

City Living:
Exploring the Modern Rowhouse Typology

Teryn Nicole Murray

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

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ABSTRACT

The traditional rowhouse form was a result of economical use of available space and materials that provided its occupants a home that fulfilled functional and societal needs. The result was a series of rooms along a travel corridor with a distinct underlining organization. The typology was established by certain characteristics of spatial configuration, constructional methods and ordering systems that kept the building economical. Popular attempts to accommodate modern needs into these buildings have lead to implementing the “open-plan” concept and creating a series of floors verses a series of rooms.

This thesis explores the rowhouse within the modern context of Washington D.C. and attempts to redefined the typology for new construction. The desire is to resort back to the historical relevance of the individual room and create a typology appropriate for modern single-family needs. Four empty sites, each with their own context and conditions within the cityscape, are used to create four individual rowhouses that exemplify this new typology. The proposed rowhouses exhibit architectural structuralism and phenomenology, resulting in four rowhouses that complete the context they are set in, yet emerge with their own identity.

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GENERAL AUDIENCE ABSTRACT

The exploration of typology in architecture is a historical and contemporary phenomena that classifies physical characteristics of the built environment into distinct types. An architectural typology instills historical continuity and spatial hierarchy, which guides and develops each design.

This thesis explores the historical characteristics that make the typology of a rowhouse distinctive and re-examines it to accommodate the modern needs of a newly built rowhouse. The narrow space enclosed by two parallel walls creates a unique list of challenges for the typology. The need for light and air, the economic use of space, and personal desire drive architectural design decisions and a hierarchical order must be established to achieve this. This exploration ends with four different proposed rowhouse designs located in Washington D.C.

ACKNOWLEDGMENTS

Dedicated to my family.

Each one of you pushed me to never give up on my passion of architecture. You all saw my abilities long before I and I thank you for constantly supporting me through every step of the way in making this a reality. I love you all.

I owe sincere gratitude to my committee, for unwavering guidance through this journey. To my professors in Blacksburg, for helping shape my architectural path. To my classmates, for pushing me and being a great support system. To my friends, for their continuous understanding.

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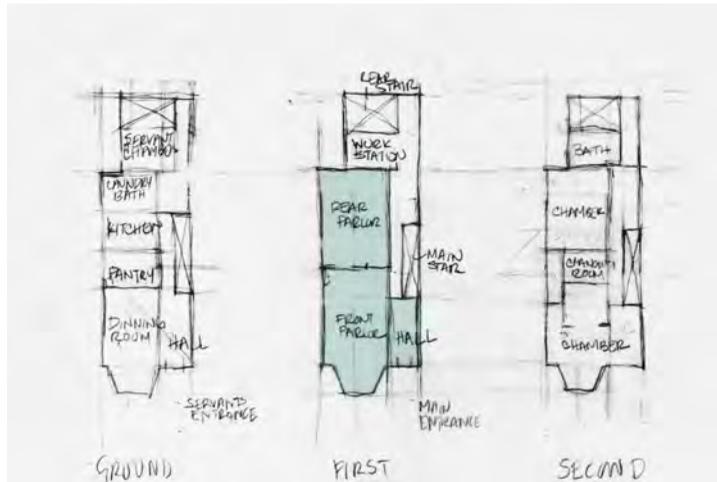


Figure 1. The 1900 block of Pennsylvania Ave built in 1796. [public domain]

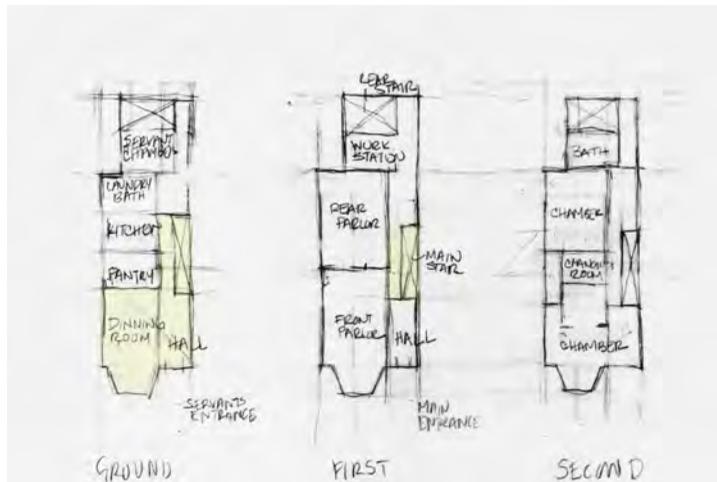
The D.C. Rowhouse

A large majority of the distinct streetscape of Washington D.C. was built in reaction to the President Washington's building regulations established in 1791. President Washington was said to have two main motivations behind the implementation of these regulations: to address safety concerns established by fire and to influence a built environment that compliments L'Enfant's plan for the capital city.

The articles¹ outlined within the building regulations established that walls of residential buildings be built of brick or stone, should be parallel and aligned to the front of the property line, should be between thirty five and forty five feet in height, and that a party wall should be built half on one property and half on the neighbors. The D.C. rowhouse flourished under these circumstances and remained the residential form throughout the nineteenth and early twentieth centuries.



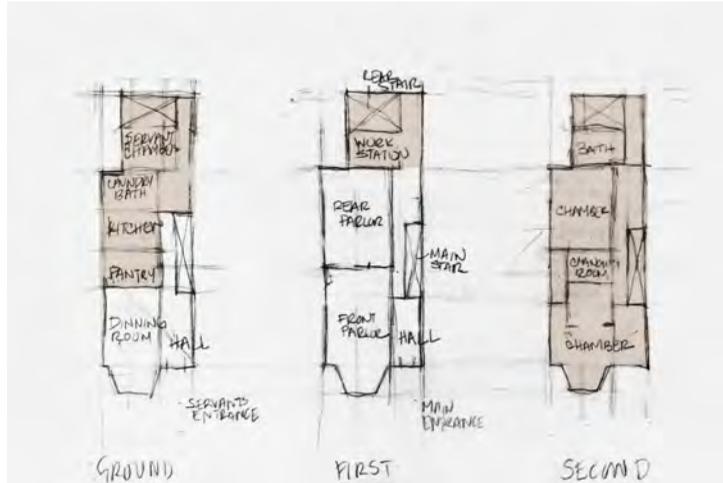
Public Space Diagram, Typical D.C. Rowhouse built in the 1900's



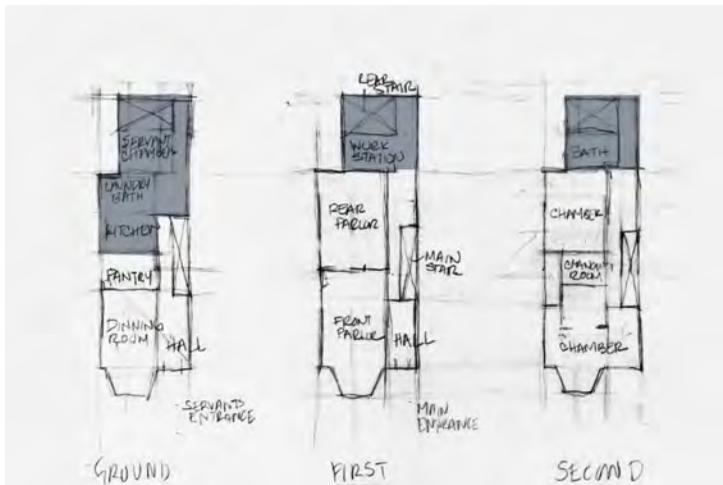
Semi-public Space Diagram, Typical D.C. Rowhouse built in the 1900's

As customary until the mid-1900's it was not only the family that lived in the residence but also the help. Segregation of spaces and compartmentalizing interaction was a focus. At the same time, entertaining was a more formal engagement than in current times. The home owners would host guests in an organized fashion. These two social qualities were huge drivers in the formation of the rowhouse typology.

As the rowhouse is an active player in the streets facade so is the activity within. The front spaces within the residence were usually the more public spaces and the private space in the back. The help resided in the basement, so chambers, a wash room and the kitchen for the house would be located there. A connecting stair was placed strategically in the back so individuals could go up and down without notice or disruption to the main family. The dining room was also commonly found in the basement as it was close to the kitchen. Guests to the residence would be greeted entering from the street, with the front and rear parlors as rooms for visitation. The front parlor as the facade to the street and statement for its family was usually more grand and most frequently used. The rear parlor was for more intimate gatherings and usual a place for men to congregate without the women and children. These rooms in addition to the dining room, which was for invited guests, were the public and semi-public spaces within the home.



Private Space Diagram, Typical D.C. Rowhouse built in the 1900's



Servant Space Diagram, Typical D.C. Rowhouse built in the 1900's

Inherently the private spaces were the rooms for changing and sleeping. Unlike current times, these were rooms for functional use mostly and were not seen as spaces to enjoy long periods of time in. The chambers for the residence were on the top floor as well as usually one wash room and a room for changing. The private spaces were clearly segregated from the others in which guests were welcome.

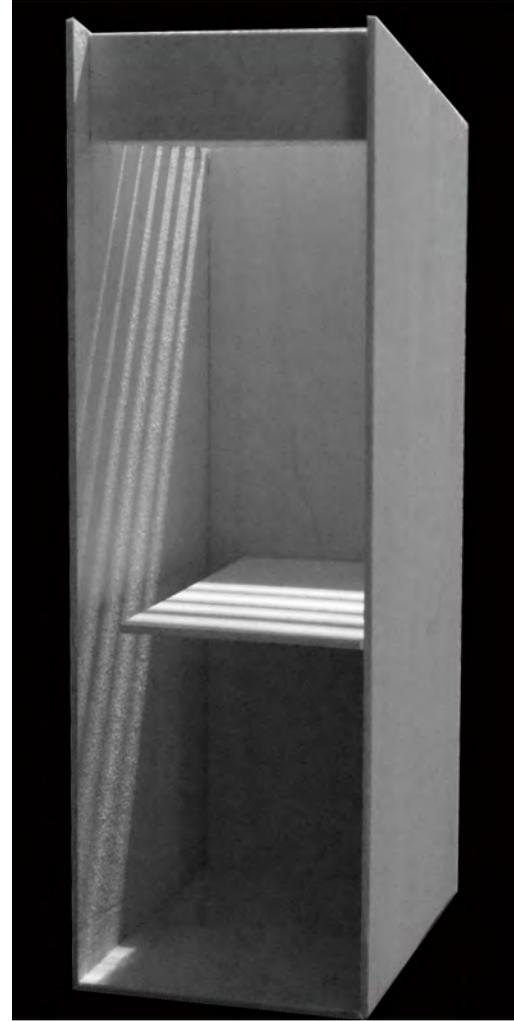
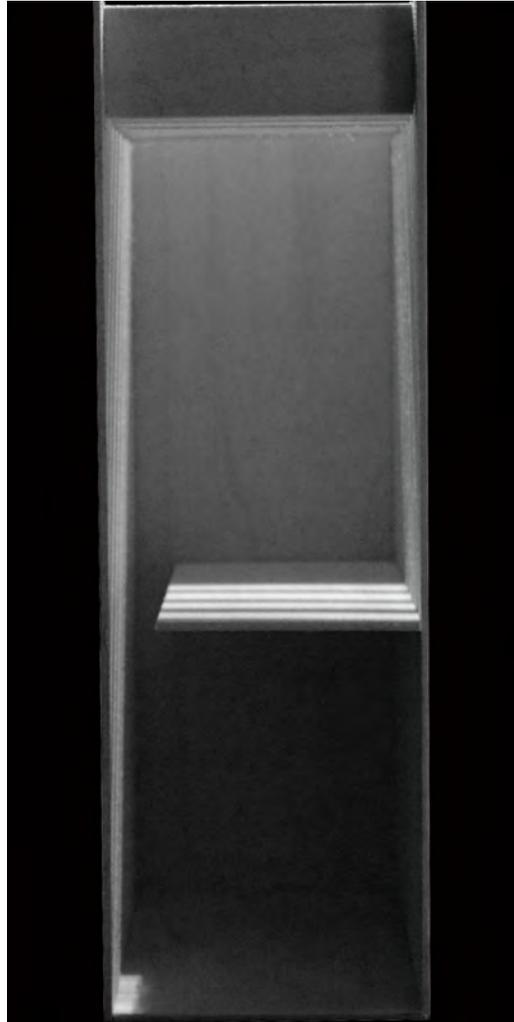
With these social characteristics, the division between the service spaces and the served spaces within the house were distinct. Service spaces being rooms that were conducive for gathering and congregation, and servant spaces being those that supplemented or served the ability to do so. During this pre-modern era, the divide created a spatial organization of servant spaces in the rear and served spaces towards the front, which became a distinct element in the development of the rowhouse typology.



Figure 2. Parlor, 238 W. 113th St. (c. 1900). [public domain]

As a reflection of technology during that period, rowhouses relied on fire to warm the spaces. Fireplaces were placed strategically and signified which spaces throughout the house were places of congregation and pause. The location of these fireplaces outline which spaces were seen as “rooms” and provide a connection as to the lifestyle of residence during that time and the architectural consequences.

The building materials available and their characteristics also impact the typology of a rowhouse architecturally. Materials utilized in construction were masonry and wood. The rowhouse being typically between fourteen and twenty feet wide, utilized the transverse section to its advantage. A frame structure bearing on two thick, brick or stone walls was the common construction method. The facade, also built in masonry units, are results of the dimensional and physical limitations of the material.

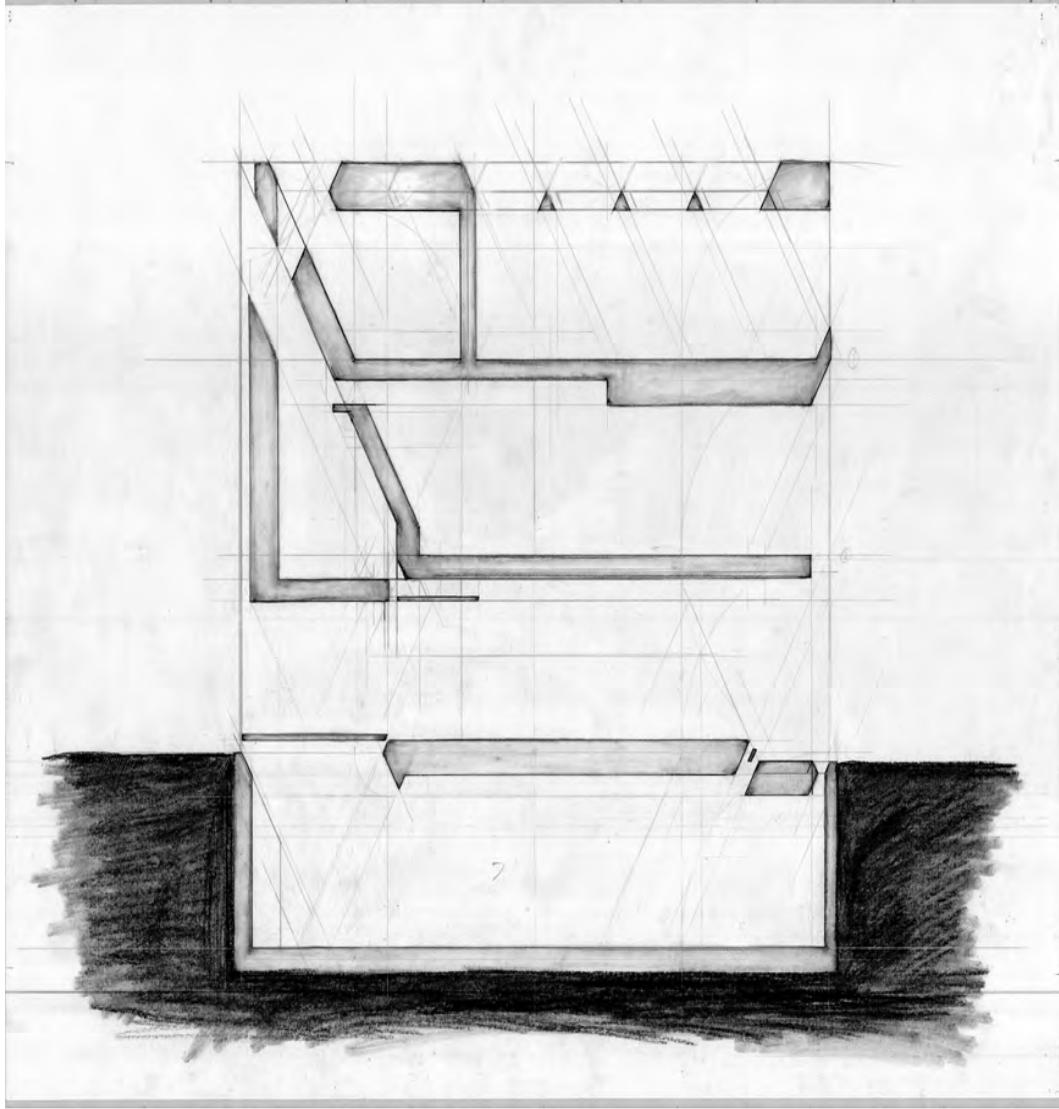


Light Study Photographs

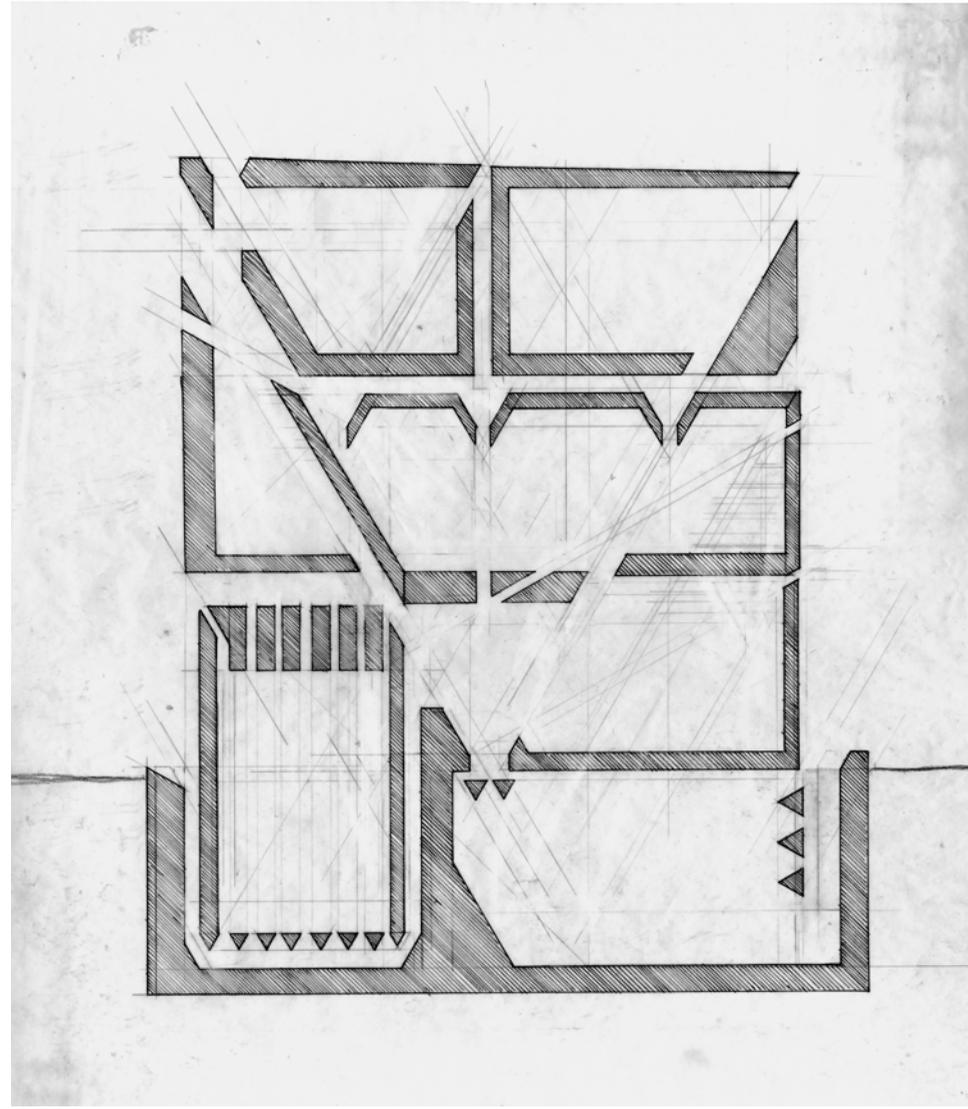
Exploring the Section

One of the largest challenges facing a rowhouse is the illumination of spaces via natural light generated from the spatial constants of the typology. Between the party walls that flank both sides of the site and the building height restrictions, the potential for freedom in the transverse section of a rowhouse design is restricted. By exploring the longitudinal section, the design has ability to generate and exploit different atmospheres of light.

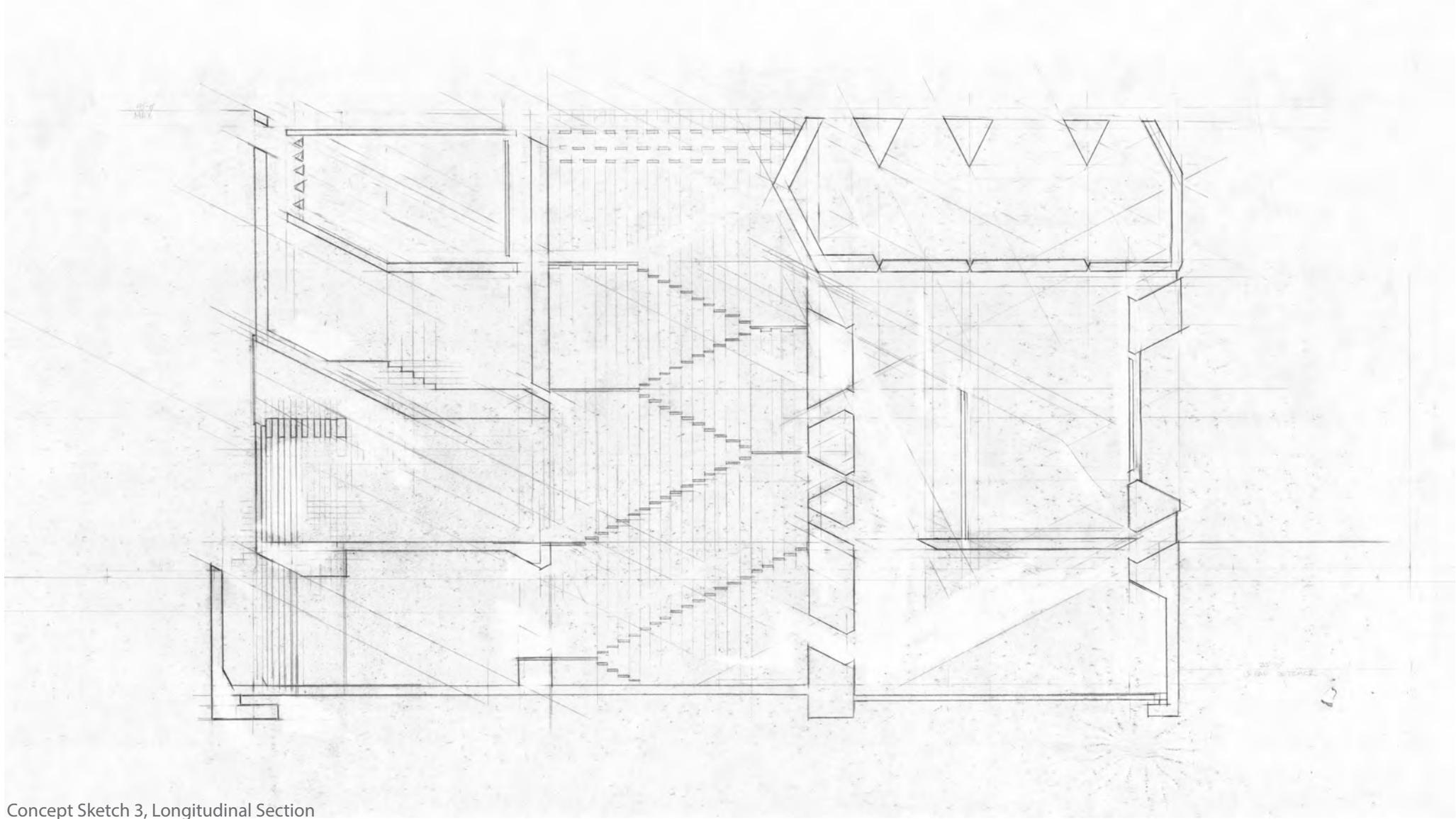
Studying the space in between two parallel facades, both vertically and horizontally, initiated looking at rooms individually. The effects of the spatial daylighting conditions within the rowhouse typology were explored by slight architectural moves. Through modeling and drawing, looking at the typology more as an organism, outlined which spaces inherently leaned towards being servant spaces and which leaned toward being to be served spaces, as well as simulated thought as to the effects of rooms and their forms on one another.



Concept Sketch 1, Longitudinal Section



Concept Sketch 2, Longitudinal Section



Concept Sketch 3, Longitudinal Section



Light Study Photographs

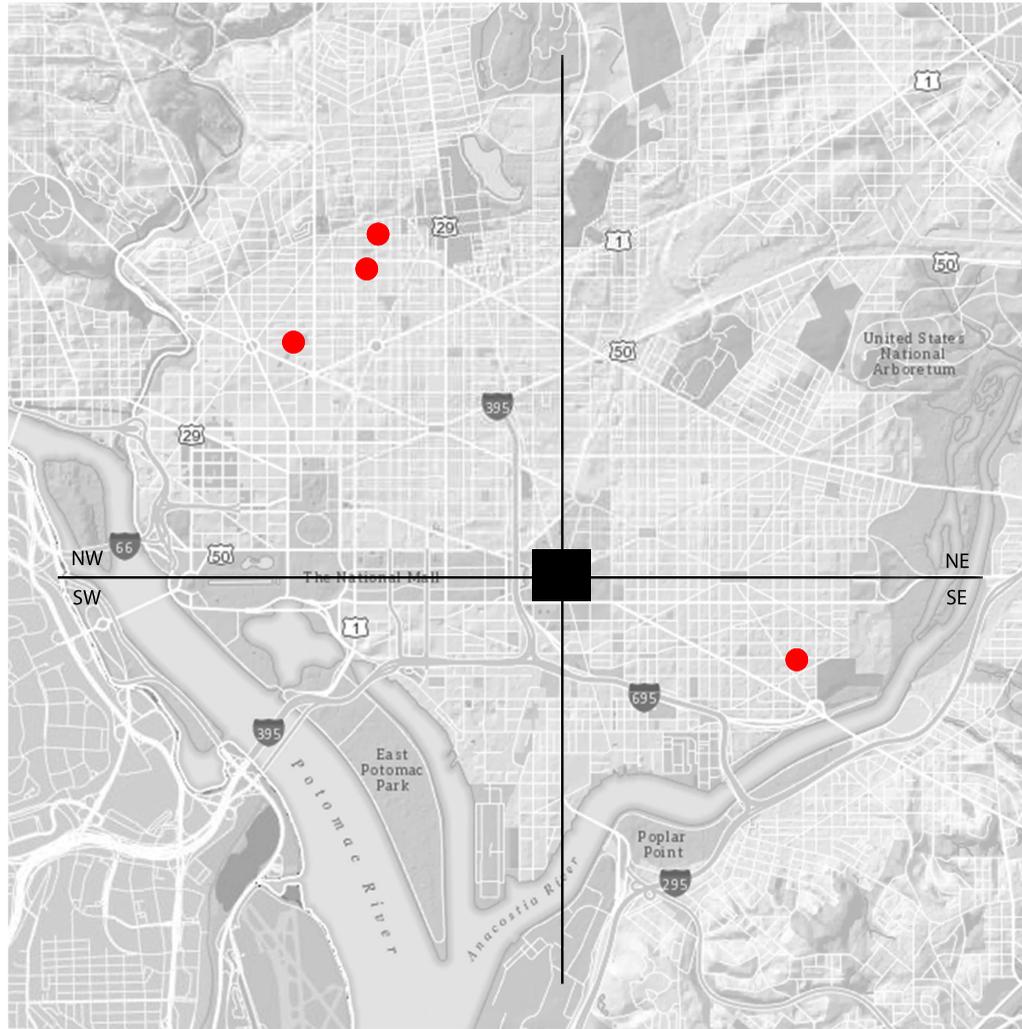
Site Selections

Two factors were considered when searching for a site: the front facade's orientation in accordance to the sun and the position of the individual rowhouse within the context of the row.

The orientation of the rowhouse to the sun is crucial as it directly influences the use of the space within. Lighting conditions would change depending on whether the front or back facade receives direct exposure and whether that facade is the short or long facade.

Typologically the rowhouse has its own variances that affect spatial development. A typical condition is the infill, where only the front and back faces receive direct access to the elements. Other conditions include the edge condition, in which one party wall may have apertures into an adjacent alley or drive along the long facade, the end of a row, where the party wall is only present on one side which relieves the opposite side from following the rigid parallel form, and there is or a corner condition where the rowhouse turns the corner between two perpendicular rows.

In order to challenge both of these factors, four sites were chosen, each site facing the four cardinal directions and also embodying different typological situations.



Map of D.C. with Selected Sites

1327 Wallach Place NW

Situated in the middle of the row and within the Greater U Street Historic District, this site truly is a hole in the fabric. The empty lot sits among two-story Victorian style rowhouses built in the early 1900s. Access to the house is available through the front by foot and the rear by vehicle. The street context does not include a front access to the basement. This infill site runs north and south in orientation with the street facade facing the south.

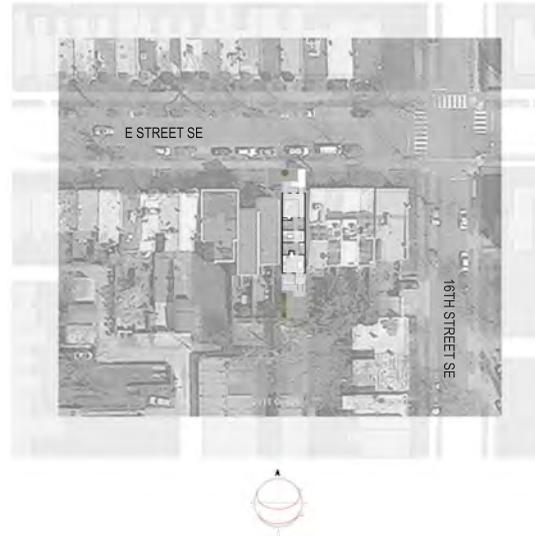
Site Plan
with Sun Pattern



Street Elevation - North

1531 E Street SE

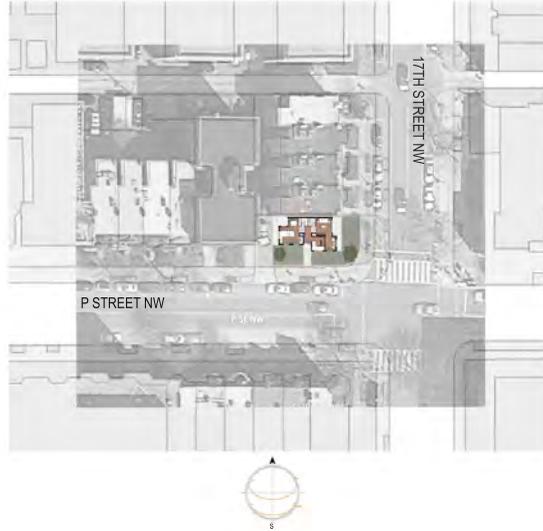
Located in the southeast district of D.C., this empty lot is nestled closer to the corner of the street. The infill property is amongst two-story Federal style rowhouses built around 1910. As the rear property line is adjacent to a perpendicular lot, the only access is through the front, uniquely creating a private rear yard. The street facade faces the north as the rear faces the south.



Site Plan
with Sun Pattern



Street Elevation - South



Site Plan
with Sun Pattern

1500 17th Street NW

Located on the corner of P Street and 17th Street, this lot turns from its Romanesque Revival neighbors on the east built in the late 1800s, to a more recent apartment building on the south built in the 1900s. Being more unique in features these three-story rowhouses have a distinct rear entrance for the basement on the west facade and a separate main access on the street facade that faces east.



Street Elevation - North



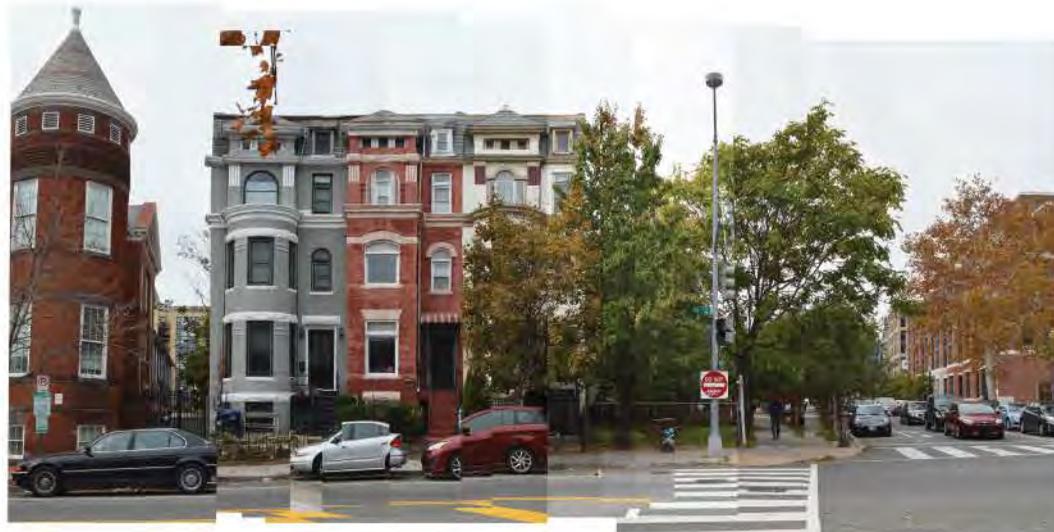
Street Elevation - West



Site Plan
with Sun Pattern

2136 13th Street NW

Another lot situated in the context of a Romanesque revival neighborhood. This corner lot connects a tall, three-story east facade with a more moderate three-story north facade. The accesses to both the basement and the main residence are expressed on the same side however access can be found on three of the four sides. The rear property line adjoins a alley, not making the rear a likely access point for the residence.



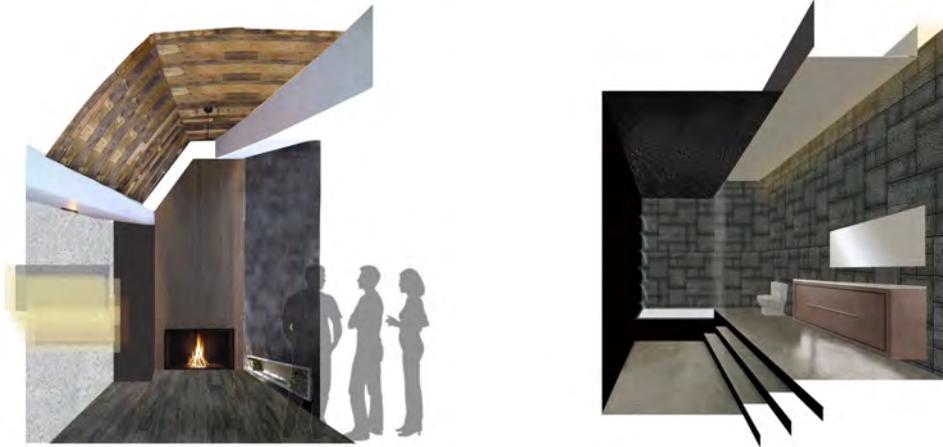
Street Elevation - West



Street Elevation - South

Structuring the Modern Rowhouse

In order to focus on a typology versus designing four individual rowhouses, a hierarchy of importance needed to be established. Keeping true to a room-based design was priority for this thesis. In order to enforce this approach the threshold became important, as moving through out the spaces there would need to be a distinguishable entrance and exit. As a solute to the historical and cultural importance versus need, a fireplace was positioned within each space that was designed to be a room for congregation. As true to their intended purpose they outline the places of pause within the typology. A clear separation of servant and served spaces needed to remain. The organization and implementation of this division could be variable. By approaching the servant and served spaces as zones, the progression of traveling through these zones could help provide thresholds and enforce the creation of rooms versus relying on doors located at every threshold. I wanted to explore using the facade as just that, a facade. Keeping the role of the elevation as a modern completion to the street, yet not a copy of the neighbors. Each facade should be a masonry unit, each being either brick, concrete block, or terracotta, and act more as a threshold between the street and the residence. Lastly positioning of rooms needed to be keep in context with the street versus just the residence. The private rooms located towards the top and rear portions of the residence and the more public rooms towards the bottom and front.



Imaginary Room Photo Collages

Final Representations

1327 Wallach Place NW



1531 E Street SE



1500 17th Street NW



2136 13th Street NW

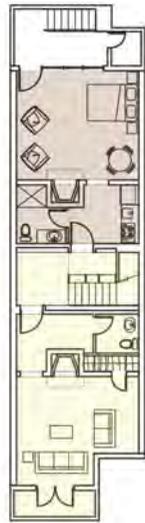


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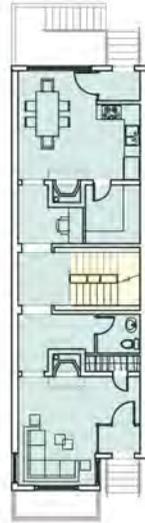


PUBLIC VS. PRIVATE

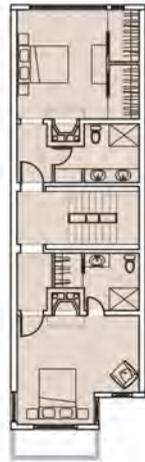
- PUBLIC SPACES
- SEMI-PUBLIC SPACES
- PRIVATE SPACES



GROUND FLOOR

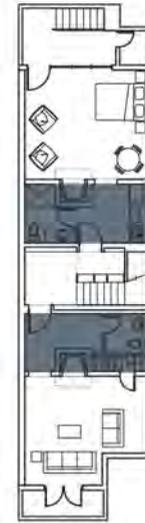


FIRST FLOOR

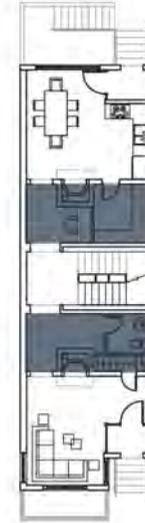


SECOND FLOOR

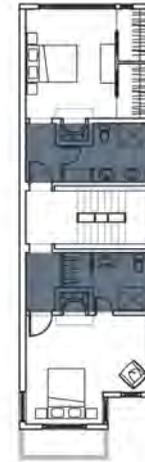
SERVANT SPACES



GROUND FLOOR



FIRST FLOOR



SECOND FLOOR



GROUND FLOOR PLAN

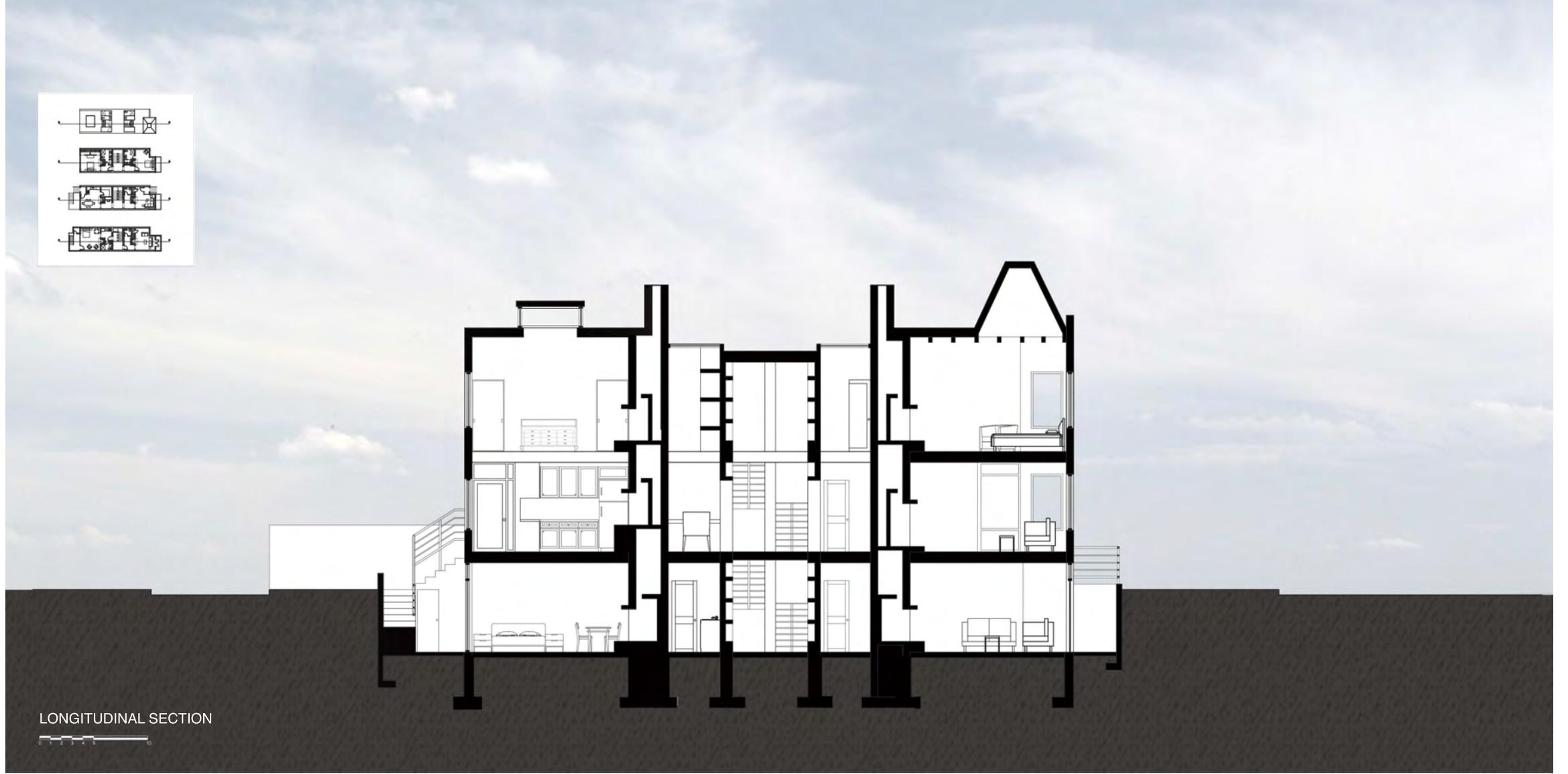




FIRST FLOOR PLAN



SECOND FLOOR PLAN



LONGITUDINAL SECTION

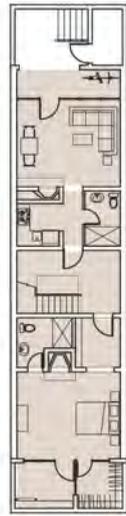


1531 E Street SE



PUBLIC VS. PRIVATE

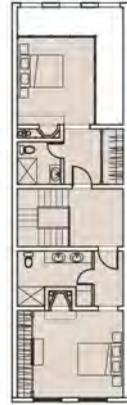
- PUBLIC SPACES
- SEMI-PUBLIC SPACES
- PRIVATE SPACES



GROUND FLOOR

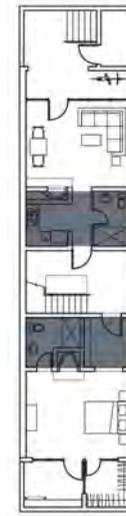


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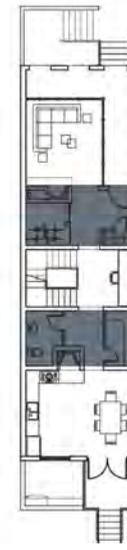


SECOND FLOOR

SERVANT SPACES



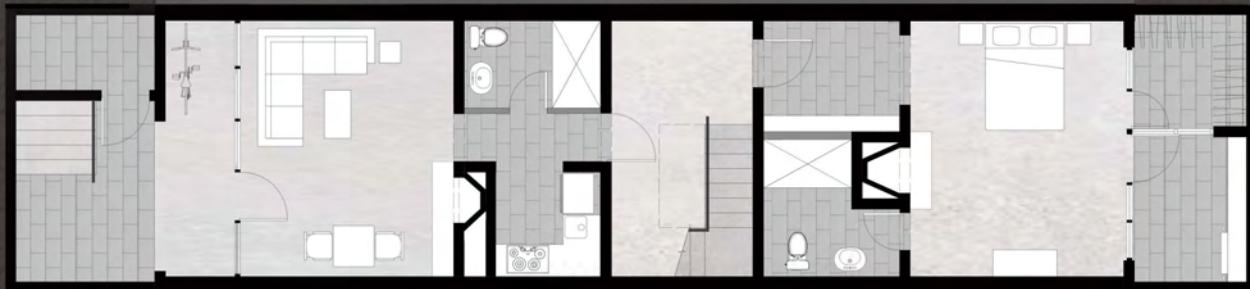
GROUND FLOOR



FIRST FLOOR



SECOND FLOOR



GROUND FLOOR PLAN

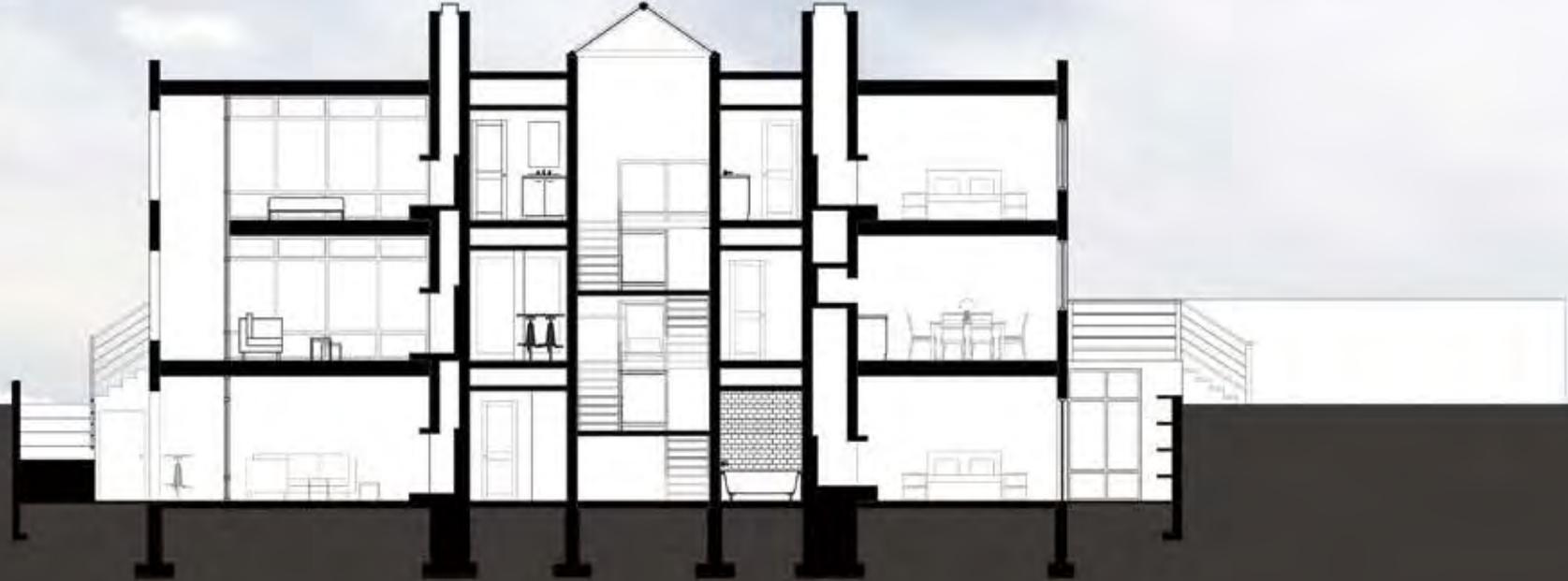
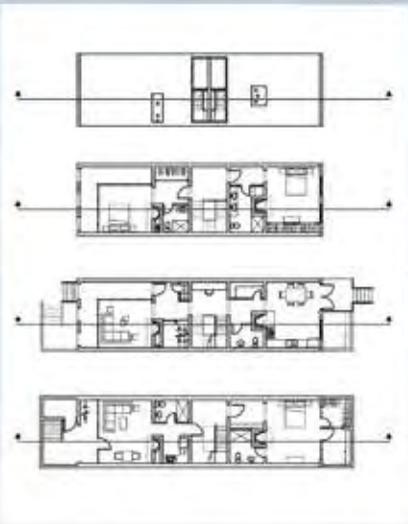




FIRST FLOOR PLAN



SECONDS FLOOR PLAN

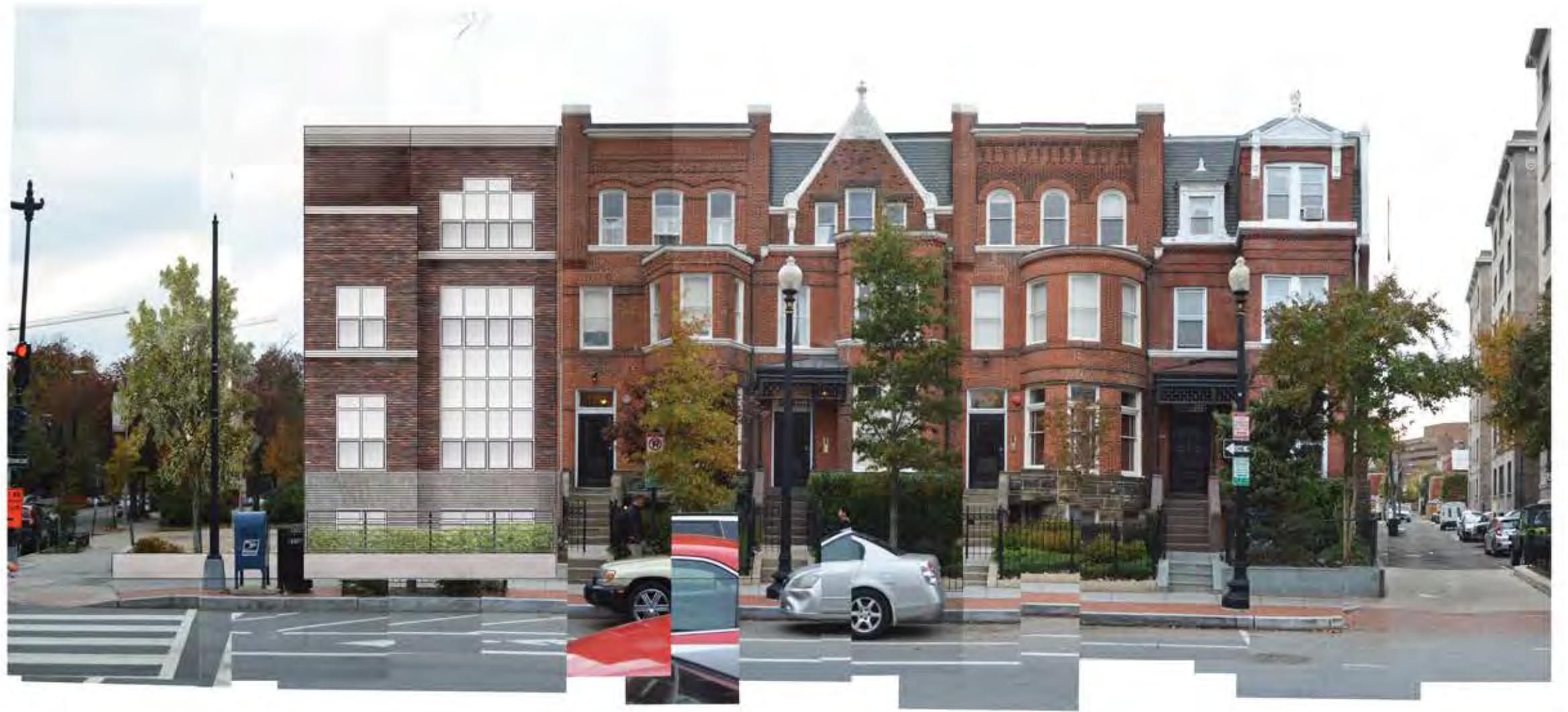


LONGITUDINAL SECTION



1500 17th Street NW



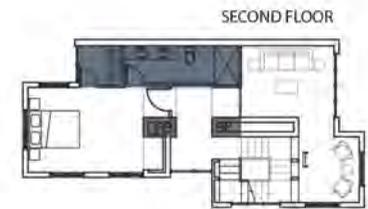
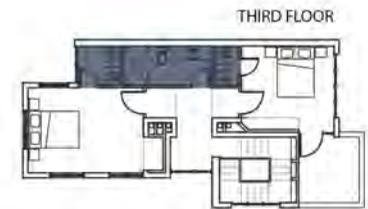


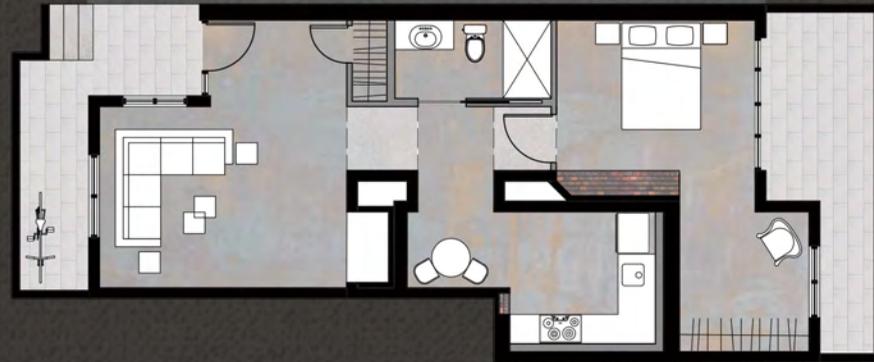
PUBLIC VS. PRIVATE

- PUBLIC SPACES
- SEMI-PUBLIC SPACES
- PRIVATE SPACES



SERVANT SPACES





GROUND FLOOR PLAN











LONGITUDINAL SECTION



2136 13th Street NW





PUBLIC VS. PRIVATE

- PUBLIC SPACES
- SEMI-PUBLIC SPACES
- PRIVATE SPACES



SERVANT SPACES



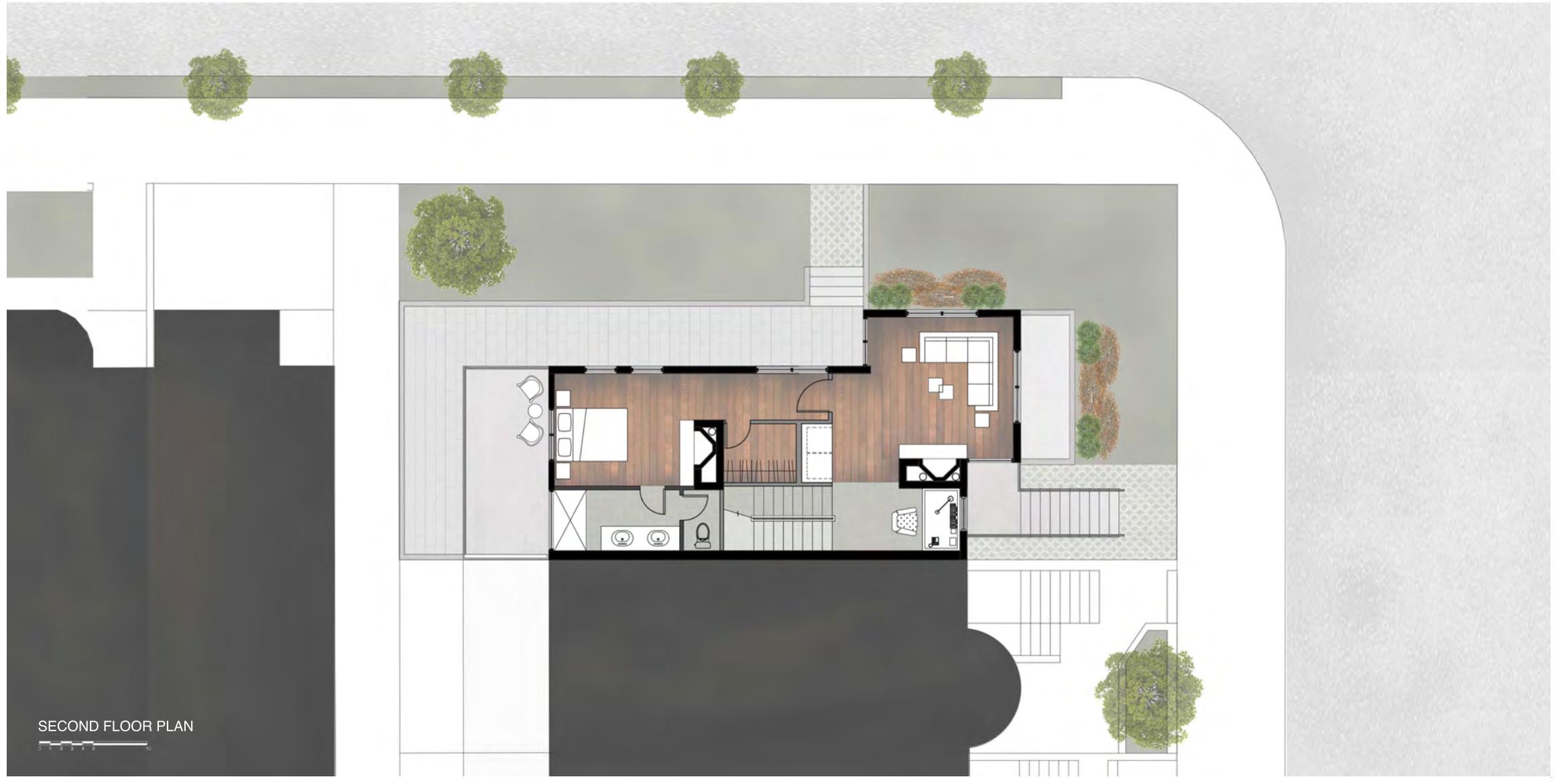


GROUND FLOOR PLAN



FIRST FLOOR PLAN





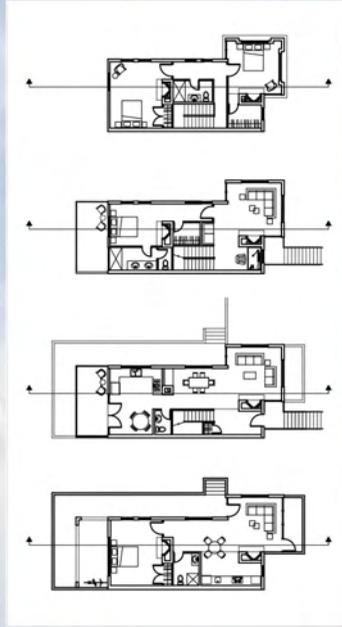
SECOND FLOOR PLAN





THIRD FLOOR PLAN





LONGITUDINAL SECTION



Reflection

The most challenging aspect of this thesis is the fact that the four selected sites were separate from each other. Each rowhouse required a change in context and situation which constantly kept the thesis in evolution. Upon development of the typology in one situation, it was severely challenged in another. This challenge was also the driving factor in keeping the thesis true. The further I progressed in each rowhouse, the more I uncovered the potential for the thesis to grow. As they always say, the thesis is never ending.

As a consequence of looking at the facade as a separate, unconnected component in each of these designs, the elevation became a result of the spaces within. I was told that the elevation is usually the last tool utilized in a student's development as an architect, and I fell victim to that strategy. The facade of a rowhouse can effect lighting, spatial organization and the interaction of the interior to the exterior. My four designs could have benefited more from this strategy of looking from the outside in. Moving forward in my development as an architect, I plan to place more consideration into the design of the facade; utilizing its potential to influence the architectural development of designs throughout the entire design process.

List of Figures

Figure 1. [public domain].....1
The 1900 block of Pennsylvania Ave built in 1796. Digital image.
The House History Man. “Washington Lost: The Federal style townhouses in the 1900 Block of Pennsylvania Ave, NW, built in 1796”. Williams, Paul K., 24 Nov. 2015. Web. 15 Sept. 2016.
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Figure 2. [public domain].....4
Parlor, 238 W. 113th St. (c. 1900). Digital Image.
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All other drawings, photographs, models, and images were composed by author.

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