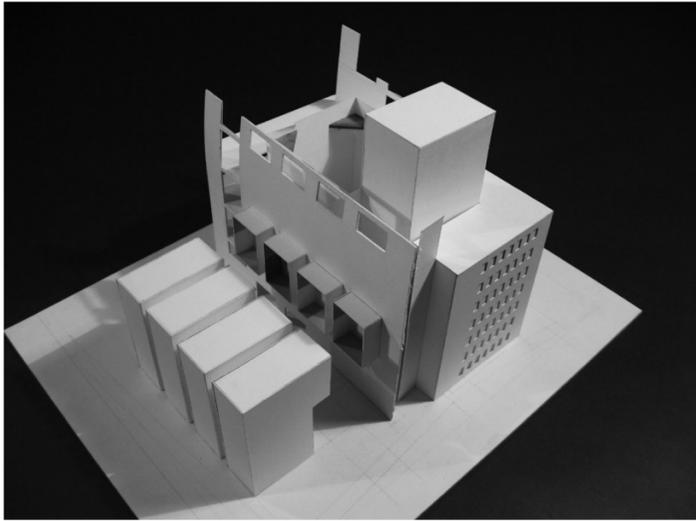
Study model 10
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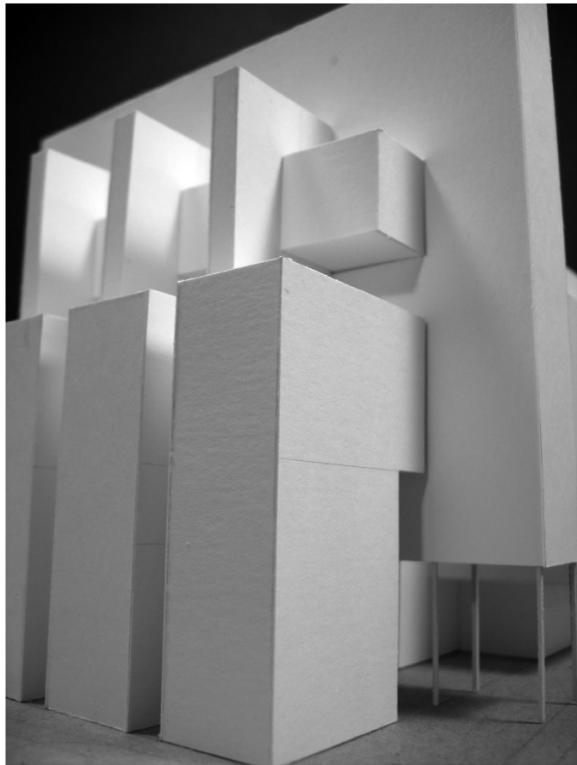
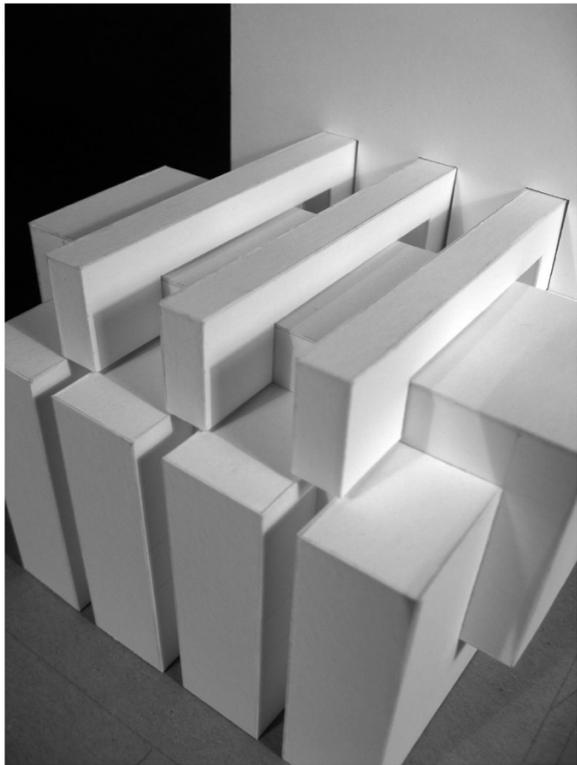




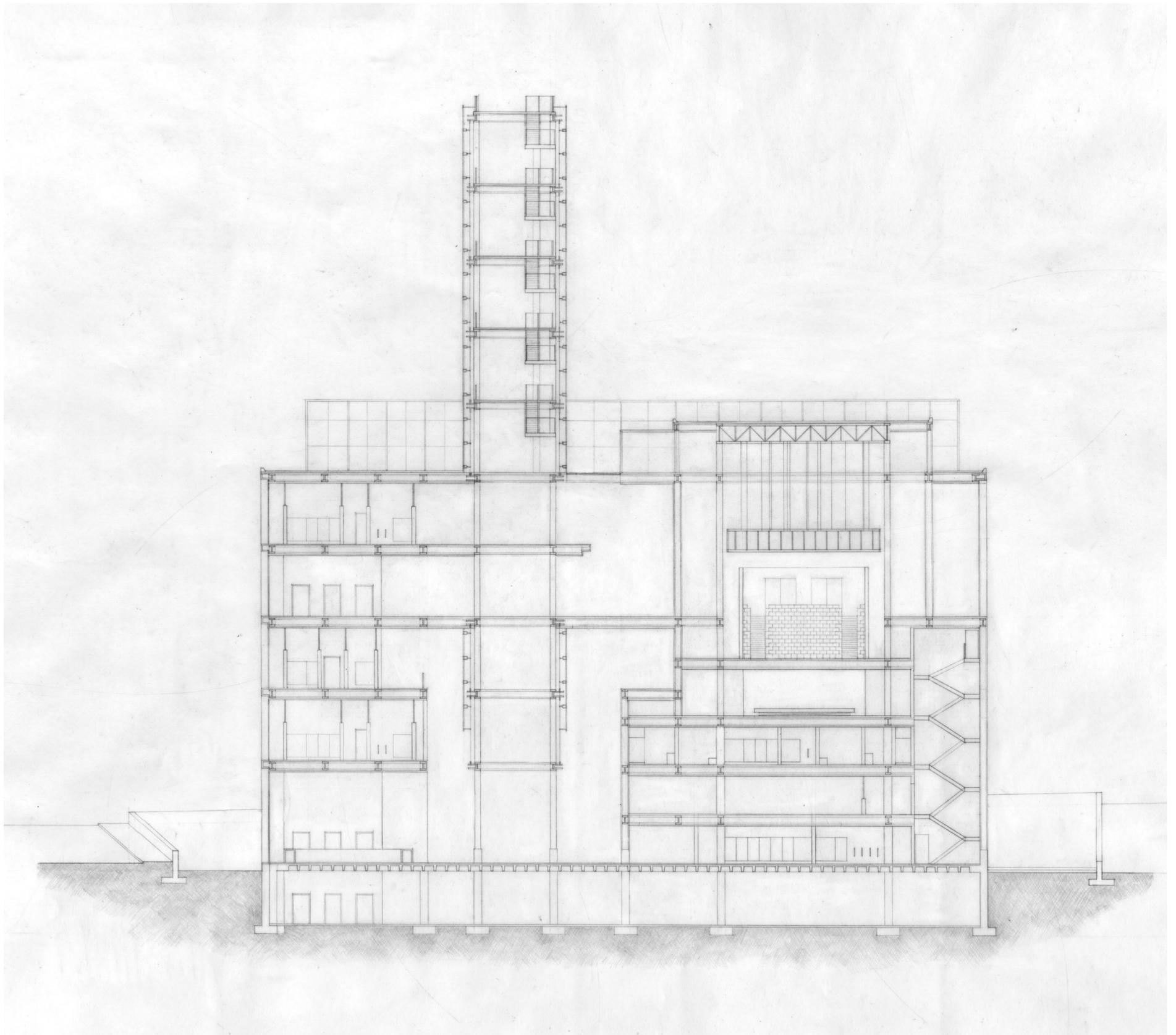
Progress drawings
opposite page: Progress drawings

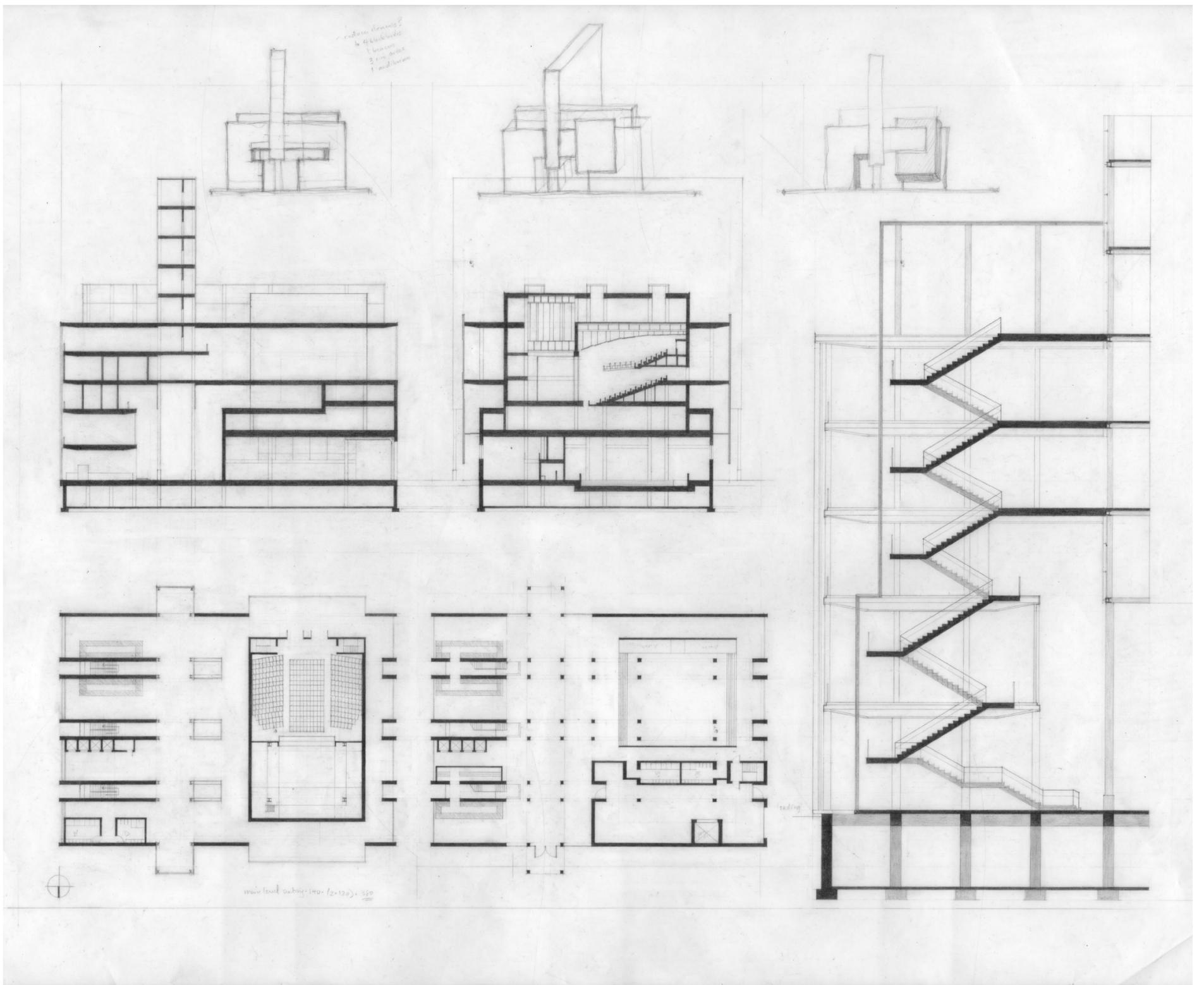






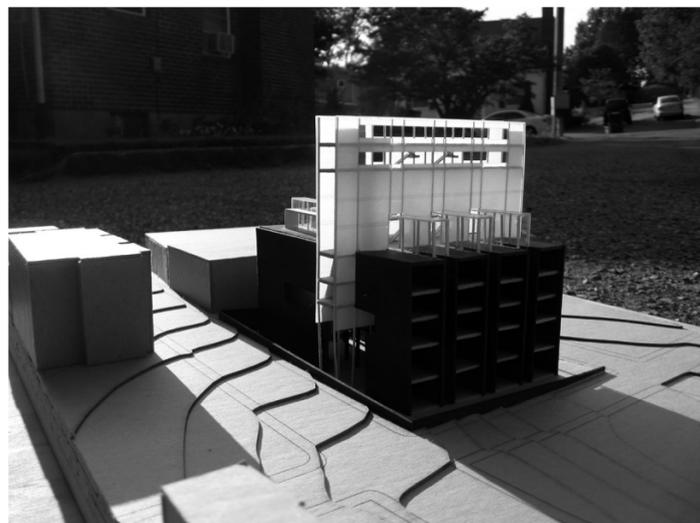
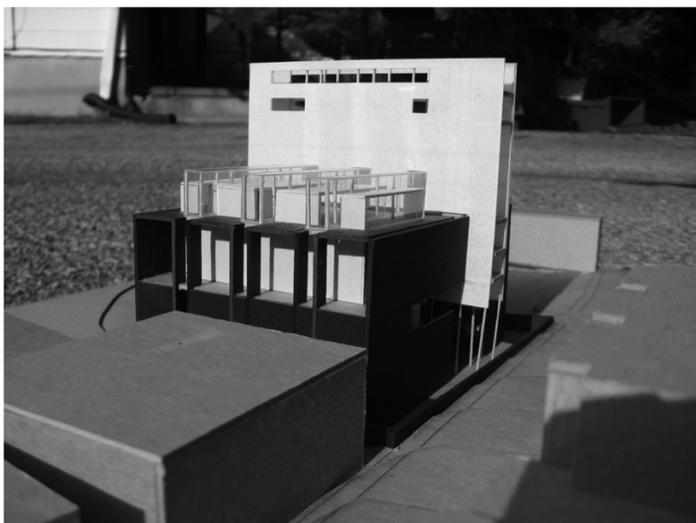
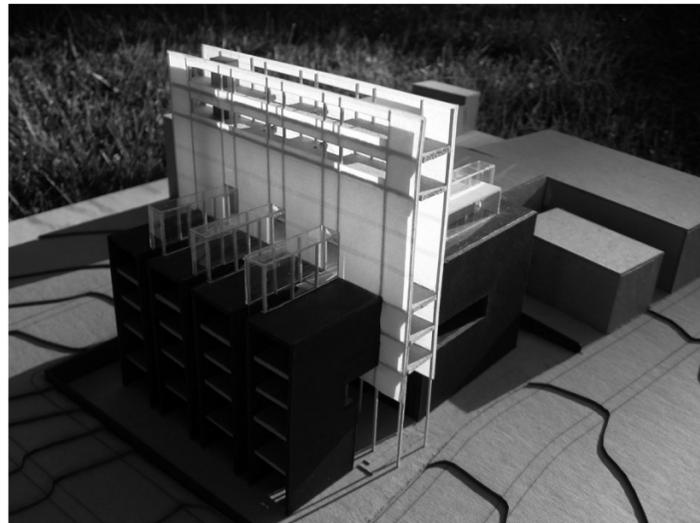
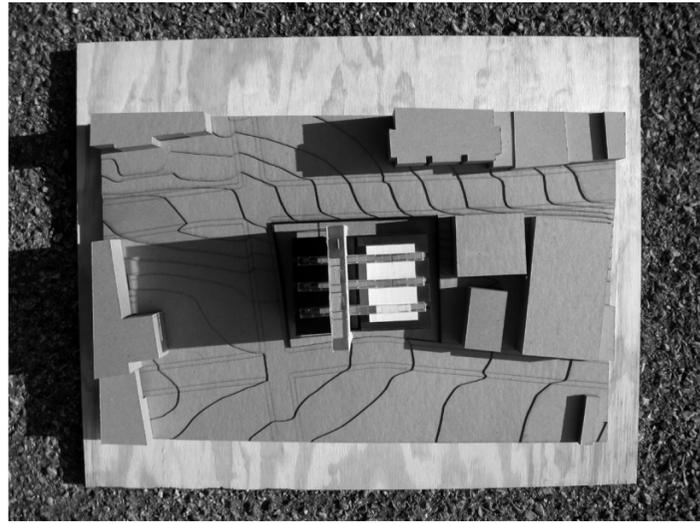
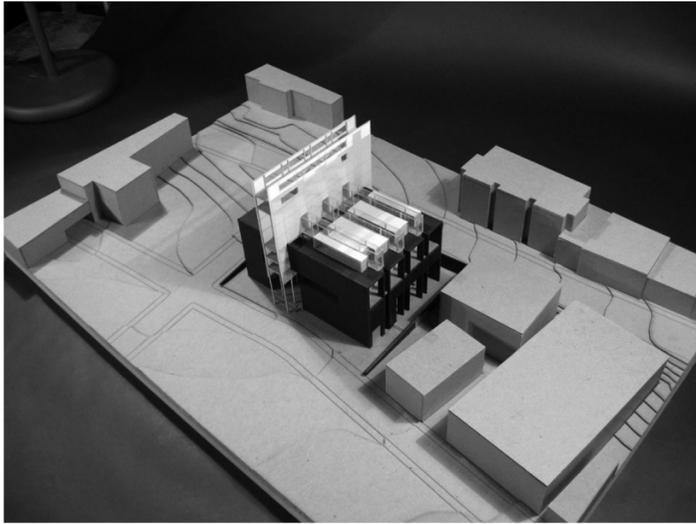
clockwise from top right: Study model 17, study model 15, study model 14, study model 12

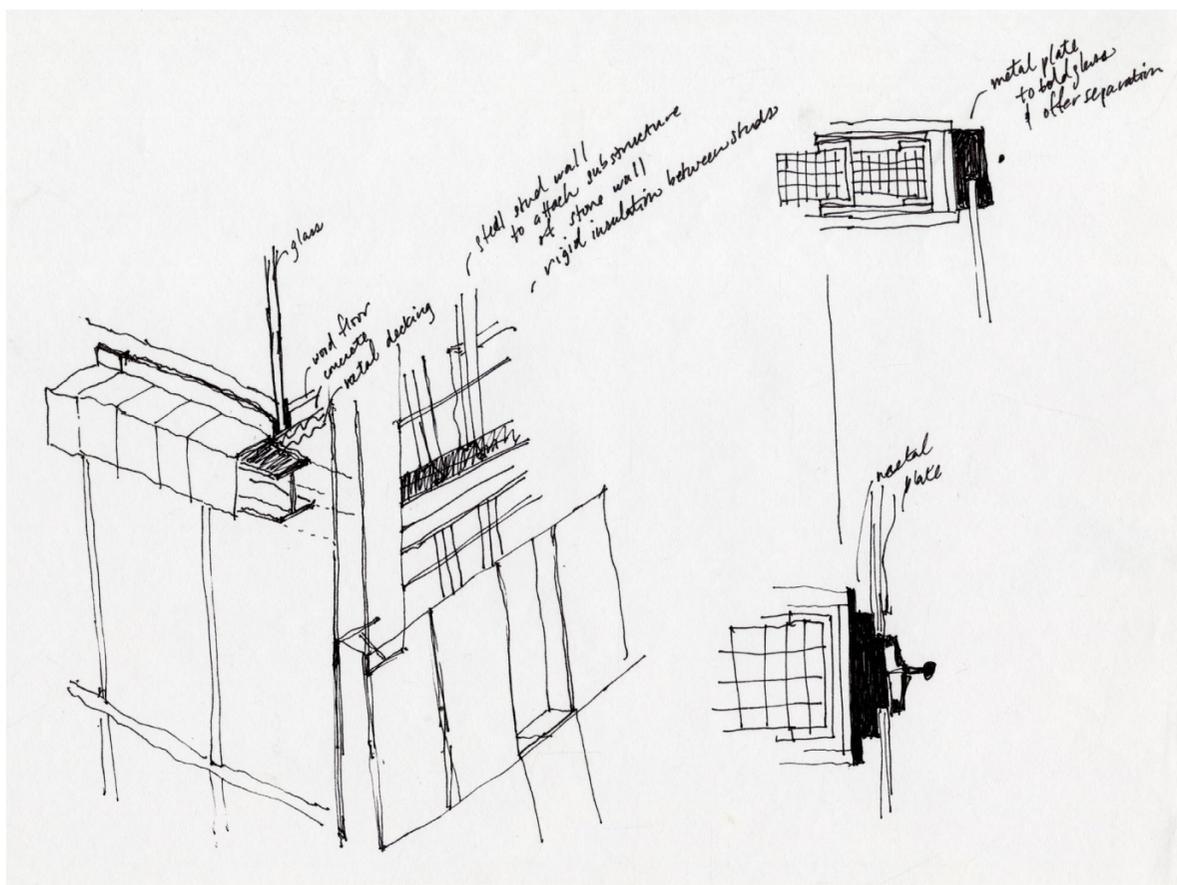
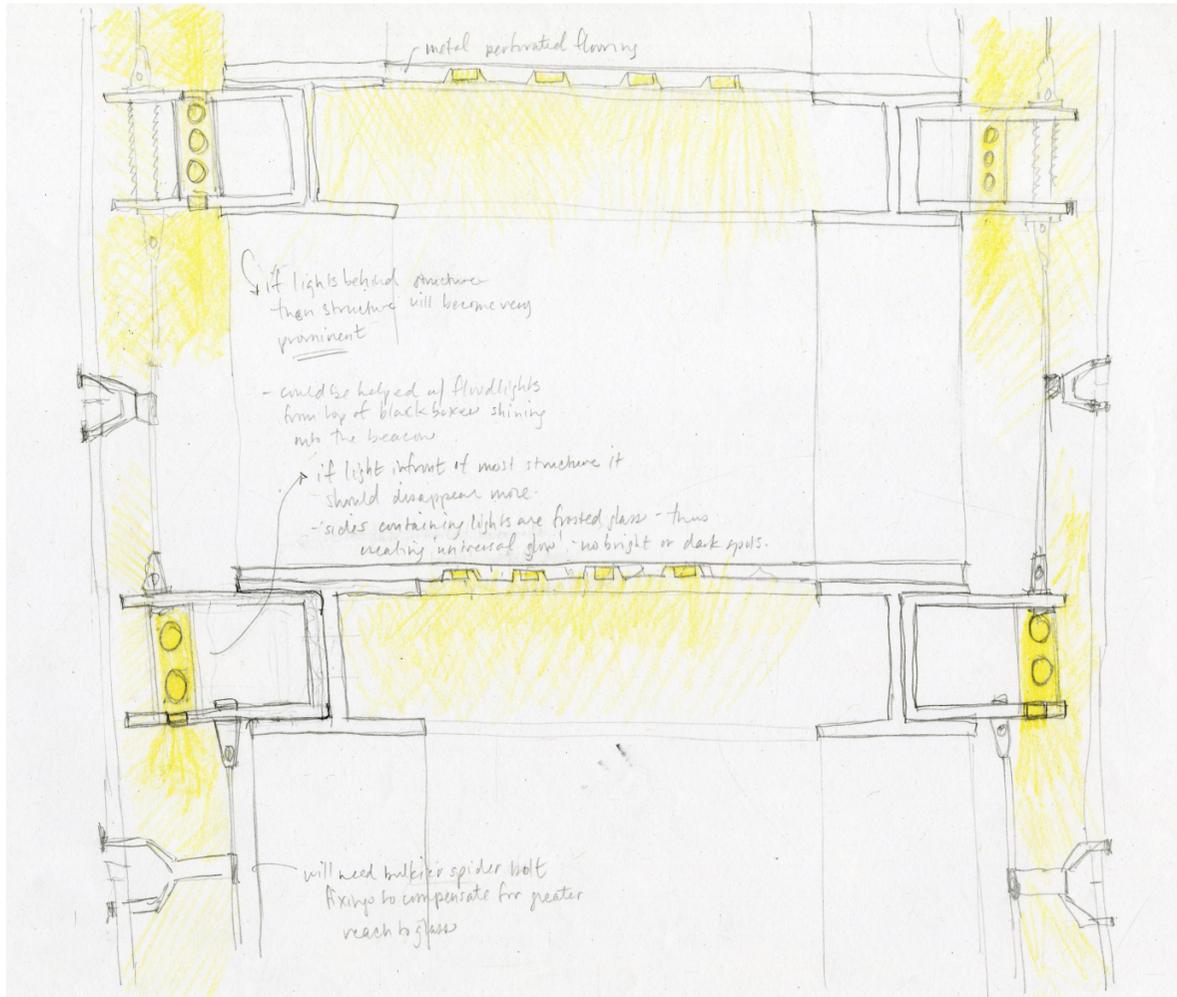


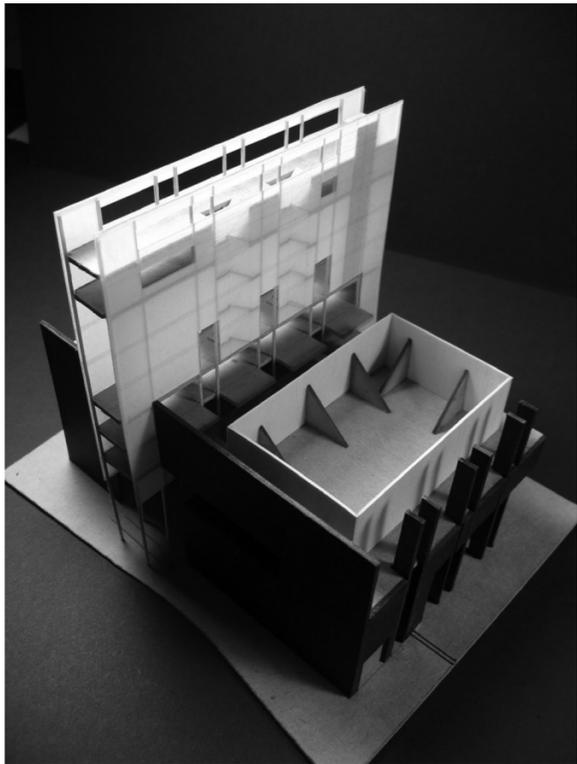
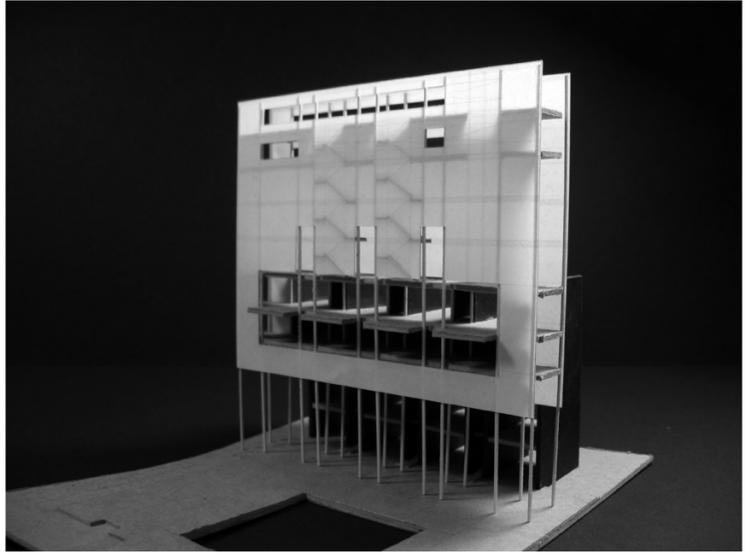
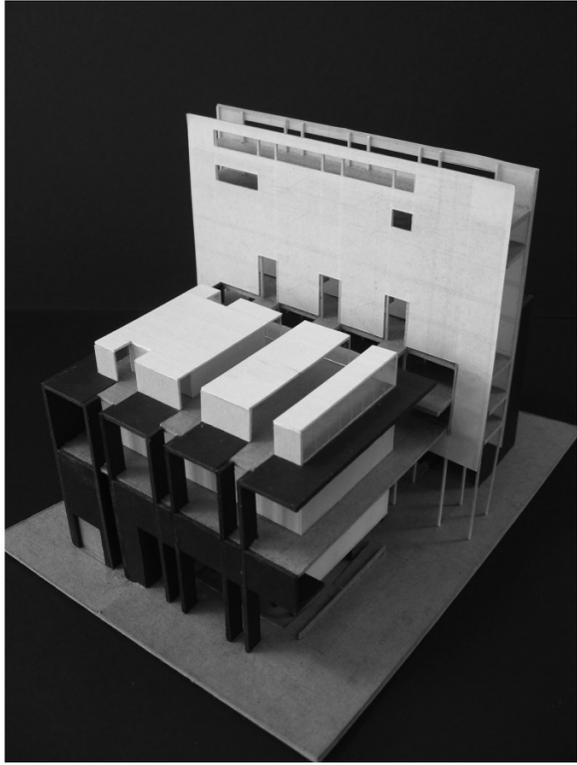


Progress drawing
opposite page: Progress drawing

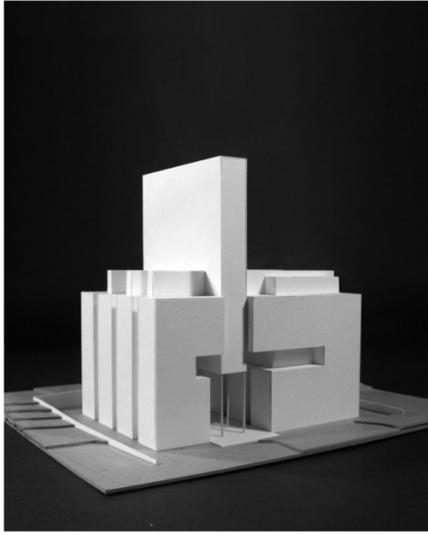
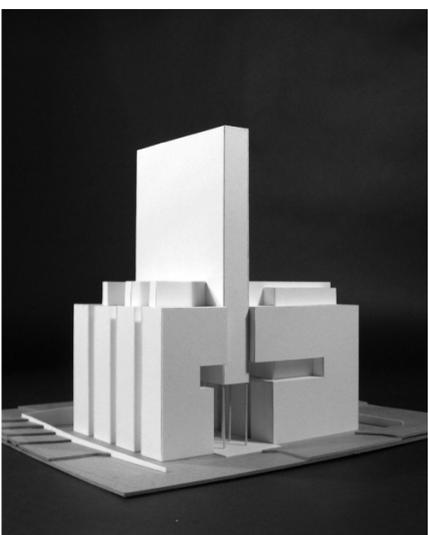
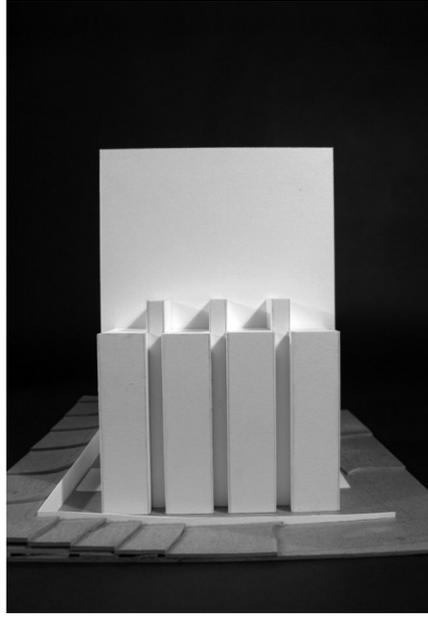
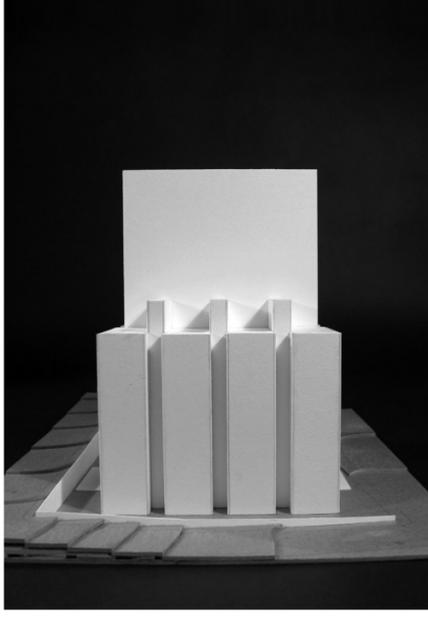
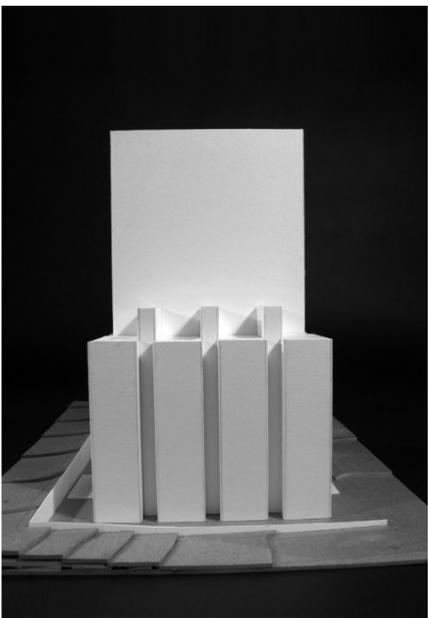
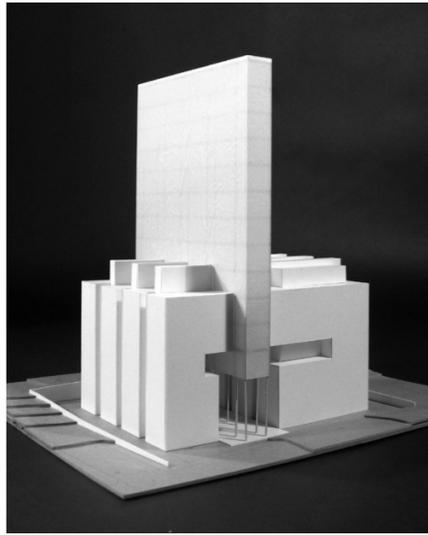
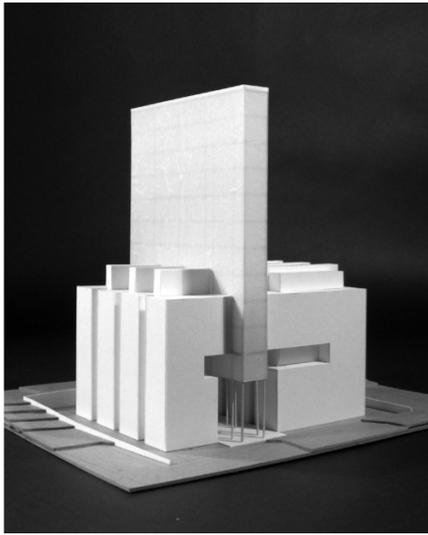
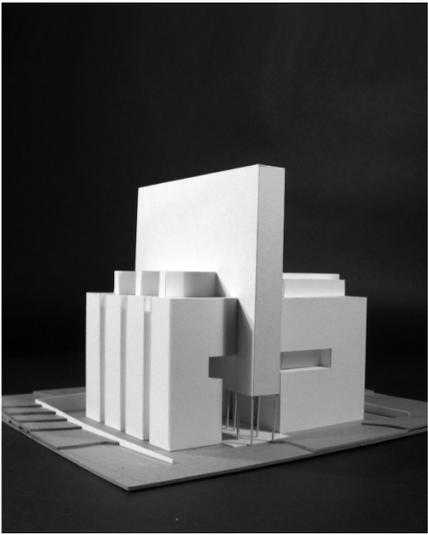
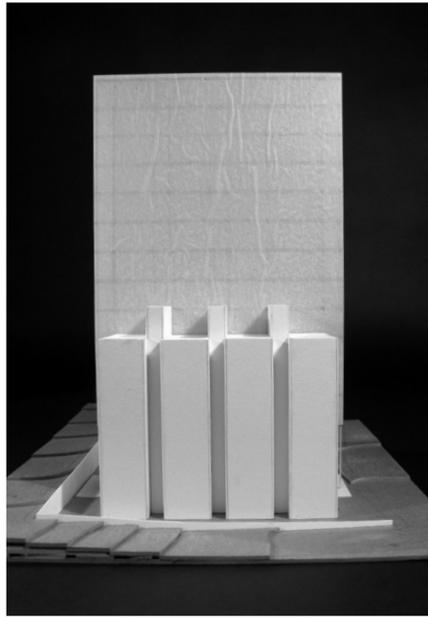
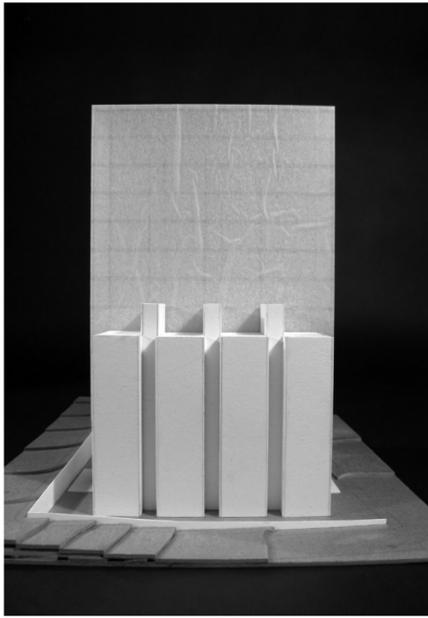
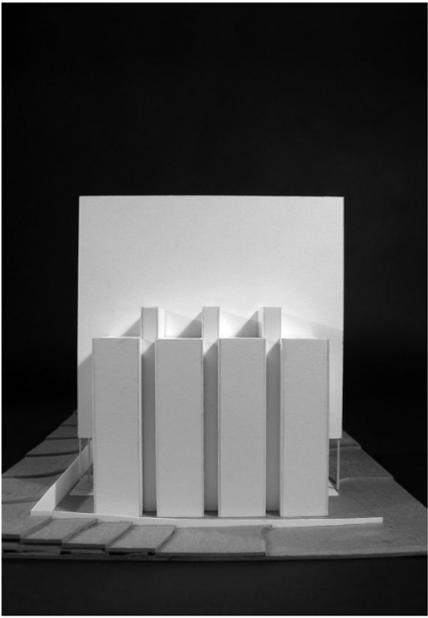


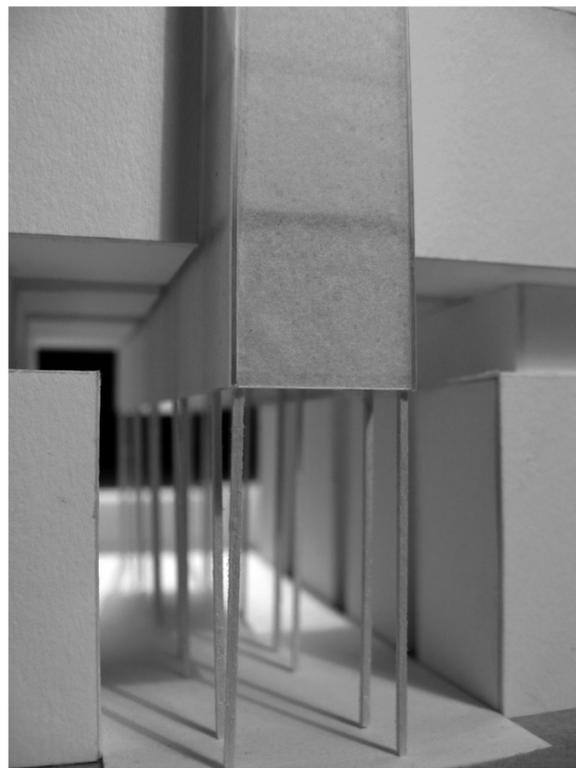
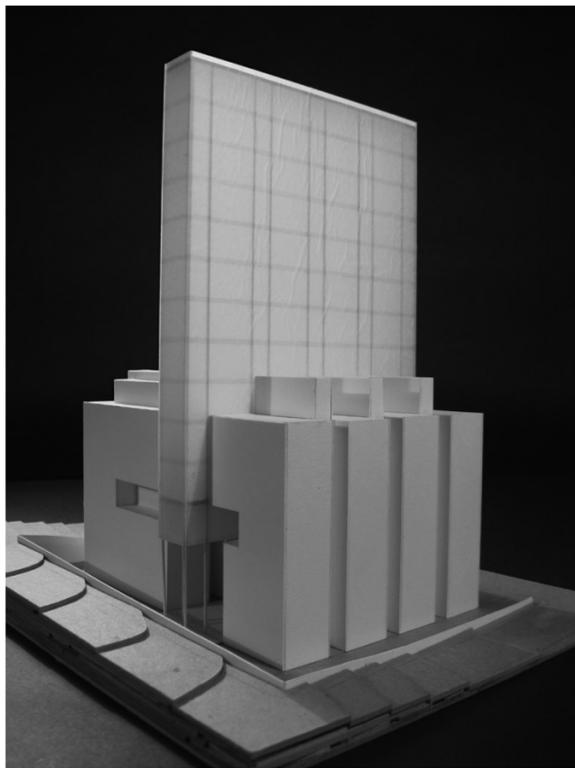
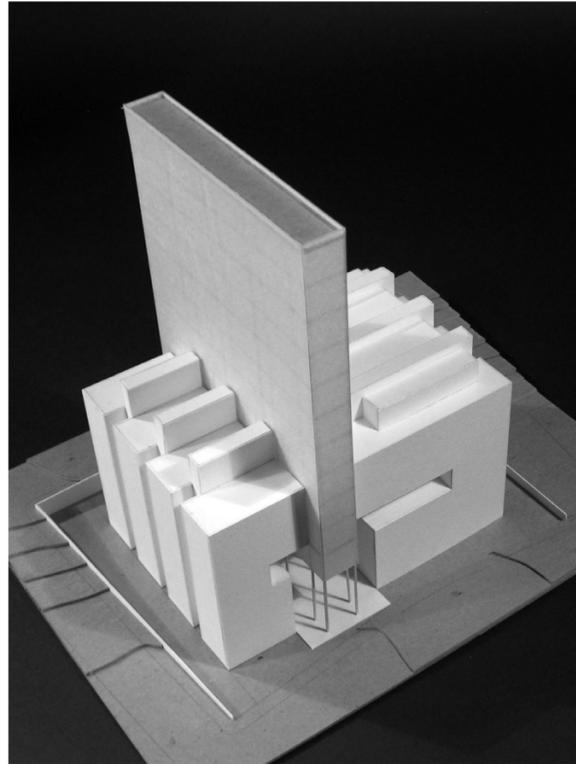




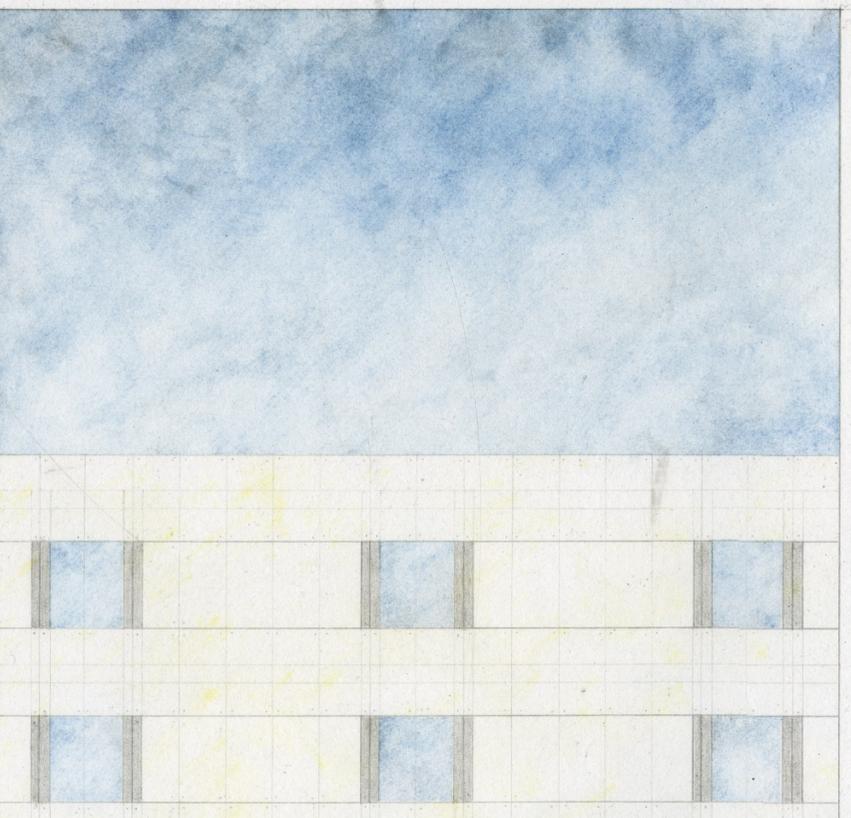
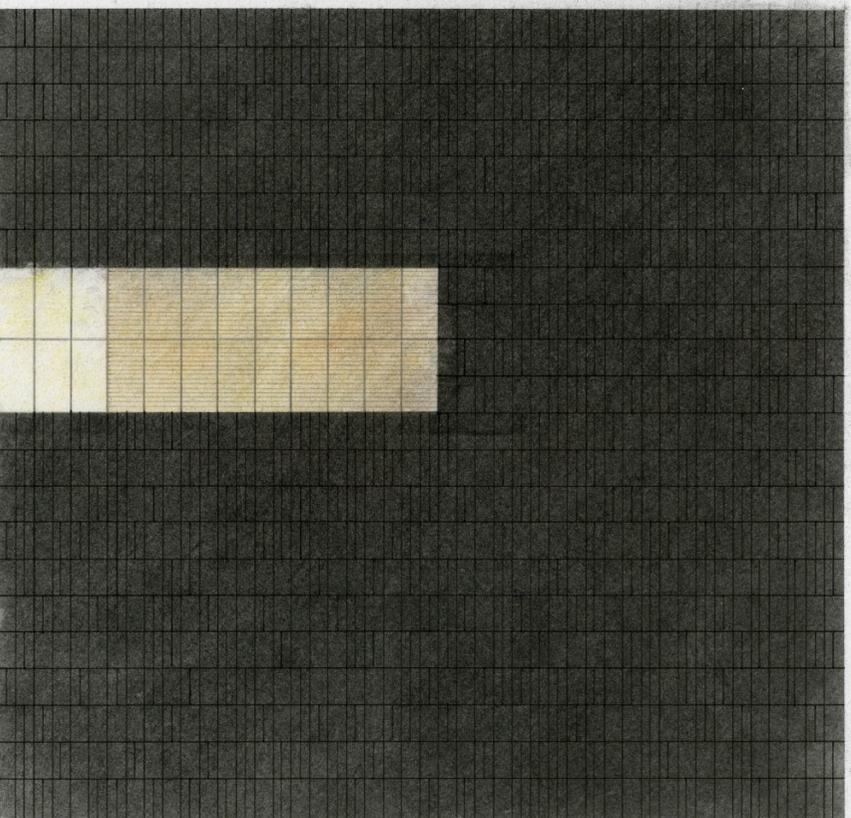
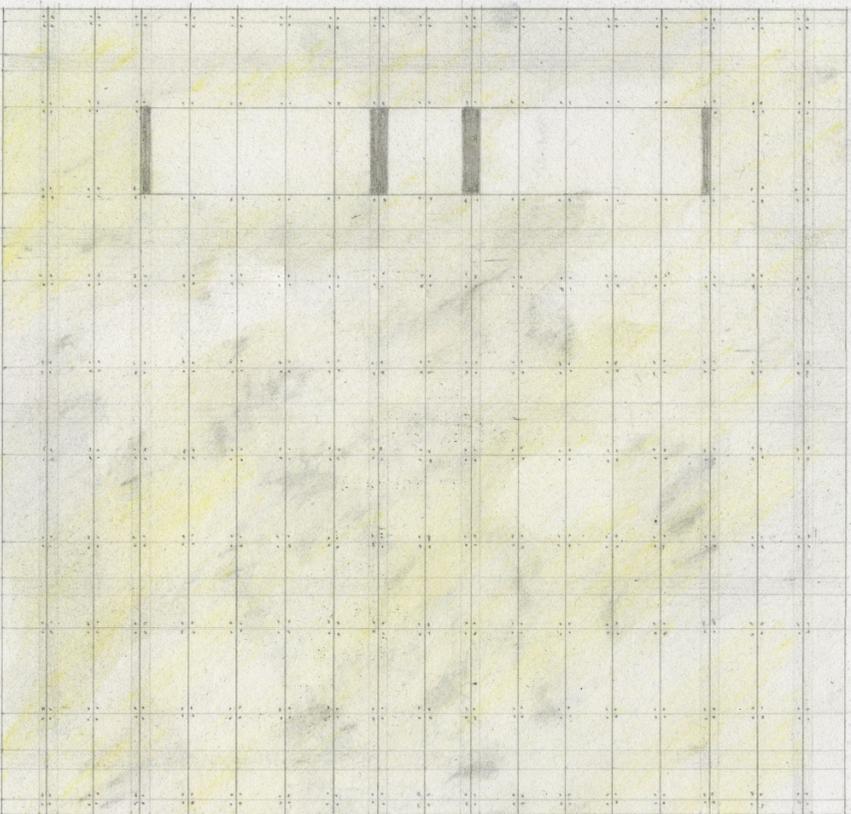
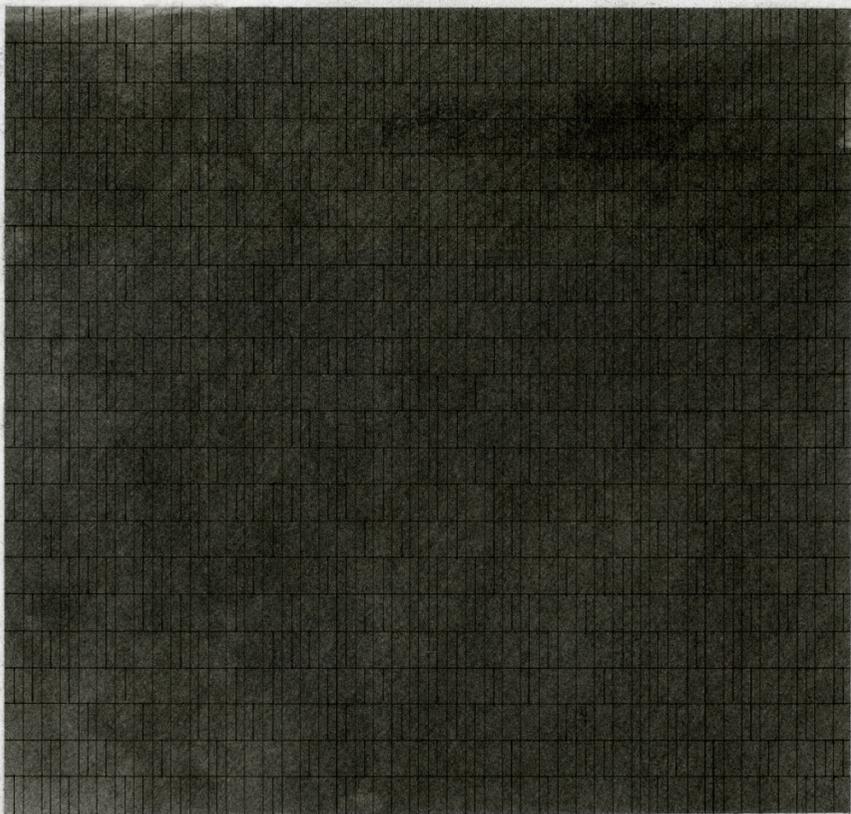
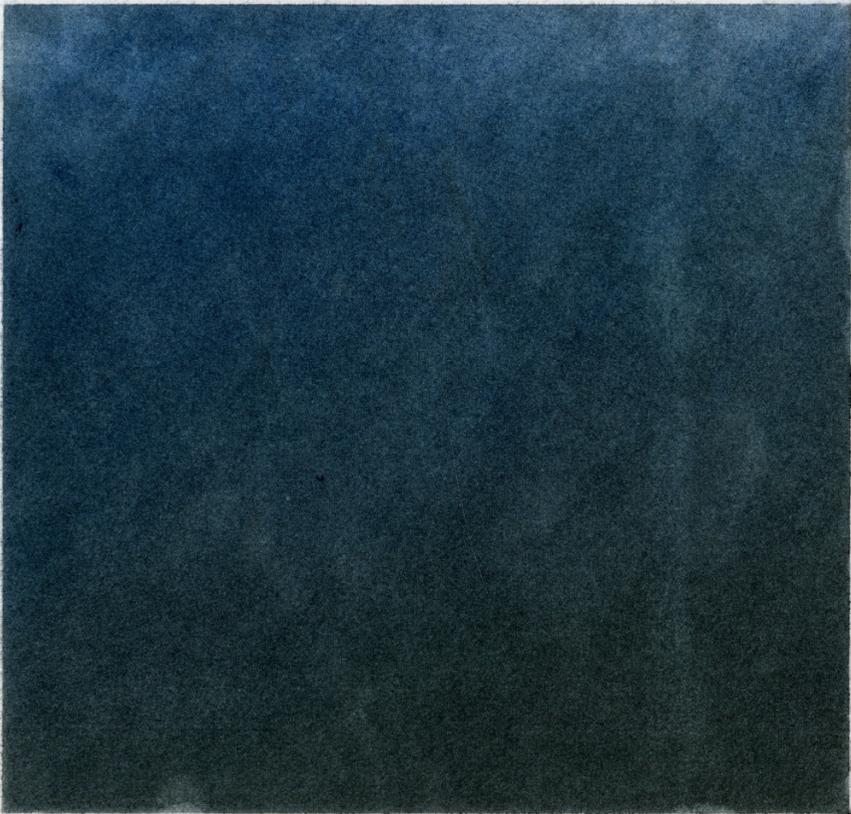


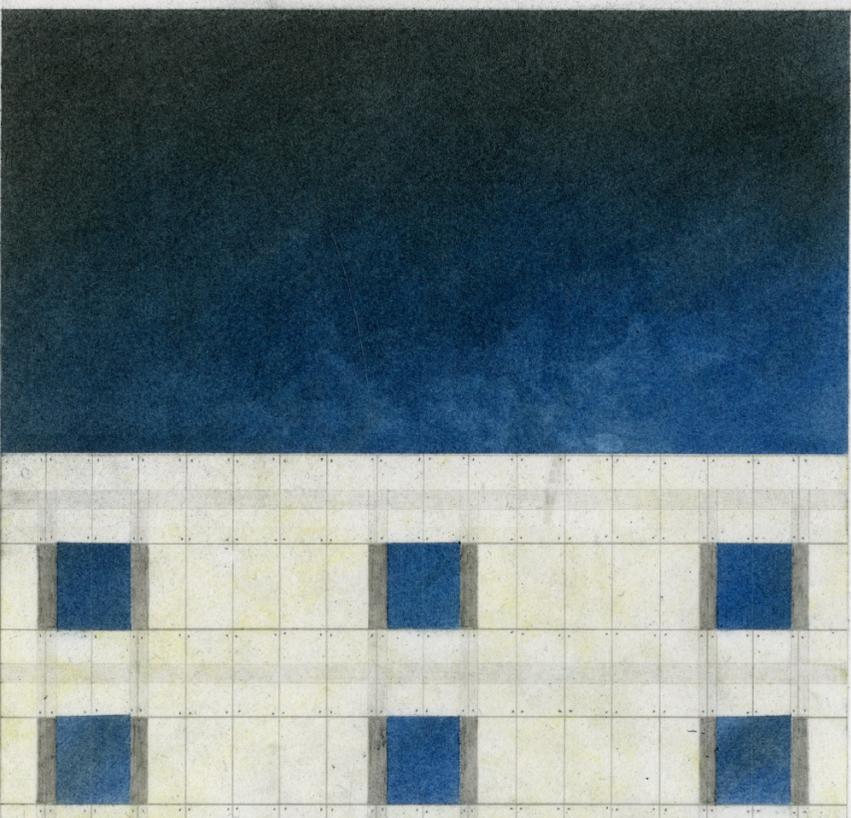
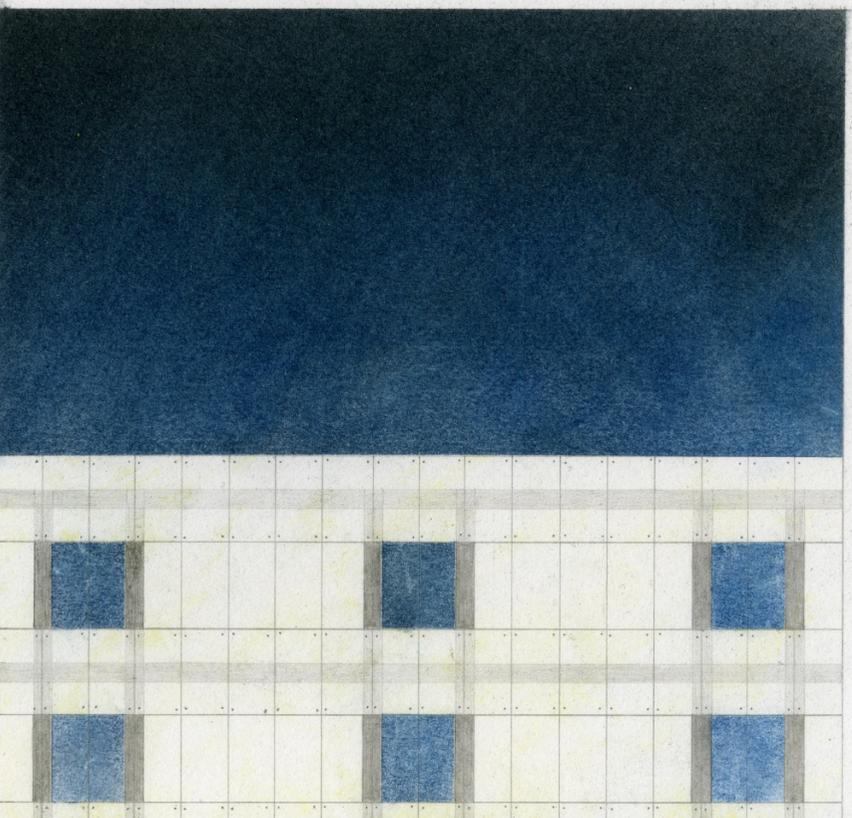
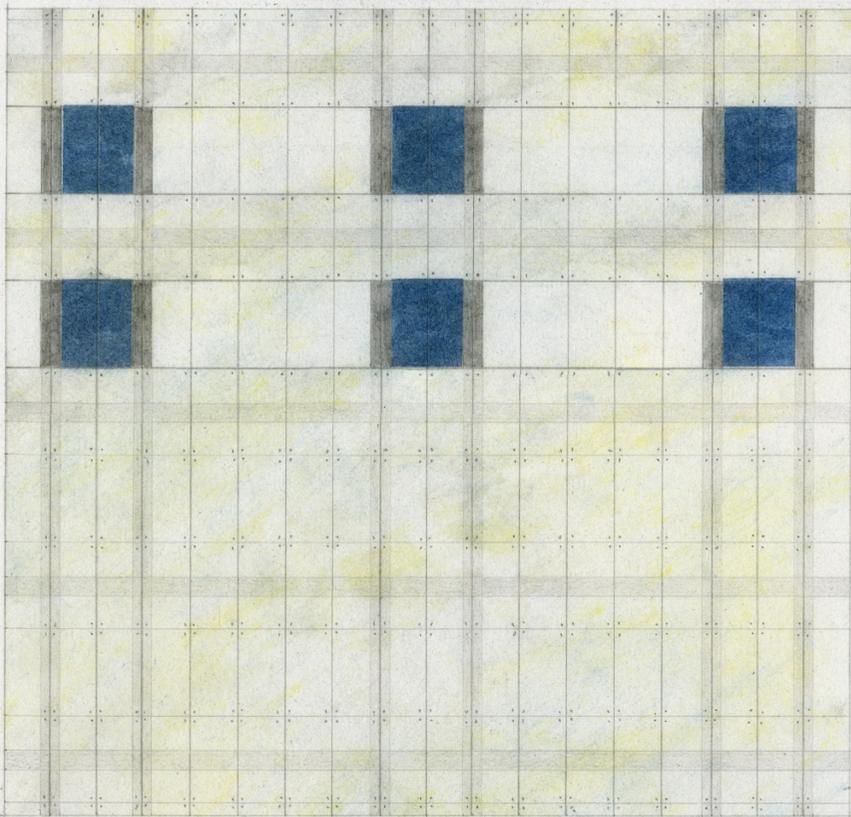
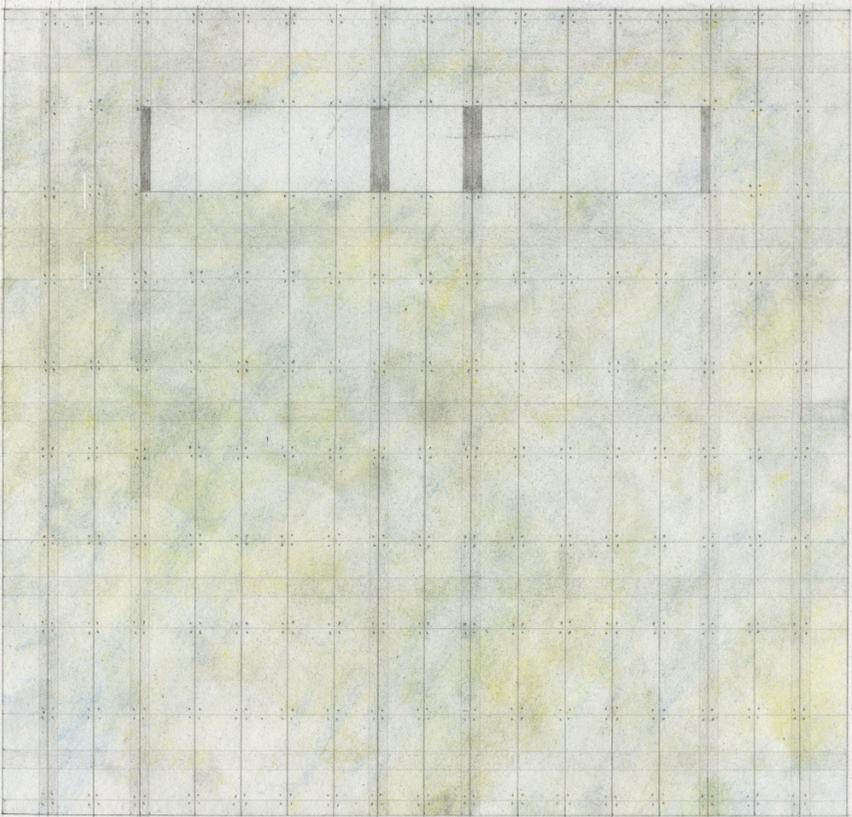
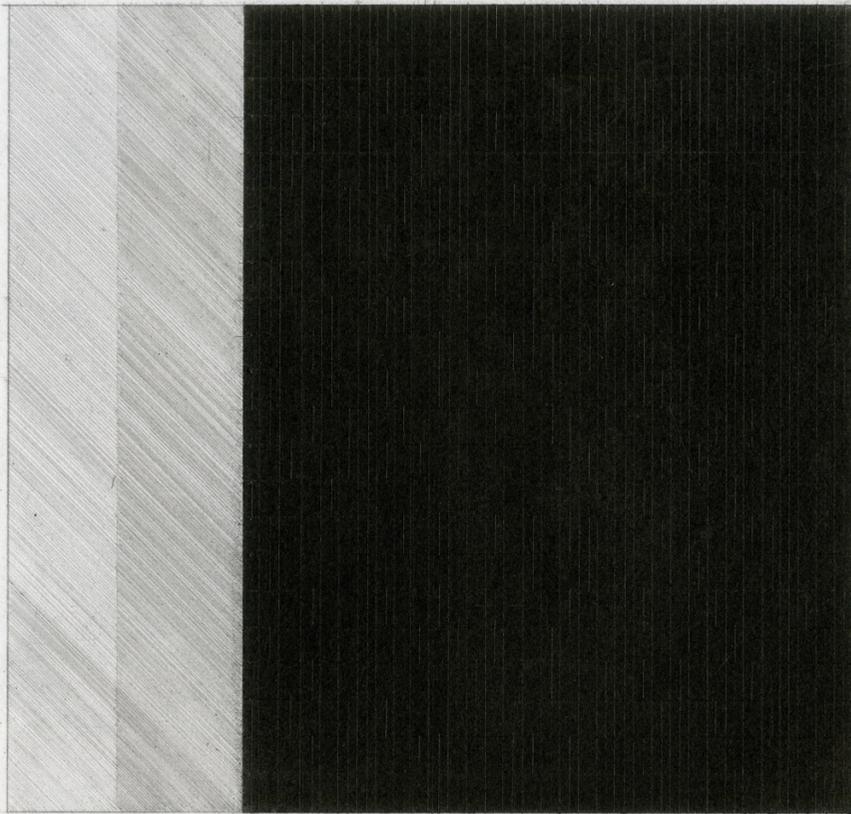
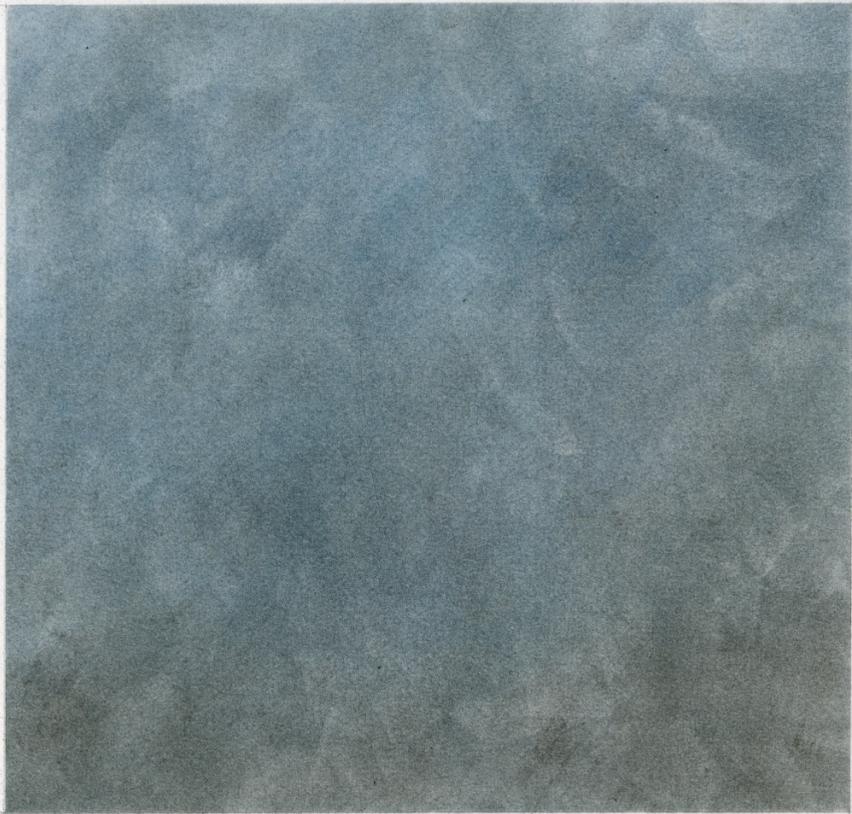
Study model 18
opposite page: Sketches





Study model 19
opposite page: Study model 19
pages 72-74: Drawings







AFTERWORD

He said, among other things, that the words beauty, inspiration, witchcraft, magic, and enchantment, as well as serenity, silence, intimacy, emotion and awe, have all disappeared to an alarming extent from architectural publications. "All these have found a living welcome in my soul, and although I am far from having done them full justice in my work, they have not, for that reason, stopped being my guiding light."¹⁸

NOTES

1. Kermit Swiler Champa, "A Little Night Music: The Play of Color and Light," in *Architecture of the Night, The Illuminated Building*, by Dietrich Neumann (Munich: Prestel Verlag, 2002), 16.
2. Dietrich Neumann, *Architecture of the Night, The Illuminated Building* (Munich: Prestel Verlag, 2002), 7.; Mary Woods, "Photography of the Night: Skyscraper Nocturne and Skyscraper Noir in New York," in *Architecture of the Night, The Illuminated Building*, by Dietrich Neumann (Munich: Prestel Verlag, 2002), 73.
3. Iain Mackintosh, *Architecture, Actor and Audience* (London: Routledge, 1993), 25.
4. Hugh Hardy, *Building Type Basics for Performing Arts Facilities* (Hoboken, NJ: Wiley, 2006).
5. W. L. Whitwell and Lee W. Winborne, *The Architectural Heritage of the Roanoke Valley*, (Charlottesville, VA: The University Press of Virginia, 1982), 4.
6. Nelson Harris, *Roanoke in Vintage Postcards* (Charleston, SC: Arcadia Publishing, 2002).; City of Roanoke, *Vision 2001-2020: Planning for Roanoke's Future Economic Development, Neighborhoods, and Quality of Life* (Roanoke, VA: City of Roanoke, Department of Planning, Building, and Development, 2001), 21.; "2010 Census Interactive Population Search: Virginia - Roanoke City," U.S. Census Bureau, <http://www.census.gov/2010census/>.
7. City of Roanoke, *Vision 2001-2020*, 68.
8. Whitwell and Winborne, *Architectural Heritage*, xi.; Benjamin Forgey, "With Bilbao in Mind, Roanoke Goes for the Bold," *The Washington Post*, September 25, 2005.; Philip Kennicott, "A Complex Legacy," *The Washington Post*, November 30, 2008.
9. City of Roanoke, *Vision 2001-2020*, 69.
10. Jenny Kincaid Boone, "Westward Migration," *The Roanoke Times*, April 9, 2008, 1.
11. Neumann, *Architecture of the Night*.
12. Werner Oechslin, "Light Architecture: A New Term's Genesis," in *Architecture of the Night, The Illuminated Building*, by Dietrich Neumann (Munich: Prestel Verlag, 2002), 32-33.
13. Oechslin, "Light Architecture," 32.
14. John Elderfield, "Leaving Ocean Park," in *The Art of Richard Diebenkorn*, by Jane Livingston (New York: Whitney Museum of American Art, 1997), 107.
15. Elderfield, "Leaving Ocean Park," 108.
16. Robert Twombly, ed., *Louis Kahn: Essential Texts* (New York: W. W. Norton & Company, 2003), 63.
17. Rainer Maria Rilke, *Letters to a Young Poet*, trans. Stephen Mitchell (New York: The Modern Library, 2001), 102.
18. José M^a Buendía Júlbez, "Barragan Rides Toward Eternity," in *The Life and Work of Luis Barragan*, by José M^a Buendía Júlbez, Juan Palomar, and Guillermo Eguiarte (New York: Rizzoli, 1997), 9.

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