

ADAPTIVE REUSE
Produce Warehouse to Apartment Lofts

Jessica L. Lane

Design 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
School of Architecture and Design

H. Scott Gartner, Chair

David Dugas

Marilyn Casto

April 29, 2008
Blacksburg, Virginia

Keywords: Lynchburg, Bluffwalk,
Adaptive Reuse, Atrium

ADAPTIVE REUSE
Produce Warehouse to Apartment Lofts

Jessica L. Lane

ABSTRACT

How do we begin to deal with urbanism in the 21st Century? We are no longer working with the tabula rasa that we were two-hundred years ago; we are dealing with leftover infrastructure. Perhaps we should alter our mindset from “creating” to “RE-creating.” We must accept the fact that cities have already been developed, they have already blossomed and many of them are now in late stages of decay. We must work with what is there now.

In the 19th Century, builders and politicians believed that in order to reform a culture, they must rebuild. However, unlike our ancestors, we can no longer build without thinking about what the construction’s future consequences will be. Environmental concerns are one of the major factors in today’s society regarding the idea of “proper urban form.” At the end of the industrial boom, many cities and urban centers have slowly started to become ghost towns of the industries that used to keep them alive. With fewer factory jobs, many families have moved outside of the city – they have become heavily reliant on vehicular transportation to and from the vast parking lots in front of their “big box” office buildings and shopping centers. Consumerism has also contributed to suburban sprawl which is quickly hastening our climate’s deterioration. We are rapidly using up our natural resources. In many instances, we are degrading the soil, deforesting our landscape, and destroying important eco-systems, like rainforests and glacial formations. We are using them up faster than they can repair themselves. Because our environment is NOT an unlimited resource, we need to begin to be more proactive about the way we let people treat our home. We must find ways to reduce the effects of what we do and what we have already done. We must create a means of reducing our footprint on the earth. We must find proper ways to dispose of our waste. We must stop sprawling outward, when there are plenty of well-built structures that we can begin to **adapt, renovate** and **re-use**.

This project examines an instance in **Lynchburg, Virginia** – wherein a turn-of the century produce-warehouse has outlived its purpose and now faces a turning point. I propose that we make use of its sturdy walls, floors and interesting character and give it a 21st Century purpose.

ADAPTIVE REUSE
Produce Warehouse to Apartment Lofts

Jessica L. Lane

CONTENTS

A Brief History of Lynchburg, Virginia 01

Downtown Lynchburg - Bluffwalk Plans03

Site [Photos & Sketches].....05

[Building Photos] - Interior Photos & Exterior Photos..... 07

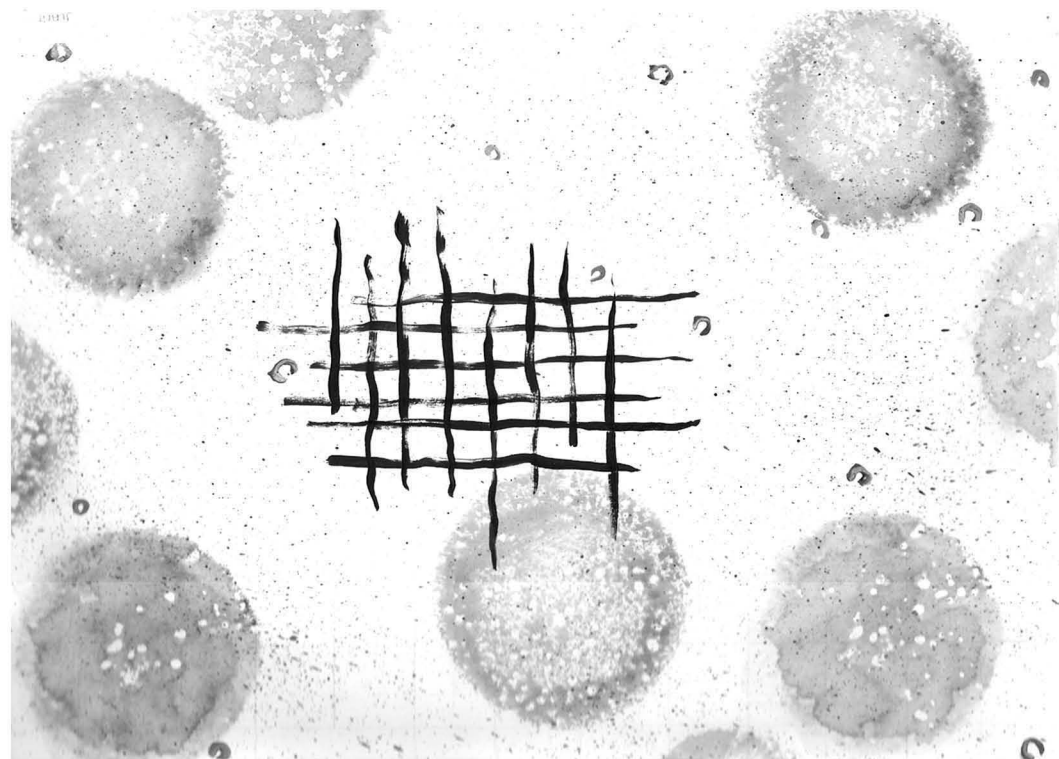
Early Scheme..... 09
Site Plan
Perspectives
Sketches
Plans
Sections & Elevations

Intermediate Scheme 19
Sketches
Plans
Sections
Perspectives

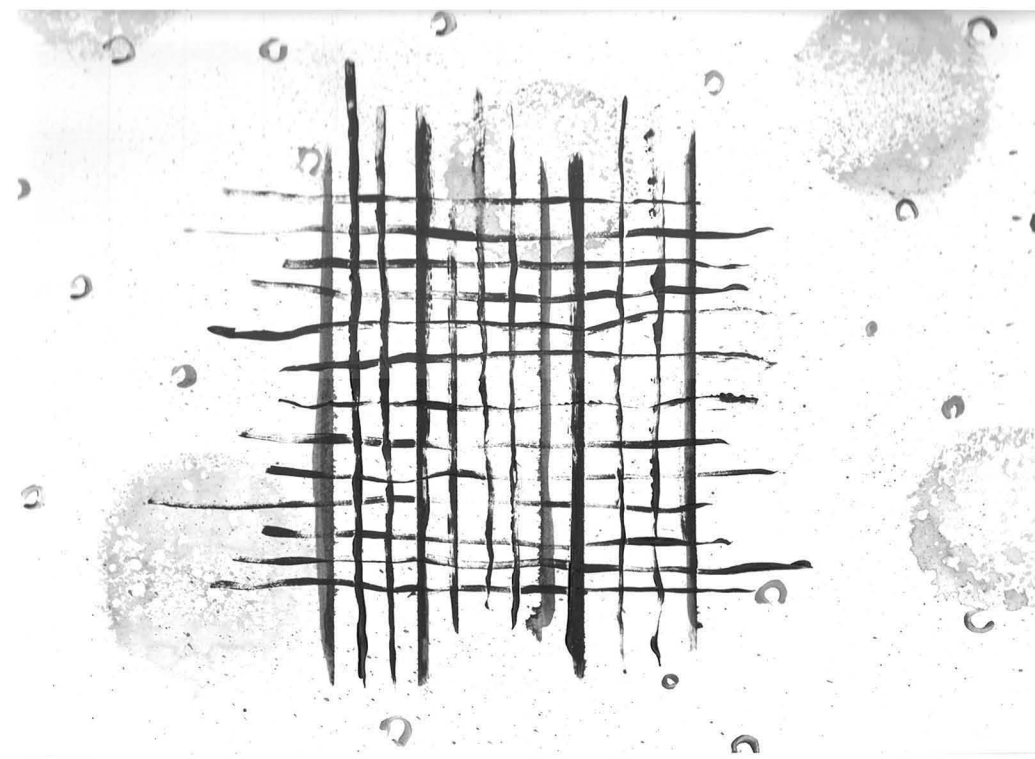
Final Scheme33
Site Plan
Plans
Sections & Elevations
Perspectives
Light Studies

Final Thoughts 63

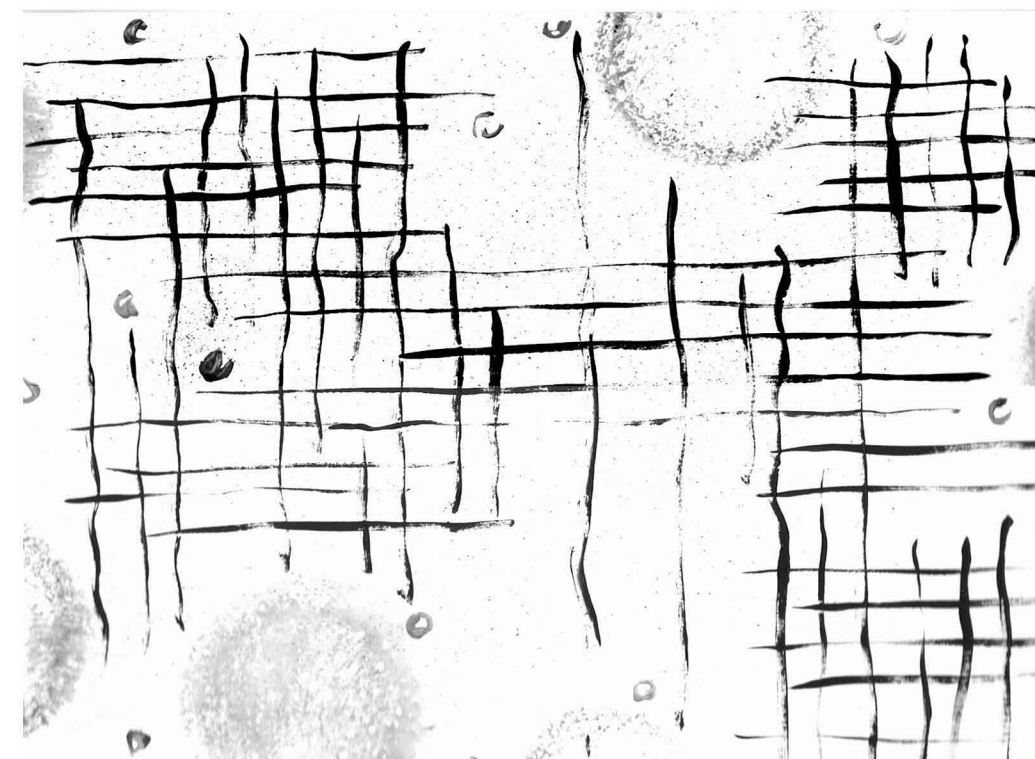
Acknowledgements 65



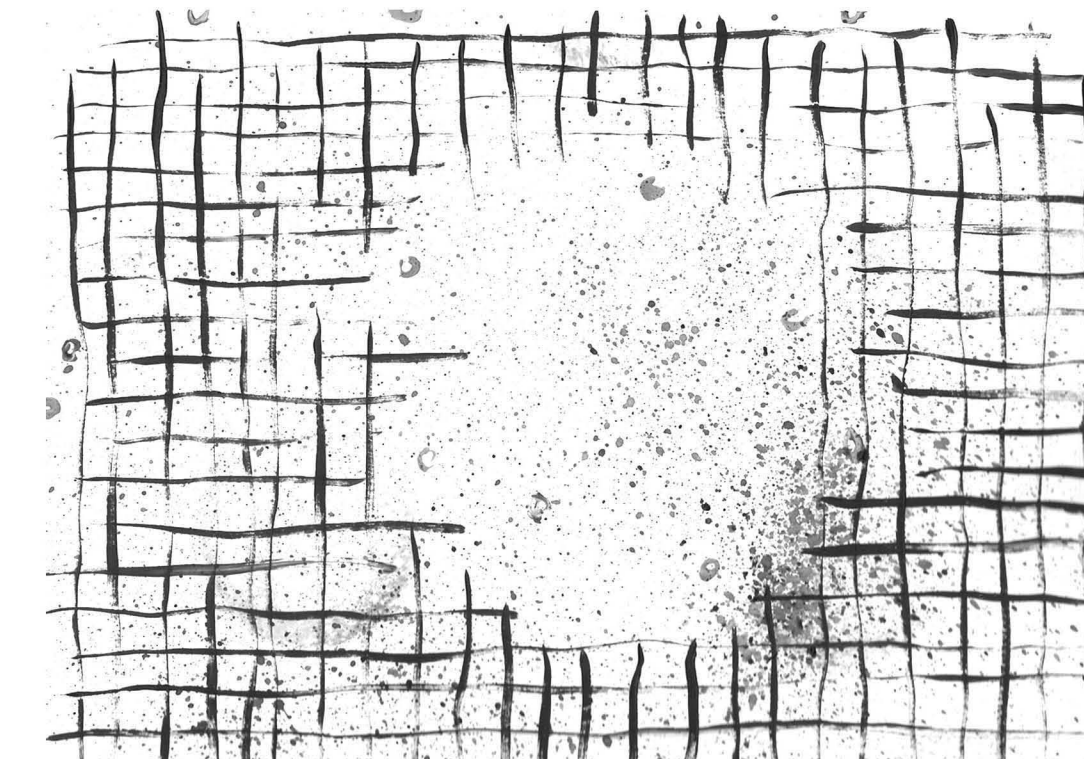
1786 - 1860s



1870s - 1940s



1950s - 1970s



1980s - PRESENT

The community is settled on the James River: factories and industries are developed. A canal system and a railroad system are established. The city is used primarily for hospitals during the Civil War and therefore does not sustain much damage. However, some natural disasters cause the need for reconstruction. The city continues to grow...

Iron works and a steel mill fuel the growth of the city. Population reaches 15,000. A street car system is established. Communities were developed and many large homes were erected. A baseball team was brought to the city. Three colleges were founded. A library was built and a music academy was established. The city built its first airport. Industry continued to boom throughout the World Wars...

Lynchburg is no longer a small, tight-knit community. As the population grows, many residents move to surrounding suburbs. In 1960 the first shopping plaza opened – signaling the end of the downtown as the retail hub. Liberty University – a fourth college – is established and causes much of the southern area of the city to be developed.

Shopping centers are popping up like wildfire in the suburban areas of Lynchburg. Many downtown buildings fall into disrepair. Some attempts are being made to renovate historic downtown, but these on-going efforts are slow and cannot keep up with the pace at which the city is growing outward. The city is making attempts to renovate the downtown. One of the most recent strategies is the incorporation of the **Bluffwalk** - a trail to be worked into the alley that lies in between Lynchburg's Commerce St. and Jefferson St. This **Bluffwalk** is a landscaped pedestrian pathway that hopes to spawn living and retail spaces in some of the dilapidated buildings in Lynchburg's downtown.

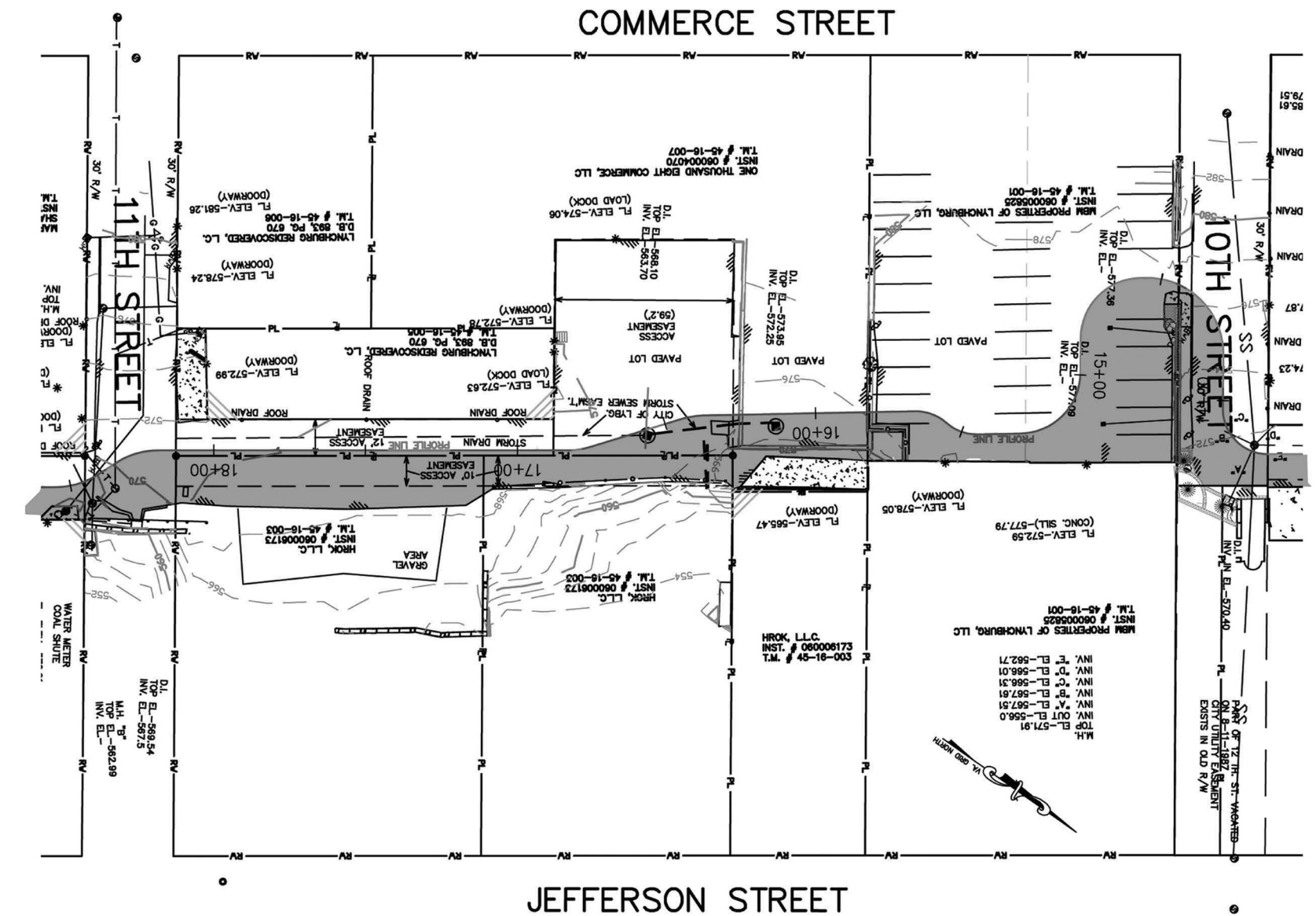
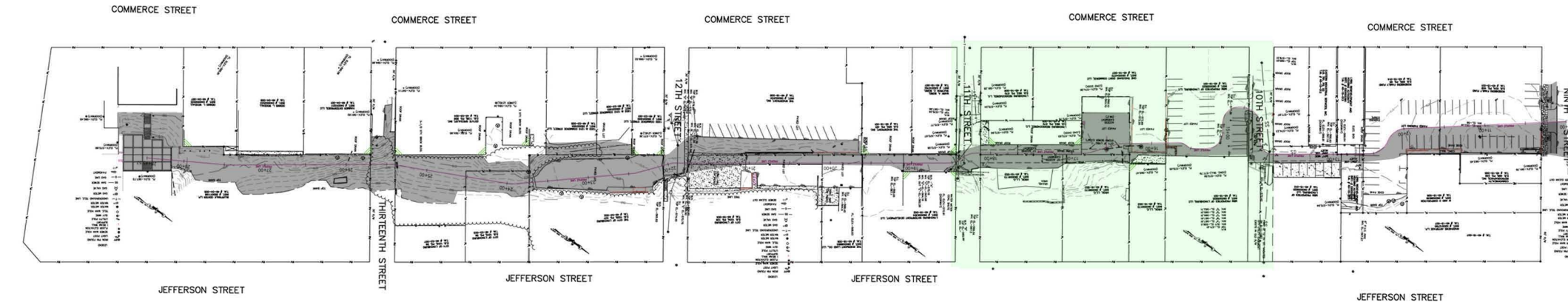
DOWNTOWN LYNCHBURG

BLUFFWALK PLANS



Lynchburg's Main Street City Market (above left) is one of the areas that has been renovated and given a facelift in the last few years. However, only 1 block away, also on Main Street, there are several boarded up facades - buildings that stand vacant and are completely run down. (image above right)

Below are 2 of Lynchburg's successful adaptive-reuse projects: The Depot Grille, a former train station and Amazement Square, a former Confederate Army Infirmary, used later as a warehouse.



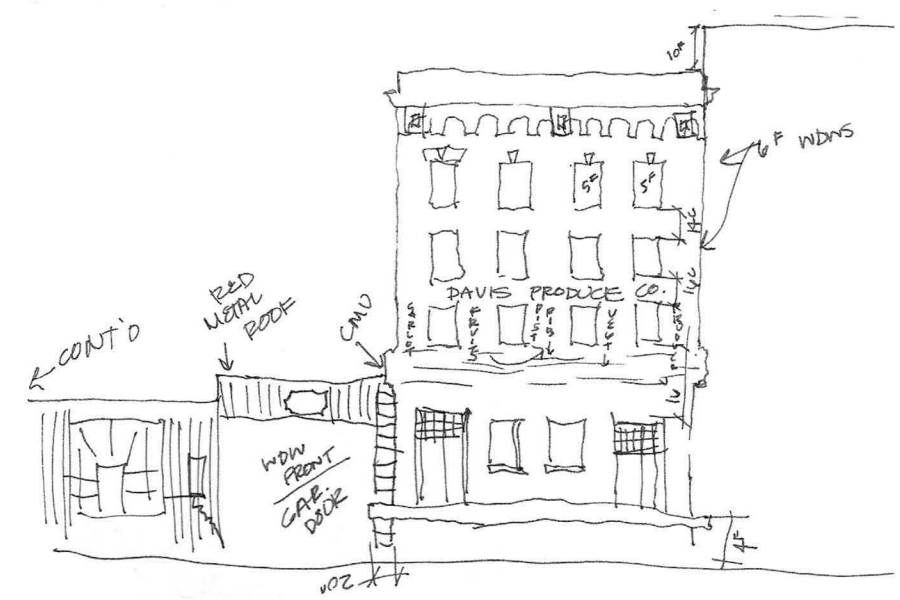
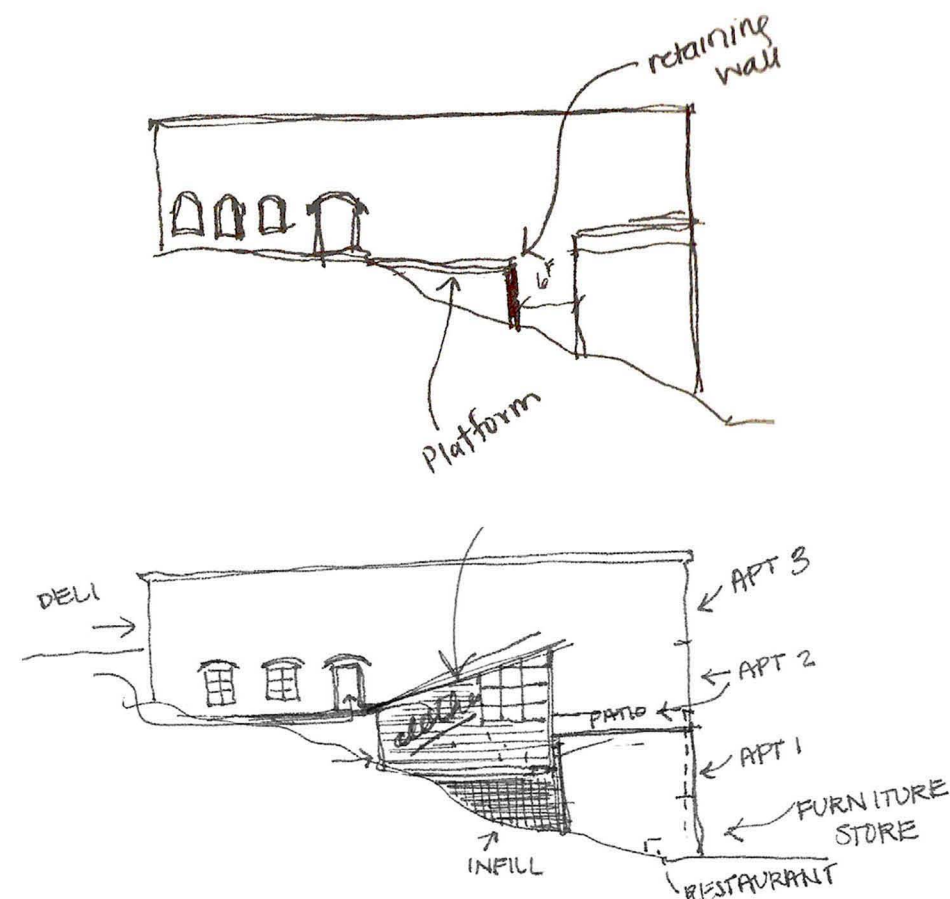
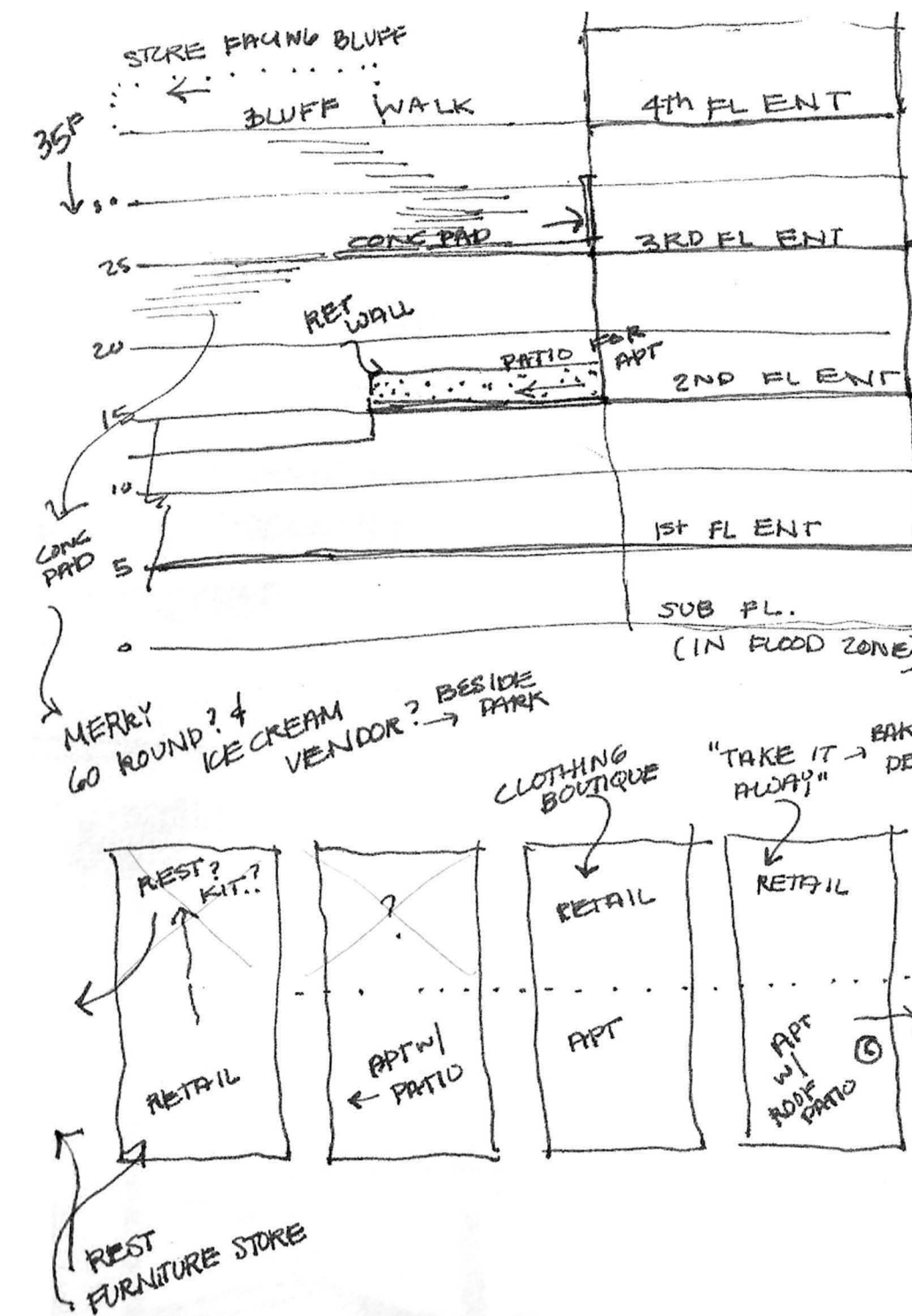
The Bluffwalk Trail is a project proposed by the city in collaboration with various private investors. This path begins at the Craddock Terry Hotel/Conference Center (known as the Bluffwalk Center) and meanders down the former alleyway between Commerce Street and Jefferson Street - from Fourteenth Street to Ninth Street. The Hotel/Conference Center was an adaptive-reuse of one of Lynchburg's oldest industries - a shoe manufacturing factory. This project was the catalyst for this trail way project and will hopefully spark many other investors, developers and designers to follow suit and make some progress in downtown Lynchburg.

SITE



SITE

Seen here are some early ideas about how to deal with the topography of the site. The grade changes allow for very separate entrances along the north, south, and western facades of 'The 4-Story.' The eastern facade is butted up to an adjacent 5-story stone and masonry building. This stone party-wall gives the interior of the '4-Story' a very interesting character.



This particular site is owned by Oliver Kuttner and partners, of Charlottesville, Virginia. Mr. Kuttner refers to this building as "The 4-Story" - he is hoping to turn this entire area into retail, restaurants, and living space. The top of the building (shown top right) is level with the parking lots on Commerce Street. There is about a 40-foot grade change from the future-Bluffwalk Trail down to Jefferson Street (top left). This building and adjacent site (lower right) has the potential to become a cut-through from Commerce Street parking garages to the Jefferson Street/Riverfront Park (seen lower left). It is my hope, that with the integration of the Bluffwalk Trail, that this downtown area will become more pedestrian friendly.



EXTERIOR PHOTOS



1009 Jefferson Street facade -
1st Floor - retail entrance,
Apartment Loft windows above



Future-Bluffwalk trail entrance, 4th Floor (retail/bakery entrance)



Western facade of building: 3rd Floor (retail entrance)

INTERIOR PHOTOS

I was intrigued by the large timber columns and beams, the brick and stone masonry and the overall character of the interior space. I wanted to preserve these things in the re-use of the building.



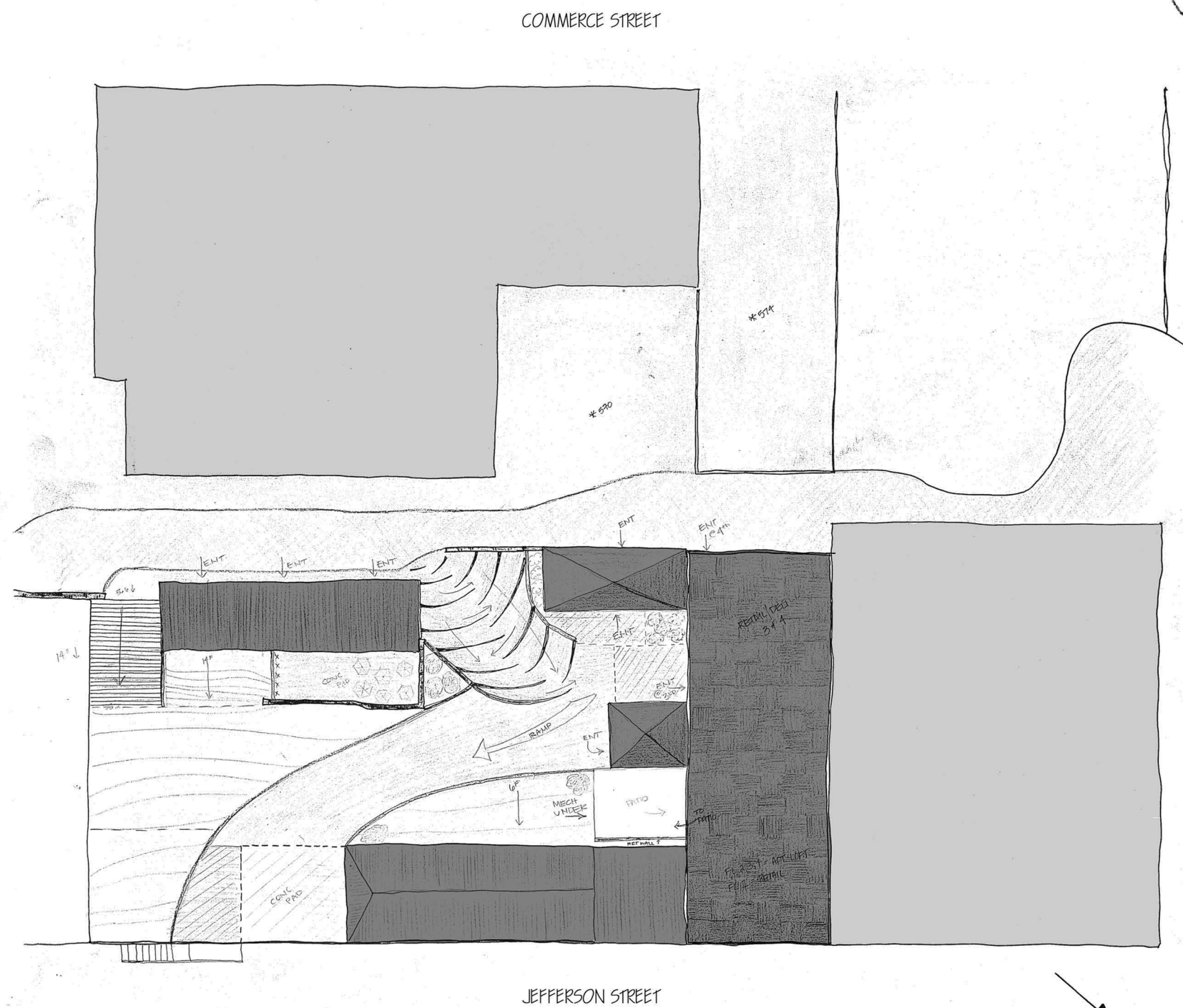
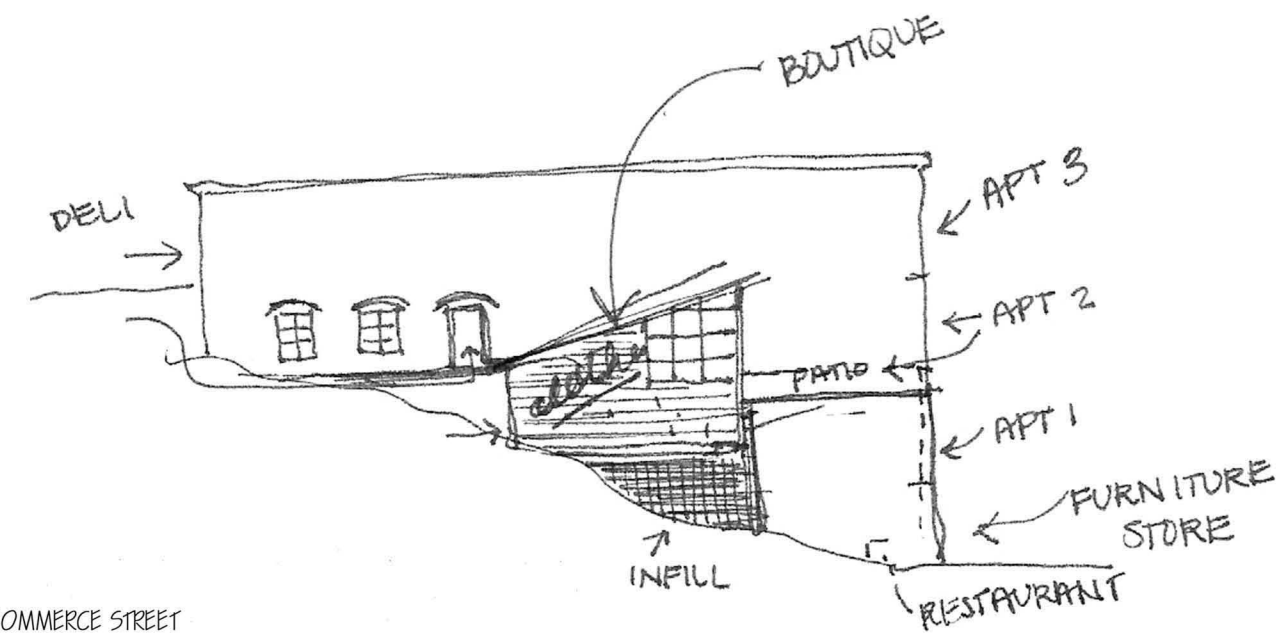
materials, space & light



EARLY SCHEME: SITE PLAN

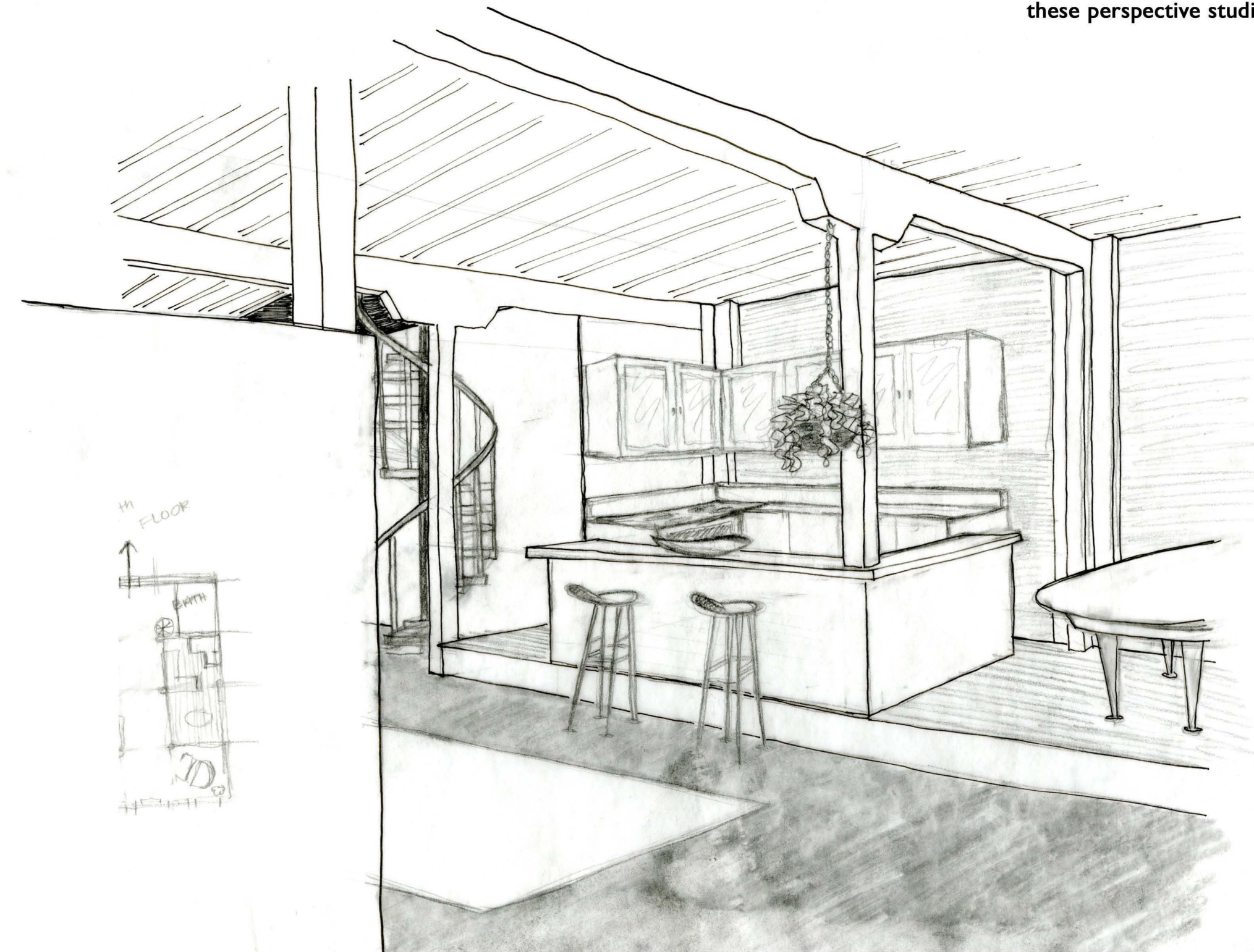
Early on, it was my hope to work with the entire site. I wanted to add some additional buildings to the grassy hillside, as to bring more pedestrians along the Bluffwalk path and down through the site.

Early schemes investigate a relationship of the "4 Story" and the available space on the hillside. I entertained the notion of making the hillside handicap accessible by introducing a grand stair/ramp through the middle of the site.

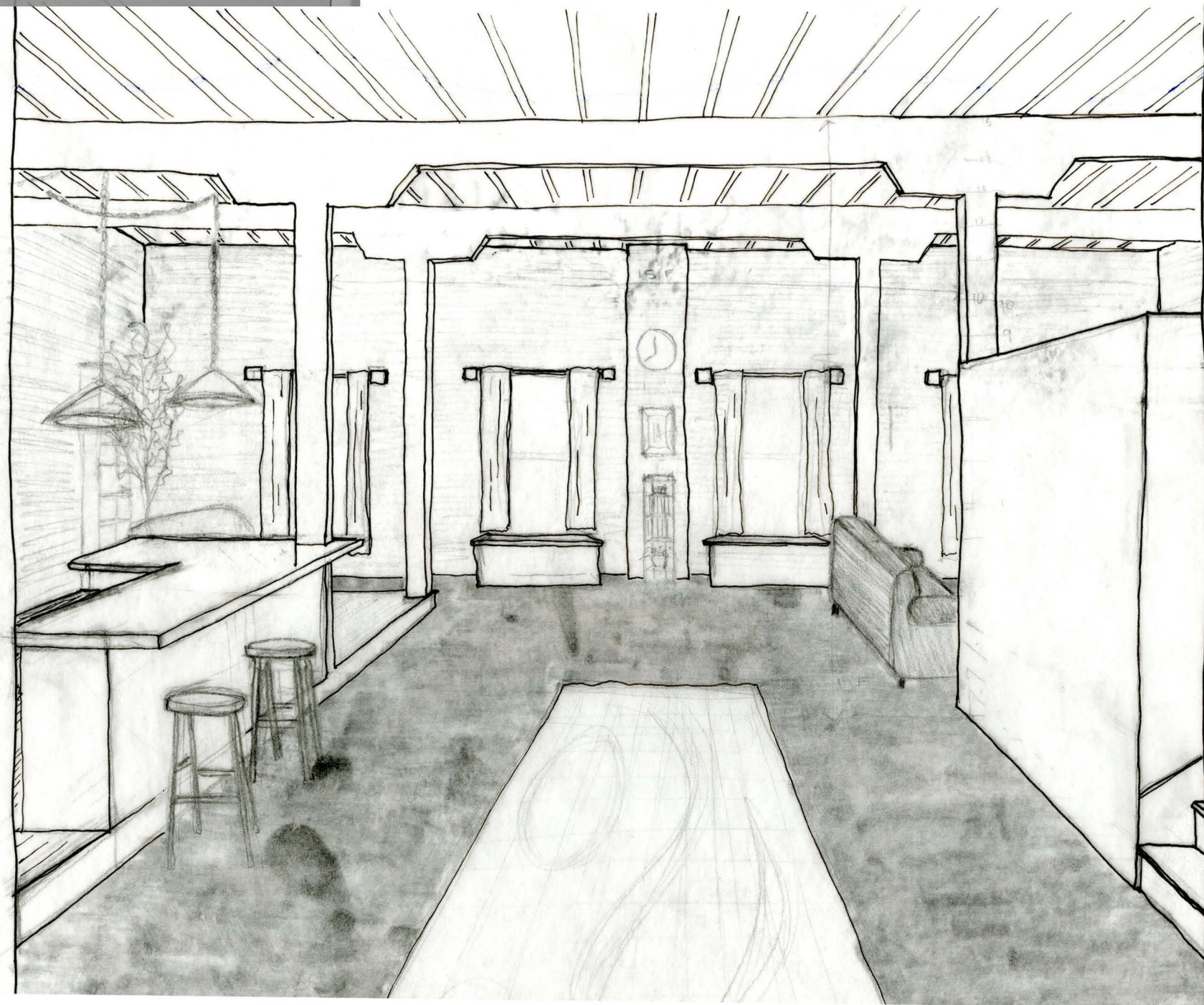


PERSPECTIVES

I started with perspectives. Having already been within the space of the building, it was easier to envision what they should look like in 3 dimensions. Plans were born out of these perspective studies.



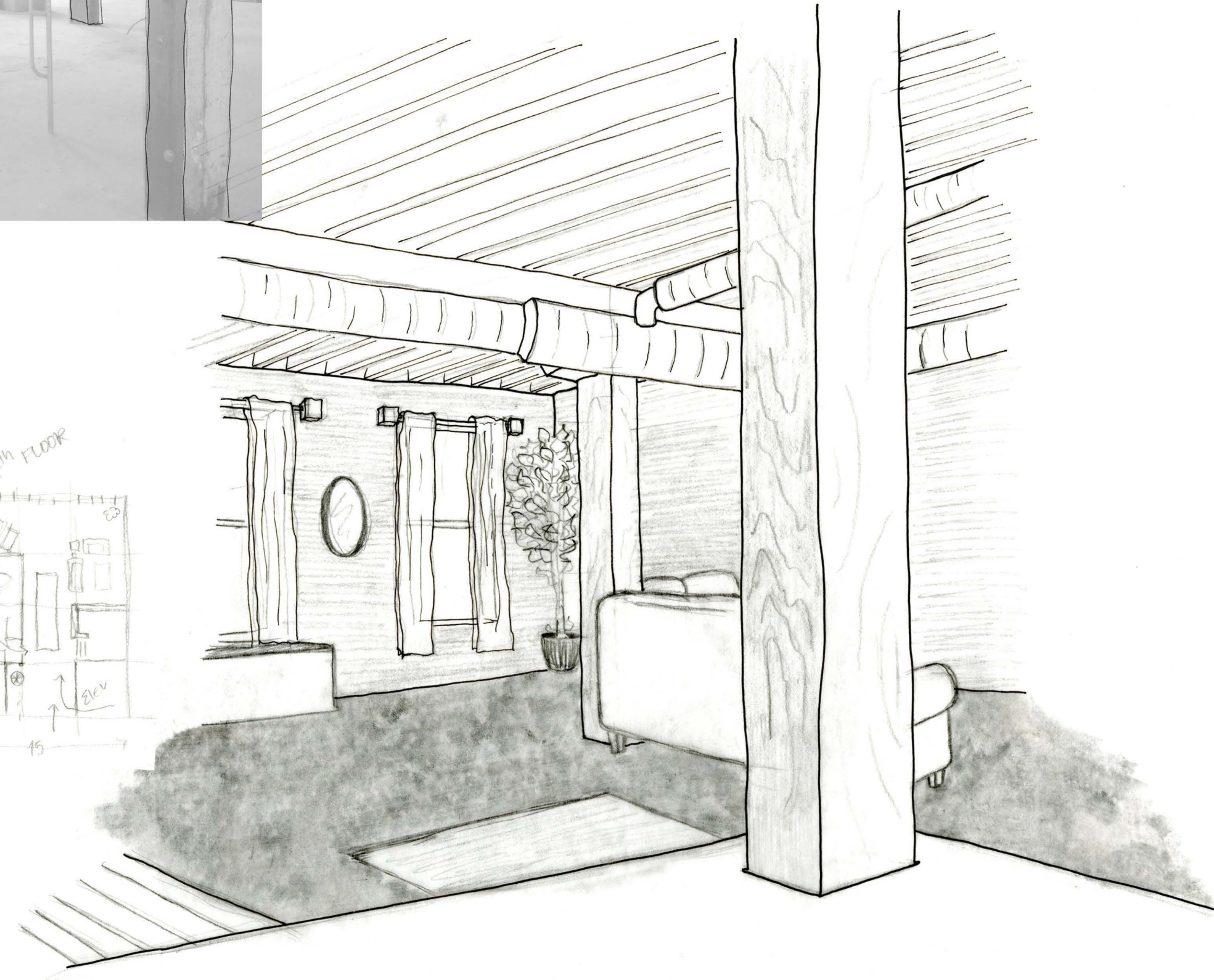
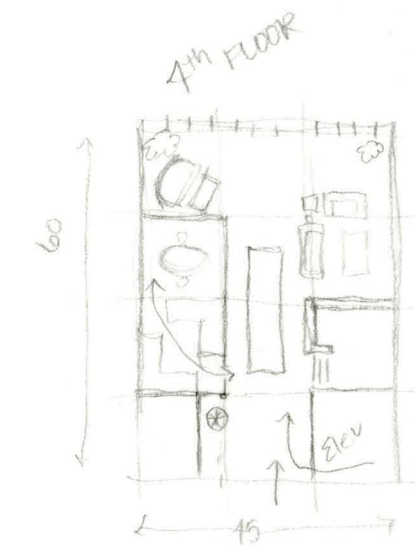
EARLY SCHEME



PERSPECTIVES

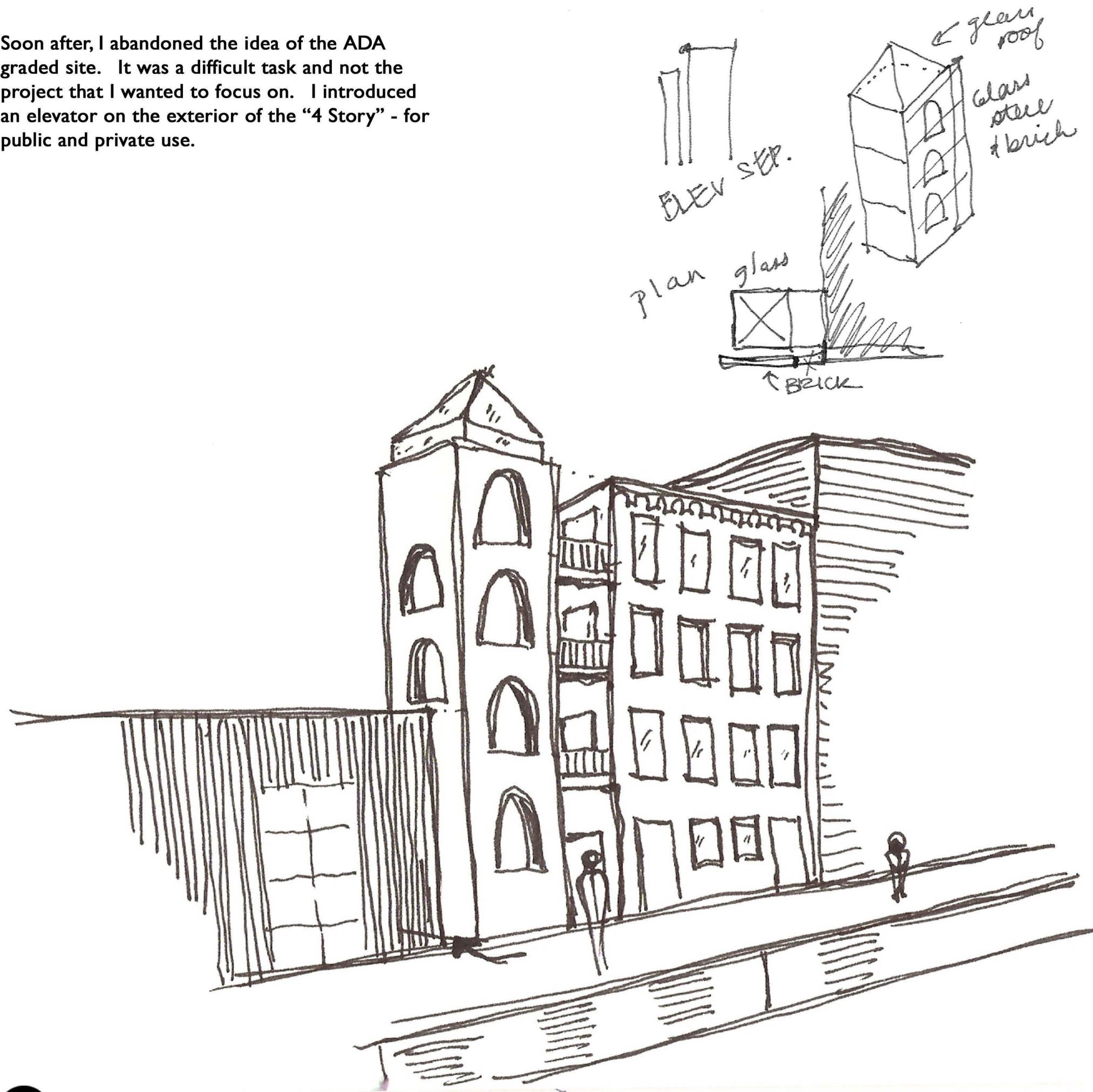


The interior spaces are intended to be very open, with minimally invasive walls or enclosed sub-spaces. Most mechanical and electrical ducts and pipes are to be exposed in the ceiling. The rafters and columns and beams will be left exposed. The floor will be raised in certain areas to help divide the "rooms" within the space. Dropped task-lighting will also help signify particular sub-spaces.

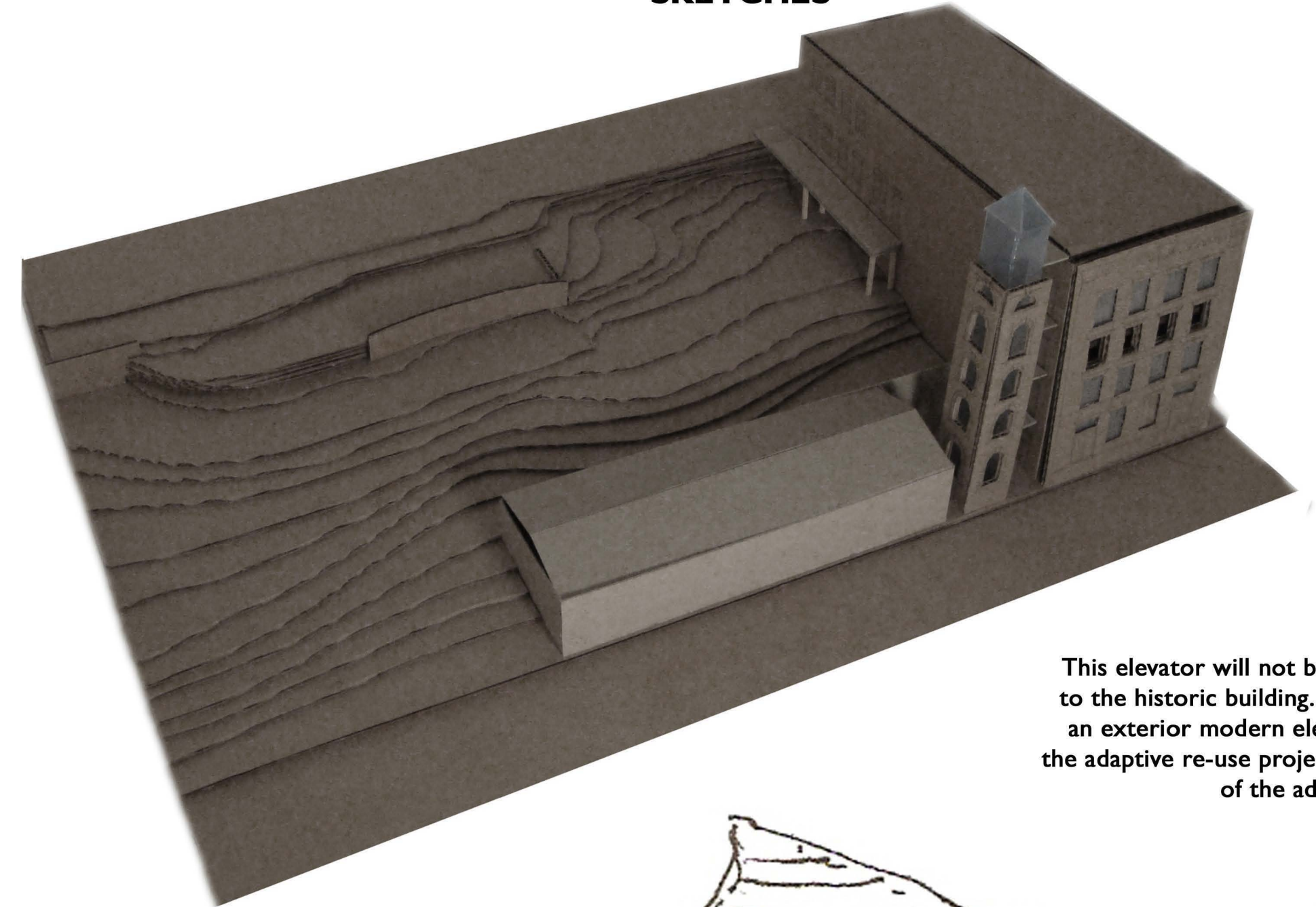


EARLY SCHEME

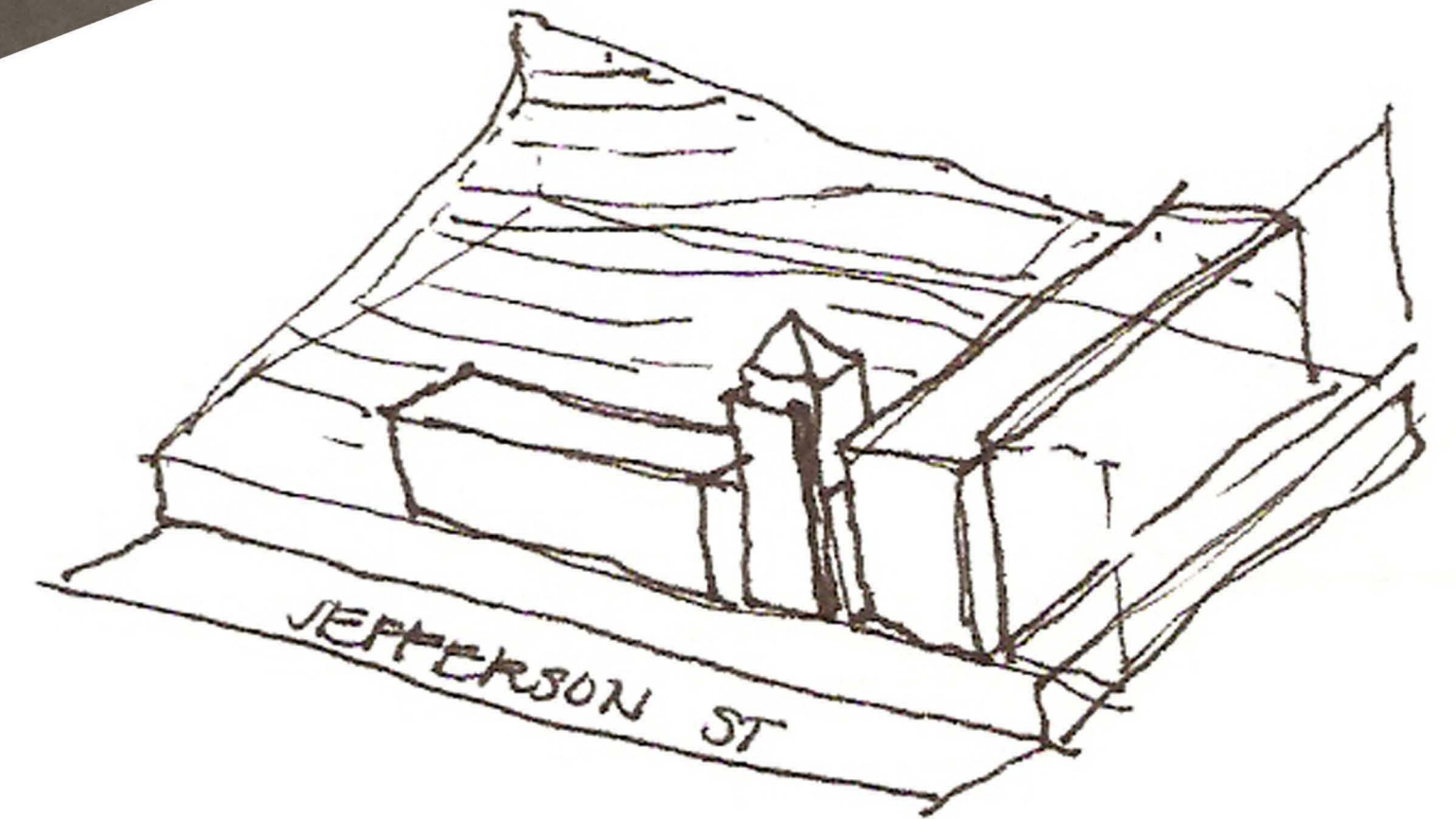
Soon after, I abandoned the idea of the ADA graded site. It was a difficult task and not the project that I wanted to focus on. I introduced an elevator on the exterior of the "4 Story" - for public and private use.



SKETCHES

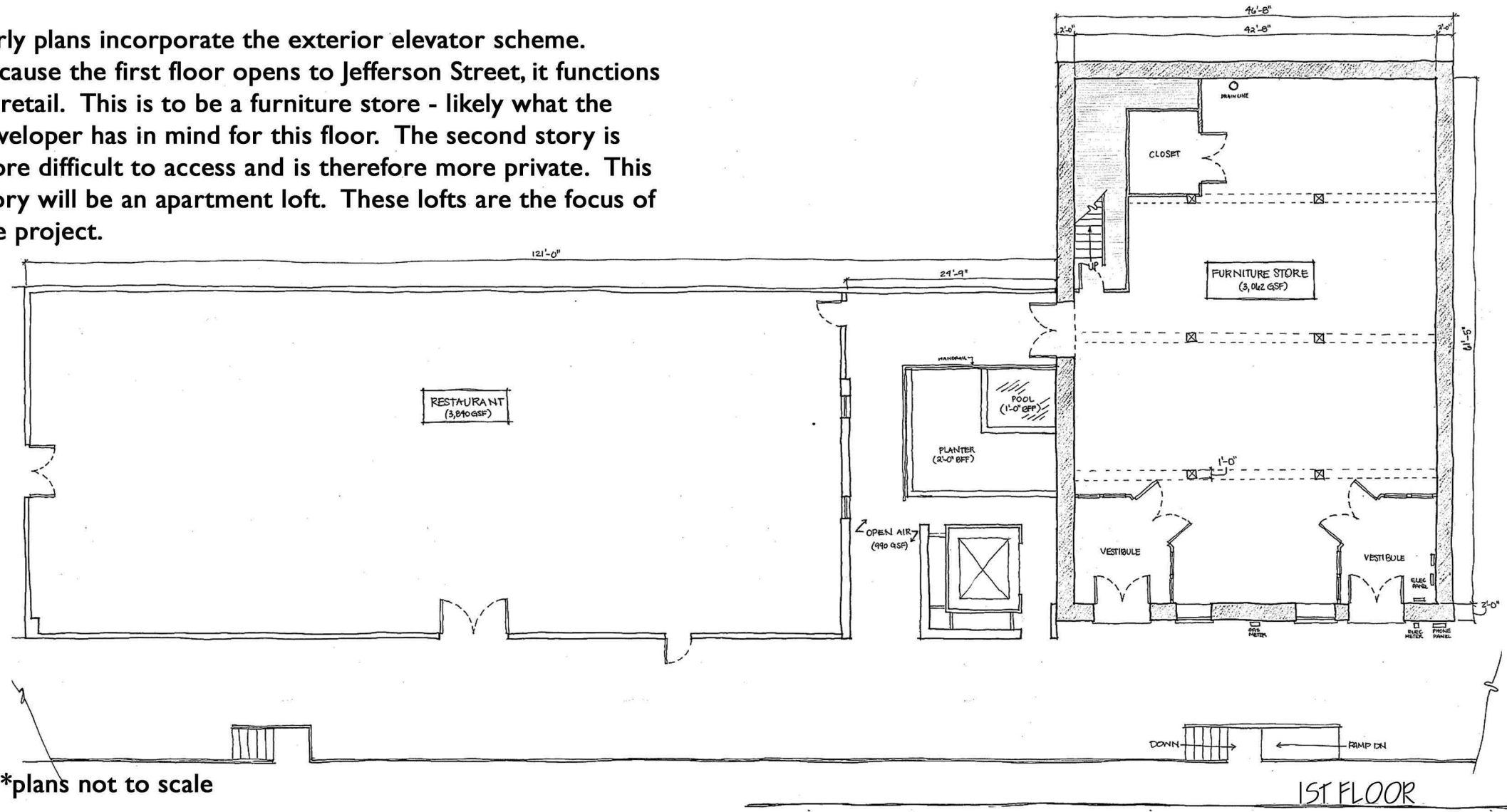


This elevator will not be very intrusive to the historic building. It will serve as an exterior modern element to signify the adaptive re-use project on the inside of the adjacent building.



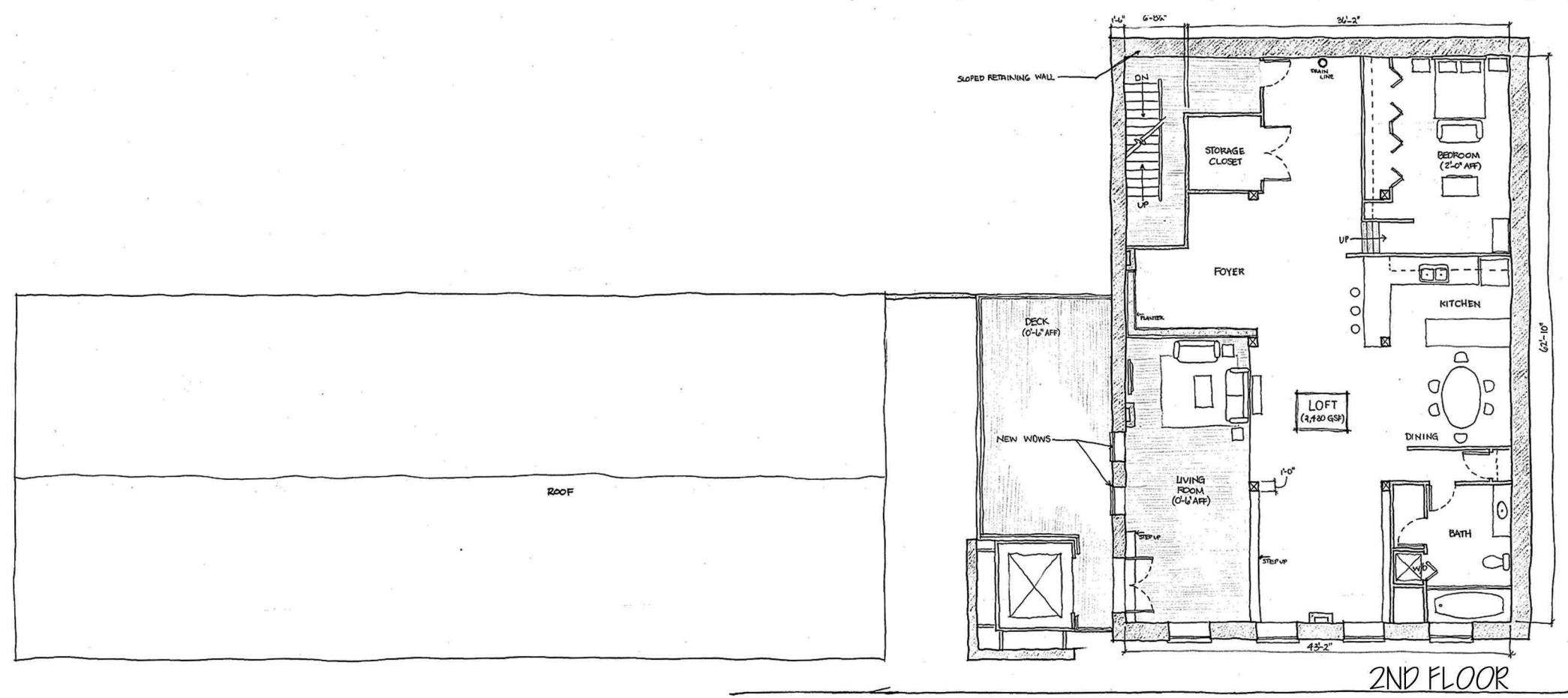
EARLY SCHEME

Early plans incorporate the exterior elevator scheme. Because the first floor opens to Jefferson Street, it functions as retail. This is to be a furniture store - likely what the developer has in mind for this floor. The second story is more difficult to access and is therefore more private. This story will be an apartment loft. These lofts are the focus of the project.



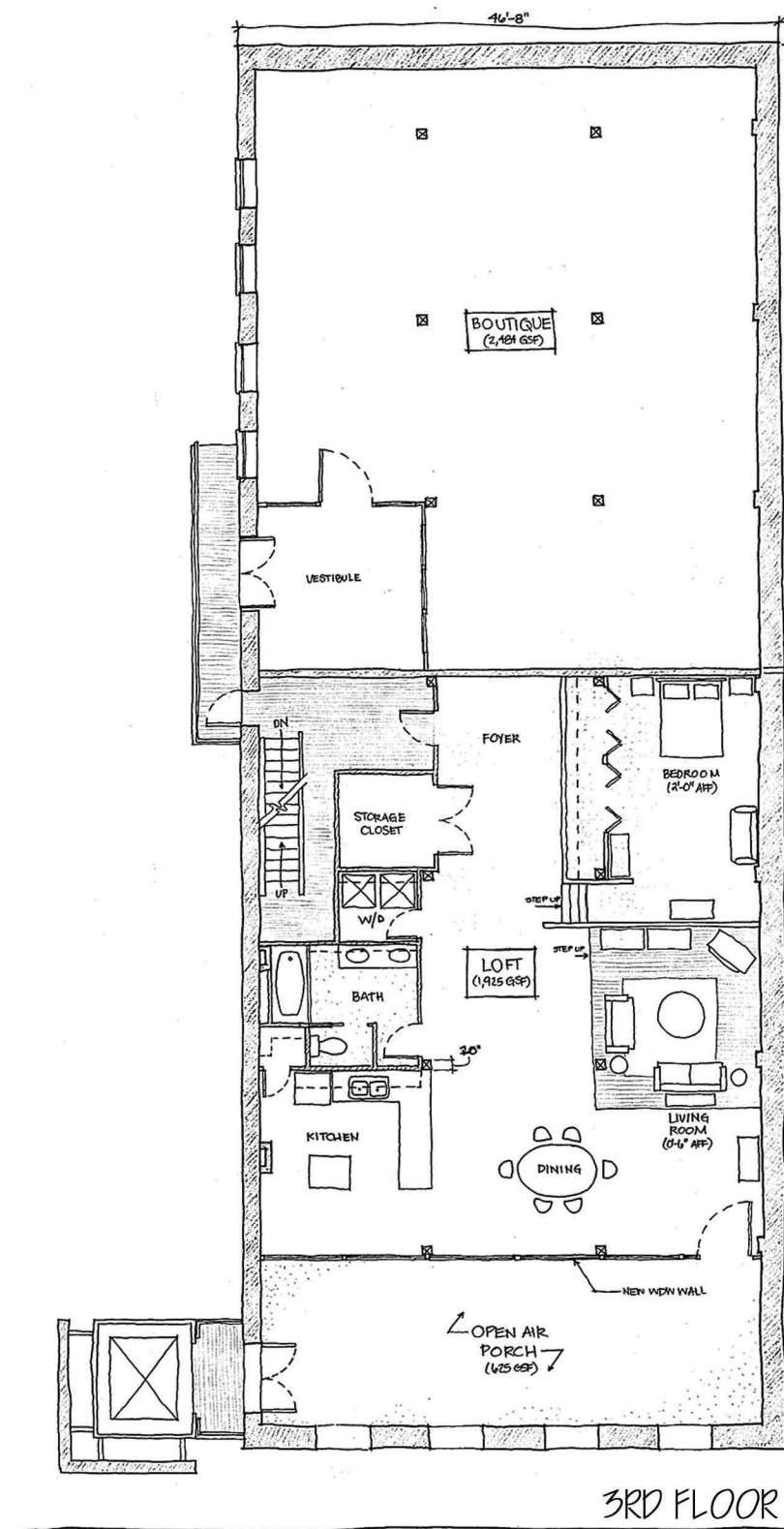
*plans not to scale

1ST FLOOR

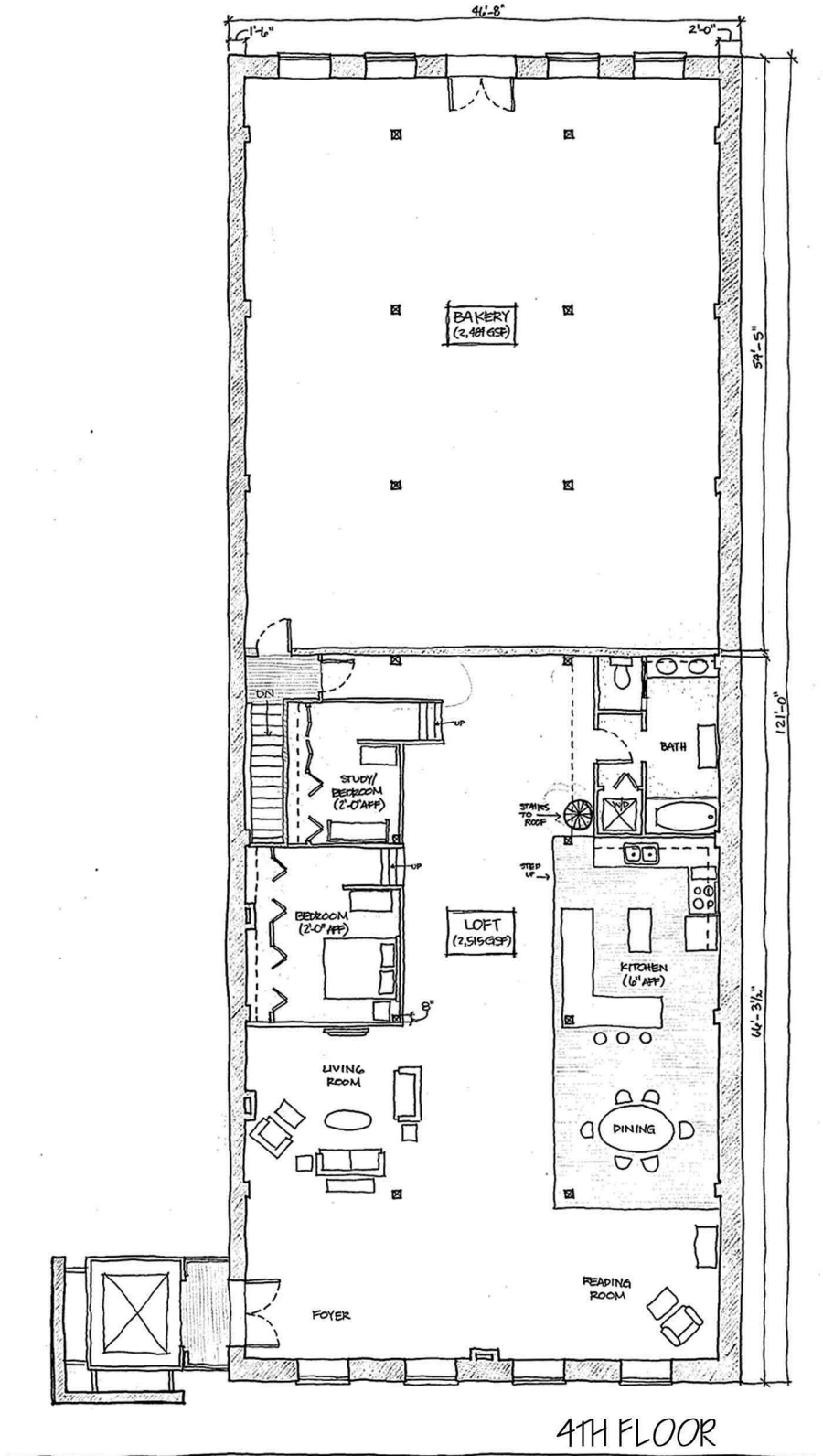


2ND FLOOR

PLANS



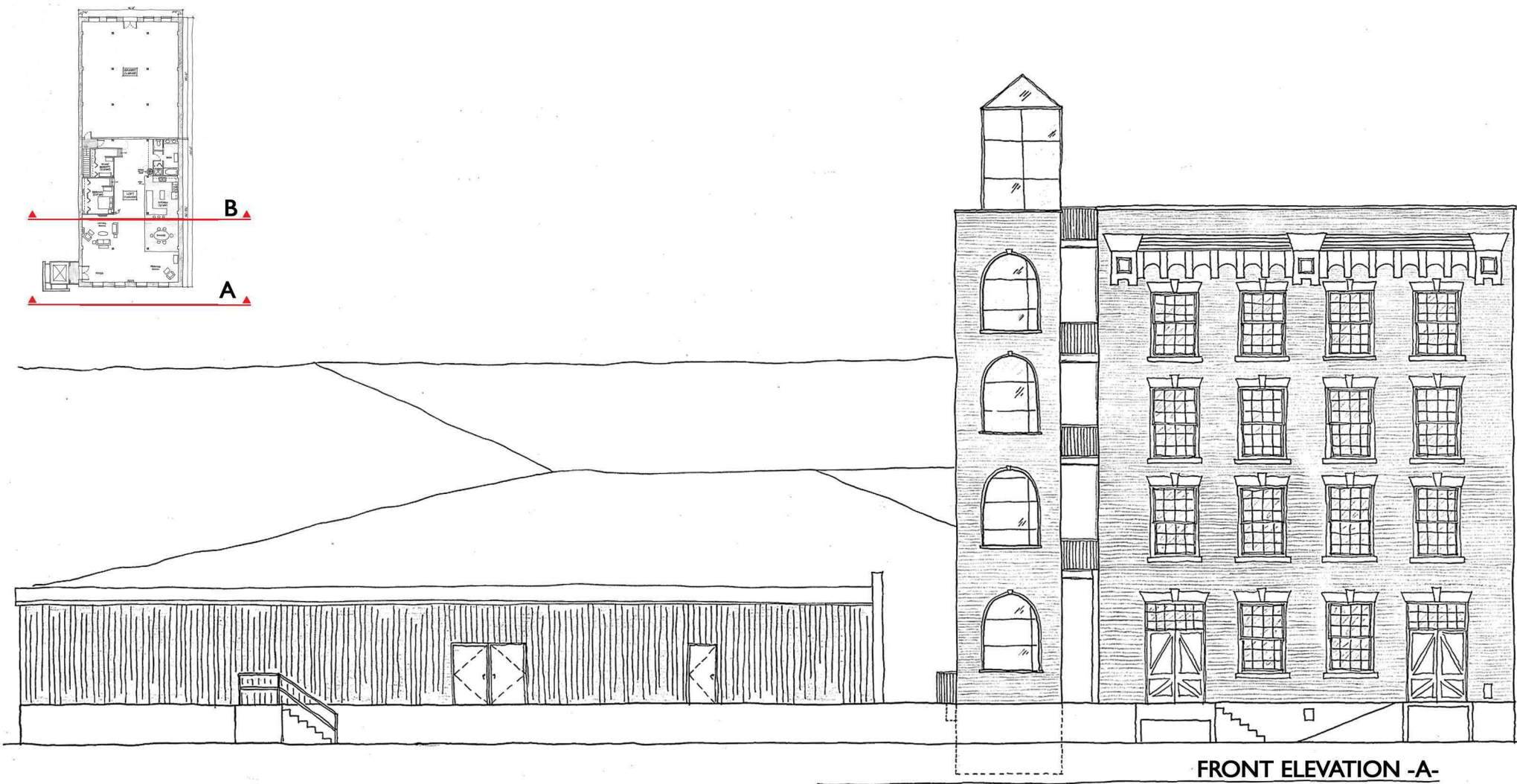
3RD FLOOR



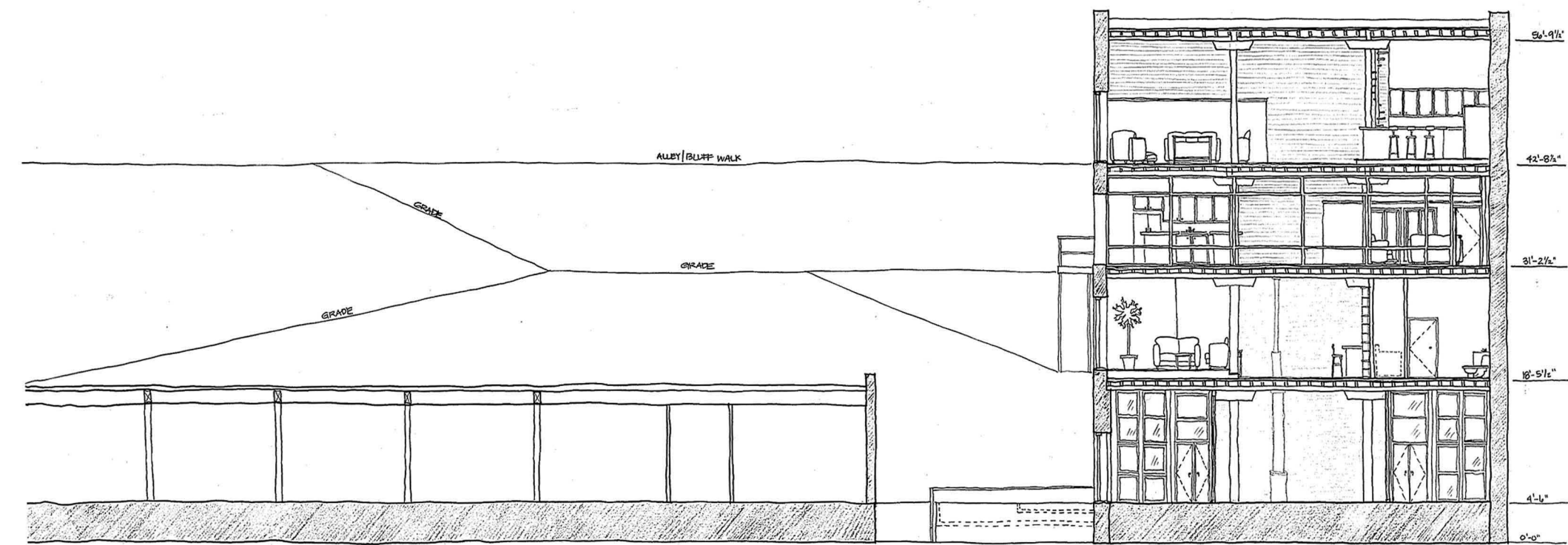
4TH FLOOR

The third and fourth floors are both mixed use. The back portion of the third story will be somewhat easy to access from the exterior. The newly added windows and door on the west facade allow for this portion to function as retail. The front portion of the third story will be an apartment loft. I was examining the possibility of this floor having an open air porch/vestibule entrance off of the elevator. The fourth story has a direct entrance off of what will be the Bluffwalk promenade, so this has been designated as another retail area. The front portion of the fourth story will be an apartment loft. This particular loft has access to the roof and therefore could host a rooftop patio.

EARLY SCHEME

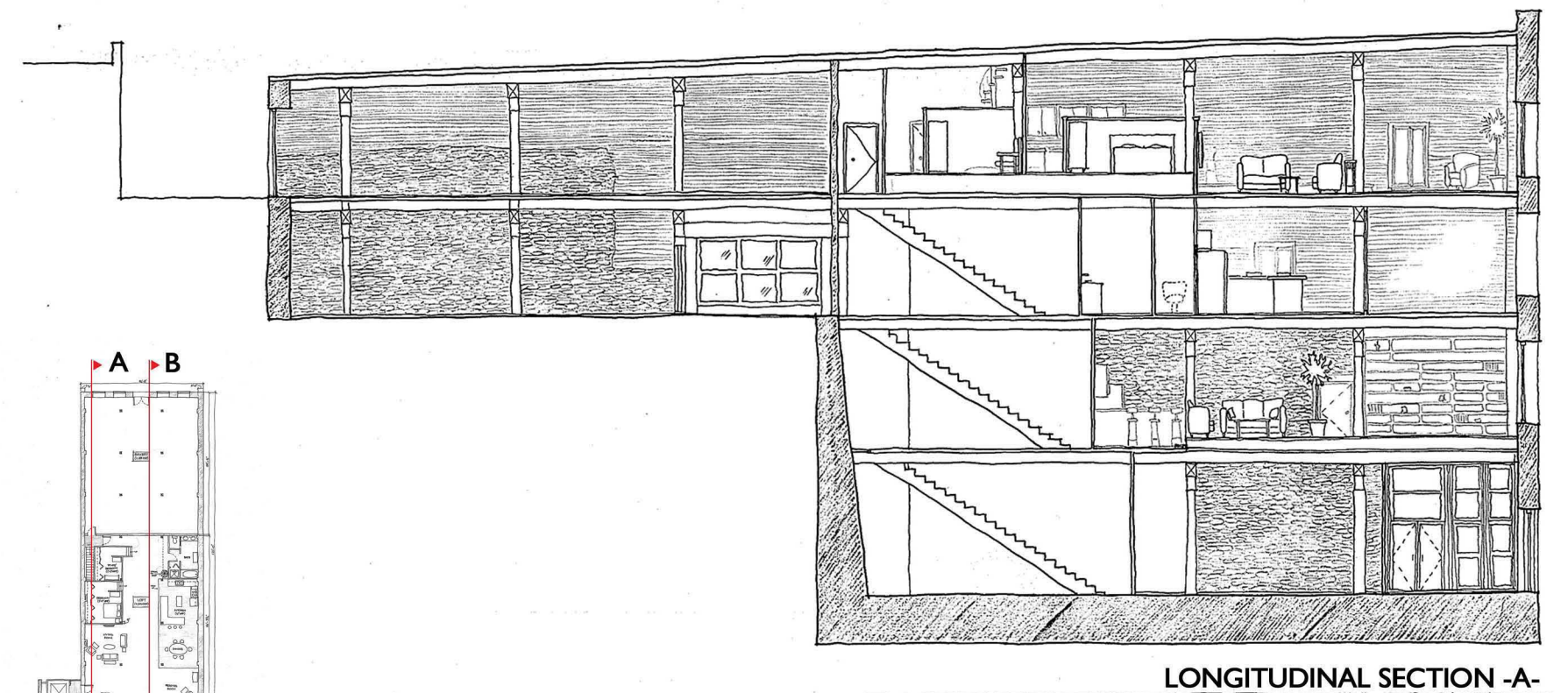


FRONT ELEVATION -A-

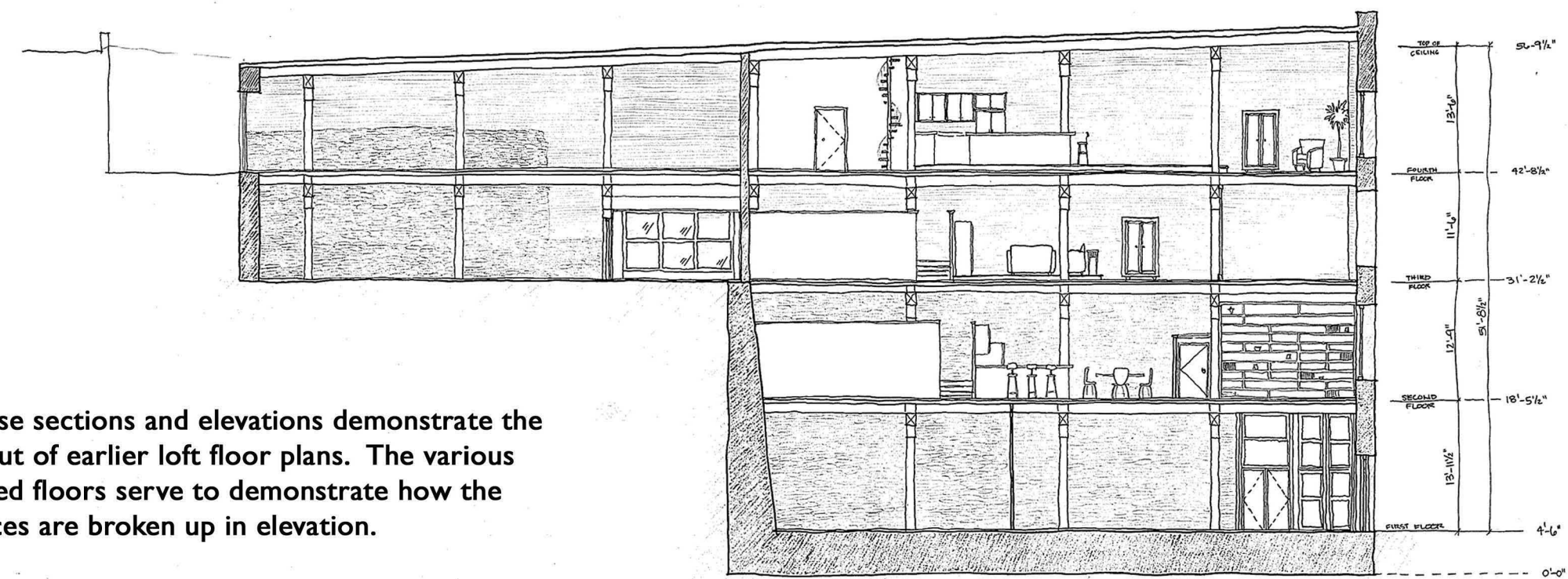


CROSS SECTION -B-

SECTIONS & ELEVATIONS



LONGITUDINAL SECTION -A-



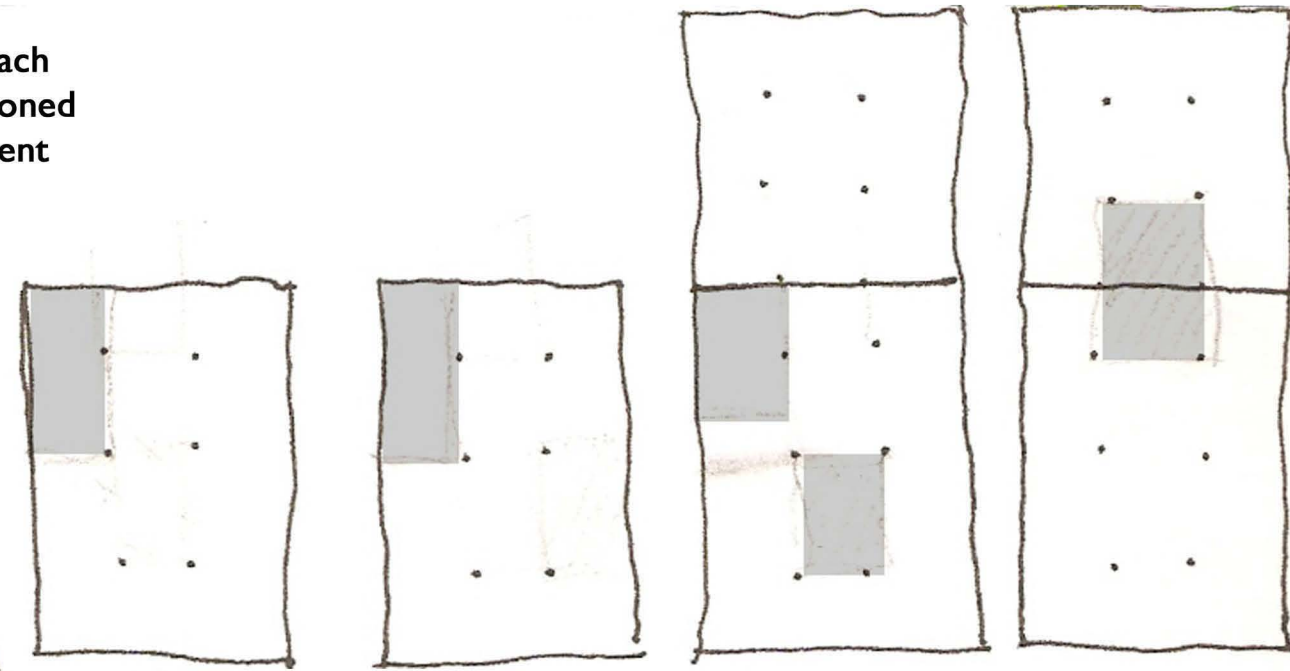
LONGITUDINAL SECTION -B-

These sections and elevations demonstrate the layout of earlier loft floor plans. The various raised floors serve to demonstrate how the spaces are broken up in elevation.

*sections not to scale

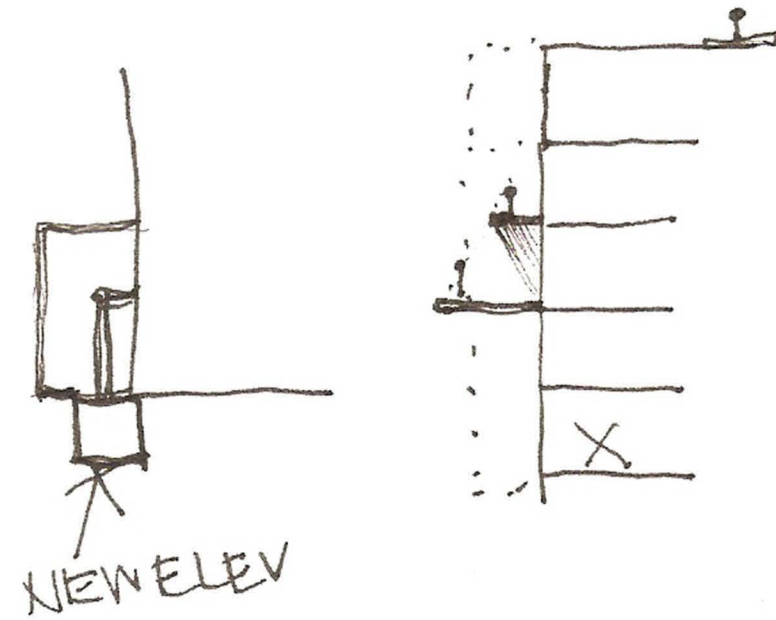
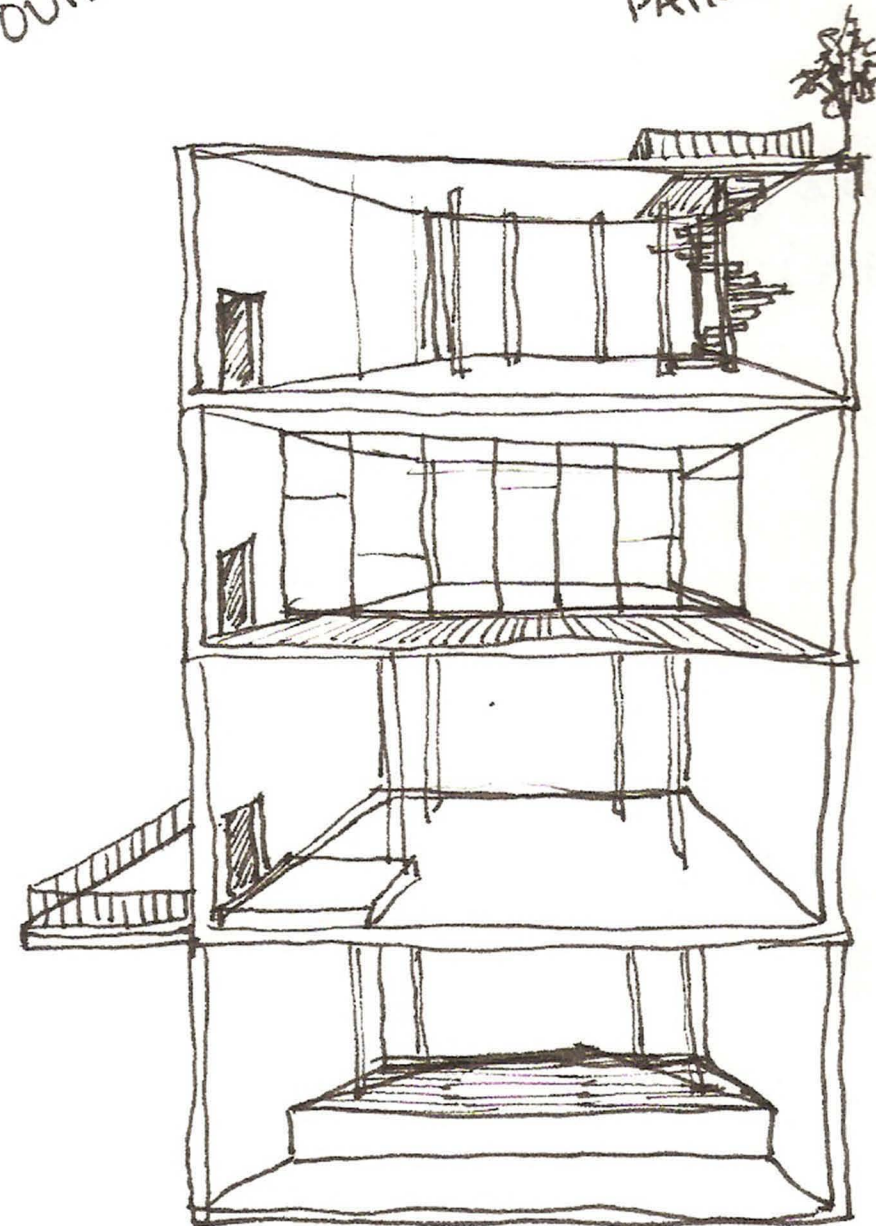
INTERMEDIATE SCHEME

I was still concerned with indoor/outdoor space for each apartment dwelling. In later plans I somewhat abandoned the idea of having porches or patios for each apartment and introduced an atrium space within each loft to provide a connection to the outdoors.



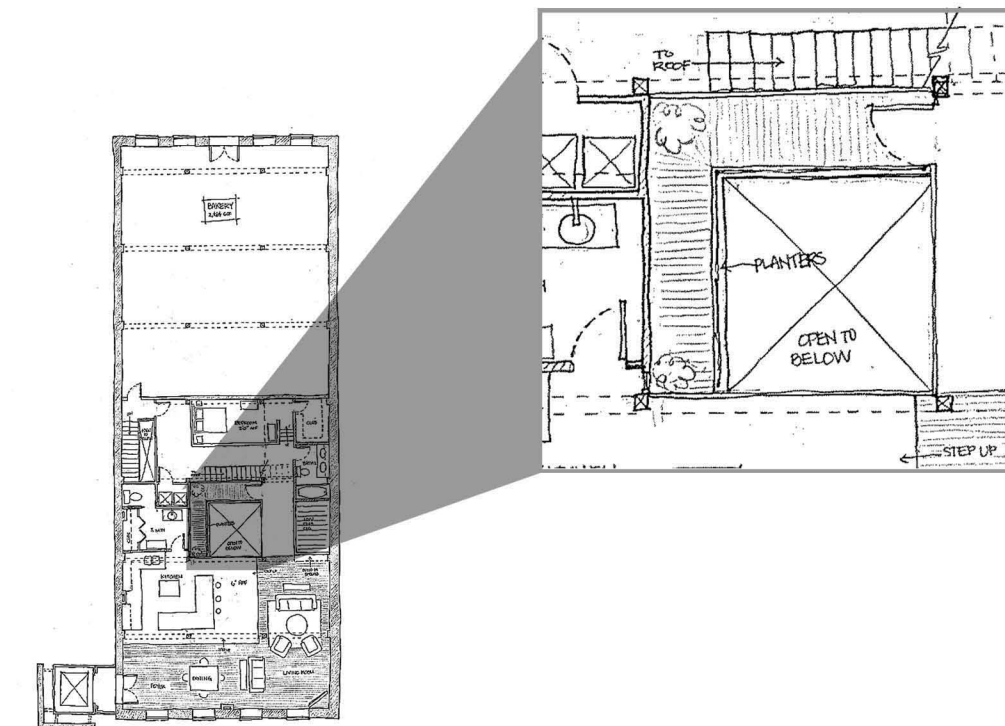
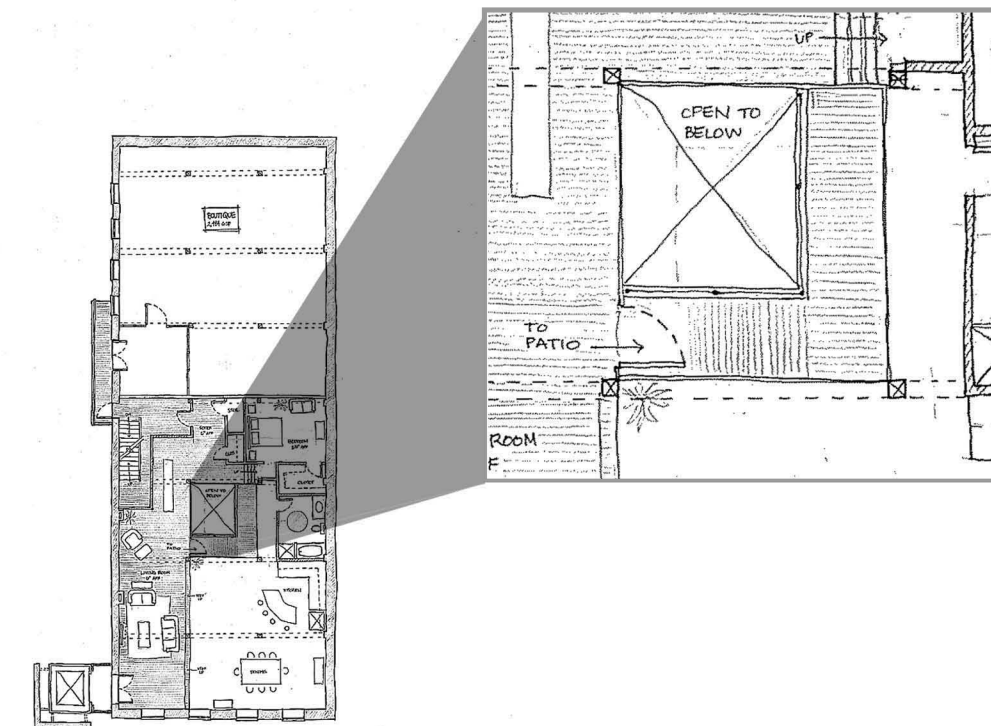
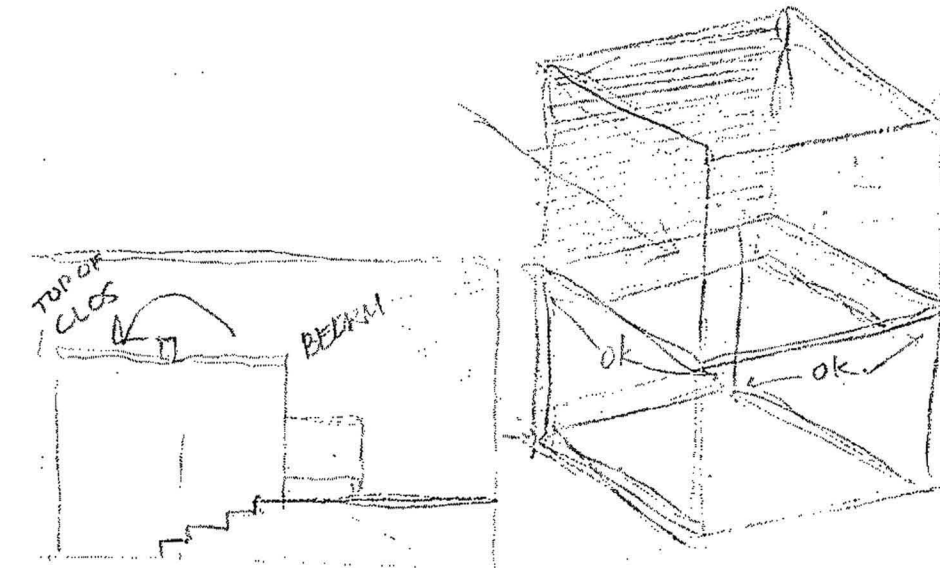
INDOOR/
OUTDOOR

PORCHES/
PATIOS



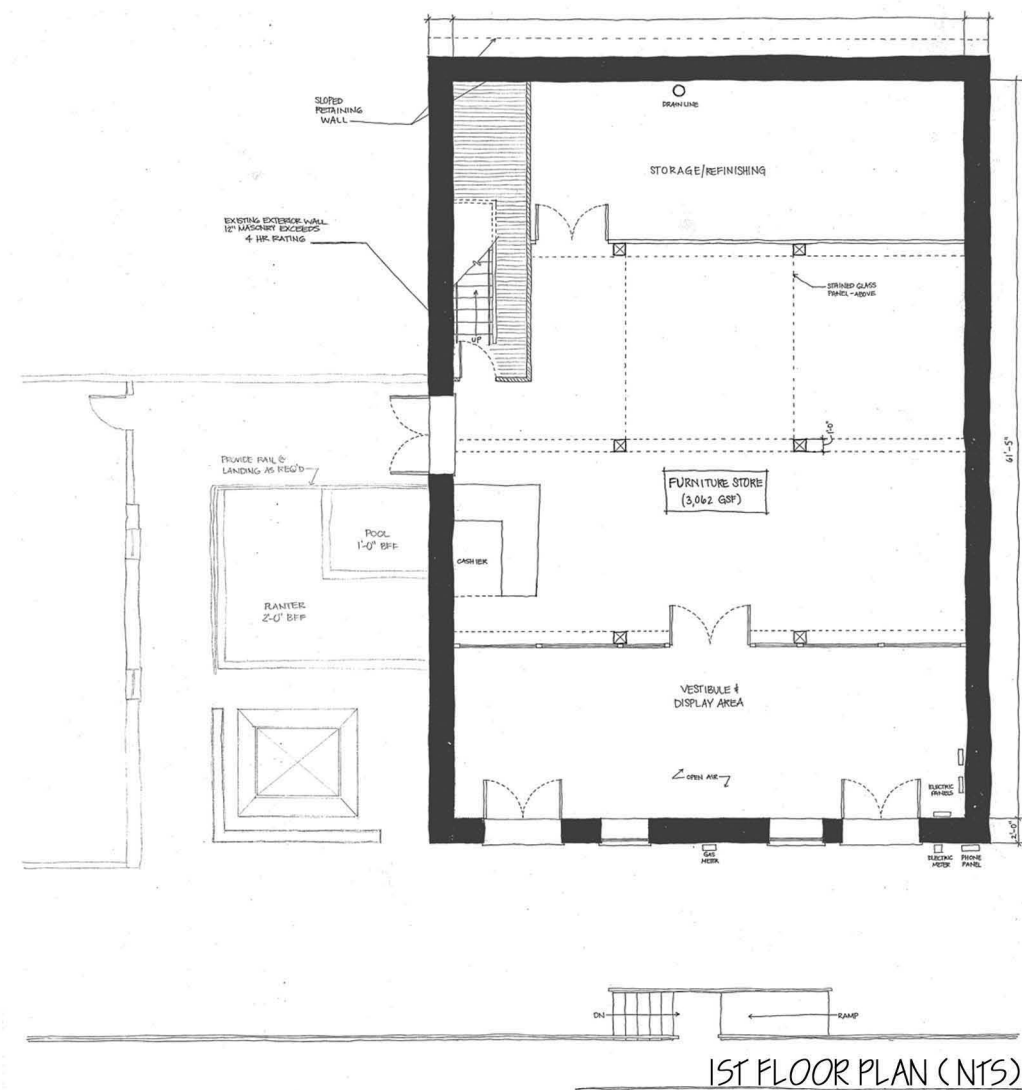
SKETCHES

In these early drafts, this atrium was an occupiable space. After consideration of what it would actually feel like to inhabit this space, I opted to use it only as a type of light-well that would bring more natural light into each apartment.

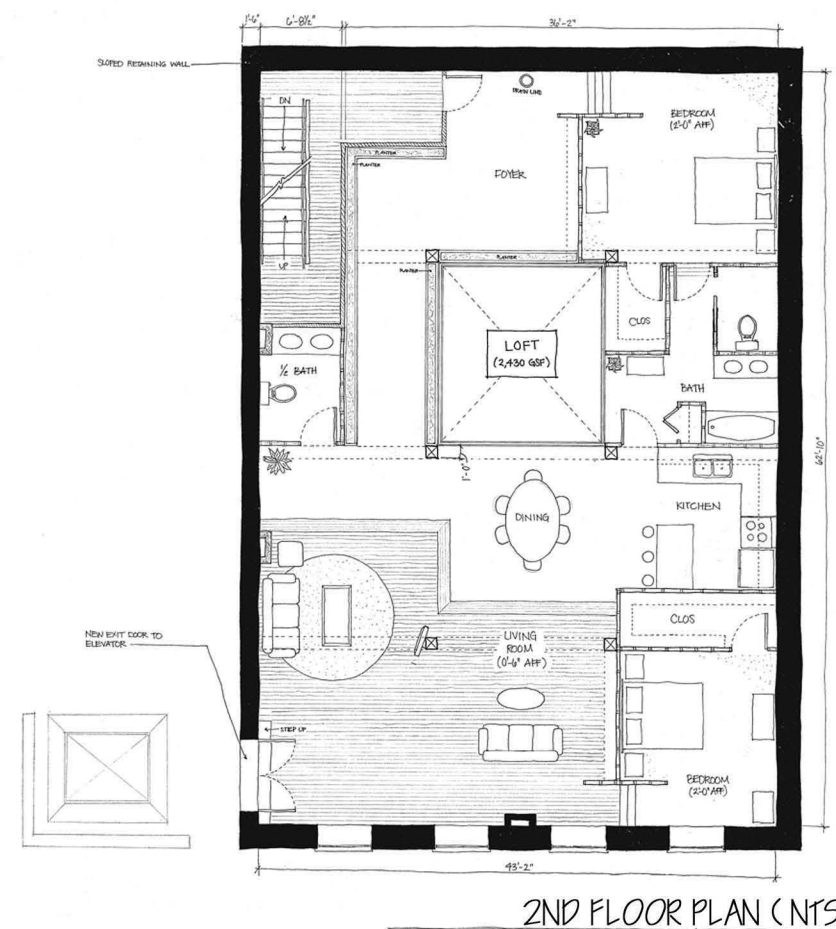


INTERMEDIATE SCHEME

Intermediate plans incorporated the light-well/atrium into the plan. The atrium penetrates through the upper 3 floors and provides for a skylight into the 1st floor/furniture store.



1ST FLOOR PLAN (NTS)

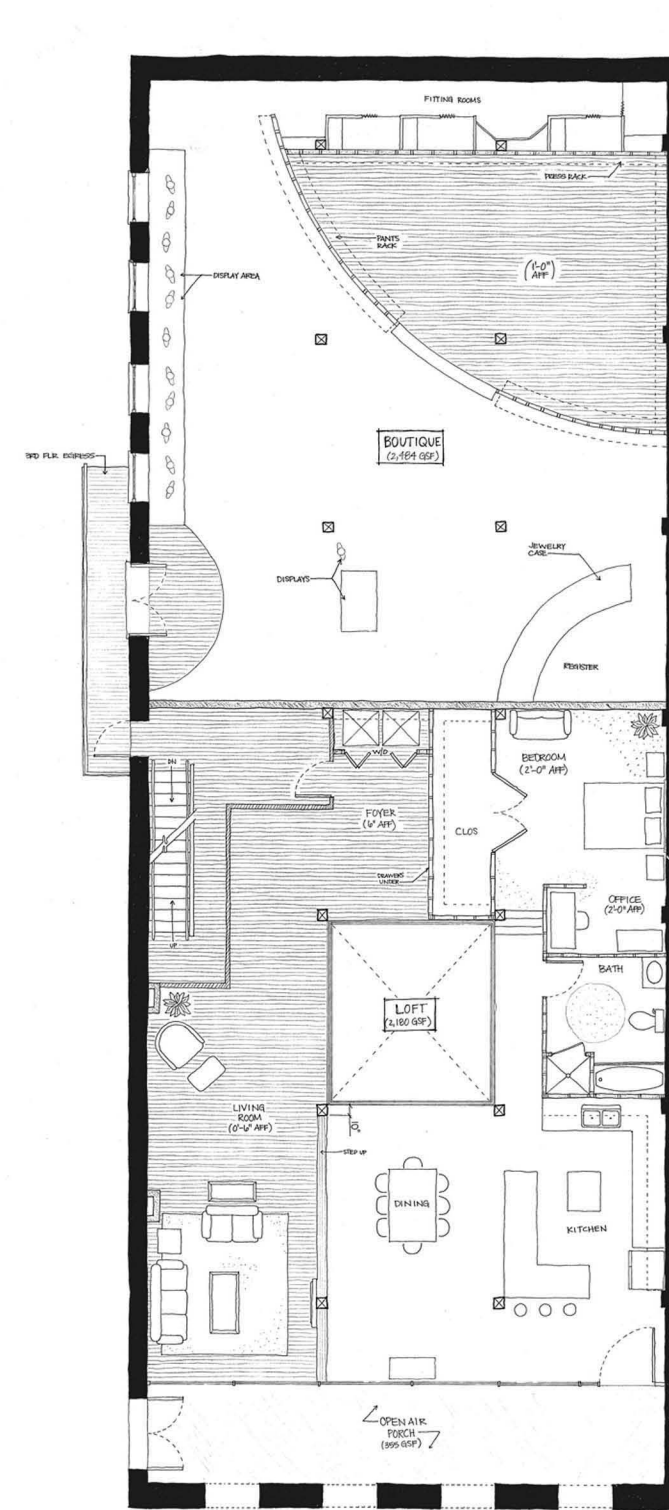


2ND FLOOR PLAN (NTS)

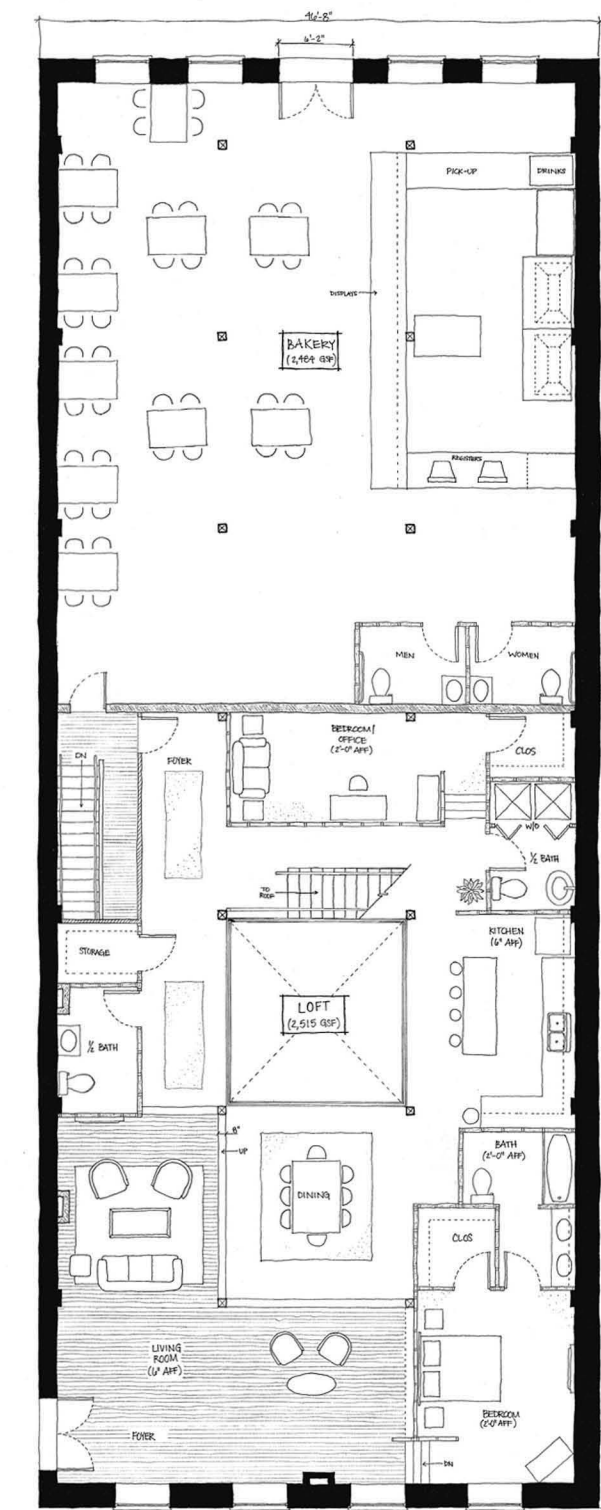
The 2nd floor/apartment level is lit by the large north facing windows on the Jefferson Street facade of the building, as well as with the atrium placed in the back half of the plan. Columns are roughly 15 feet apart from one another and therefore this atrium takes up about 225 square feet of the very spacious plan.

PLANS

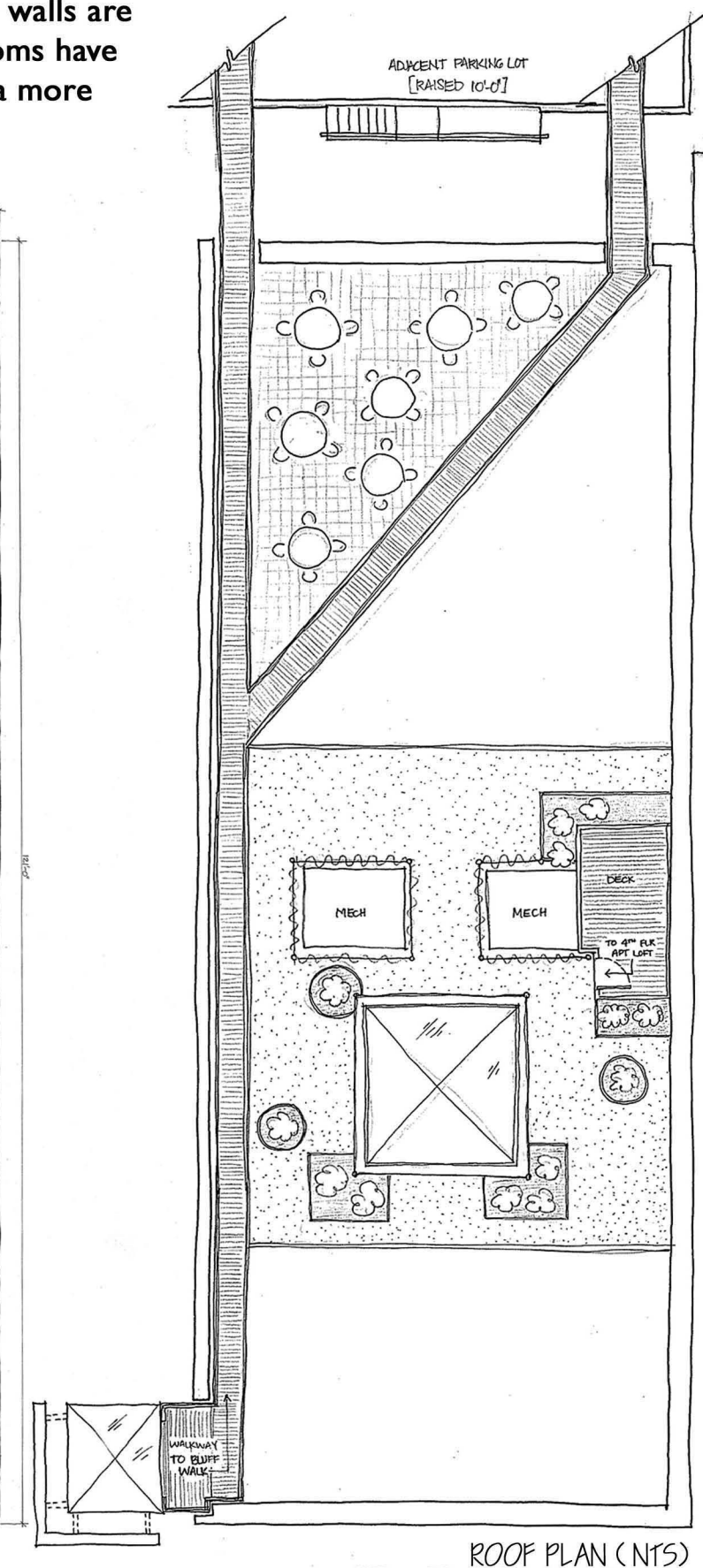
The third and fourth stories are still mixed-use - apartments and retail. The third story is split with a clothing boutique and the fourth is split with a bakery. All three apartment plans integrate living/public spaces and “separate” the areas in elevation, through a means of raised floors and partition walls. These walls, however, are not meant to block a room entirely off, and therefore do not touch the underside of the deck. The bedroom walls are only 5 feet tall from the floor level. The more private rooms, such as the bathrooms have dropped ceilings and are 9 feet tall. This dimension gives the smaller bathrooms a more appropriate scale and fits comfortably in the (average) 12 ft tall space.



3RD FLOOR PLAN (NTS)

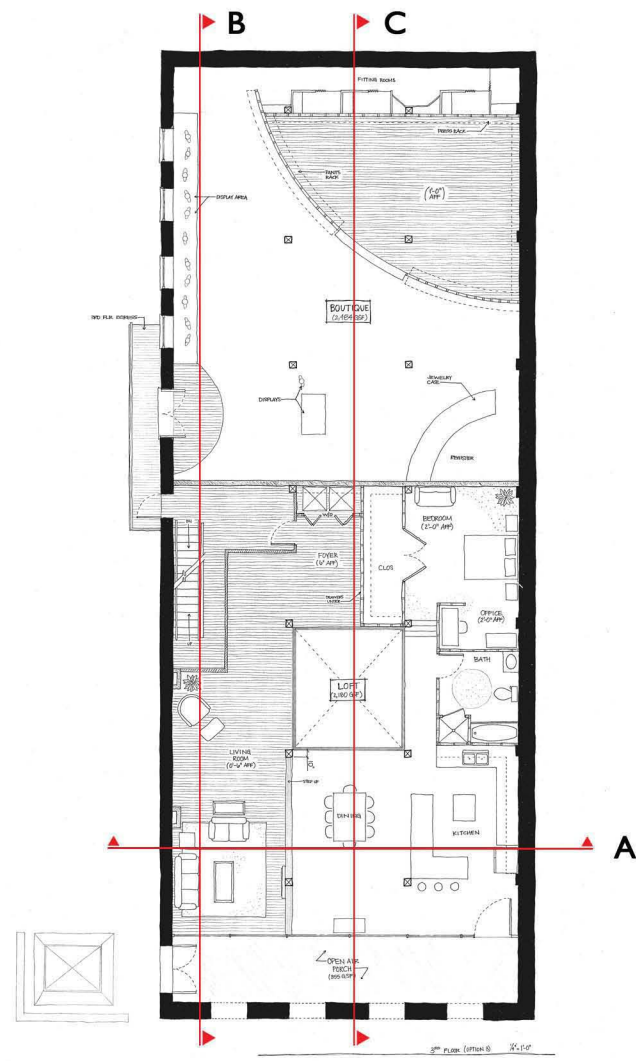


4TH FLOOR PLAN (NTS)



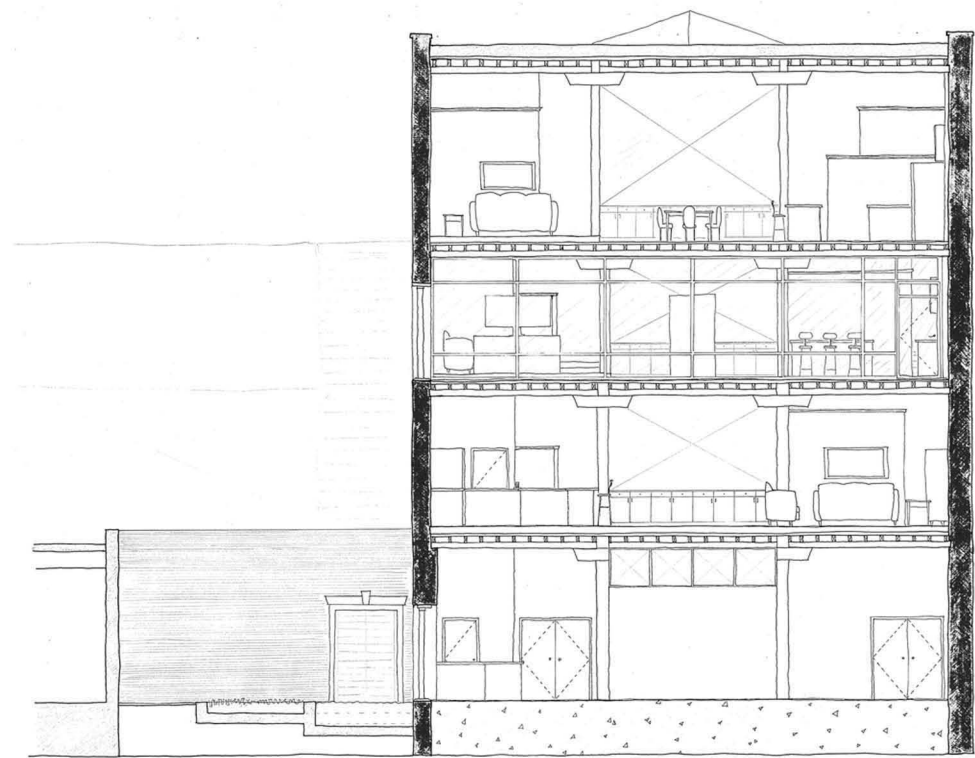
ROOF PLAN (NTS)

INTERMEDIATE SCHEME



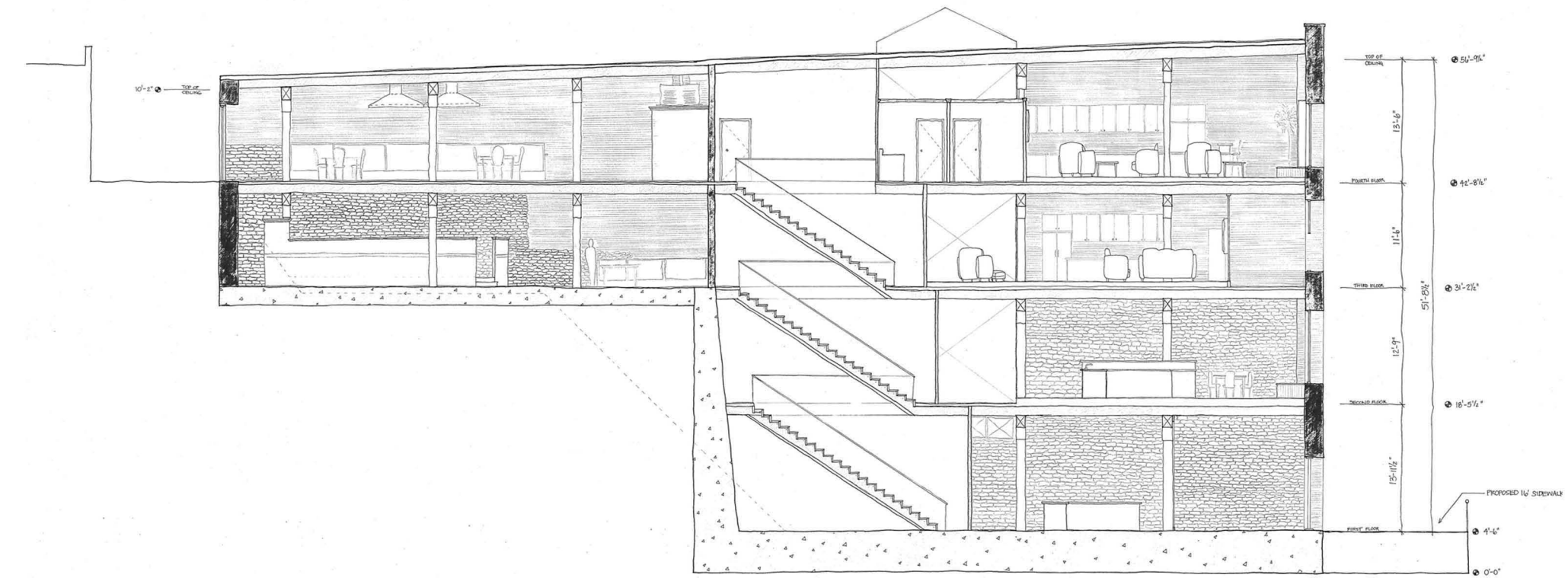
Intermediate Cross Section and Long Sections demonstrate the atrium in the center of the apartment plans.

*sections not to scale

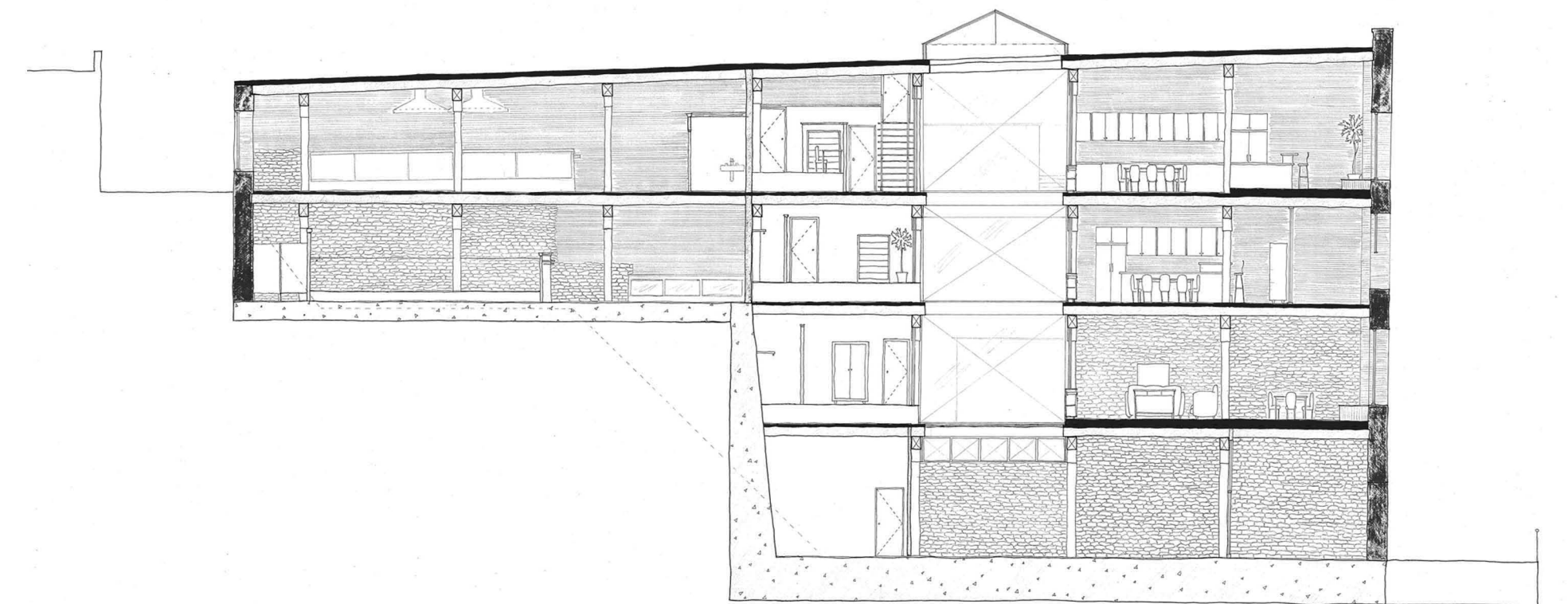


CROSS SECTION -A-

SECTIONS



LONGITUDINAL SECTION -B-

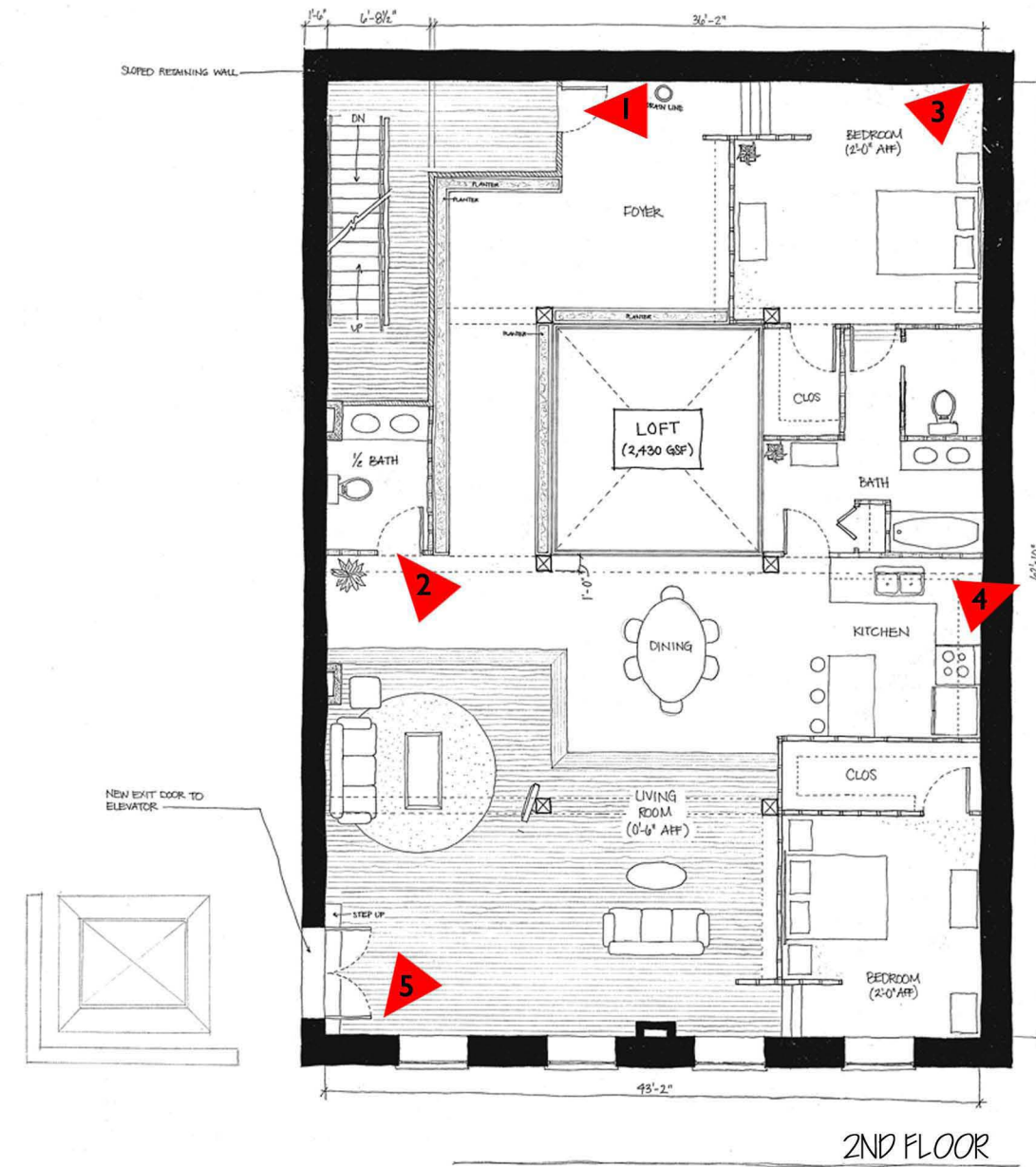


LONGITUDINAL SECTION -C-

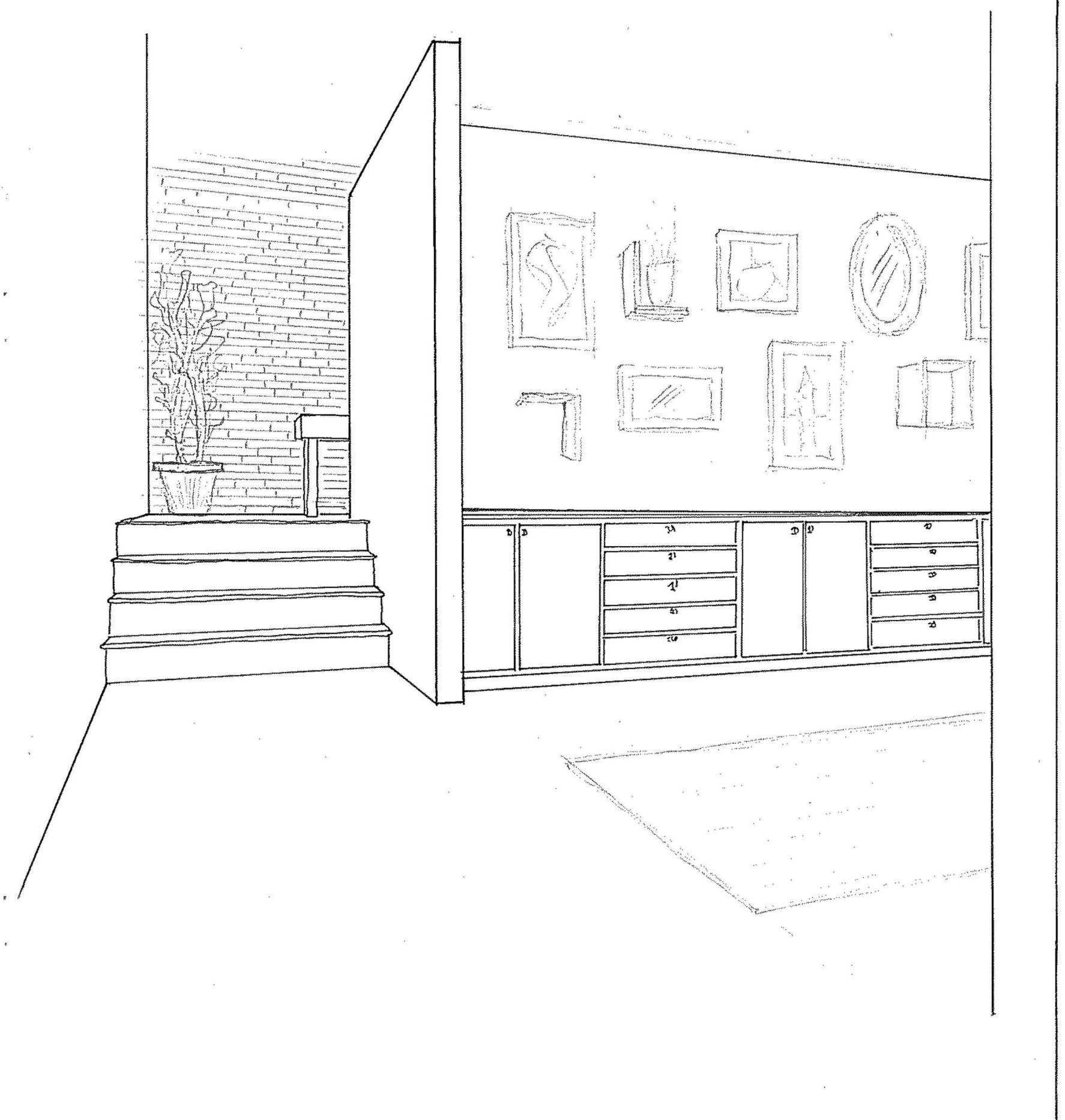
INTERMEDIATE SCHEME

Perspectives of the 2nd Floor Plan, shown here at 1" = 1/16", aim at the same feeling I was trying to achieve early on. However, this iteration incorporates much more daylight, because of the atrium.

Perspective I illustrates the approach into the bedroom. The floor is raised 2ft above the main floor so there are three steps up to the bedroom level. I have also incorporated built-in shelves and cabinets in the available space underneath this floor.



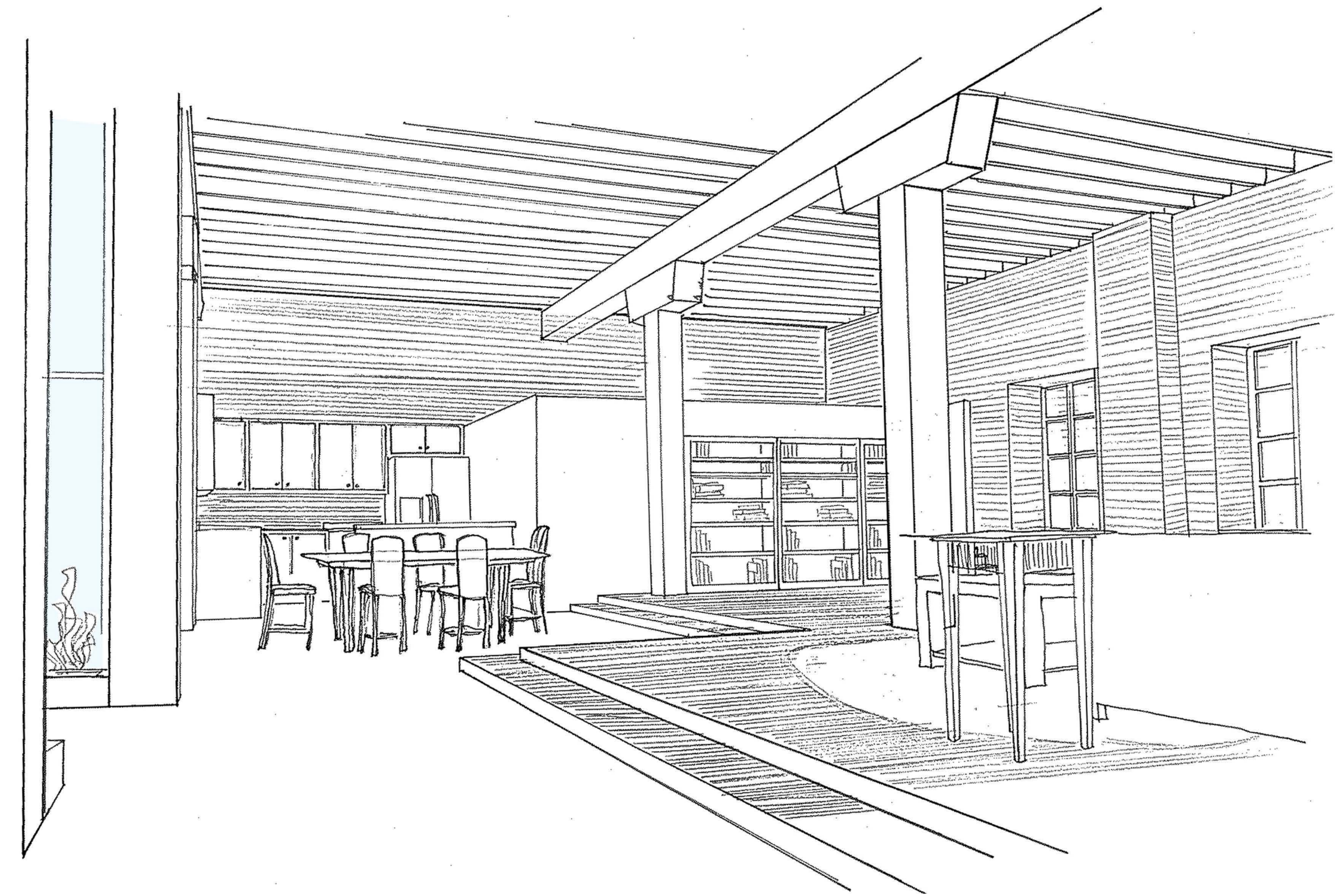
PERSPECTIVES



Perspective I

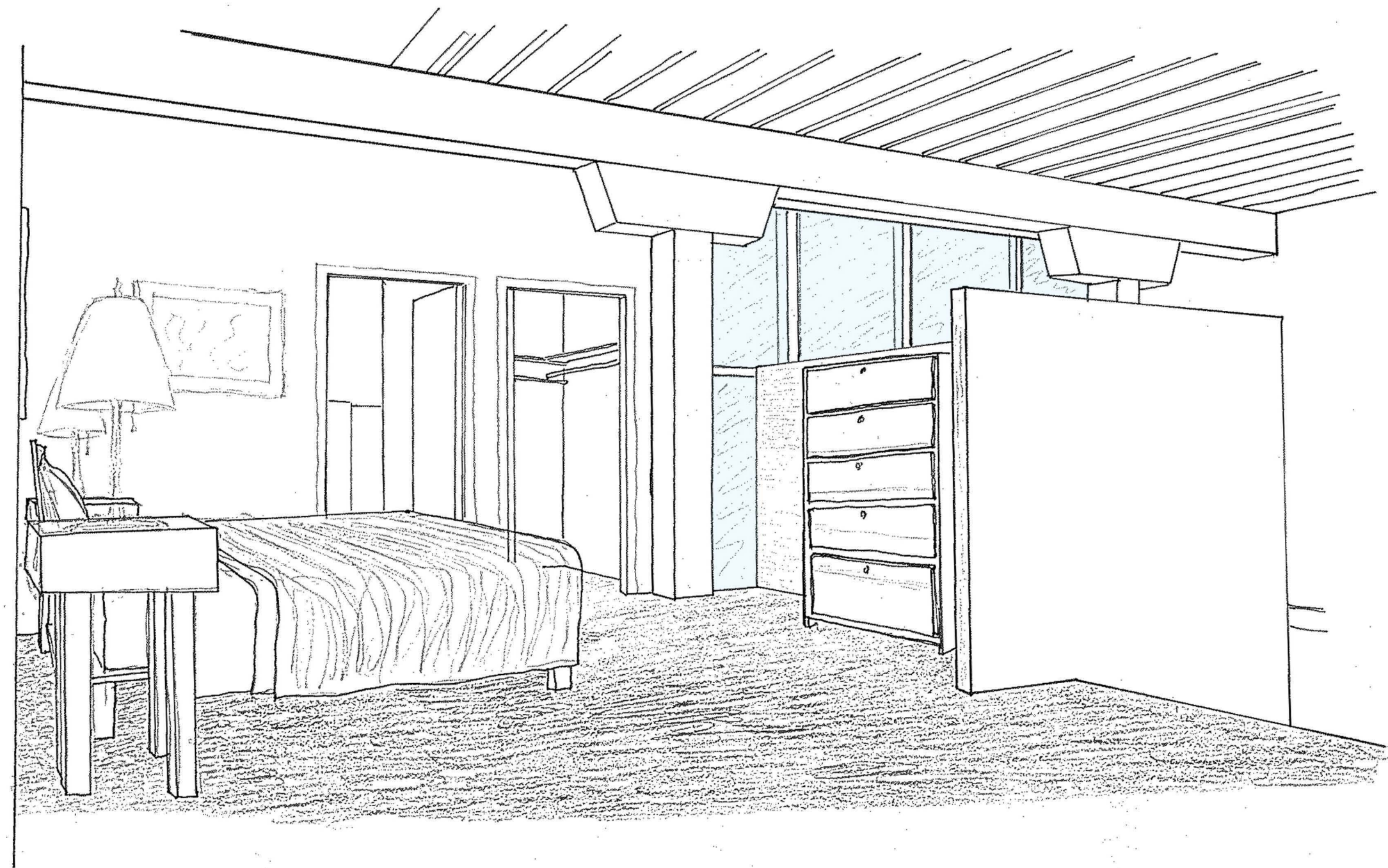
INTERMEDIATE SCHEME

These perspectives show how the atrium has been incorporated into the plans. This atrium, using transparent and translucent glass, brings a lot of light into the space.



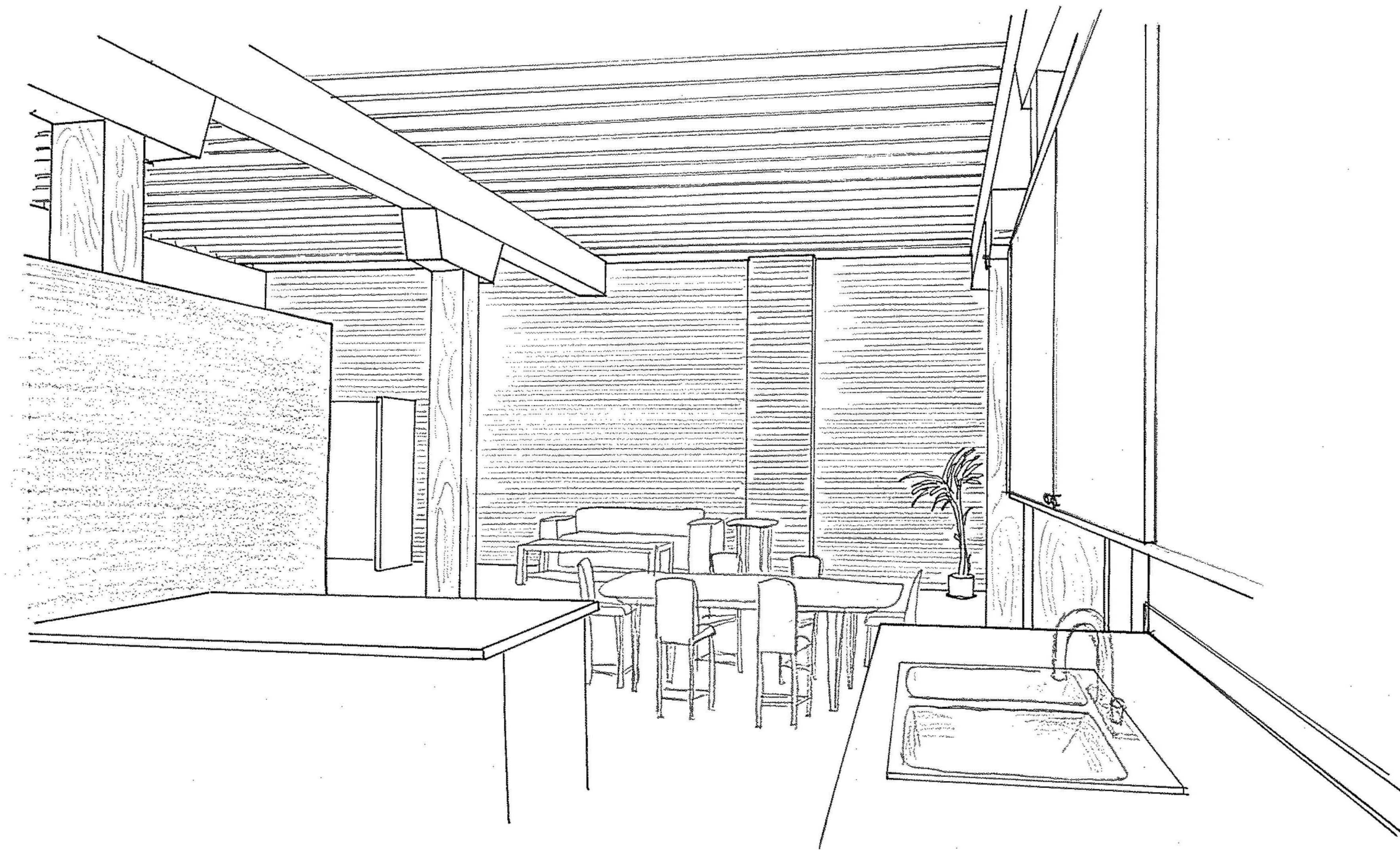
Perspective 2

PERSPECTIVES



Perspective 3

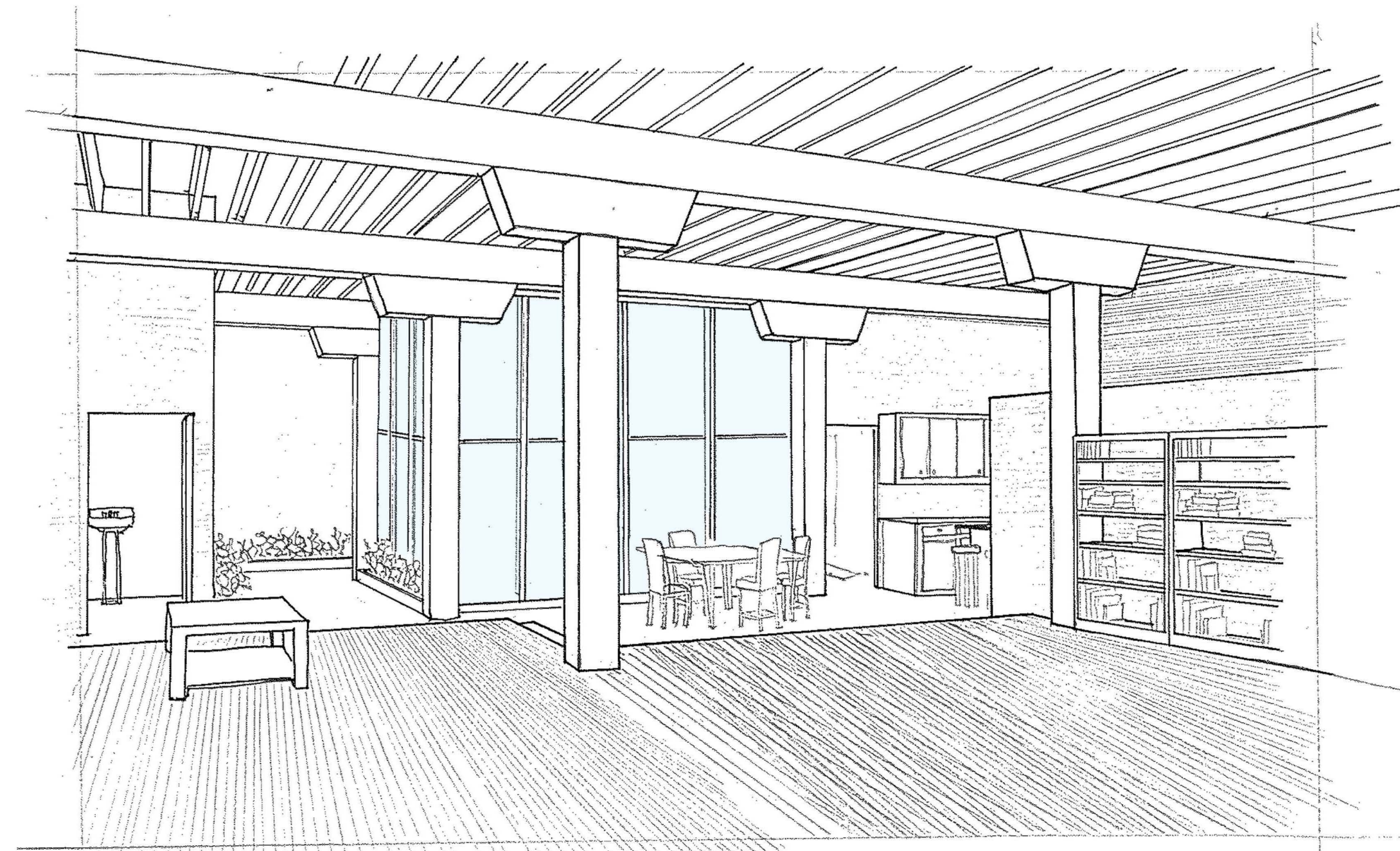
INTERMEDIATE SCHEME



Perspective 4

PERSPECTIVES

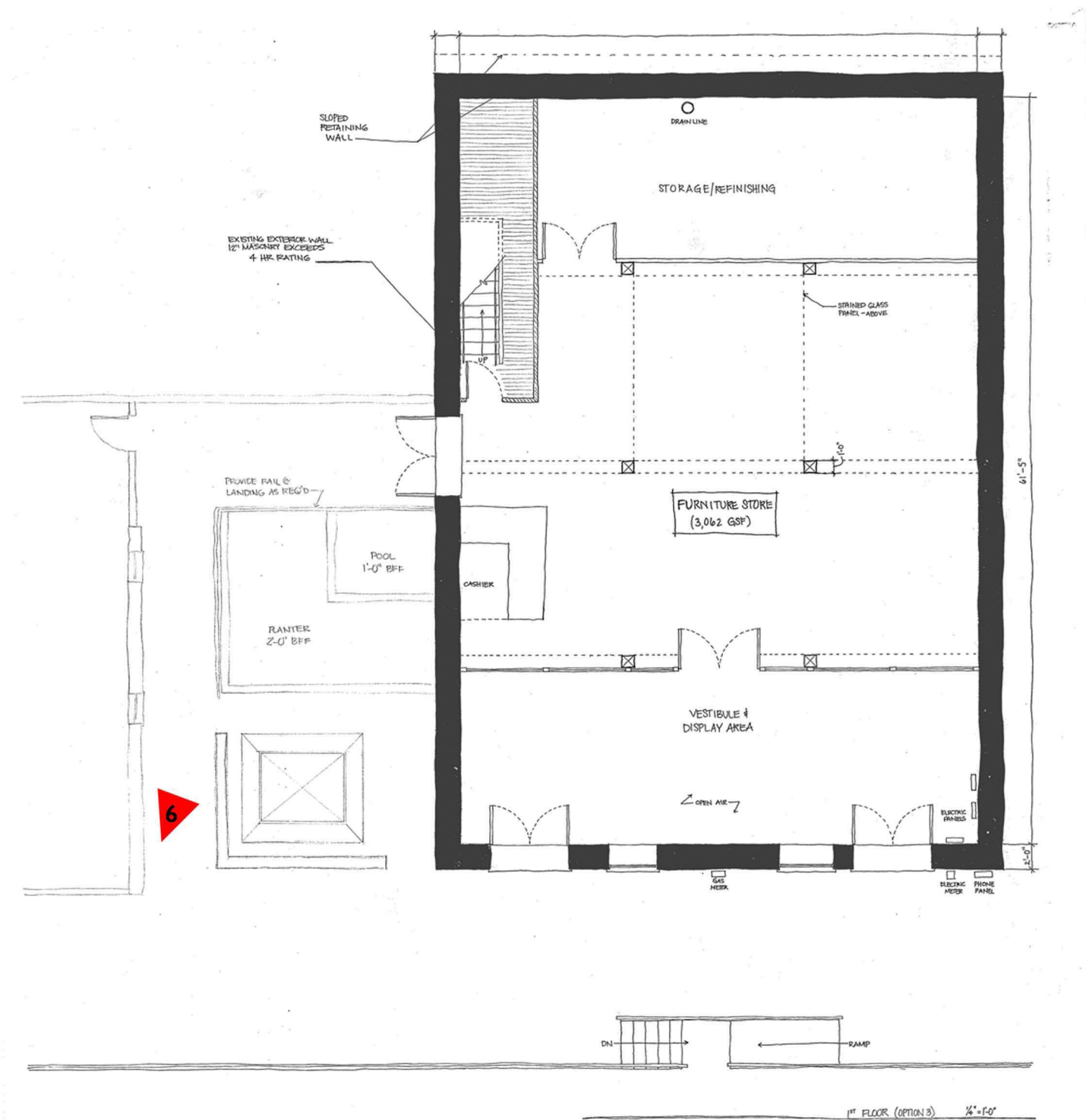
This perspective shows the atrium from the North/elevator entrance. There are planters along this corridor, lit by this atrium.



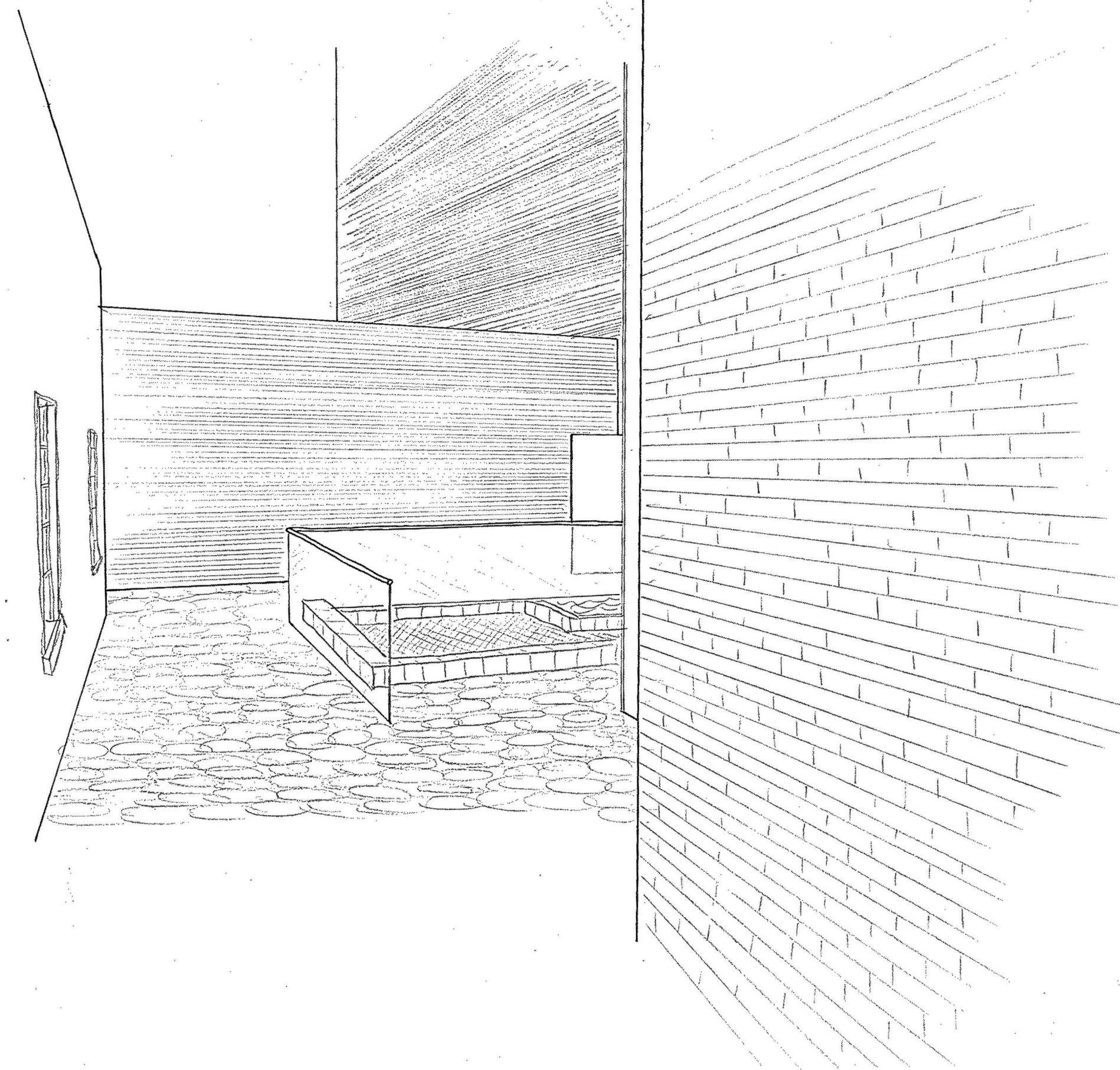
Perspective 5

INTERMEDIATE SCHEME

Perspective 6 is taken of the entrance around the elevator base..



PERSPECTIVES



Perspective 6