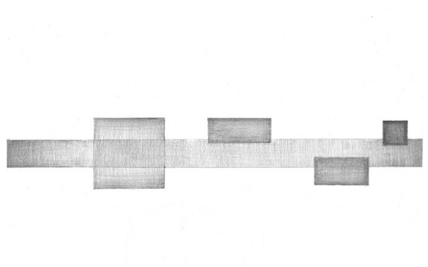
Moments of Entering a Home

Lantian Zhang



Moments of Entering a Home

Examining the Entrance Condition in Architecture through the Lens of an Apartment Building's Corridor and Grounds

by **Lantian Zhang**

Thesis submitted to the faculty of
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirments
for the degree

of

Master of Architecture

Hunter Pittman, Committee Chair

Kay Edge, Committe Member

Kevin Jones, Committee Member

Steven Thompson, Committee Member

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I would like to express my sincere gratitude

to my Committe members:

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Kay for the the encouragement and continuing support,

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to my colleagues and friends in studio and elsewhere, especially Bo, Muzi, Wang and Xin.

and finally, to my parents for their love and understanding.

Thank you.

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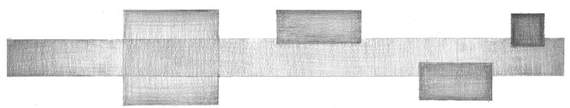
Abstract

This thesis explores the corridor as an essential architectural element in an apartment building. By differentiating the conventional linear corridor, a more pleasant corridor could be achieved: corridor with various widths and natural lighting through architecture manipulation.

The building's locale contributes to another topic of this thesis, the urban form for a downtown apartment building. The identities of three streets surrounding the site are respectively unique. One is a downtown pedestrian sidewalk with storefronts, one is a quiet one-way back road, and the other is a major highway with heavy traffic. Examining these three urban conditions, the possible relationship between the streets and the apartment building is explored.

For apartment residents, the street conditions and the corridors constitute the very transitional experience for him or her to enter a home.



Introduction

When I started thinking about a typical apartment, I first encountered the memory of a long, narrow, dark corridor. It might be in a Shanghai 1980s masonry apartment; it might be an American suburban chain hotel; and it might also be Slusher Hall on campus where I spent my first night in the U.S.

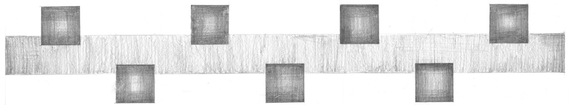
Revisiting these memories, most of them are not so pleasant. My memories of corridors are mostly long, dark spaces. I used to live in a dormitory building where there were only light fixtures every 5 or 6 doors, and all I could see in front of me was the monotonous enclosed space. The common layout of a hotel also consists of the linear corridor, with its reduced floor to ceiling height, travelers usually would feel cramped inside.

So how can we have a better corridor? In most cases, the linearity in corridor spaces leads to an uncomfortable feeling. The reconsideration of the corridor's spatial conditions allows me to have a corridor with a possible dynamic path, a brighter interior, and some spaces where inhabitants could use a corridor as a place to interact with each other.

Similar to the previously stated reconsideration of the interior conditions, I started to look at the exterior. How would streets, buildings and people meet in this unique urban context? How would my building provide a vibrant addition to the city life?

On studying how the building touches ground in this downtown Roanoke lot, I discovered the three unique street conditions. A major highway, a downtown sidewalk with storefronts nearby, and a quiet one-way back road. Each condition could be seen as a generic type existing in most urban spaces.

With the corridor variations and the study of different street level entry conditions, we will have a deeper understanding of how architecture could better interact with the residents and the urban context in which they set footprint on.



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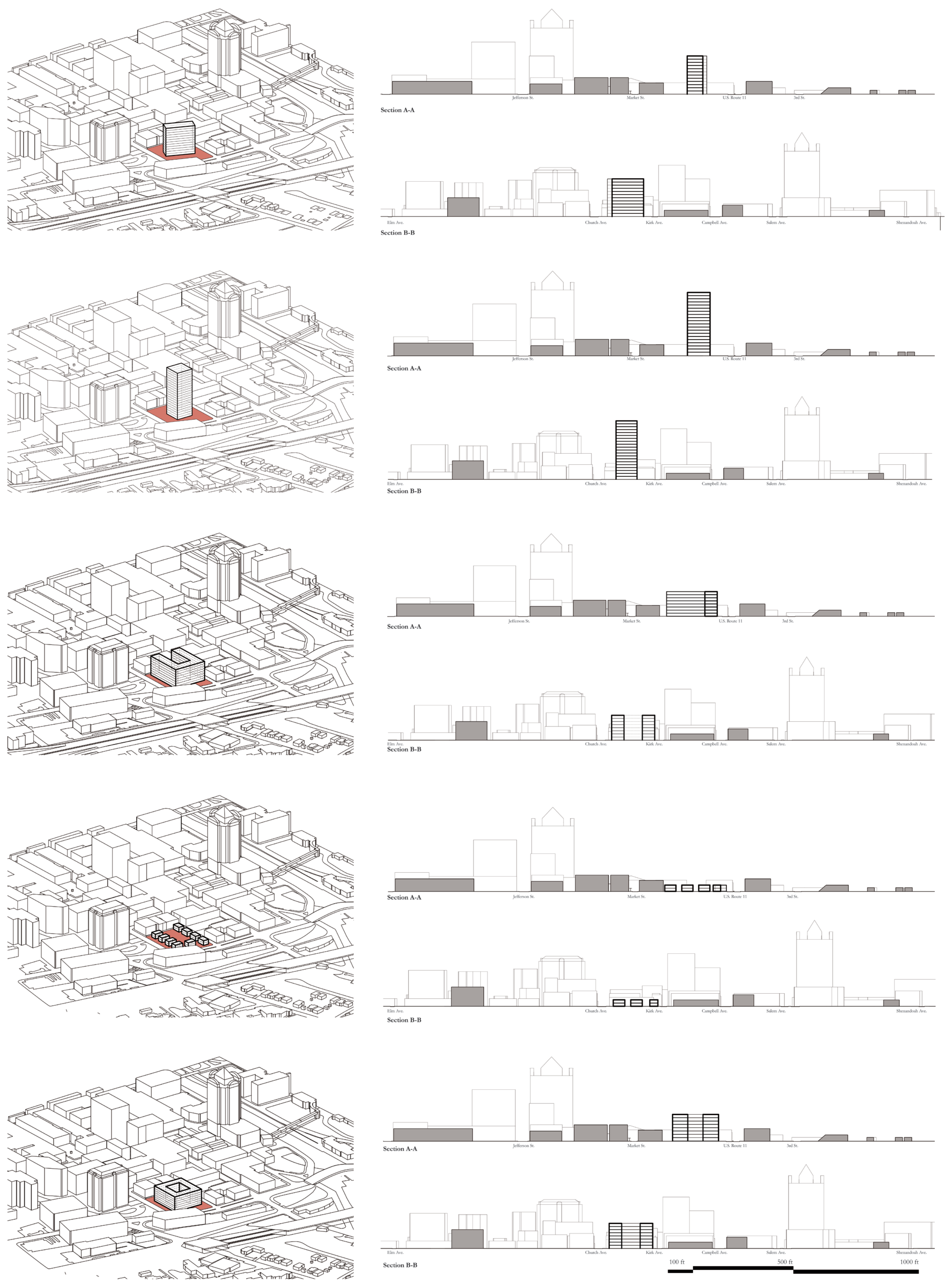
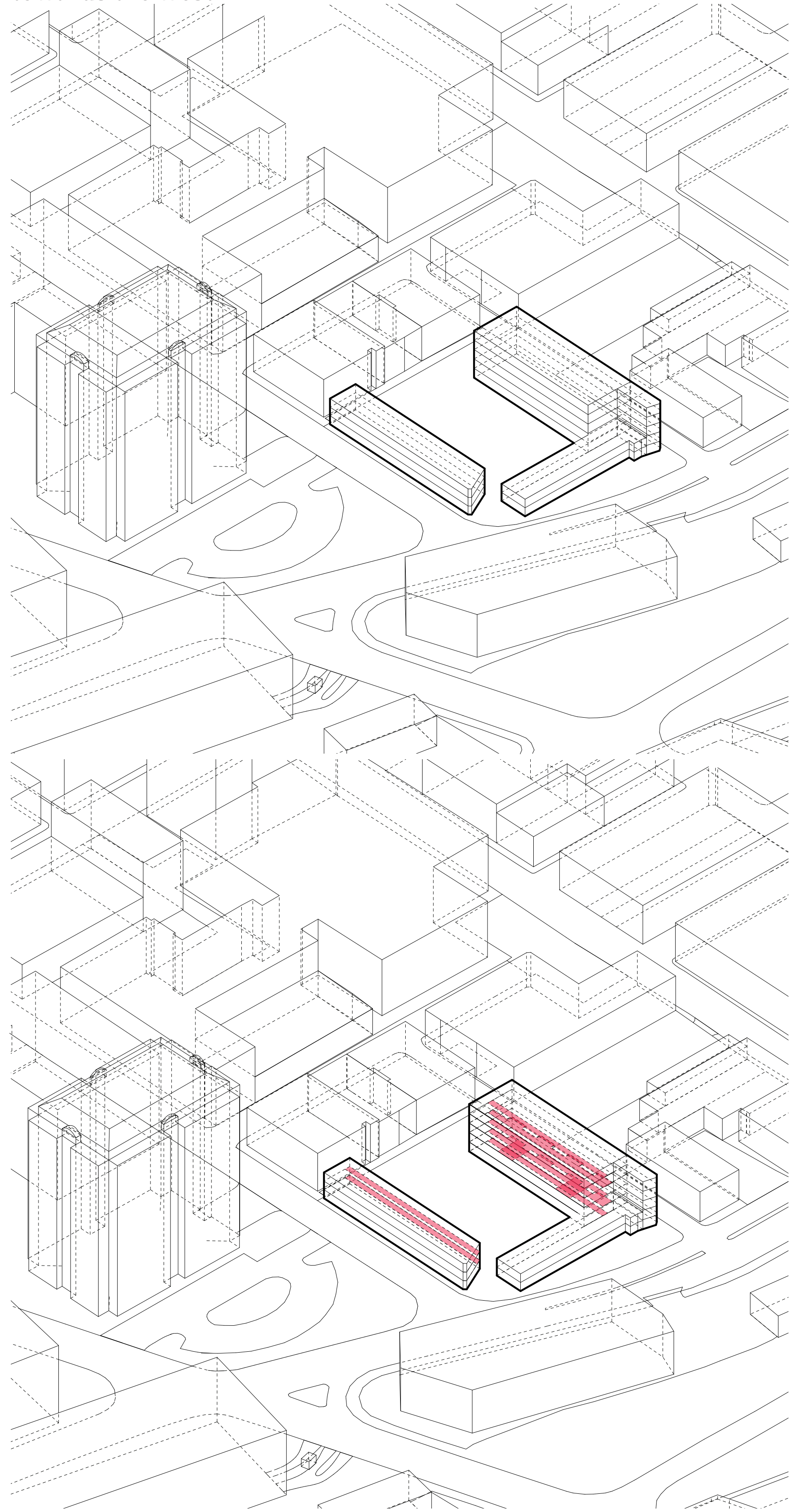


In the initial conceptual design, there were several urban forms. The slab and the tower were the first two that I excluded as neither fit well with the site. The rest are scattered townhomes, a tower with a courtyard, and a semi-enclosed massing with an opening towards the west.



The commercial spaces on the south-west side of the site (Church Ave.) have multiple storefronts where people can enter from the sidewalk. On the east side, the existence of the highway is dominating. One can see and hear traffic coming through for most of day. The north side, Kirk Avenue is a quiet one-way road with very few automobile and pedestrian traffic.

....Some of the other images have to do with my childhood. There was a time when I experienced architecture without thinking about it. Sometimes I can almost feel a particular door handle in my hand, a piece of metal shaped like the back of a spoon...

...I frequently find myself sinking into old, half-forgotten memories, and then I try to recollect what the remembered architectural situation was really like, what it had meant to me at the time, and I try to think how it could help me now to revive that vibrant atmosphere pervaded by the simple presence of things, in which everything had its own specific place and form...

...I can hear the heavy front door closing behind me as I walk along the dark corridor and enter the kitchen, the only really brightly lit room in the house...

...Everything I knew before about the thing I am creating is flooded by a bright new light...[1]

As memories emerged, the dim image of a corridor came to my mind. And the most significant feature of the image is its darkness.

1. Zumthor, Peter, et al. *Thinking Architecture*. 2nd, expanded ed., Basel, Birkhäuser, 2006.

In the fourteenth century, in both Spanish and Italian contexts, a corridor referred not to a space but to a courier, someone who as the word's Latin root suggests could run fast. A corridor might have been a scout sent behind enemy lines, a governmental messenger, a carrier of money, or even a negotiator arranging mercantile deals and marriages. He could also have served on the battlefield, sending reports between commanders and officers.

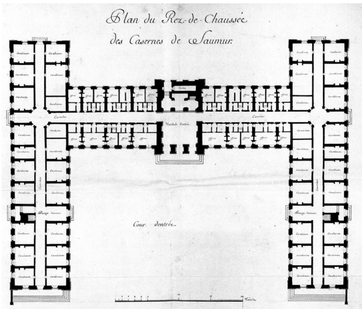


Figure 1
Saumur Barracks, Saumur, France

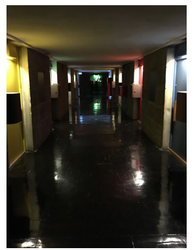


Figure 2
Corridor at Unite d'Habitation

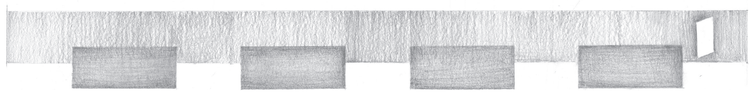
Figure 3
Interior at the Convent of La Tourette

A more enjoyable corridor can be achieved through architectural manipulation using material and natural lighting. Below is an early sketch to study how natural lighting could affect the corridors on the 3rd, 4th and 5th floors. Along the corridor, each 20-feet linear portion (matched with the unit plan and grid) has its own vanishing point.

As illustrated below, the 4th and 5th floors have two arrays of four light shafts (a total of eight) penetrating through. The 5th floor shall be the most illuminated, and 4th floor less illuminated.

The level of illumination on the 3rd floor is difficult to be compared with the ones on 4th and 5th floors. However, the gradual brightness change along the 3rd floor corridor is easy to determine: the closer it is to the open terrace, the brighter it will be.

The proposed 2nd floor varies in its width and materiality, not in its brightness. The following diagram will show how the width changes along the corridor.



Study Sketch for Linear Element Variation

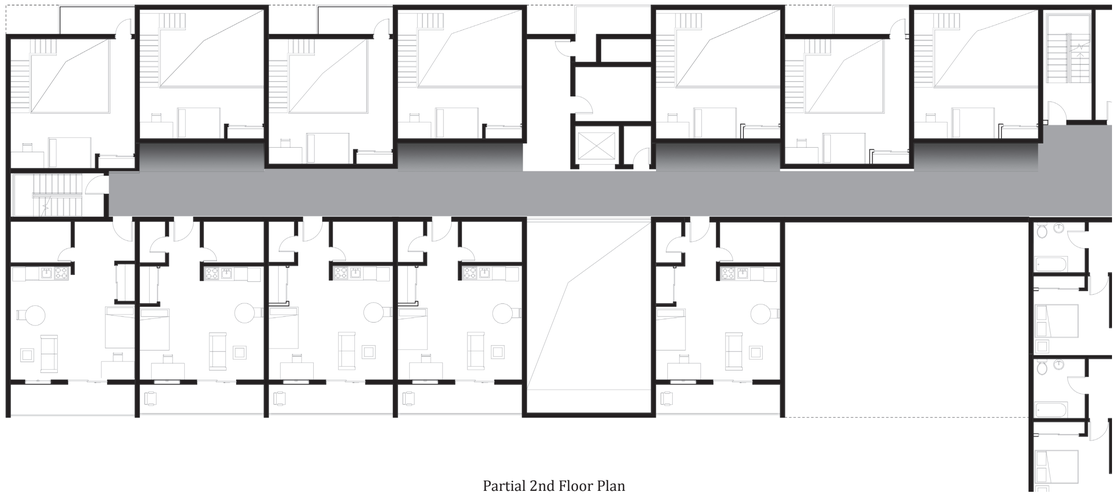
Differentiating the Corridor I: Correlation of Unit Plan and Corridor Width

Images below show a corridor in a modernist home, with doors and openings. The light from other rooms makes the floor and ceiling along the corridor brighter. The protagonist moves along, and light and shadow change onto his body. The varied width of this corridor makes the linearity less uncomfortable.

Figure 4
Scene from *The Ice Storm*, directed by Ang Lee

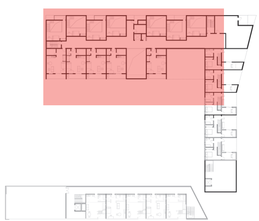
Figure 5
Scene from *The Ice Storm*, directed by Ang Lee

Figure 6
Scene from *The Ice Storm*, directed by Ang Lee

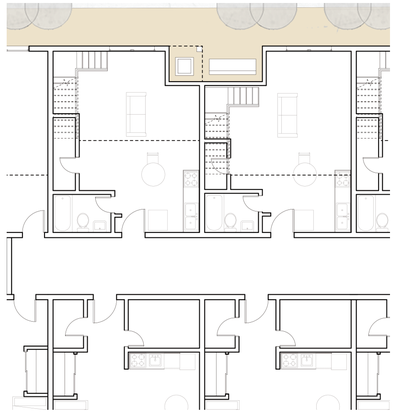


Partial 2nd Floor Plan

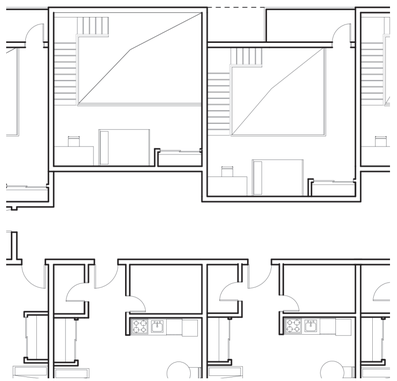
The sense of boredom in a corridor is related with its linearity, and the first attempt to diminish the perception is to have a corridor with varied widths. By slightly changing the unit plan on the first and the second floors, a corridor with varied widths could be achieved.



The layout of the unit floor plans for this building is modified to make the first corridor variation possible. The locations of the staircases in the two-story units (on the northern side of this wing) vary. See in Appendix (Page 70) for earlier iterations of the unit plans.



Partial 1st Floor Plan



Partial 2nd Floor Plan

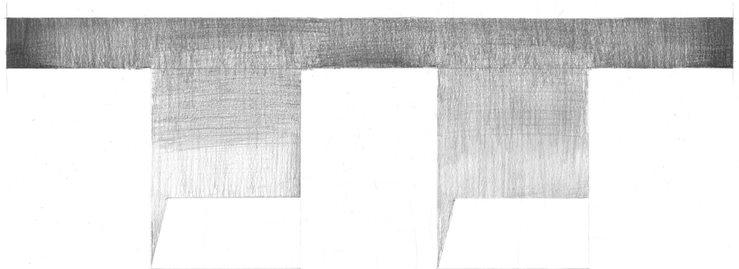
Differentiating the Corridor II:
Open Terrace as Device for Light Penetration

A double-loaded corridor usually has limited natural lighting coming in. Sometimes architects manage to open windows at the end of the corridor, making the interior more attractive than the artificially lit corridor as natural light comes from both ends of the corridor.

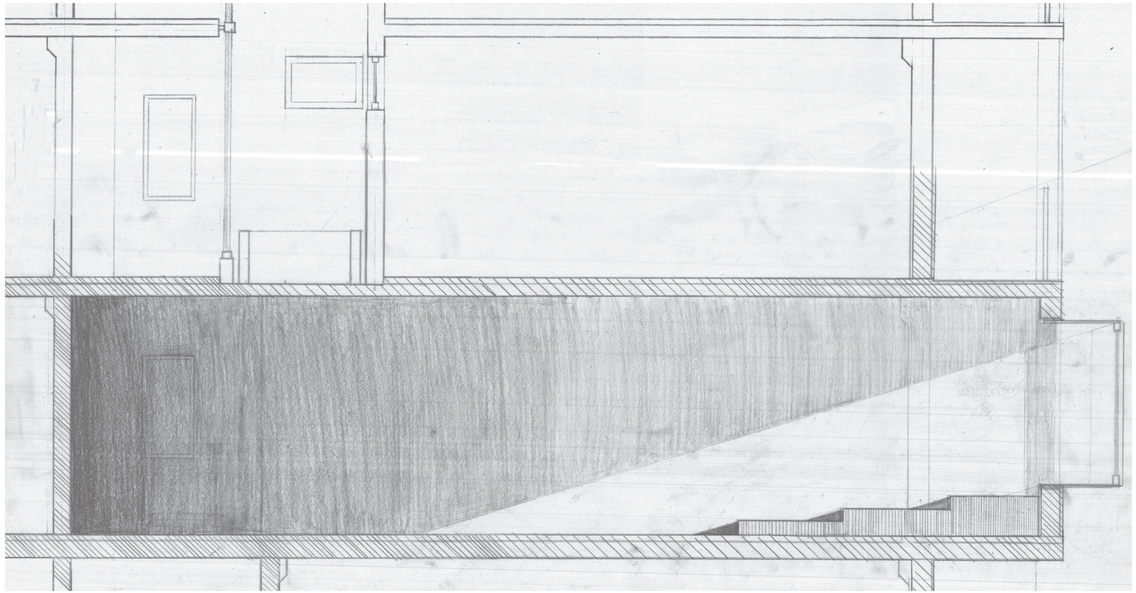
The end-window is sufficient in some occasions. However, other alternatives to bring natural lighting into the corridor are needed, especially when the floor plan layout or other restrictions limit the possibility of having end-windows.

The corridor on the 3rd floor has south-facing open terraces where light can penetrate.

Figure 7
Morning Sun
Edward Hopper, 1952
Oil on canvas

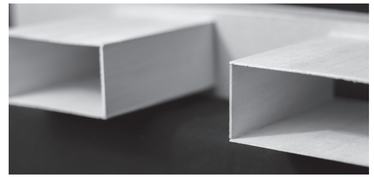


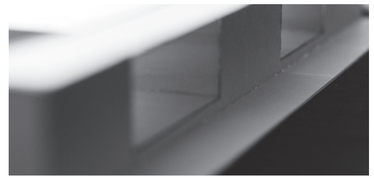
Study Sketch for Linear Element Variation

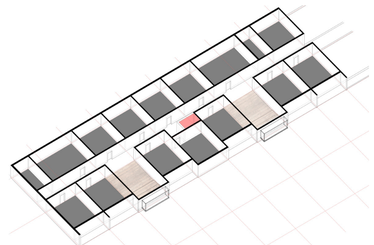


This drawing study of condition along the corridor shows the large amount of light coming through a projected window, projecting a clear shape of shadow onto the walls of the terrace.

However, its effect on the interior walls of the corridor still remained unclear, and physical models were needed to examine this.







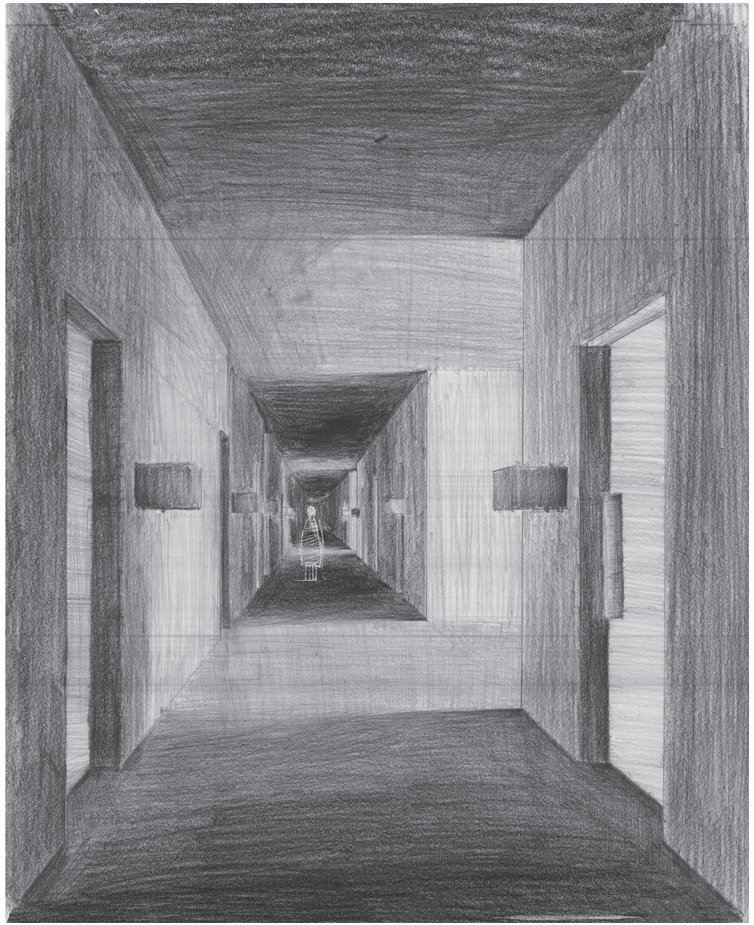
These study models tested the lighting and its effect on the inner face of the model. The study models demonstrated how natural light penetrates through the open terraces and turns the wall's flatness into a more enjoyable space.

The two terraces are located at both ends of the corridor, and residents on both sides traveling to their homes are able to see the light.

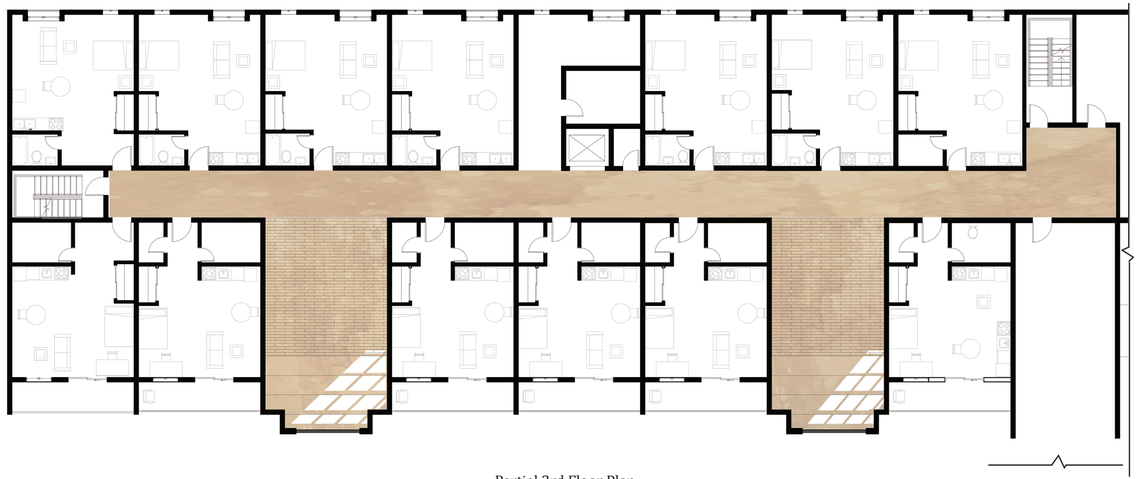
...Memories like these contain the deepest architectural experience that I know. They are the reservoirs of the architectural atmospheres and images that I explore in my work as an architect...[2]

When drawing this series of pencil renderings of the building interiors, memories of myself walking in the long, dark corridors emerged. The array of doors, the door handles, and the mailboxes reference to the places that I have been to.

The change of illumination level within the corridor is also a response to the atmospheres that I am familiar with. As an attempt to improve the usually unpleasant journey into one's home.



2. Zumthor, Peter, et al. *Thinking Architecture.* 2nd, expanded ed. ed., Basel, Birkhäuser, 2006.



Partial 3rd Floor Plan

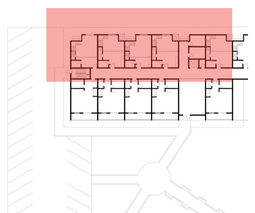


Figure 9
Corridor at Unite d'Habitation

Differentiating the Corridor III: Lightwell as Devices for Spatial Variation

On the 4th and 5th floors, the approach to differentiating the corridor is to change both the width and the lighting condition. A series of light shafts are introduced, penetrating through two floors.

The two images show natural light coming from the outside. In La Tourette, natural light illuminates a room whereas in Unite d'Habitation it illuminates the corridor on the top floor of the building.

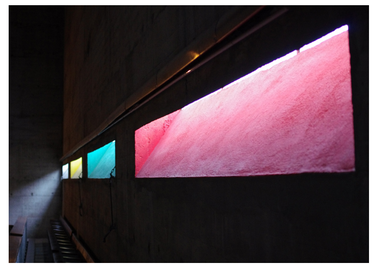
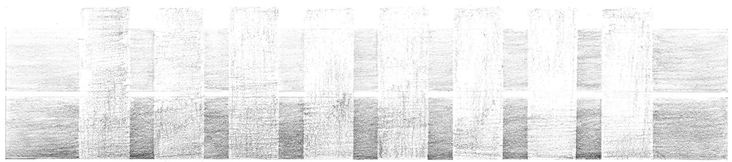
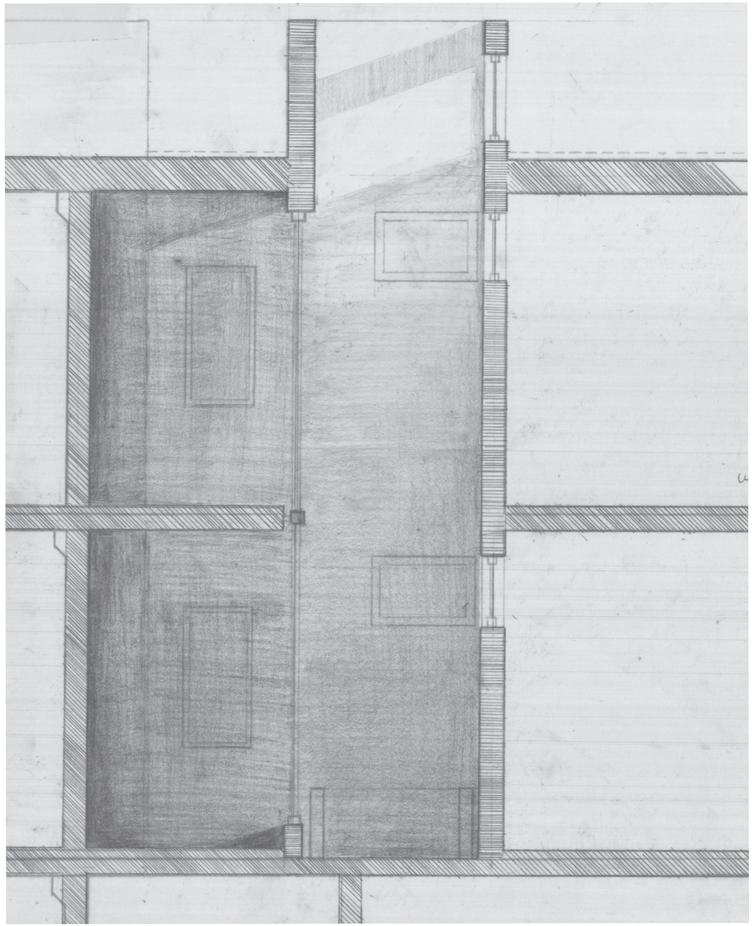
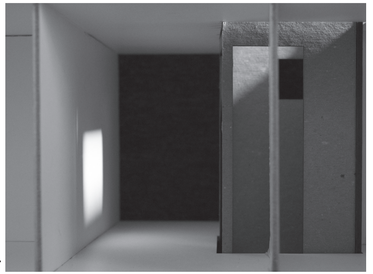


Figure 8
Interior at the Convent of La Tourette

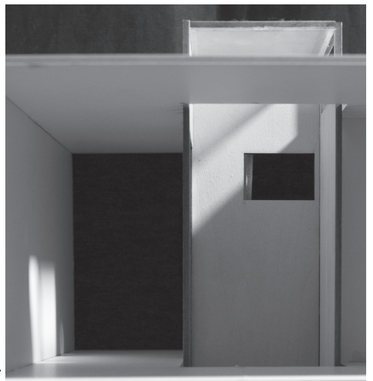


Study Sketch for Linear Element Variation

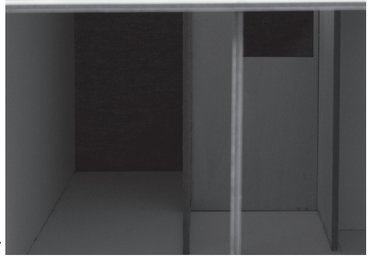




5th floor



5th floor



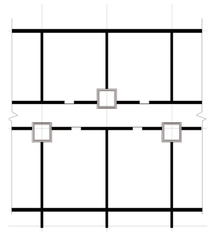
4th floor

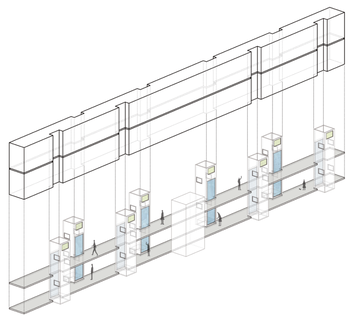
The light shafts penetrate through two floors, making it possible for the residents to have a place that is *between* the outdoor urban space and their private balconies.

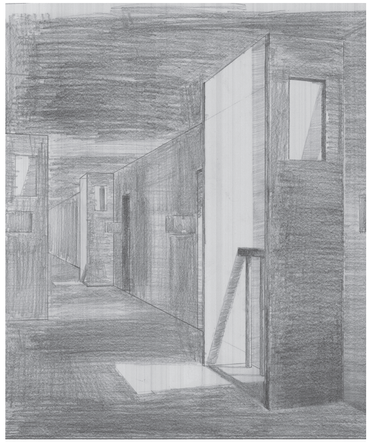
After photographing the study models, I realized that the lower floor (4th) would not be as bright as I had imagined. There was only a slight hint of natural lighting on the floor and wall of the 4th floor corridor.

The initial concept of having the light shafts inaccessible to the residents was revised to make them available for residents to enter on the 4th floor.

The allocation of these shafts is based on the grid of the building. Every two units will share a shaft at the intersection of connecting walls.



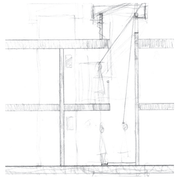


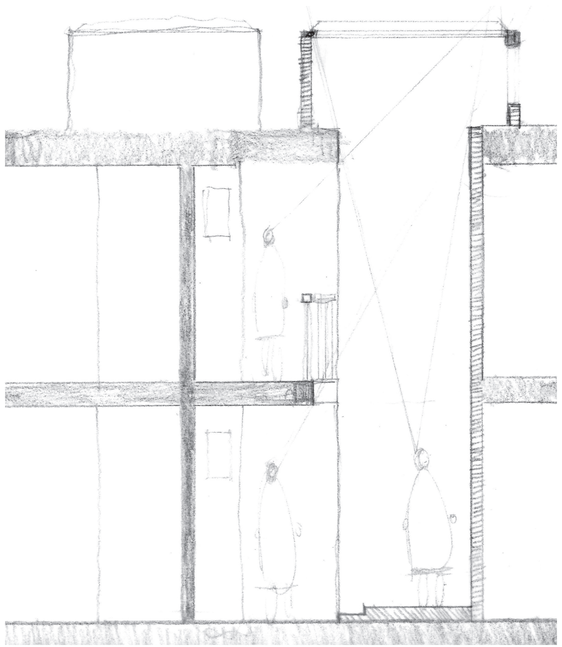


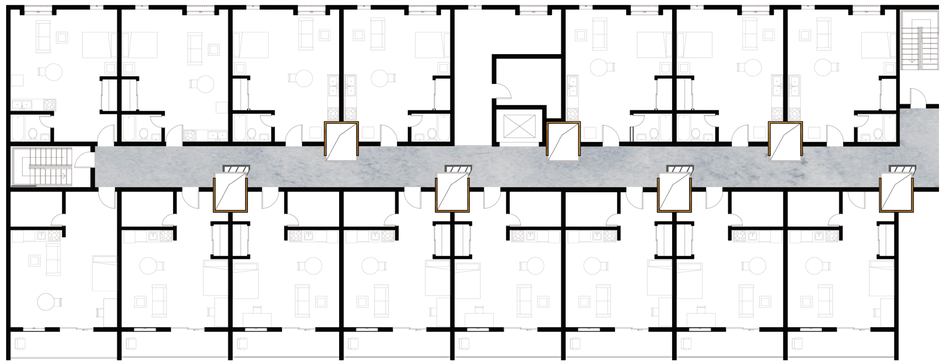
The 4th floor part of the light shafts could be accessed from the corridor. And the 5th floor part of the shafts have the railing where people could see upwards to see the sky or downwards through the light shafts.

Through these sketches, the basic form of the light shafts was finalized. People on the 4th level will not see the edges of the skylight. As a result, the sense of an enclosed skylight could somehow be diminished. When the light comes in, the corridor will be a dynamic space where residents could enjoy the path.

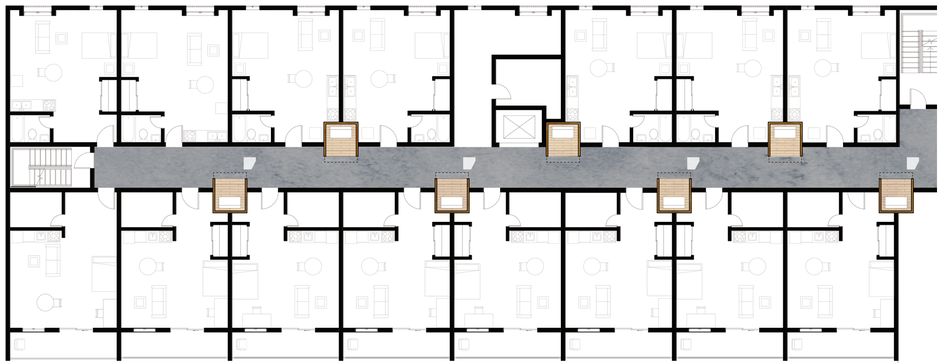
The floor on the 5th level is partially pushed back, and the ceiling of the 4th floor corridor will not block people from seeing the skylight and the light coming through.

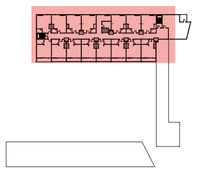






Partial 5th Floor Plan





Partial 4th Floor Plan

Ground Floor Entrances

The residents who live on the first floor of an apartment building could easily enter their home without using an internal elevator.

The three conditions in this chapter examine how residents will sense the facade on the street level as well as the building's urban identity.

Figure 10
Kirk Avenue

Figure 11
Williamson Road

Figure 12
Corner of Church Avenue and Market Street

Ground Floor Entrance Conditions: Williamson Road, a Major Highway

The entry condition on Williamson is unique as it is the one facing a major highway - U.S. Route 220. And the noise generated by the large amount of traffic is unpleasant for pedestrians as well as for the potential residents. To have a sign of the division between the public space (the sidewalk along Williamson) and the private homes, an array of gates are placed.

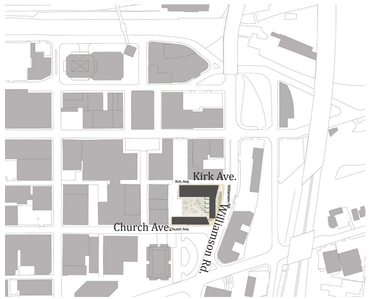


Figure 13
Southern side of the site, the corner of Williamson and Church

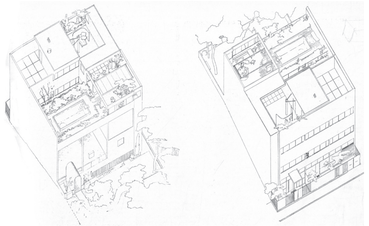
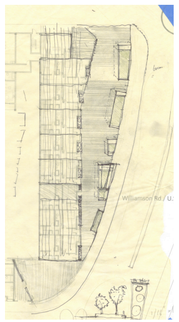
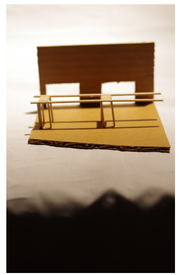


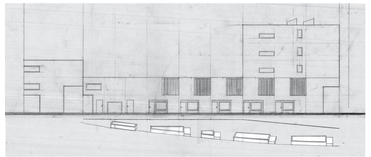
Figure 14
Villa Meyer, Paris
Le Corbusier, 1925

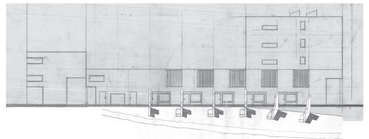
The gates took inspiration from Le Corbusier's drawings where a series of entry gates topped with curvatures. Examples are shown as in the drawing for *Villa Meyer* above.

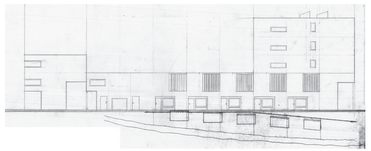
Other iterations are made to study the possible ways to signify the public/private division.

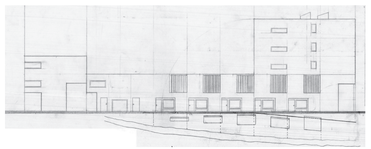


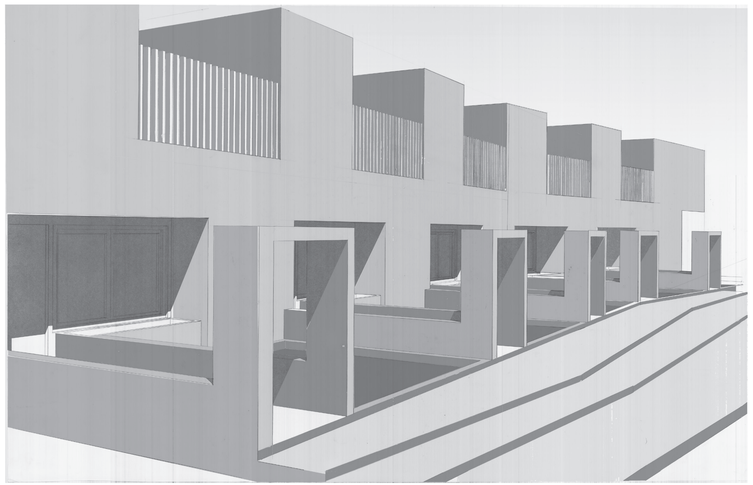






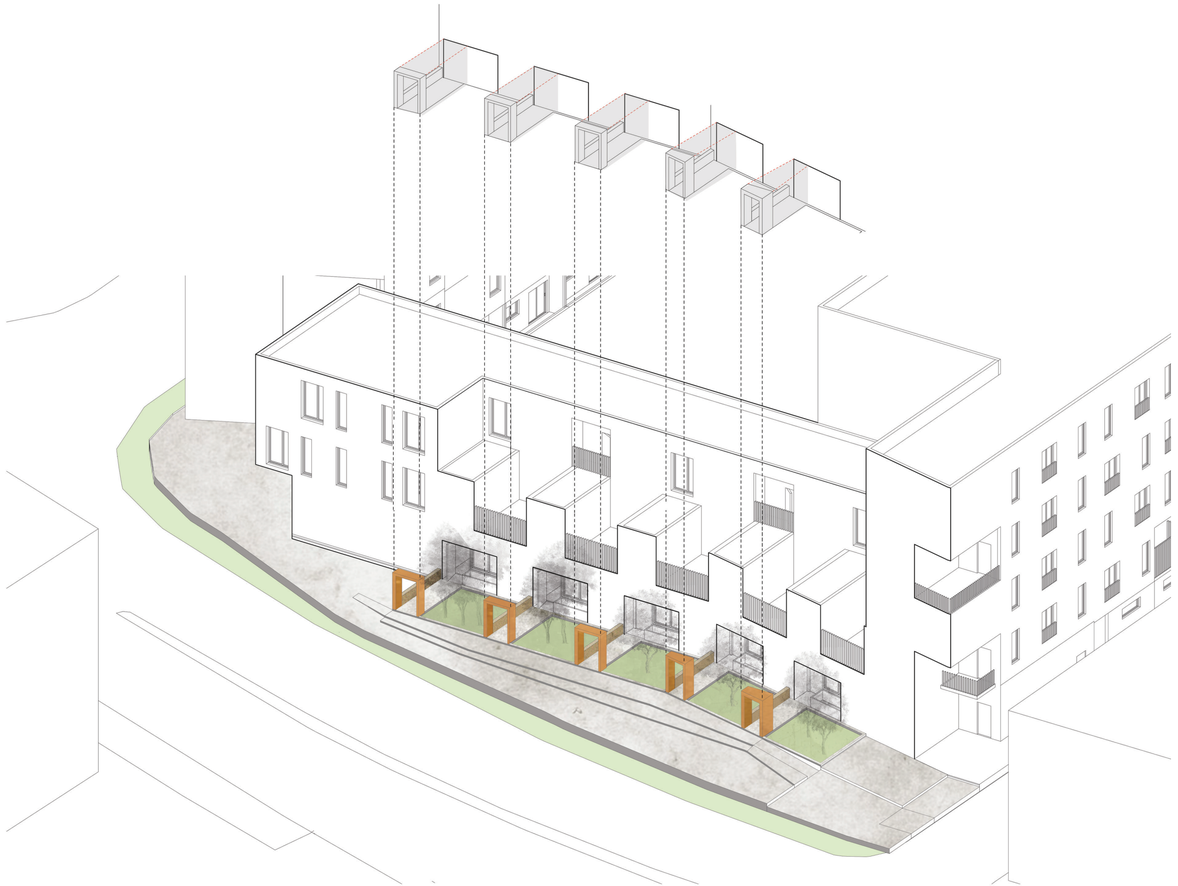


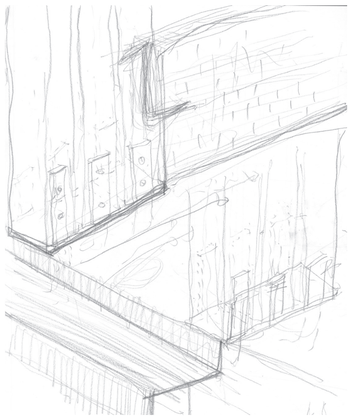


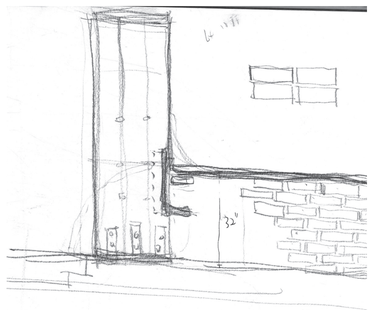


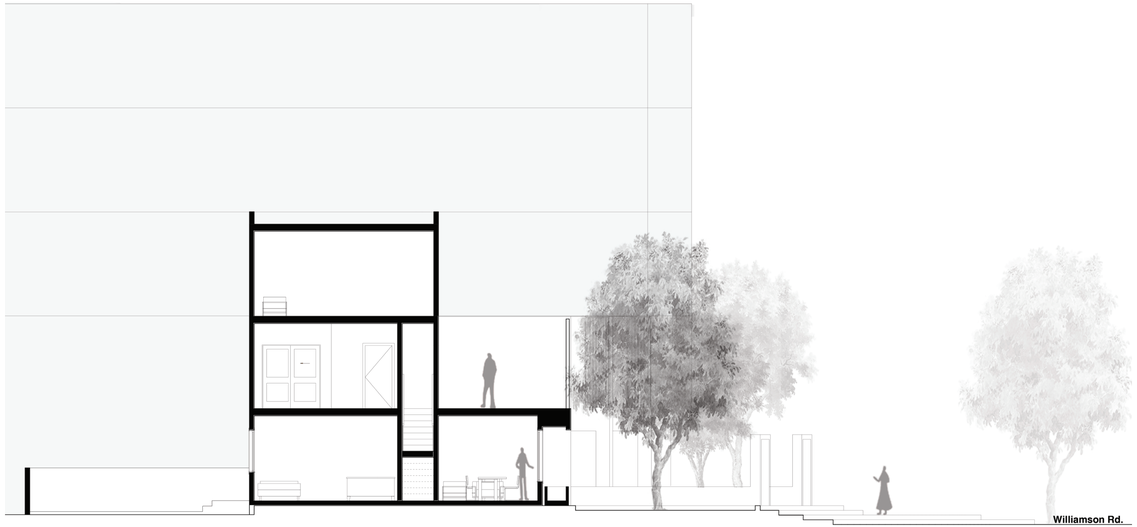
Partial 1st Floor Plan on Williamson

Williamson Road Elevation








Williamson Rd.


KIRK AVE.
WILLIAMSON RD.
DALRICH AVE.


Williamson Rd.


KIRK AVE.
WILLIAMSON RD.
CHURCH AVE.

Ground Floor Entrance Conditions: Church Avenue, a Downtown Sidewalk

To respond with the texture of storefronts nearby, there are unit entrances where residents could enter the units directly. Some privacy is provided for the residents when the first floor units on Church Avenue are sunken below the sidewalk level. A series of planters are also placed in front of the street-facing windows.

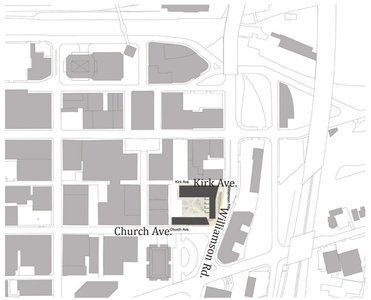
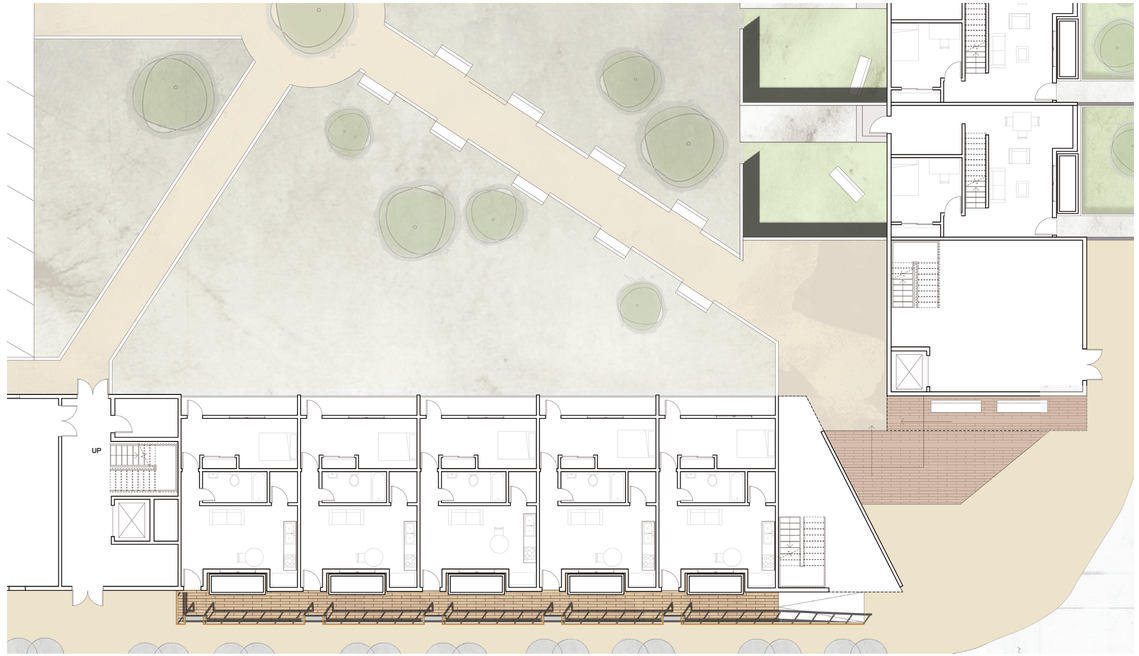
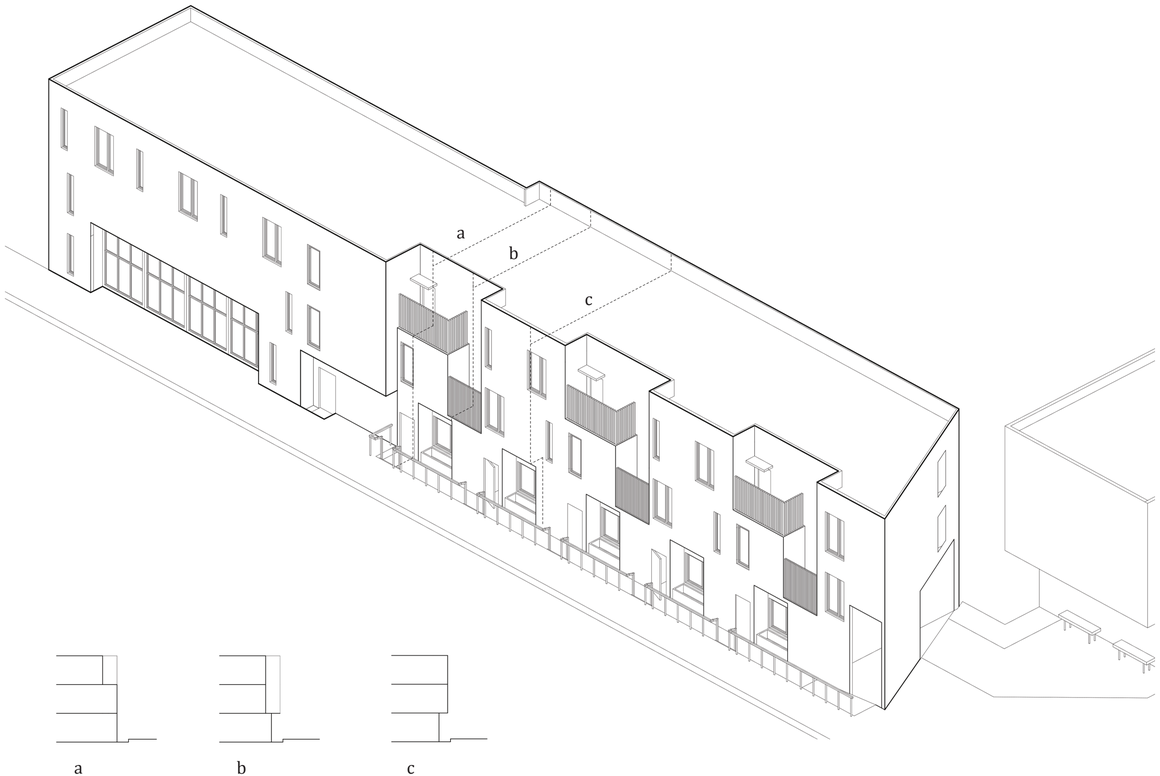


Figure 15
Church Avenue Storefronts



Partial 1st Floor Plan on Church



Church Avenue Elevation


Church Ave.

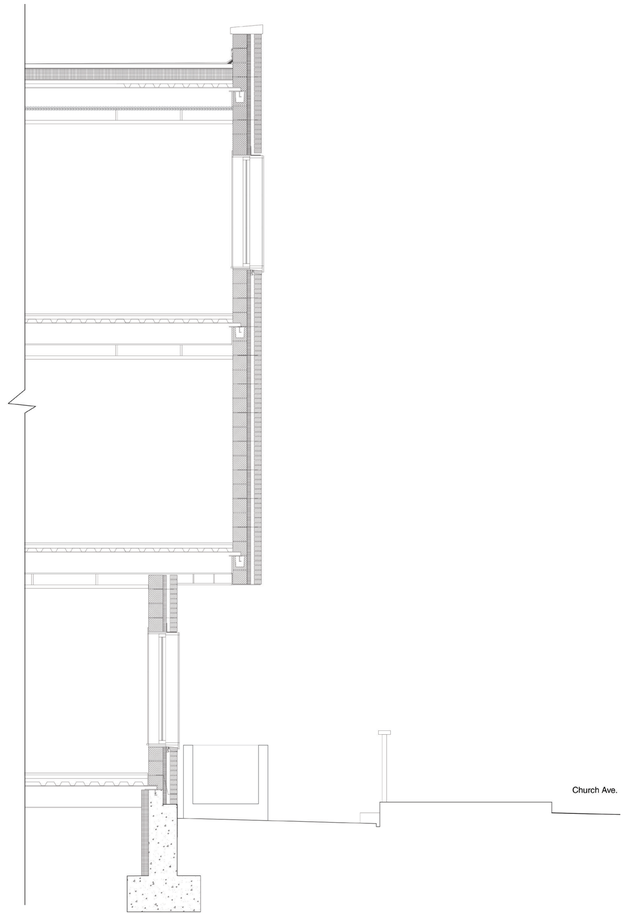

KIRK AVE.
WILLIAMSON RD.
CHURCH AVE.


Church Ave.


KIRK AVE.
WILLIAMSON RD.
CHURCH AVE.


Church Ave.


KIRK AVE.
WILLIAMSON RD.
CHURCH AVE.


Church Ave.

Ground Floor Entrance Conditions: Kirk Avenue, a Quiet One-way Road

Kirk Avenue is a quiet, one-way road in downtown Roanoke. The width of the road and the buildings on the opposing side makes it difficult to have a welcoming ground floor entrance for the residents. Rather than have direct entrances along the sidewalk, several public spaces are created for the pedestrians to use. Through pushing back the facade, people could take shelter from the rain or just have a place to sit and chat.

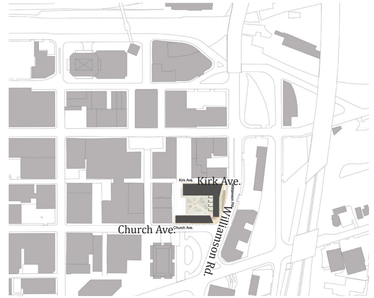
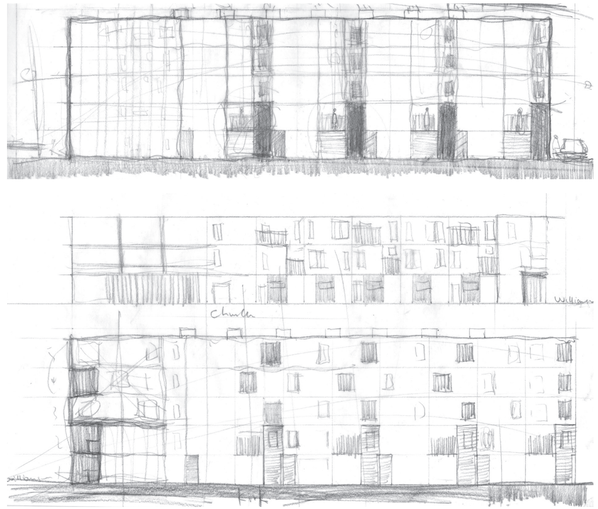
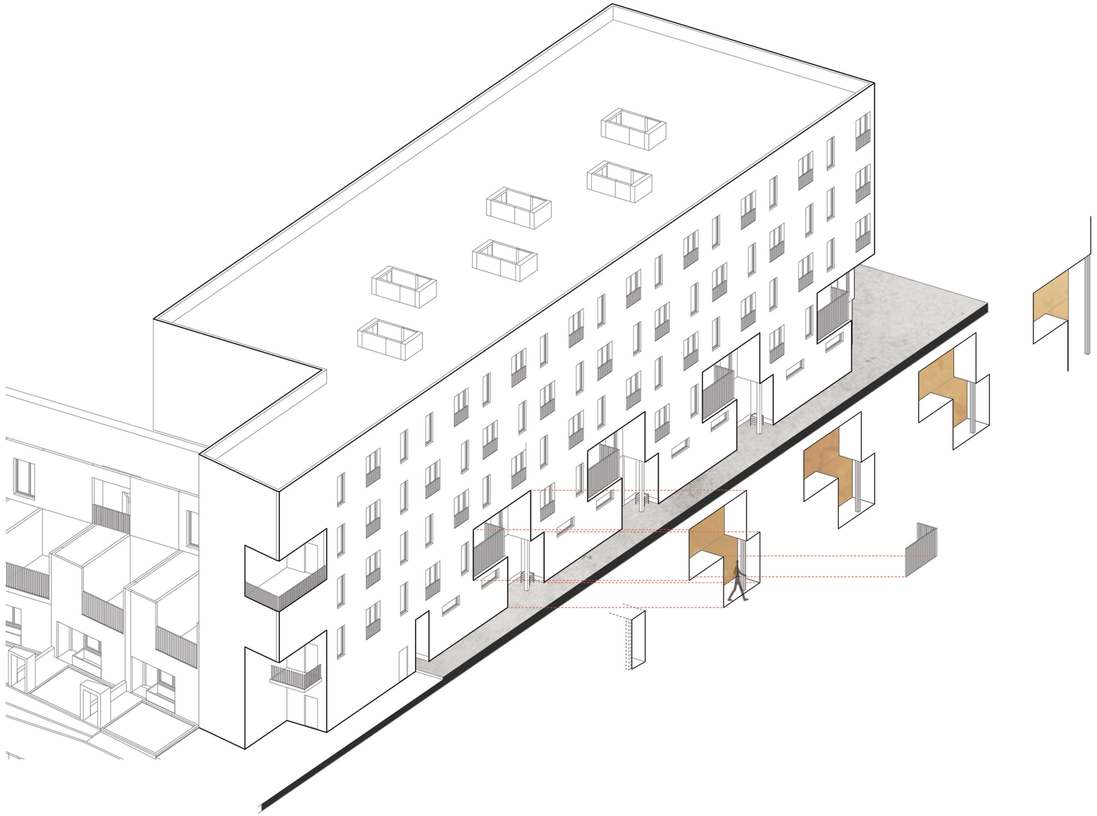


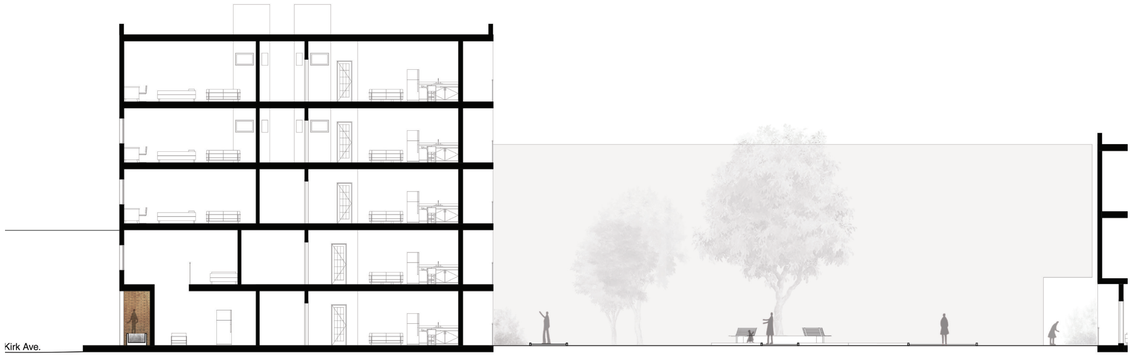
Figure 16
Northeastern Side of the Site, view towards Kirk Avenue.

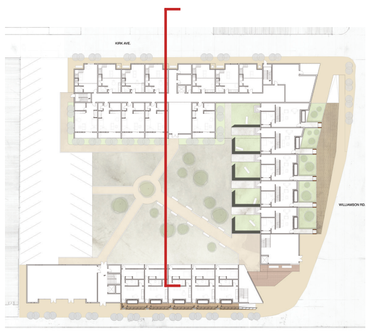
Partial 1st Floor Plan on Kirk



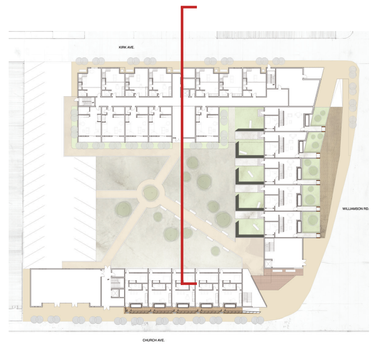
Kirk Avenue Elevation



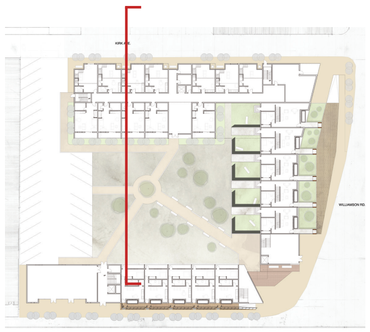

Kirk Ave.


KIRK AVE.
WILLIAMSON RD.
CHURCH AVE.


Kirk Ave.


KIRK AVE.
WILLIAMSON RD.
CHURCH AVE.


Kirk Ave.

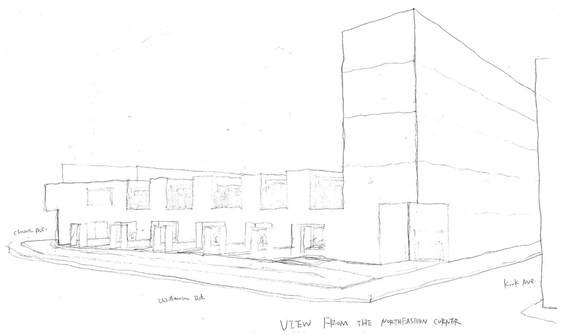

KIRK AVE.
WILLIAMSON RD.
CHURCH AVE.

Conclusion

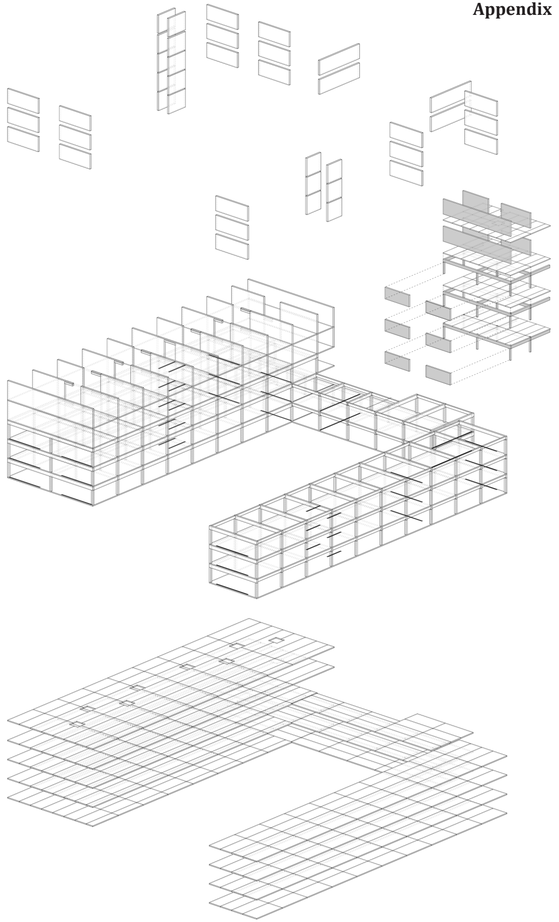
Through the development of an apartment building, the investigation of the possible relationships between people, building corridors, facades and the urban context has been able to create instruments to better mediate human activities and the built environment.

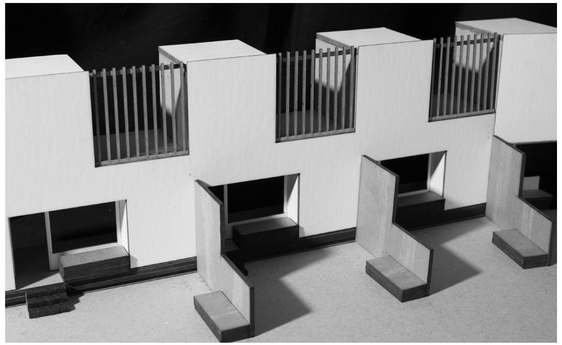
The process of composing the different building elements and systems enables the space to have the materiality essential to realize the desired conditions. The pragmatic aspects of the building, including the circulation, the structural system, the material palette, all contribute to a brighter, less monotonous corridor, and a set of first level entrances with unique ways to intervene between the public and the private homes.

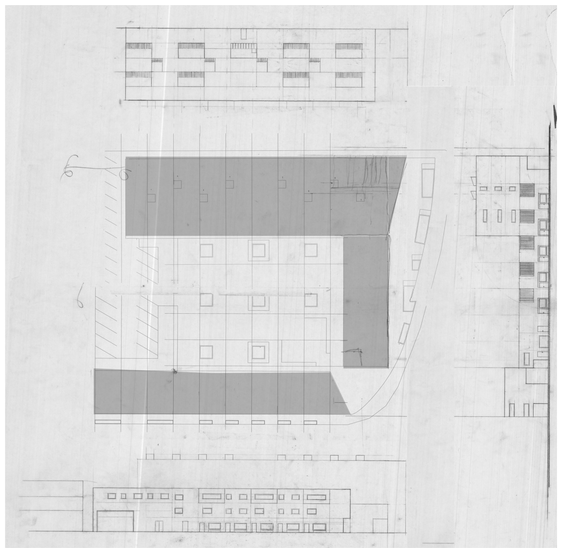
By examining the internal corridor conditions and the street level entrances, one could recognize that by introducing natural light, spatial variations into the corridor, and by treating the building exteriors with respect to the streets, we may *revive that vibrant atmosphere pervaded by the simple presence of things*[3].

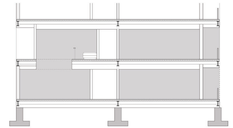


3. Zumthor, Peter, et al. *Thinking Architecture*. 2nd, expanded ed. ed., Basel, Birkhäuser, 2006.

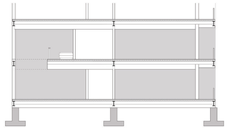




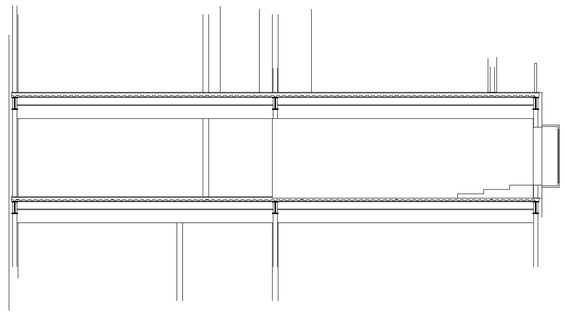


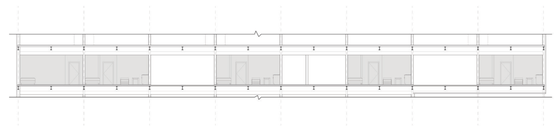


A

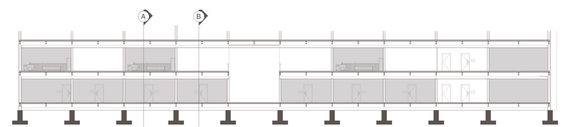


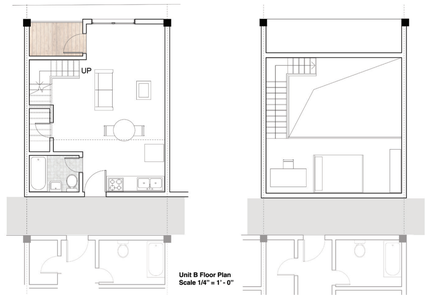
B



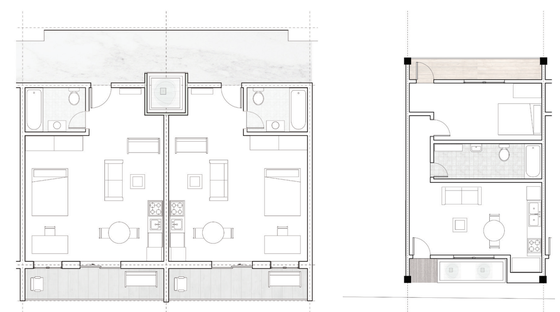


3rd Floor Longitudinal Section 3/16" = 1'-0"





Unit B Floor Plan
Scale 1/4" = 1' - 0"



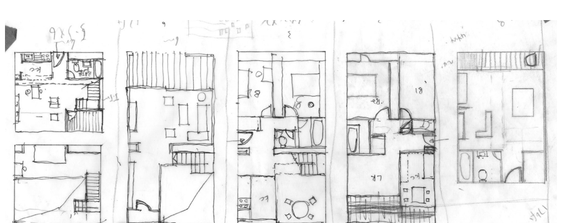


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Figure 2: *Corridor at Unite d’Habitation in Marseille.* Photo by author.
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