

Walls with Presence

Kevin Likens

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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

Master of Architecture

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Walls with Presence

Kevin Likens

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Architecture

ABSTRACT

This thesis is an investigation in taking the architectural element 'wall' and celebrating it in the design of a building.

Walls are necessary elements in the urban fabric, and as such, should be celebrated. They enrich the space that they surround and enrich that which surrounds them as part of the urban fabric.

The project involves first creating walls with presence, then enclosing them in a manner that reveres them, that preserves their significance and emphasizes their presence.

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This thesis would not have been possible without the help and support of so many people. In particular I would like to thank my committee for your insights and your patience. Ultimately, I want to thank Churyl whose every limit I tested throughout this process
- thank you so much for everything you do for me.

considering the presence of walls: walls with presence

In the presence of a wall, we might find ourselves having a number of different thoughts. We may find that we are in the presence of a simple boundary, an element manifesting the moment of separation between man and nature, between 'ourselves' and 'other'. We recognize that the wall forms a limit to the expansive, chaotic universe and thus defines a place where, by excluding what is 'not I', we can endeavor to better understand 'I'.

We may find, however, that we are in the presence of something more. We may find, in the presence of a wall, that something about the wall moves us. Somehow existing in the presence of this wall seems to enrich our experience of being alive. We may find the wall beautiful.



1. Ancient Roman wall, London

Only in intimate communion with solitude may man find himself.
- Luis Barragan



experience of a wall - worth celebrating

A wall speaks to us – it reveals, demonstrates, captures, holds. Our sensory experience is rich.

A dynamic canvas, a wall tells us stories about the passage of time - from the color of light projected and reflected, and the movement of shadow across its surface to the degradation of materials and the patina of age. We perceive the hours and the seasons, the weather and the atmosphere.

We discover the richness of material: the depth of colors and textures, the intricacies of layers, and patterns; raking light highlights the texture and enlivens the colors.

We can use our hands to experience a wall. The material holds the warmth of the sun or the coolness and wetness from the rain. The texture tells us about the composition of the material. We also apply our senses of sound and smell.



2. Wall, Riva San Vitale



3. Wall, Riva San Vitale

In searching to understand and fully appreciate how a particular wall moves us, we probe deeper; we augment our sensory perceptions with our faculty of reason. We perceive certain ideas or intentions at work affecting the wall in its situation, orientation, proportion - its overall size, shape, and form. We discern meaning and we recognize aesthetic intent affecting the material, its treatment, and the means of assembly.



4. Incan wall, Peru
used by permission of www.hat.net



5. Wall, Riva San Vitale



6. Zumthor. Therme, Vals

walls enrich the space which they directly surround

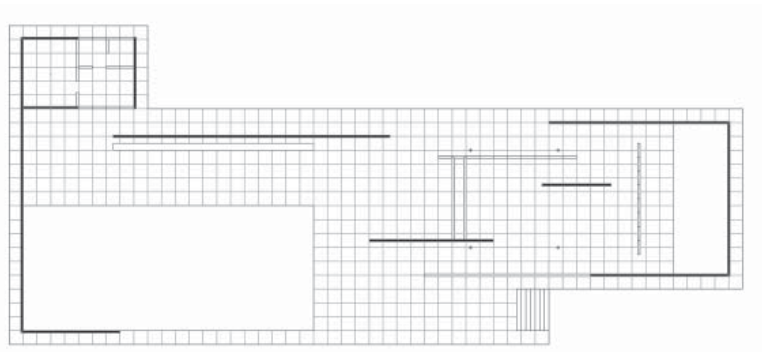
In the presence of a wall that moves us, we recognize that there is typically a strong emphasis on the material – the countless inherent attributes exposed naturally or revealed by hand and machine. We recognize the way the walls are arranged by the architect in celebration of the natural qualities of the material as well as of the art of construction – the tectonic expression.

In the presence of such a wall, a notion of beauty might arise within us. We can enjoy inhabiting the space next to such a wall when we can create a meaningful, personal experience – from directly engaging with the sensuality of the material and from recognizing aesthetic intent in the making of the wall.

The Barcelona Pavilion walls are astounding. The rich, deep layers of the marble are geologic poetry - heat, compression, time, crystallization. The book-matched treatment both highlights the layers and brings an order, showing artistic intent. The polished treatment elucidates the complexity of the material structure and brightens the space by allowing light to reflect off the surface.

The richly colored marbles, the textures of the honed travertine, the orientation and proportions of the walls and their constituent blocks, the interplay of the vertical surfaces with the horizontal surfaces – these phenomena (among innumerable others) collaborate to transcend the act of mere building.

Unencumbered by the burden of structure, the walls exist simply as partitions. Smooth planes of stone and glass make definite places, but ultimately encompass a continuity of space from inside to outside - they create 'flowing' space.



Plan, Barcelona Pavilion.



7, 8. Mies van der Rohe. Barcelona Pavilion.



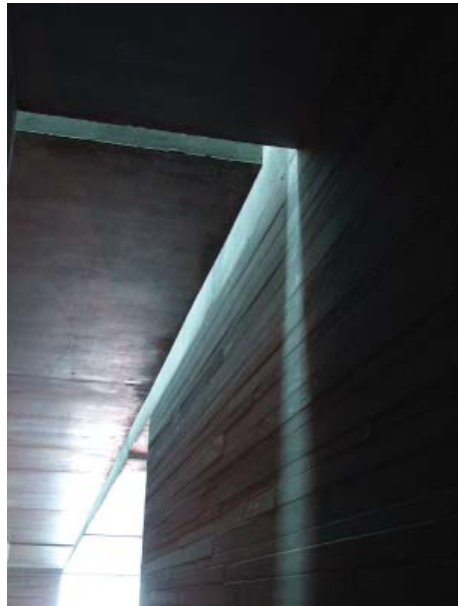
9. Ando. Koshino House



10. Ando. Vitra Pavilion

In Ando's walls we comprehend a rigorous order in their situation and orientation, especially in the walls themselves made apparent in the marks of construction - in the proportion and repetition of the form-lines and form-ties. The raking light that he directs gives the material a glow, and serves to illustrate the texture of the surface and at times the frozen fluidity of the cast concrete.

We can imagine getting dressed in the morning next to such a gentle glow which becomes gradually more intense as the sun slowly rises, the phenomenon attuned to the slow process of our waking and becoming alert.



11, 12. Zumthor. Therme, Vals

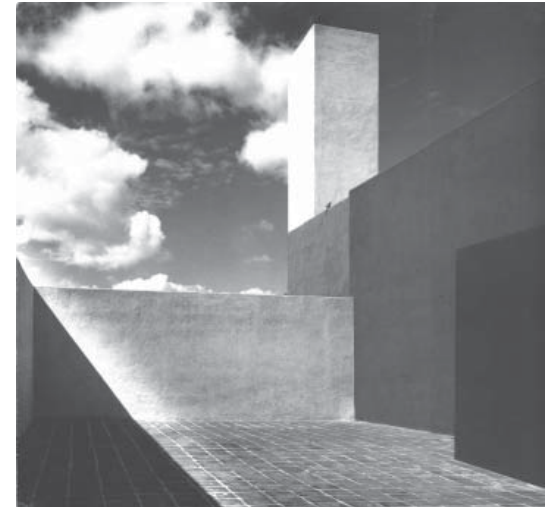


The walls at Therme Vals are locally quarried quartzite, machined smooth so that the depth and layers of the crystalline structure are revealed - soft to the touch, water on the surface enhances the depth.

We imagine how the stone has been extracted from the mountain in rough form, refined, and returned precisely - proportioned, oriented, and stacked, manifesting intent. We instinctively want touch this wall, to feel the strength, and to learn how smooth the stone mountain really can be.

The walls of the roof garden at Barragan's house frame the sky (right). They delimit the infinite. They provide a sense of scale for man against nature and the infinite, and they mark a contrast and juxtaposition between what is man-made (by expressing a rational order) and what is nature.

Inside the study in the same house (left), he uses a wall to invite the outside in. On a basic level - if we want to keep things out, that is if we want to concentrate on our self, then we make confined spaces; we conceive substantial, enclosing walls. If we want to let things in, that is if we want to experience the world around us, then we make open spaces; we conceive minimal, open walls.



13, 14. Barragán. Barragán House, Mexico City, 1947-48
used by permission of Barragan Foundation, Switzerland /
ProLitteris, Zurich, Switzerland

Jim Jennings' guesthouse walls are a literal concrete canvas. Carved and honed, the richness of the material is celebrated on the interior with light from above. Their placement in the landscape directs the inhabitants' views. Their scale in the courtyard creates a refuge.



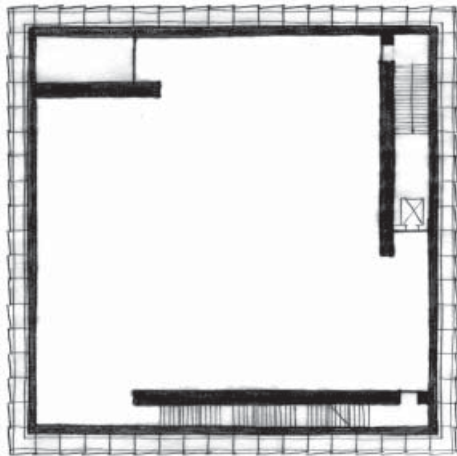
15, 16. Jennings, Guest house, Sonoma
used by permission of Tim Griffith





17. Zumthor. Kunsthhaus, Bregenz

Zumthor's Kunsthhaus Bregenz walls have definite presence because there is a richness and depth to the concrete akin to natural stone, due to the way it was cast in smooth forms then gently scrubbed. The simplicity is amazing – the barely discernible proportion of the formwork and the absence of form-tie holes establish a monolithic uniformity. The consistency of the material, its color, and the subtle light instill a charged lucidity for viewing art. The space itself is art, yet it embodies an appropriate (neutral?) context for art.



Plan, Kunsthhaus Bregenz.



18. Zumthor. Kunsthhaus, Bregenz

walls enrich the spaces which surround them

Barragan's Las Arboledas wall unquestionably creates place. Further, it is a massive canvas for nature. We can imagine having an early summer's evening dinner next to this wall - basking in the sun's warmth which radiates from it and enjoying the silhouette of a tree's shadow dancing on it in a gentle breeze.



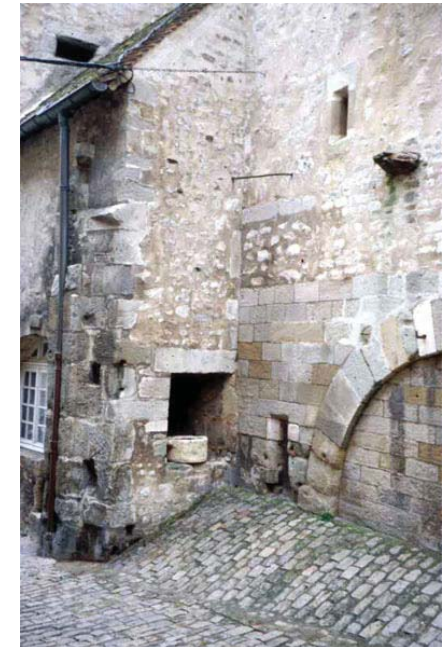
19, 20. Barragán. Las Arboledas, Mexico City, 1959-62
used by permission of Barragan Foundation, Switzerland / ProLitteris, Zurich, Switzerland

In Incan walls we marvel at enormity of the stones and the precision with which they are carved and placed. They seem like natural formations in the mountainside, diplomats of the natural world. The smooth surfaces invite us to run our hands over them and inspect how tight the joints are. They too become a canvas for nature.

In walls of old world stucco falling away from stone rubble, we admire the complexity and depth of the layers, of the myriad construction techniques that animate the surface and enliven the room of the street.



21. Incan wall, Peru
used by permission of www.perutreks.com,
Peru Treks and Adventure Tours



22. Wall, Autun
used by permission of Terry Clements

walls enrich that which surrounds them as part of the urban fabric

We understand the urban condition as being predominately constructed of walls. When we move through an urban setting, we recognize that for the most part the spaces we inhabit are produced by walls. Rooms emerge in the street-spaces as a by-product of the enclosures of the buildings. On the other sides of these walls are the smaller rooms where people work, shop, eat, sleep... where people live their private lives.

The spaces of the city are defined by walls, created and delimited by walls. Walls play a large part in ordering the open space and offering opportunities to create 'place'. They are the material, par excellence, of the city. Urban architecture, and therefore walls, should then celebrate the act of separation. It should celebrate the moment where that which separates is also that which binds.



23. Arsenal wall, Venice



24. Side wall, Paris

Besides separating and organizing space, urban architecture exemplifies humanity's capturing of vertical space, which is helpful if not necessary in accommodating dense populations. We conquer the vertical and defy gravity through mastery of materials and construction techniques. Urban architecture, and therefore walls, should also celebrate this capturing of the vertical.

Often side-walls and back-walls go neglected and only facades are revered; as the material par excellence of the city, all walls should be celebrated and should aspire to be monuments of the urban condition.



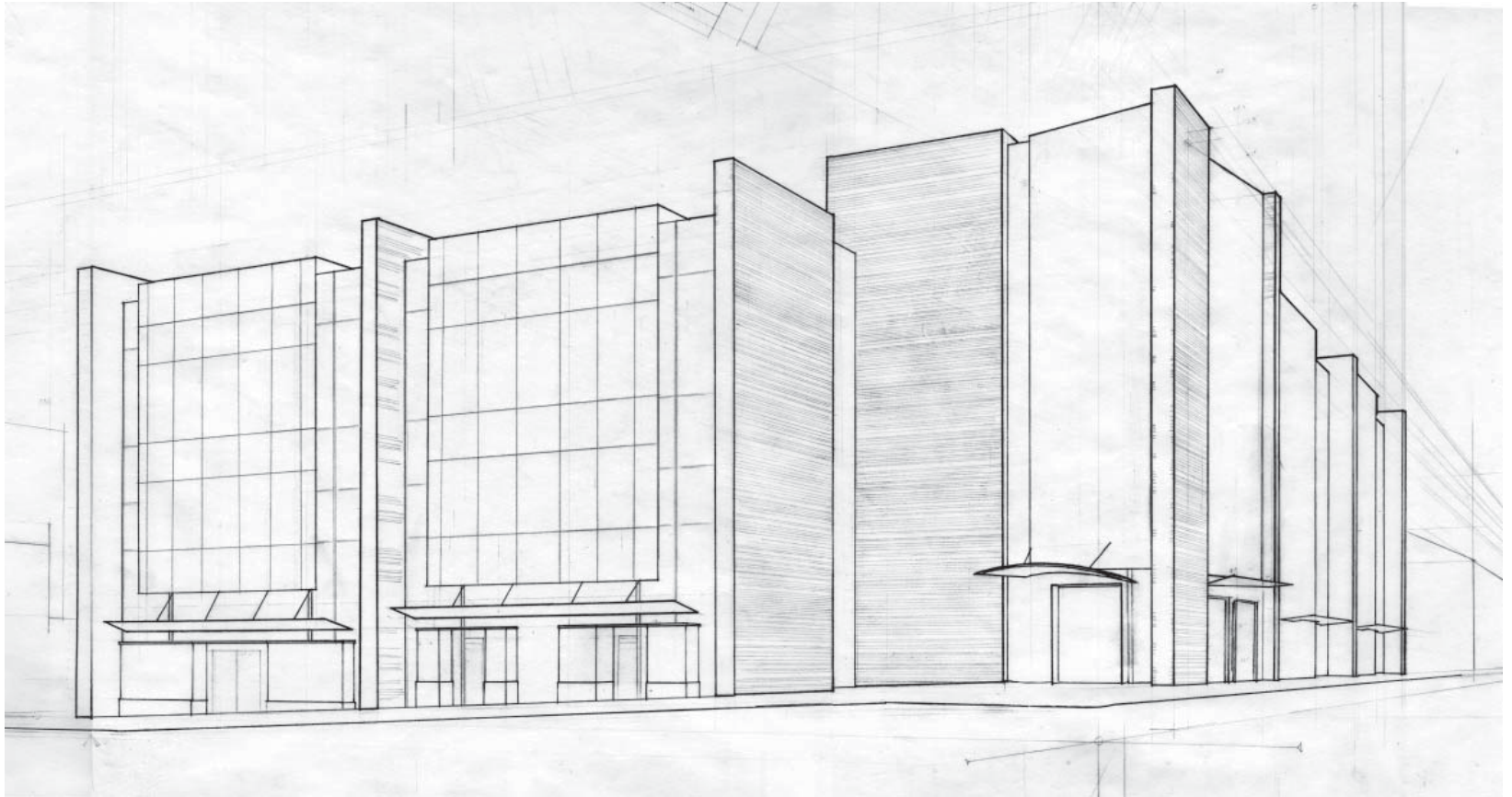
25. Urban walls, Paris

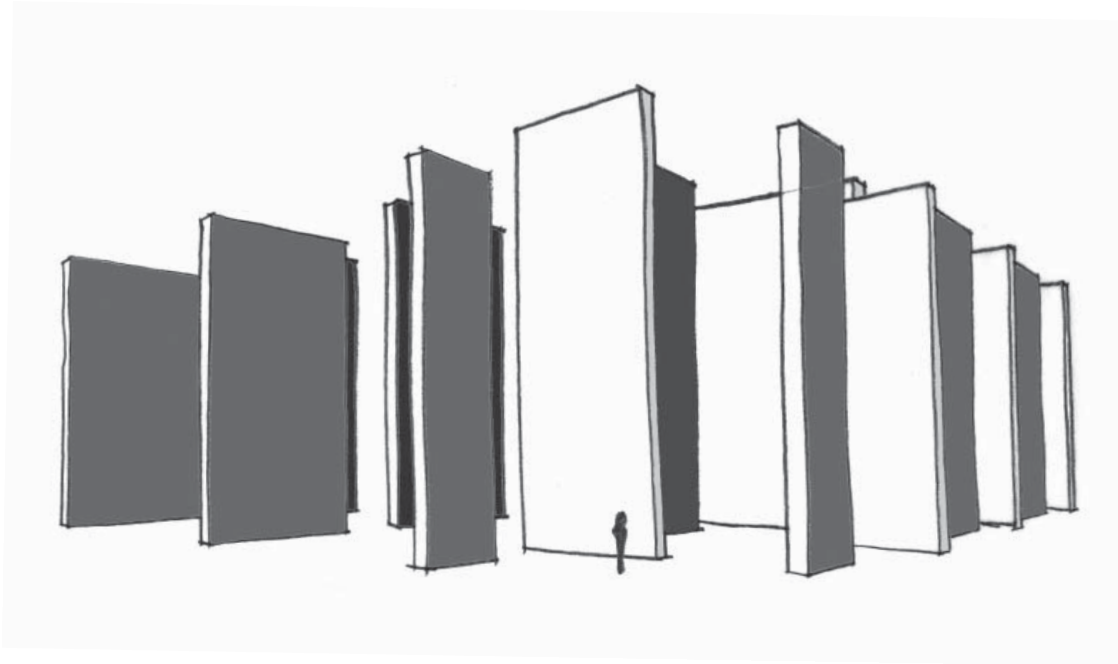


26, 27. Urban walls, Graz

creating walls with presence

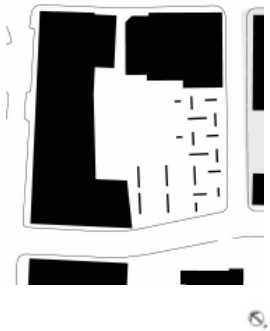
The first step in the thesis investigation involves creating walls; walls with presence; walls that celebrate their urban situation; walls that we can enjoy existing next to.





form

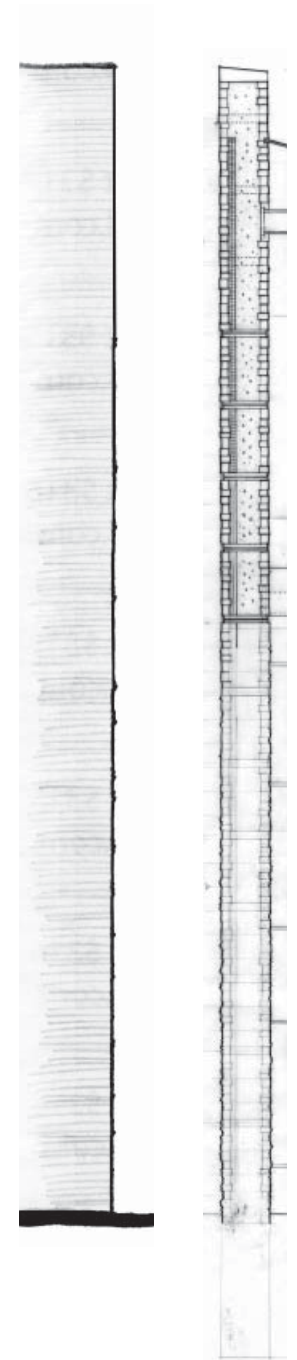
The walls of the project are massive monolithic slabs, thick and tall. The verticality is emphasized by the proportion of the height over the width. The simple rectilinear shape of the towering vertical slabs is the spirit of an urban wall.

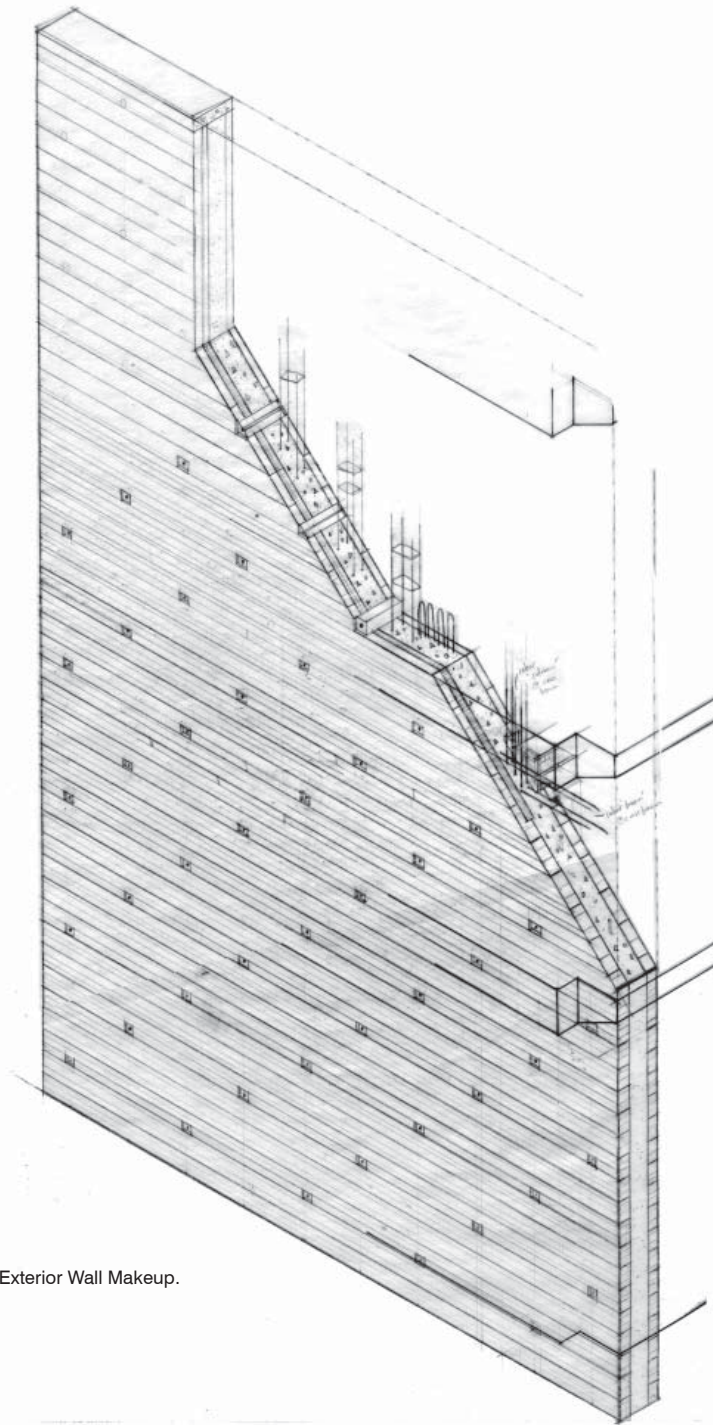


material

They are made of stone – a material with an enduring, timeless character – and arranged in such a manner as to revere the material and to revere the art of construction. Limestone, quarried nearby, is machined and honed into long rectilinear slabs and stacked, coursed ‘ashlar’. The varying hues of blues and grays manifest on a small scale as a rich mixture of geologic cake-batter, but on the larger scale they make a uniform tapestry.

Also, the texture of the limestone’s surface treatment changes over the height of the wall - it starts out at the bottom with a large percentage of the stones being split-faced and thus rough, intermingled gradually as the wall rises with honed stones, and then at the very top, mingling with a few polished stones.



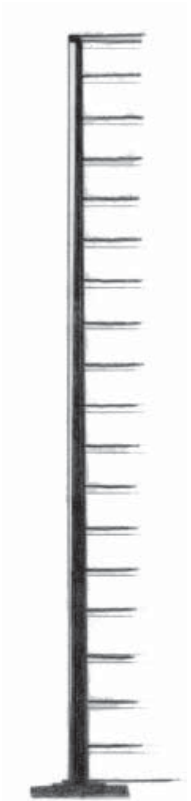


Typical Exterior Wall Makeup.

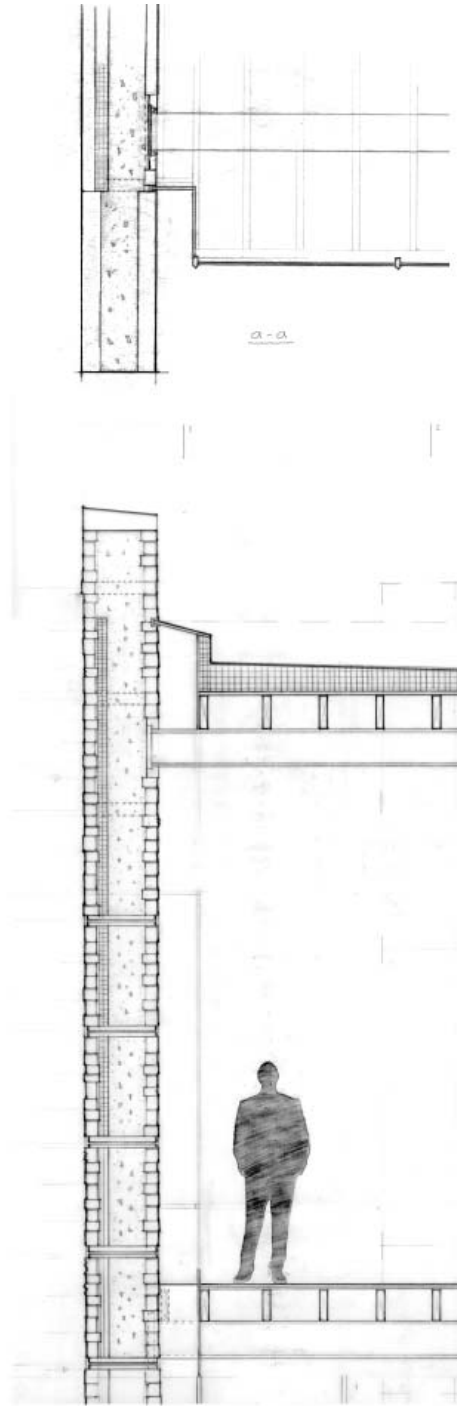
construction

Massive stone walls have traditionally expressed their weight and uniform structure by being thicker at the bottom and tapering towards the top. The walls of this project are expressed as clean vertical slabs, and this is achieved with a composite construction.

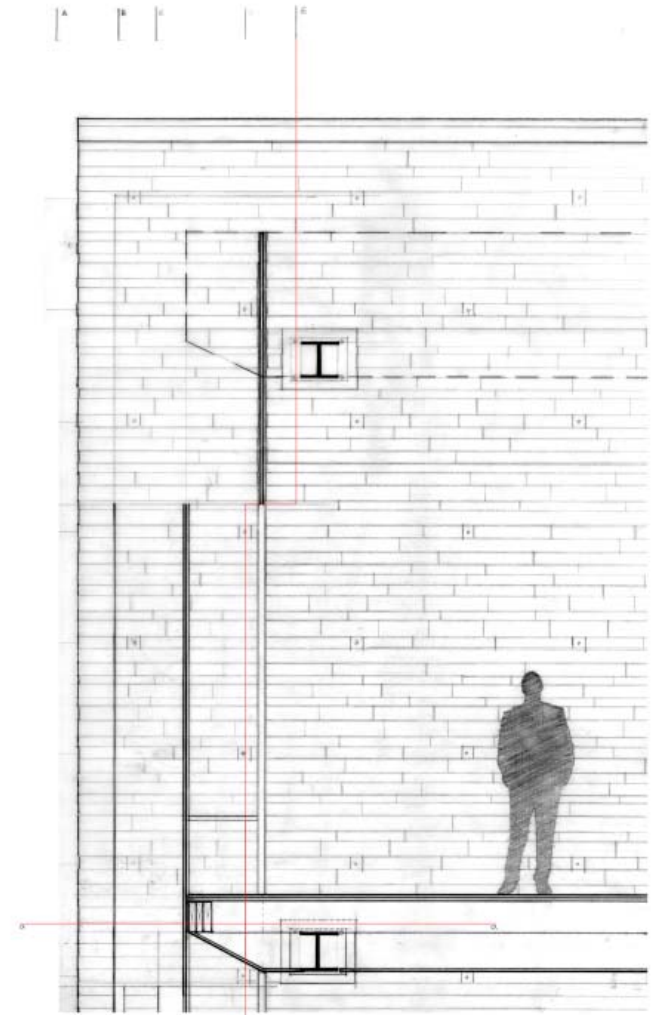
The stacked limestone is a skin that encloses a structural reinforced-concrete core. The nature of the composite is made evident as the concrete is exposed at the ends of the walls – the limestone only covers the faces of the walls. More than a cosmetic appliqué, the limestone serves as the form-work within which the concrete is poured, and thus is structurally unified with the concrete.



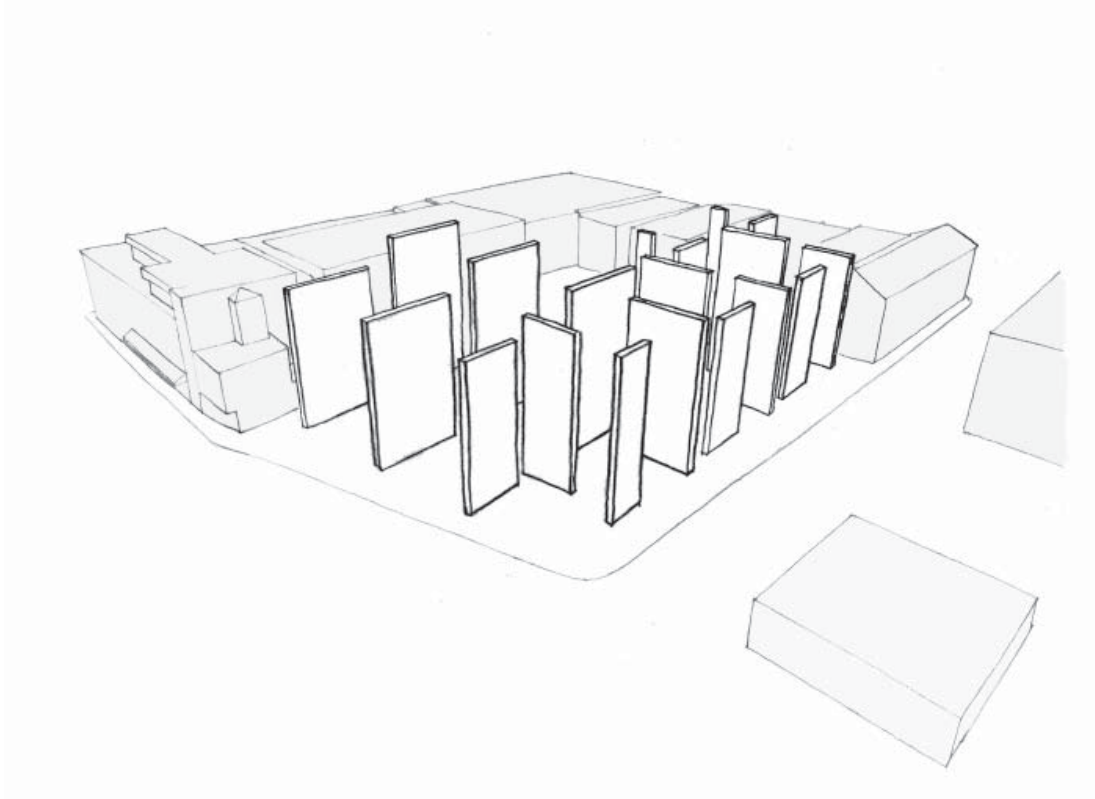
Tapering wall section.
 Monadnock building, 1893.
 Burnham and Root, Chicago.



E-E



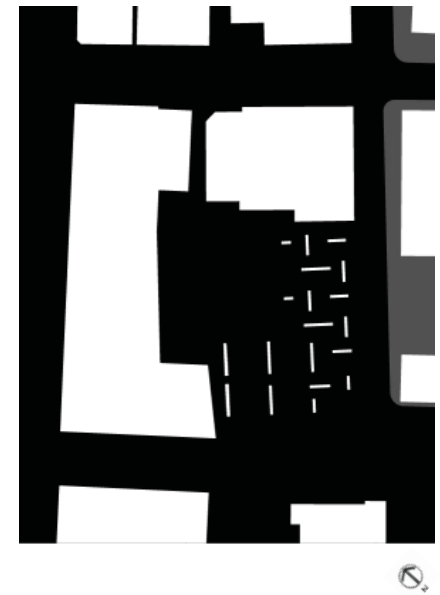
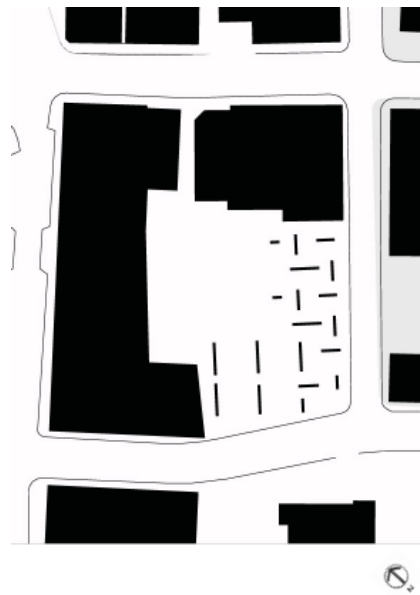
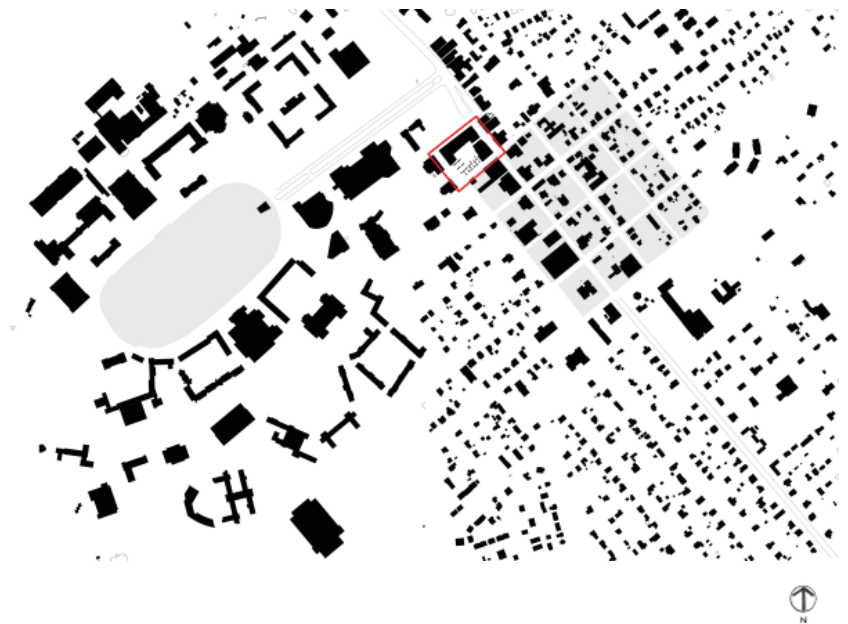
Wall construction detail.

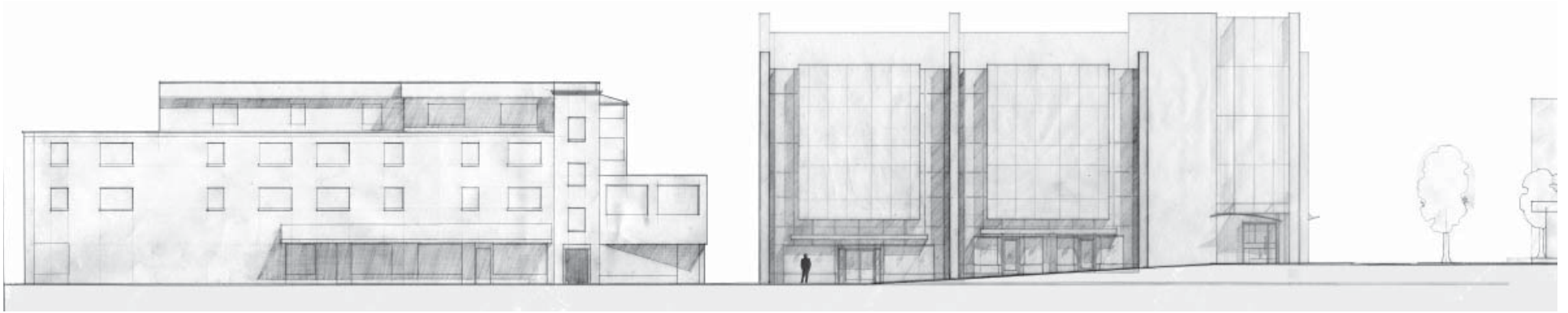


orientation

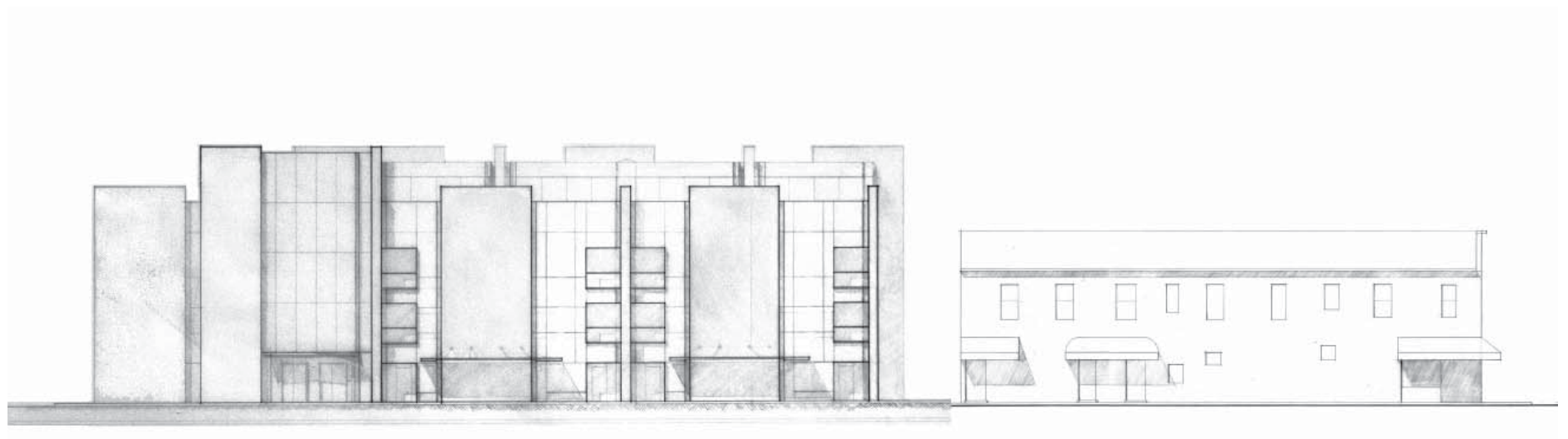
The massive walls are fixed into the ground on the site, situated to close the open block. They are arranged to define space without completely enclosing it – to capture space without arresting it. More than simply ordering the space, the walls define 'place'. Due to the sizes and proportions of the walls, there is no question about the notion of separation, yet the placement of the walls serves to invite the outside in. The monolithic nature of the walls is thus enhanced and the vast stone surfaces are made evident from every angle.

The layout of the town grid is oriented on an axis diagonal to east-west, such that the Draper Road facade is exposed to the south-west and the Jackson Street facade is exposed to the south-east. The orientation of the walls and the handling of the enclosure (discussed in the next section) serve to catch the sunlight and celebrate the passage of the day.





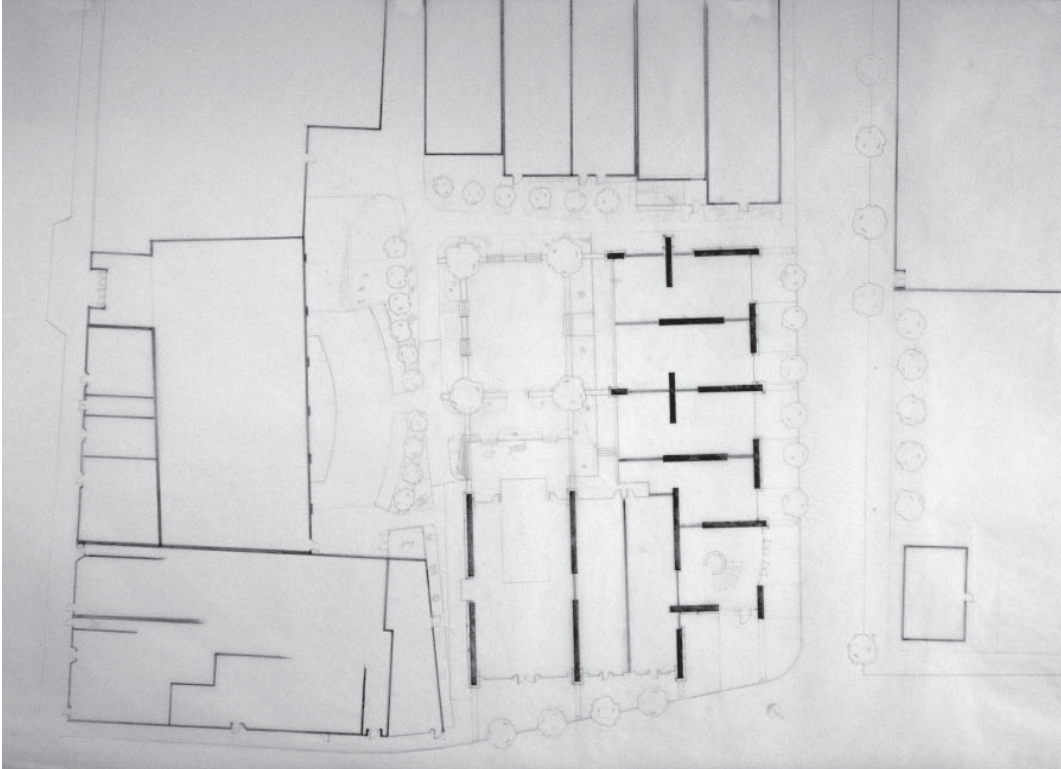
Draper Road



Jackson Street

The orientation of the walls with respect to the site is also related to the surrounding buildings and streets – more ‘open’ along busier Draper Road, and more ‘closed’ along quieter Jackson Street.

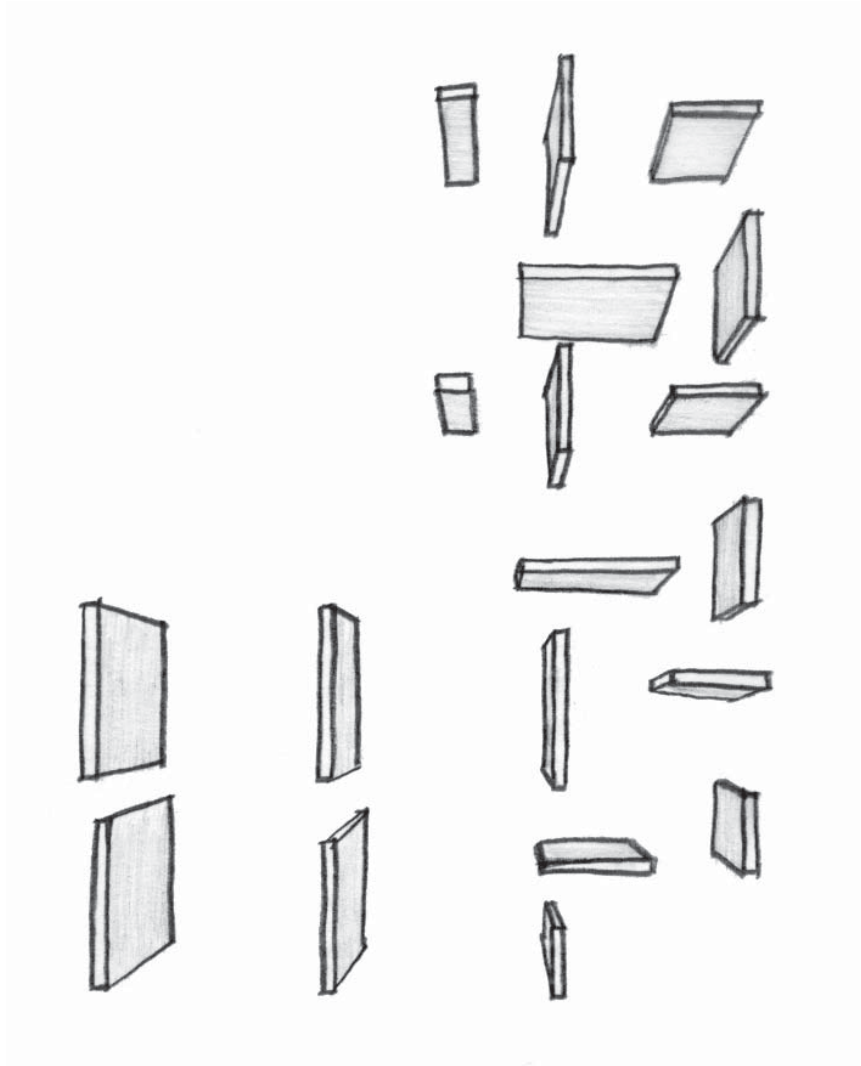
The spacing between the project walls is derived from the general spacing of the walls of the surrounding buildings. The spaces of the project therefore both acknowledge and belong to the context of the town. Ultimately, the arrangement of the walls creates spaces within which one can appreciate the notion of existing between massive urban walls, and without losing connection with the outside.

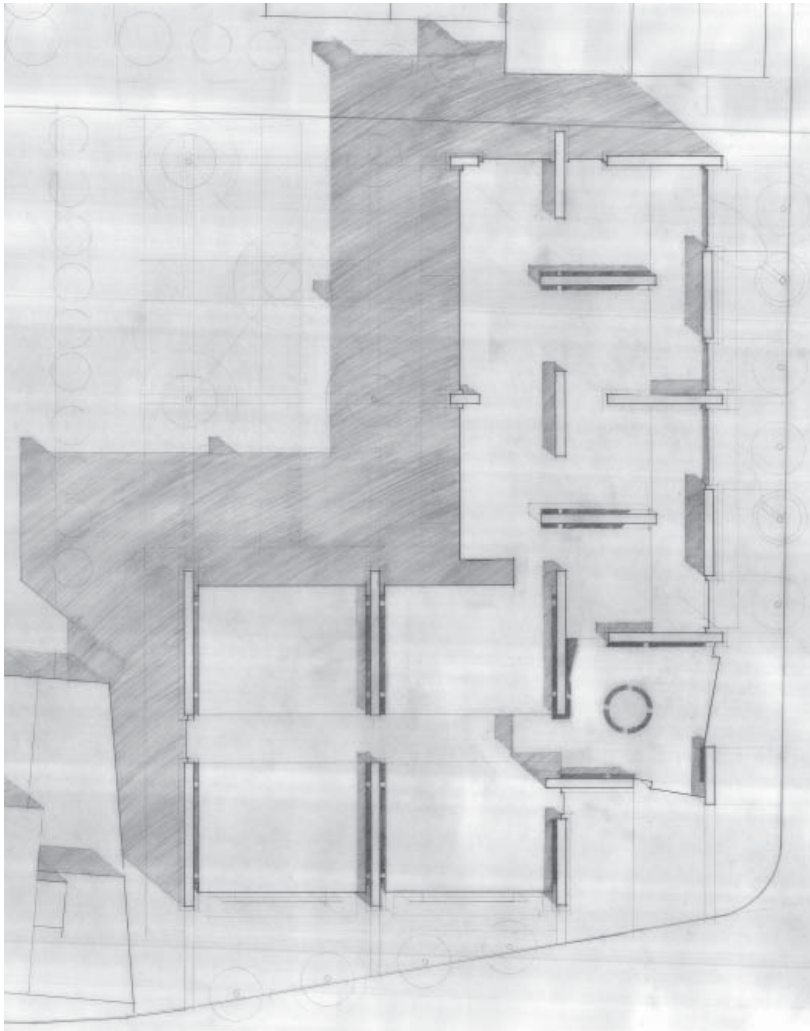


preserving the presence of walls: enclosing the walls

We want to exist next to these walls; to find stability and peace in the 'place' they create; to watch the shadows of trees dance across their surface and to feel the warmth they have absorbed from the sun.

To inhabit the walls we must capture the space between them, yet to revere the walls we must ensure that the enclosure preserves and celebrates their significance and presence.

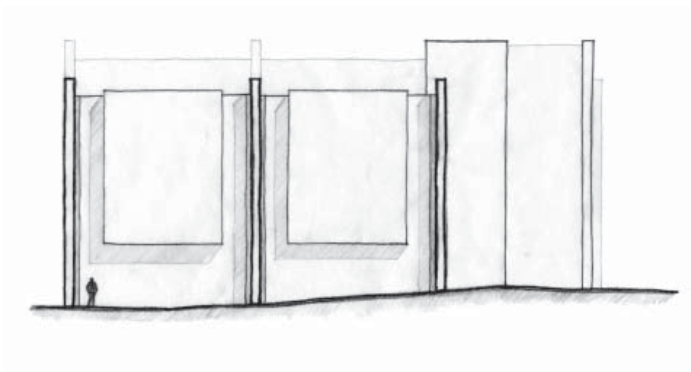


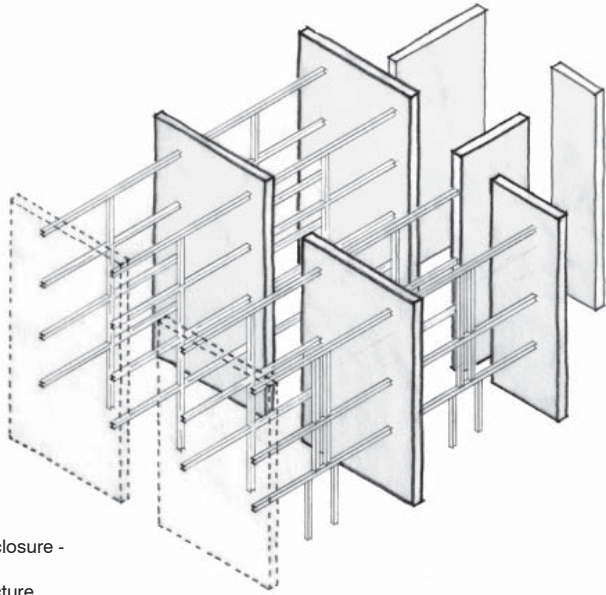


capturing the space between the walls

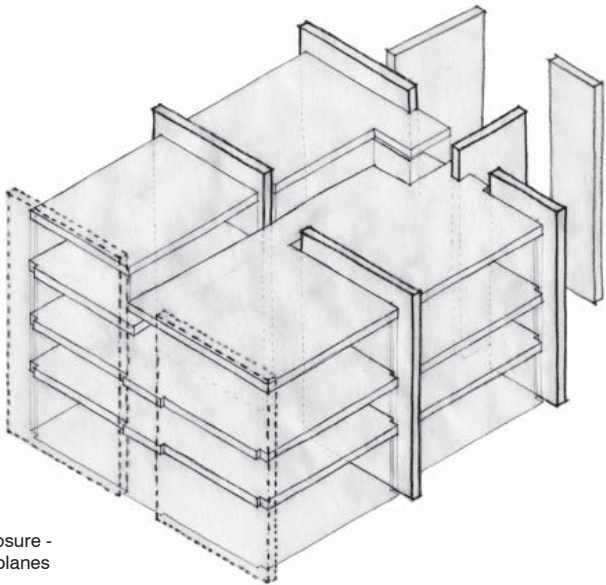
The walls remain the dominant element of the enclosed building. In elevation they are taller than all other components and in plan they extend out farthest to the viewer. Every detail of the enclosure works to preserve the dominance of the walls.

Space is first captured vertically with the floor and roof substructures, further defined by interior walls. The floors are pulled back into the space so that the walls extend out past the enclosure. The actual connection where floor meets wall happens two feet further back into the space, giving a 'reveal' to the entire facade, additionally highlighting the subordination of facade to wall. This moment of 'reveal' also serves in providing a recess where the sun can more easily penetrate the interior and wash the walls (figure 2).

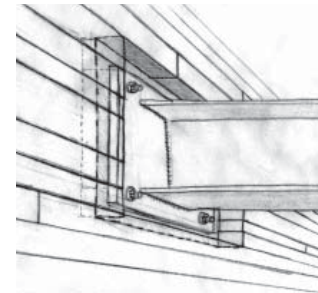




Vertical Enclosure -
'secondary'
Beam Structure



Vertical Enclosure -
Floor / Roof planes



Detail, Beam Attachment at Wall.

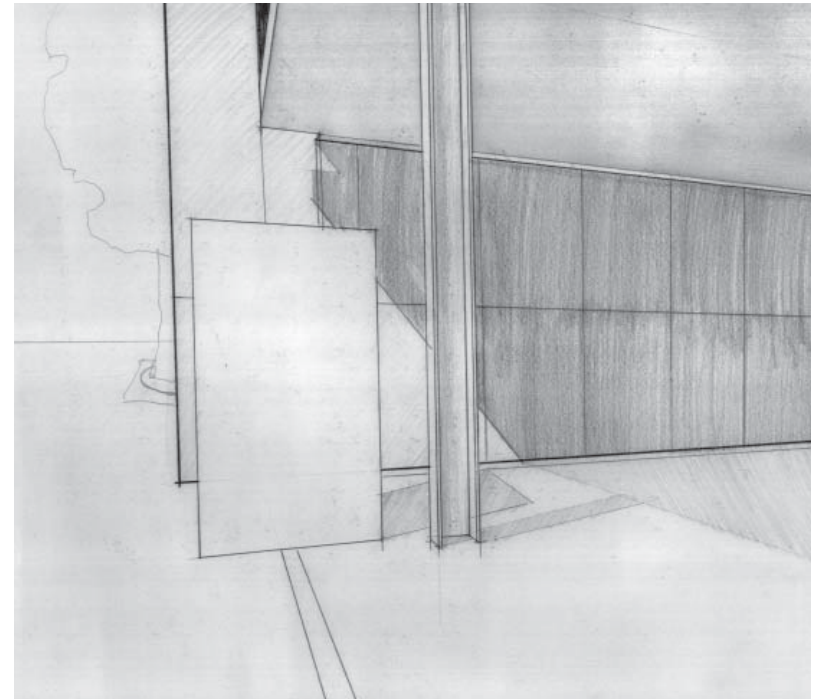
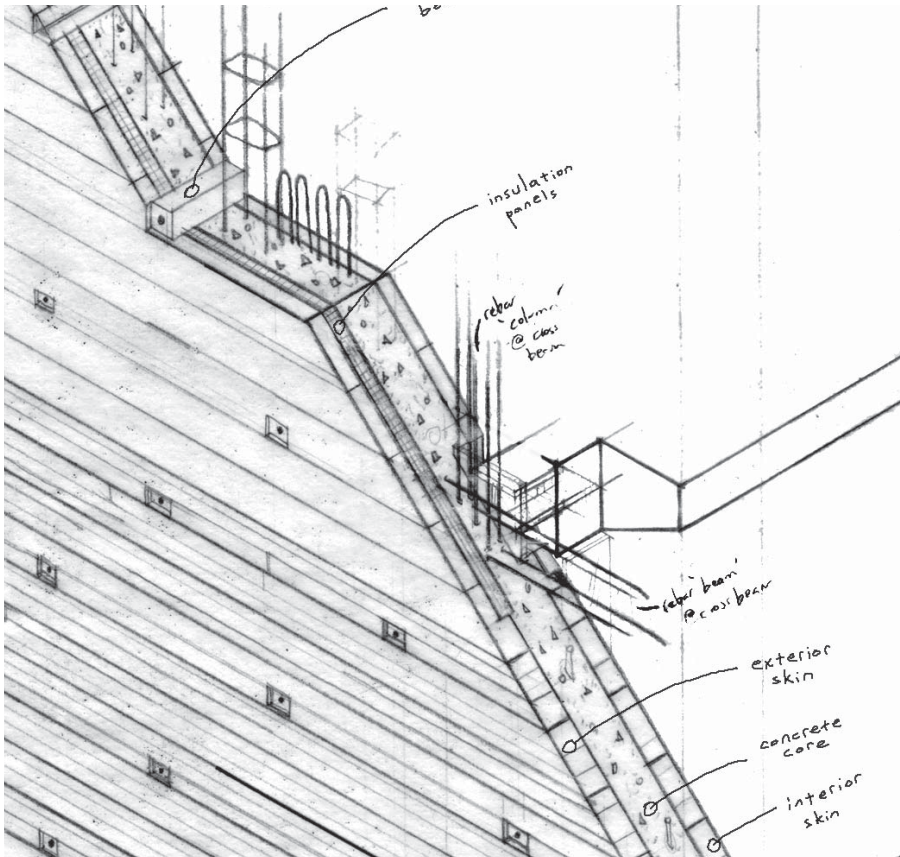


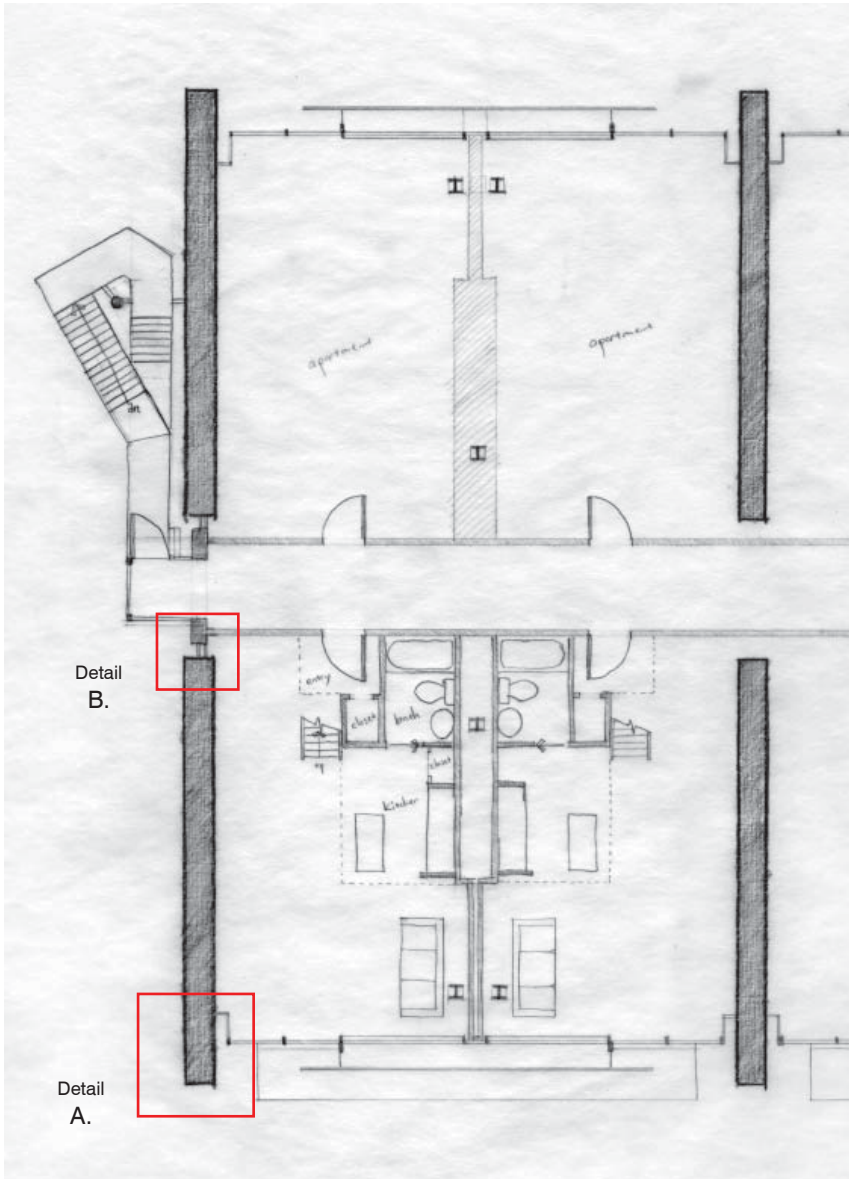
Figure 2



Detail, Exterior Wall.

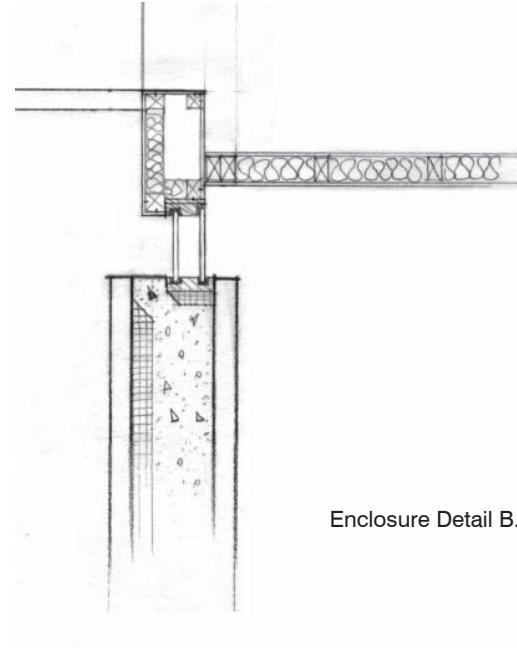
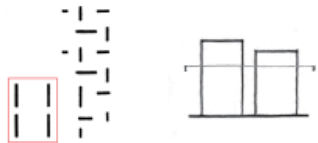
thermal enclosure

The captured space is enclosed by the 'thermal' enclosure. The walls themselves comprise a part of the thermal barrier – they are two feet thick made up of limestone skins and a reinforced concrete core with insulation panels embedded in the cores of the exterior walls for increased thermal resistance.

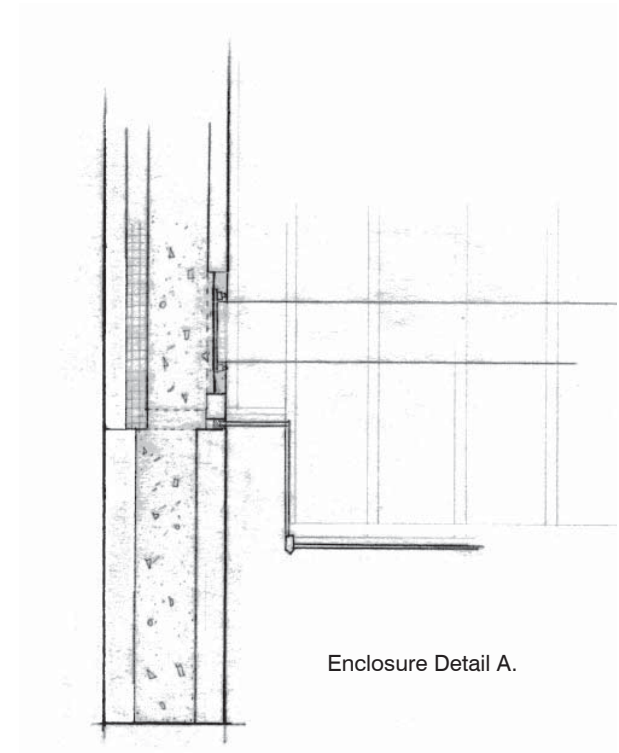


Detail B.

Detail A.

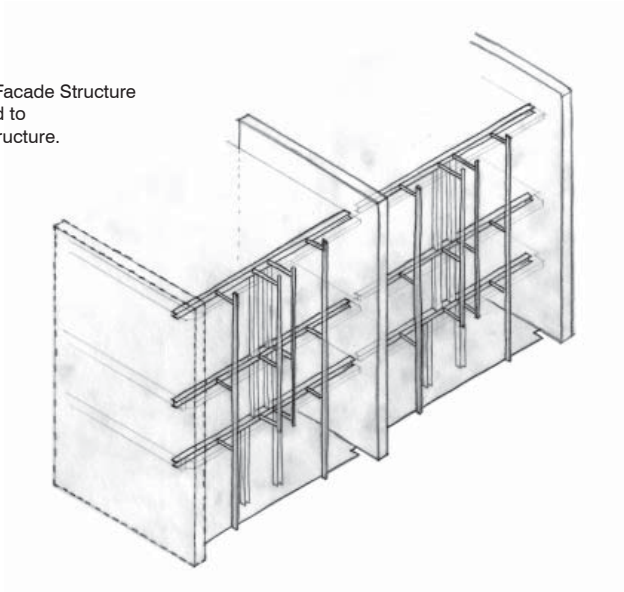


Enclosure Detail B.



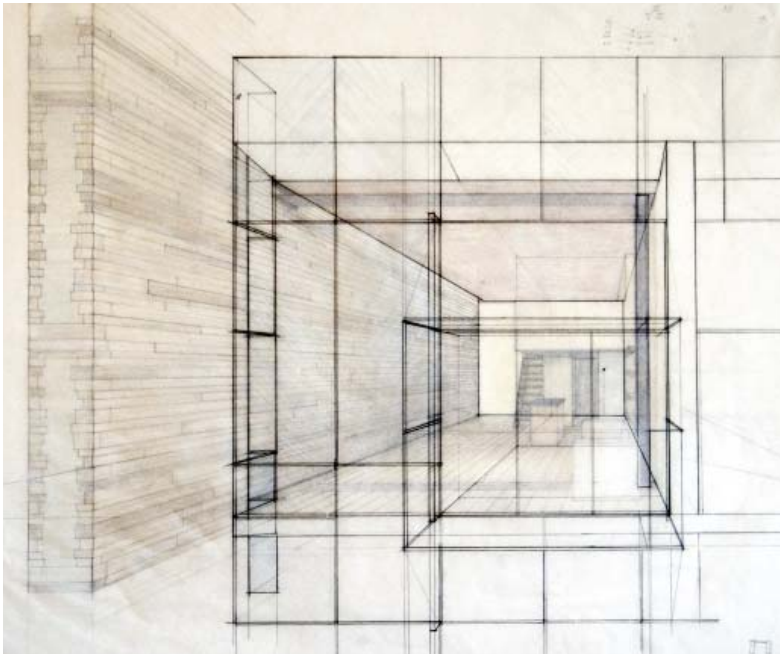
Enclosure Detail A.

Sketch, Facade Structure anchored to Beam Structure.



The remaining thermal enclosure, the 'infill' between the walls, consists primarily of full glazing. The lightness, openness, and transparency of the glass enclosure is a direct counterpoint to the heavy, solid walls and creates a continuity of the wall between interior and exterior.

The ultimate effect of the glass enclosure is that the walls are both inside and outside at the same time. On the inside, there is an unquestionable connection with the outside, and from the outside, the walls come out and draw us in. Within and without the raw limestone is exposed and fully accessible. Space is created and walls are emphasized by the interplay between what is wall and what is not wall.

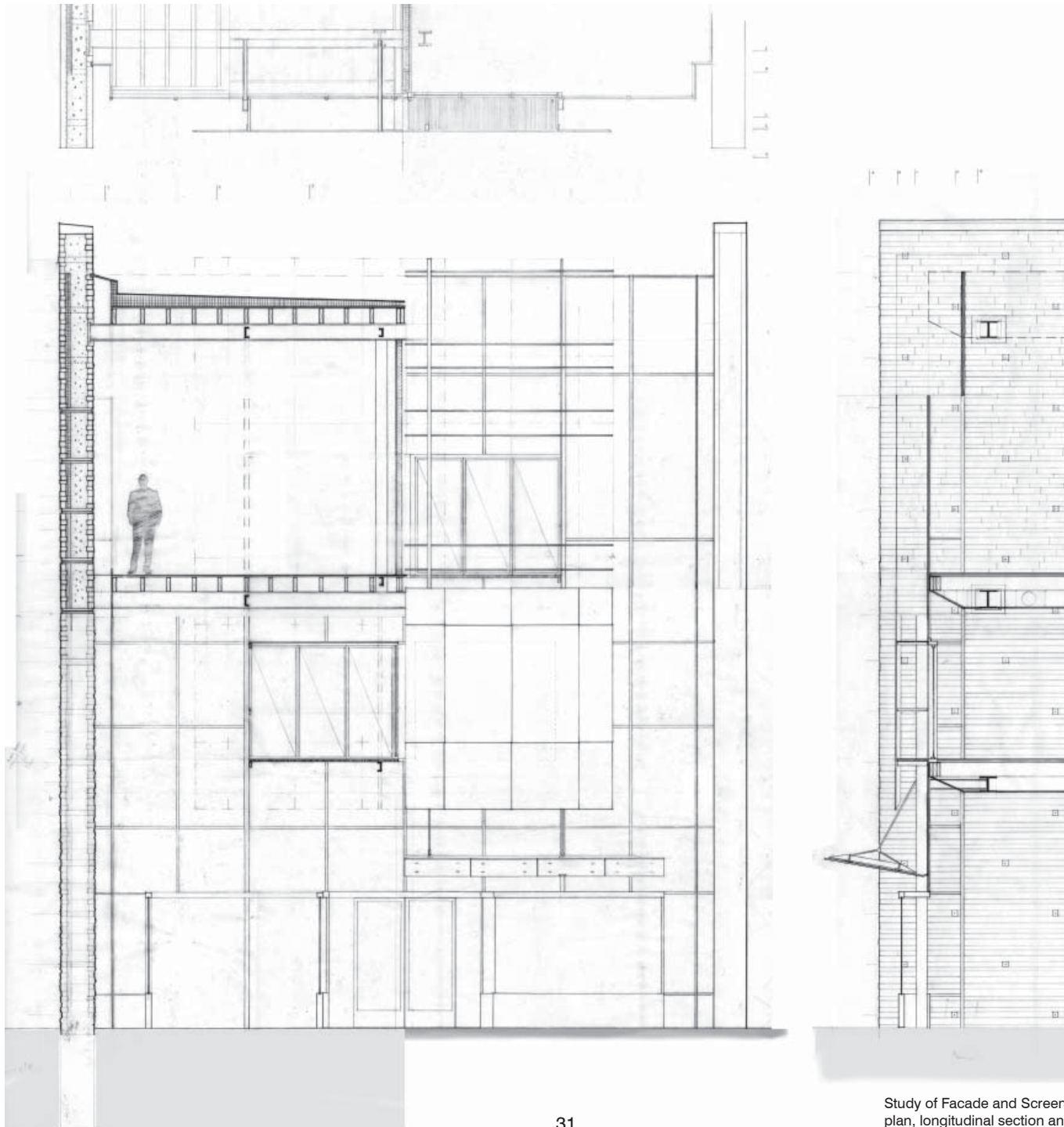


Detail, Glass Enclosure at Apartment.

To mediate between the absolute opaqueness of the walls and the absolute transparency of the glazing, screens of perforated sheet-metal complete the enclosure system abating unwanted solar gain. They stand two feet off the glass enclosure and are withheld six feet from the walls.

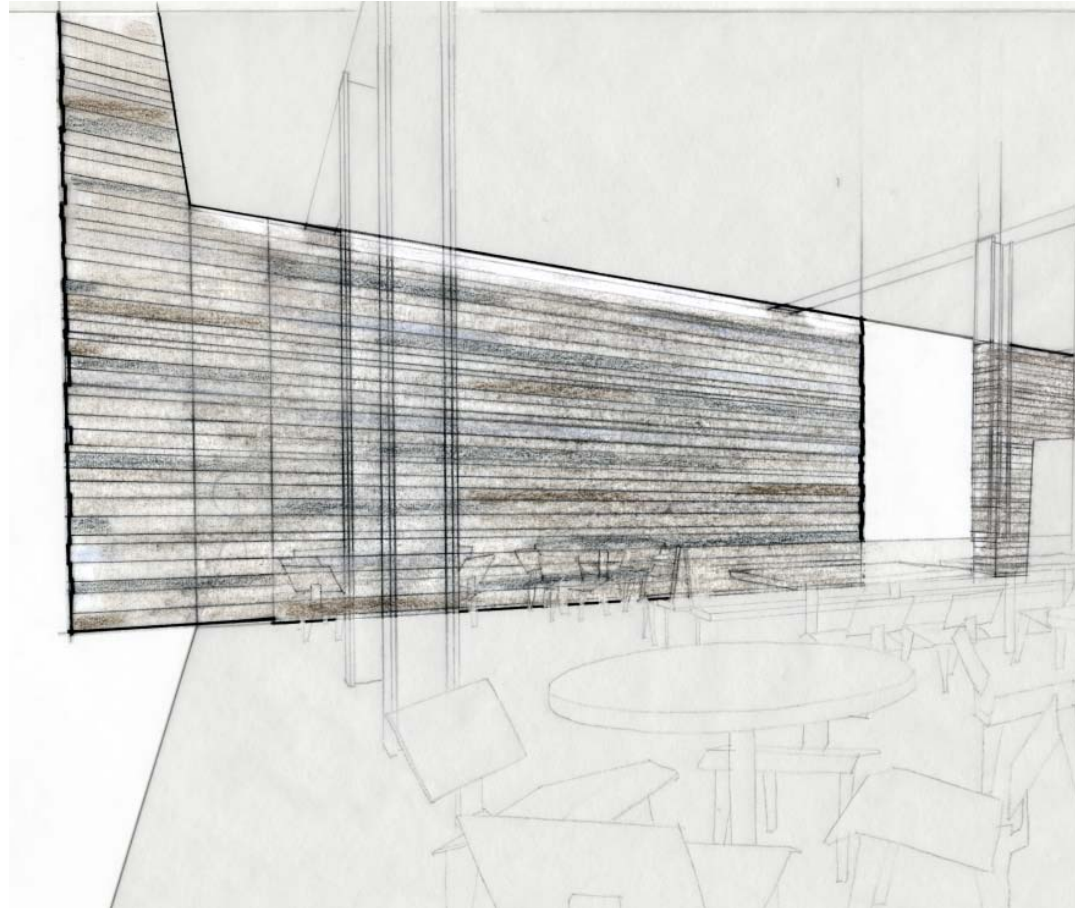


Detail, Screen Perspective.



in the presence of walls: inhabiting the spaces between the walls

The walls are inhabited within the typology of a 'mixed-use' building. The ground floor houses a restaurant and retail spaces, while the second floor contains offices and the top floor contains residential spaces. In as such, one can experience the walls in every aspect of daily life.





apartment

The architecture of the apartment is characterized by the significant presence of the wall. At 15' tall, it forms an unencumbered boundary through the entire extent of the space.

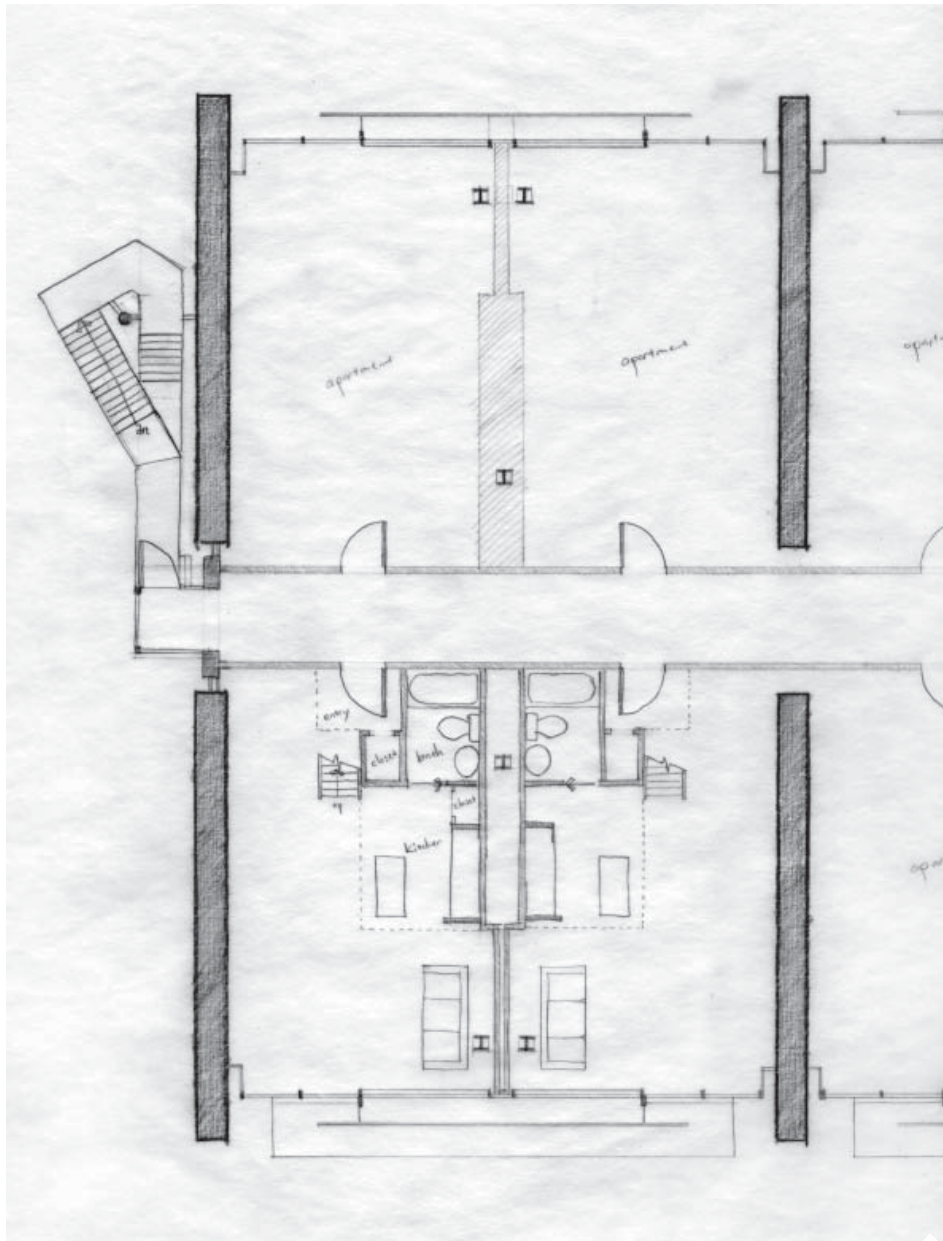
The intersections of the floors and ceilings are withheld from the wall with 'reveals'. This physical retraction from the wall, as an indication of subordinate building elements deferring to the primacy of the wall, is a measure that preserves and even highlights the presence of the wall.

The hardwood finished floor is a warm soft contrast to the stone wall, and ends four inches from the wall where there is an 'inlay' of darker wood, thus giving the effect of a bigger reveal.

All the ceilings in the building have a one-foot reveal within which artificial lighting is set. As the apartment is on the top floor of the building, the reveal passes through the roof and opens to a skylight. The resulting glow on the wall charges the experience of the wall and ultimately serves to celebrate the wall.

At night the wall is still the unquestionable focus of the space because of the warm glow from the artificial lighting in the ceiling reveal; while the rest of the lighting in the apartment is predominantly task lighting and spot lighting.

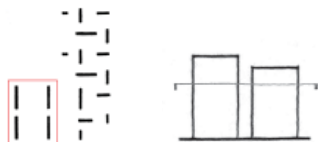


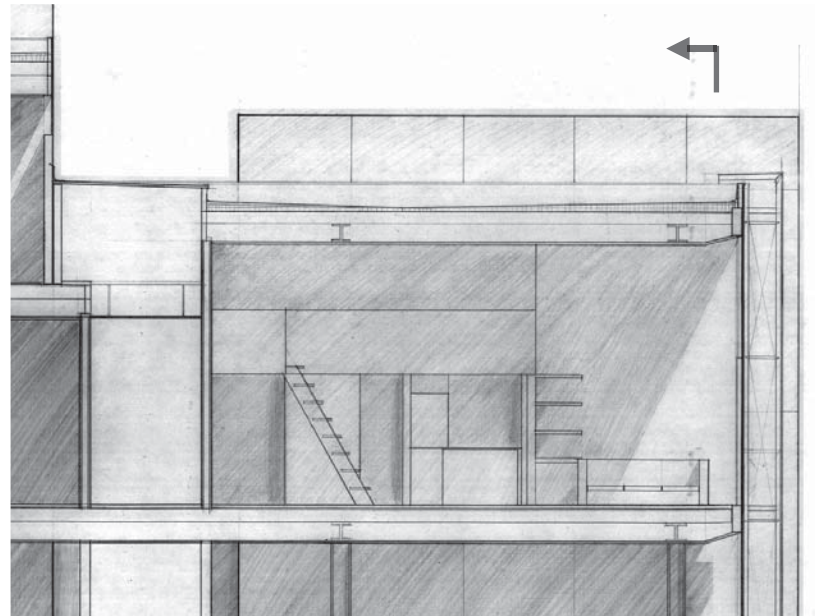
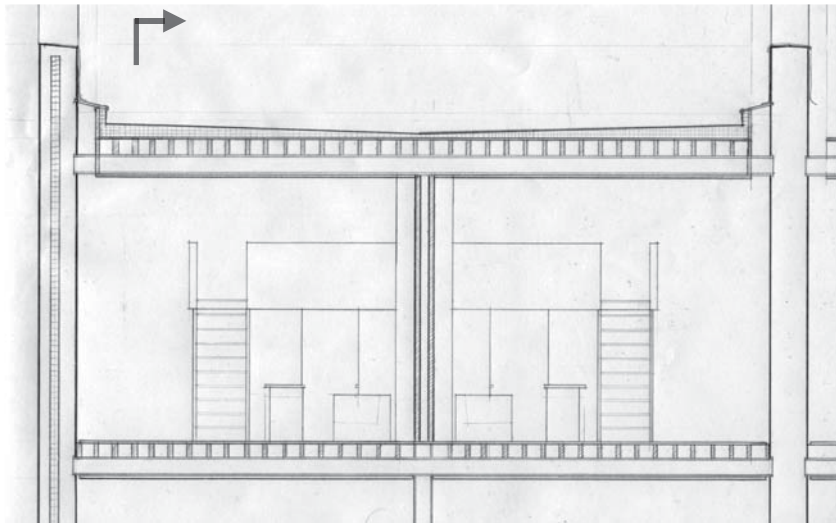


Next, the wall remains unencumbered from the technical necessities of a living space. All of the utilities are placed in such a manner as to be withheld from the walls, as well as to be facing the walls such that the wall is always the main focus of the space. Two apartment units share one utility 'core' between them.

The orientation of the walls and character of the enclosure work to ensure that the walls are washed with sunlight, enlivening the surface and texture of the wall.

As the warmth that the stone absorbs from the sun is comforting when we are cold, hot water pipes inside the wall warm the wall when the weather is cold. Alternately, the pipes can be used for cold water to cool the walls when the weather is hot.



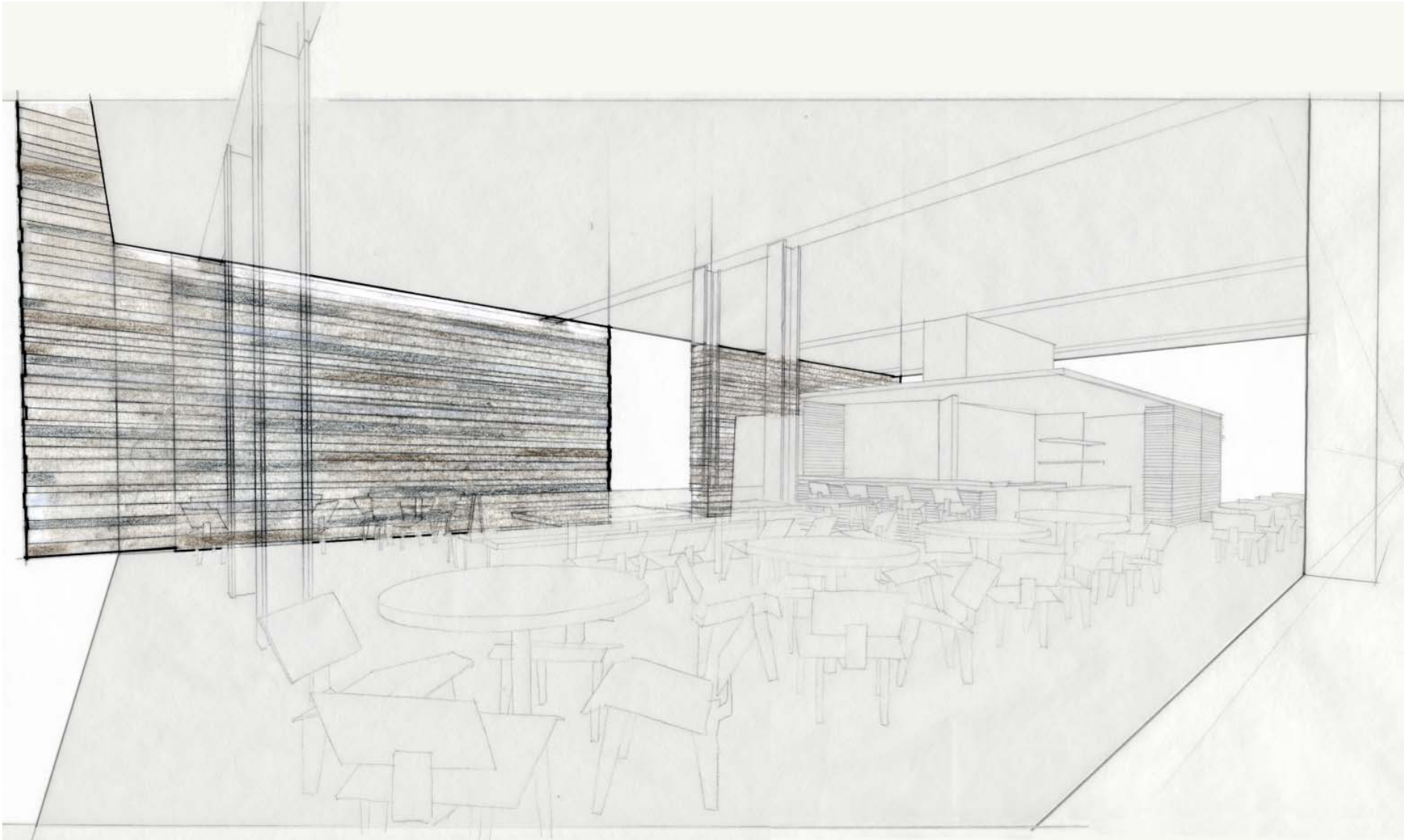


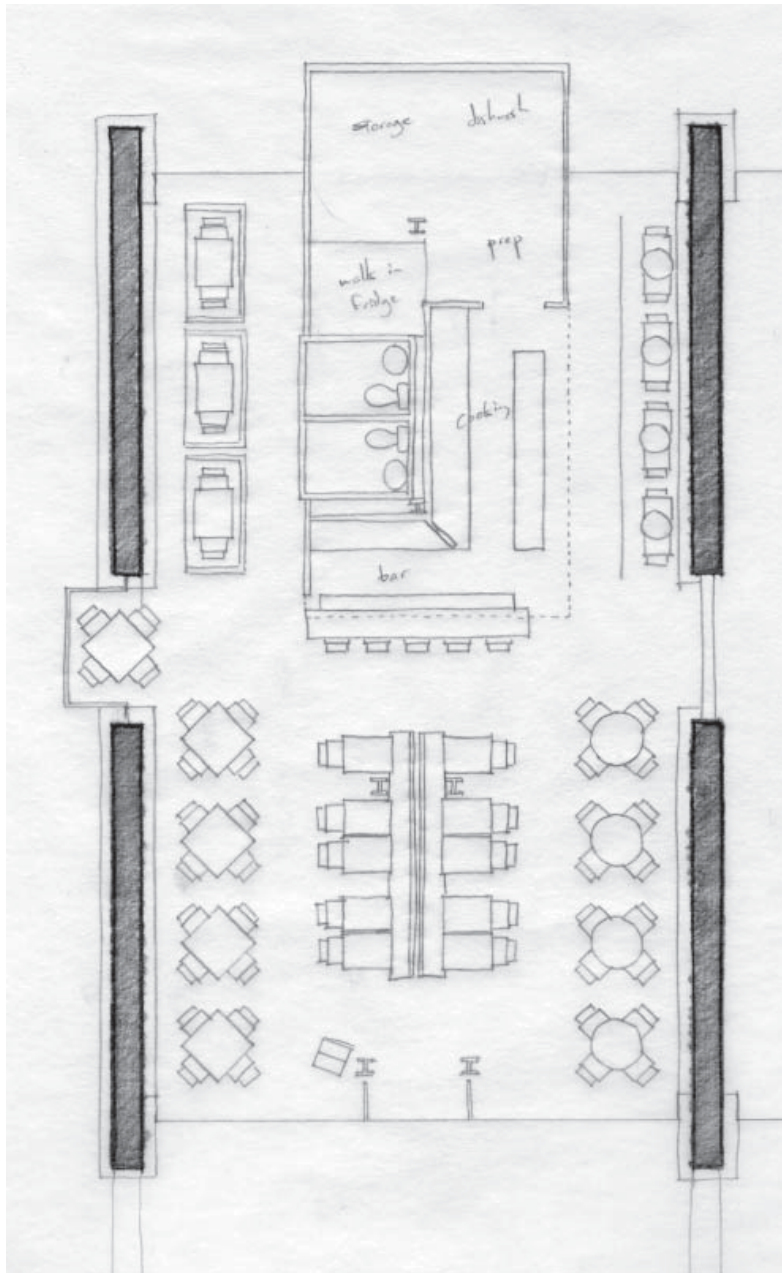


restaurant

The restaurant space is another double height space, placing emphasis on the vertical surfaces of the walls. Situated on the ground floor, the texture of the wall is primarily rusticated. Down-lighting from the reveal in the ceiling, and up-lighting from a reveal in the floor enliven the texture of the wall in a tapestry of light and shadow.

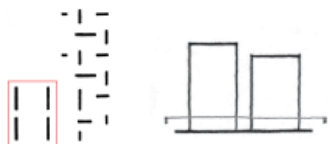
The unrefined texture draws attention to itself. Instinctively we withdraw slightly from the roughness. The tables are placed away from the wall with a space 'cushion'; indeed, the tables become a refuge – initially from the roughness of the wall, but ultimately, our proximity to the wall becomes a sanctuary from everything else. Acoustically, the texture of the wall absorbs the noise of the restaurant – other conversations, the clamor of tableware.

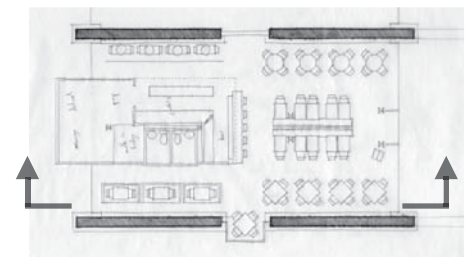
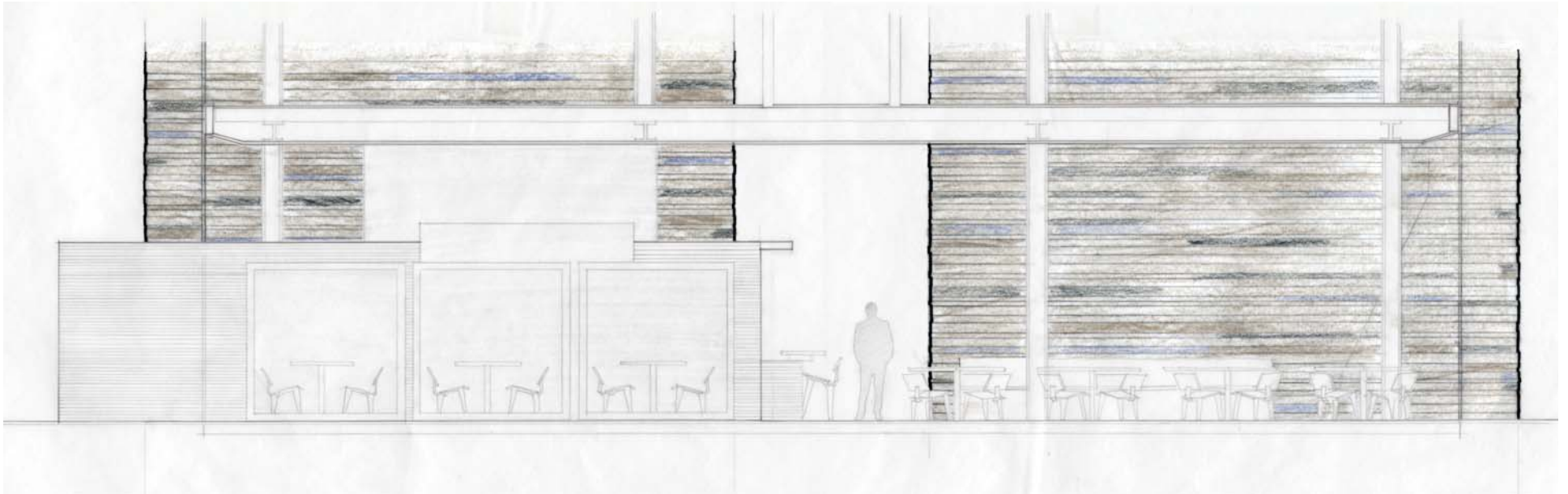




As in the apartment, the 'functional' necessities of the restaurant are withheld from the wall. The kitchen, storage, and restrooms are situated in their own box in the middle of the space – this ensures the presence of the walls is manifest. The 'service box' is pushed into the back patio area to give more open space between the walls and provide an experience of dining between urban walls, and to bring a continuity to the inside and outside spaces.

Along one of the walls there are three units where patrons can dine in nearly absolute privacy with a wall. A box of dark wood housing a table and two chairs, open only to the wall focuses attention on the presence of the wall and provides for an unique experience of communion with the wall.





conclusion

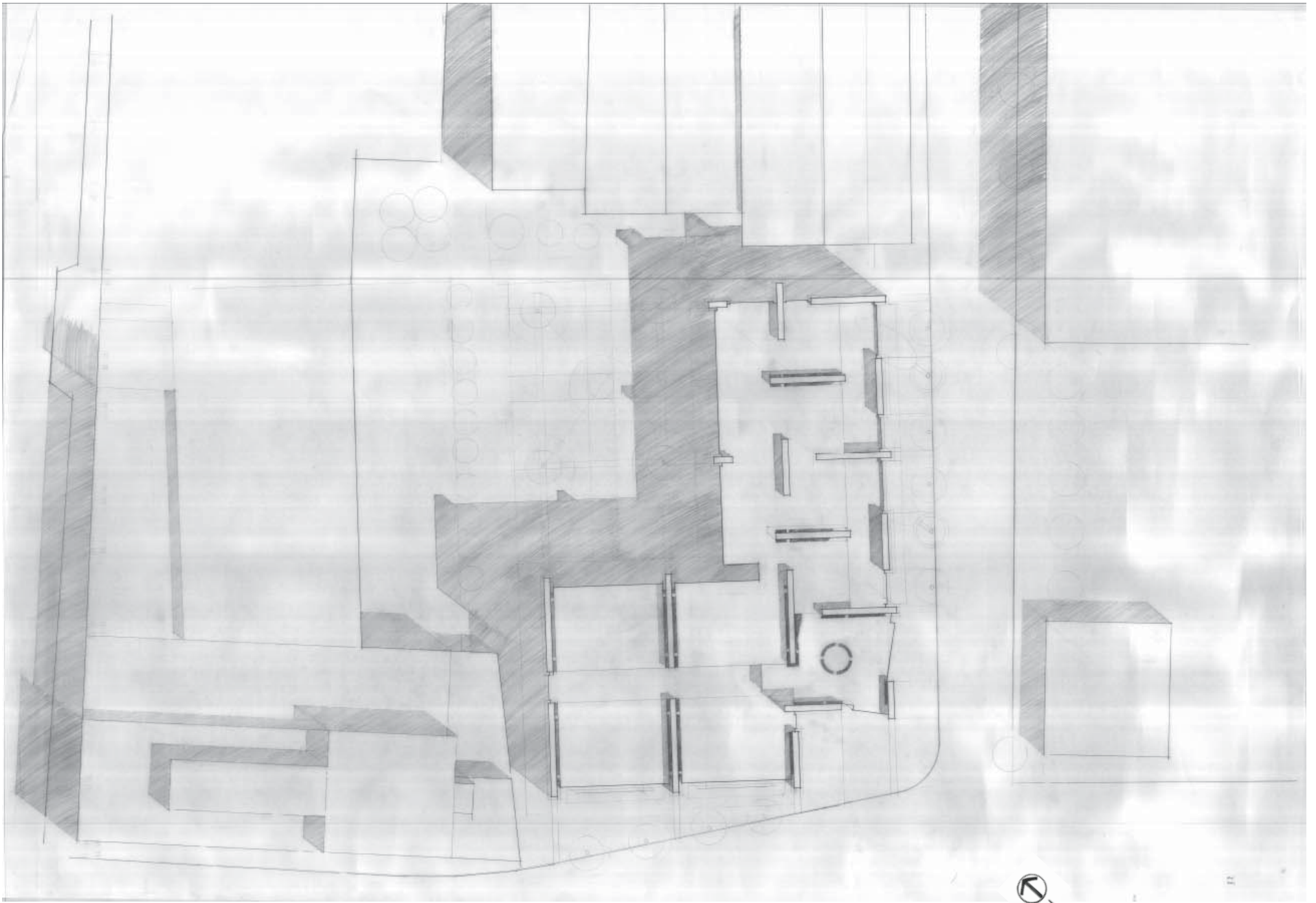
The presence of a wall begins with the relationships between its material and construction, its form and orientation. The arrangement of a group of walls can work together to both separate and unify space in a manner that enhances the presence of the walls.

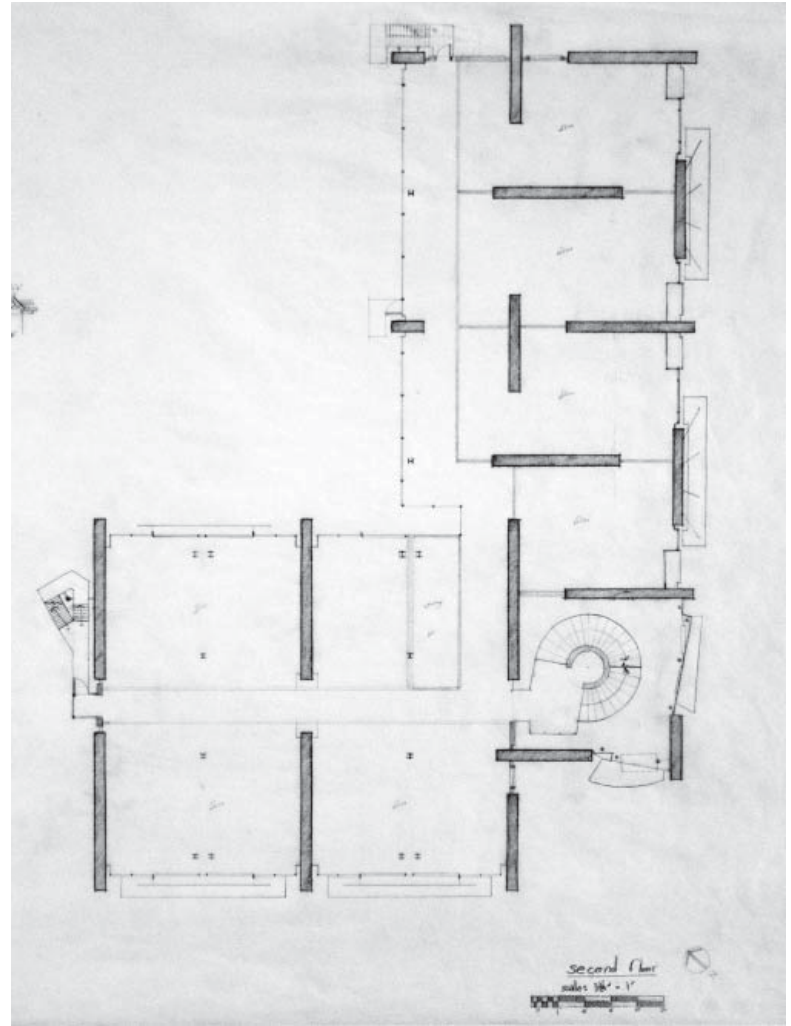
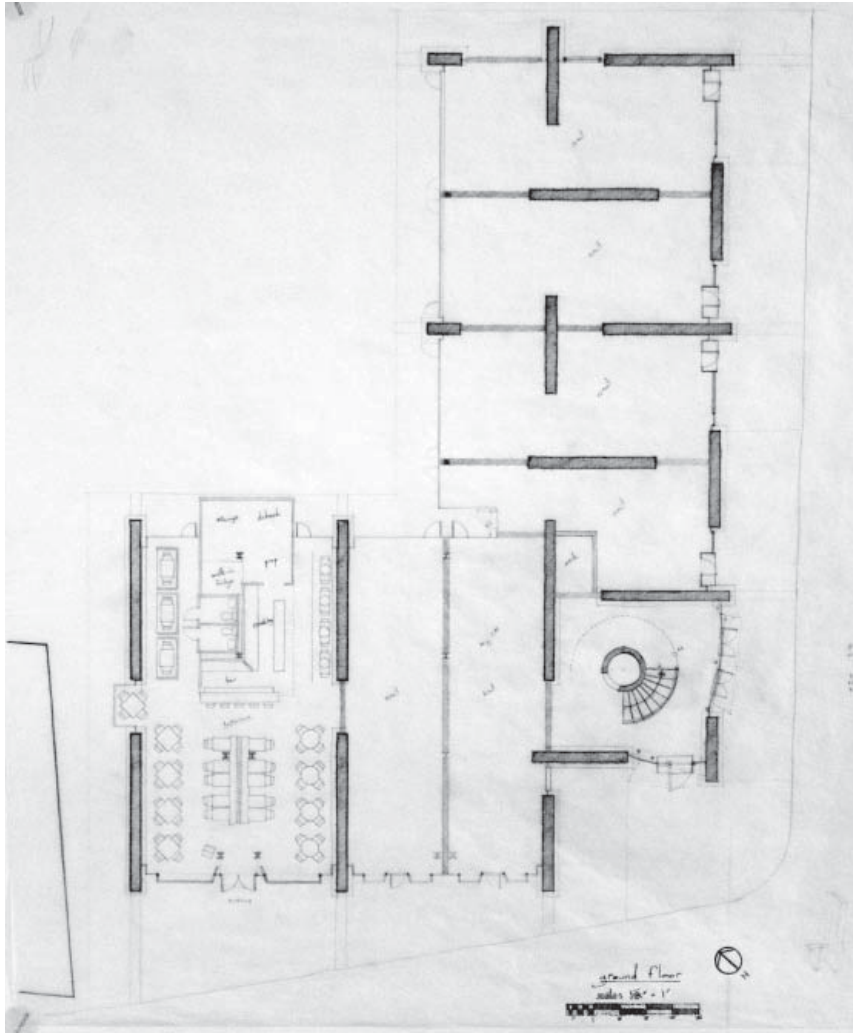
To enclose the spaces between walls while emphasizing their presence, we discover how to take advantage of these properties. The way in which other architectural elements interact with and subordinate to the primacy of the walls serves to revere the walls. Inhabitants have the opportunity to engage and admire walls if they are directly accessible and when functional necessities are withheld from the walls.

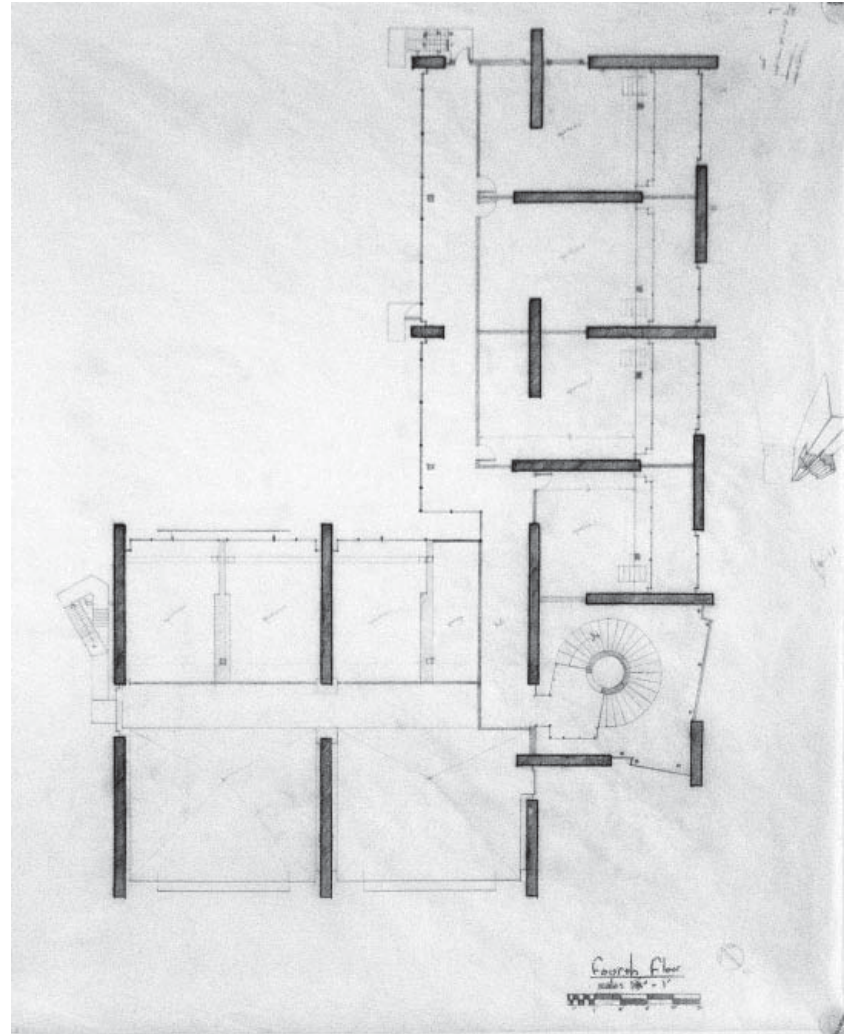
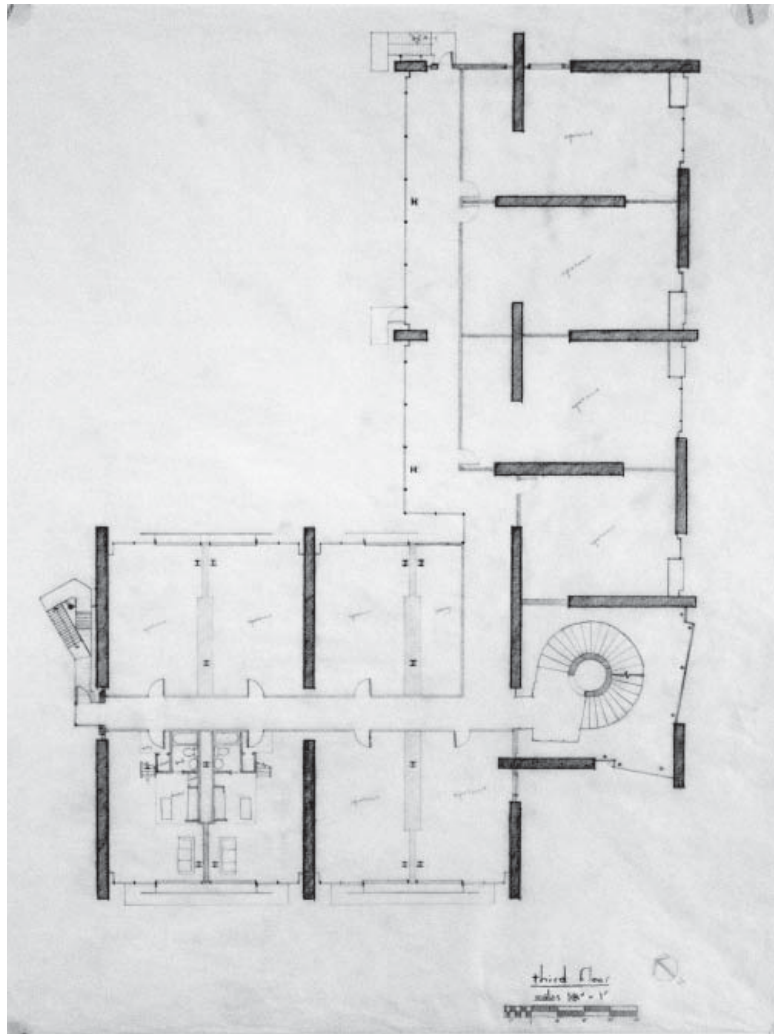
This thesis has been an exploration in how a set of urban walls come to enrich both the habitable space which they directly surround and that which surrounds them as part of the urban fabric. As necessary elements in an urban situation, walls are revered as monuments to the urban situation and as such, their presence is celebrated in the act of enclosing and inhabiting the spaces between them.

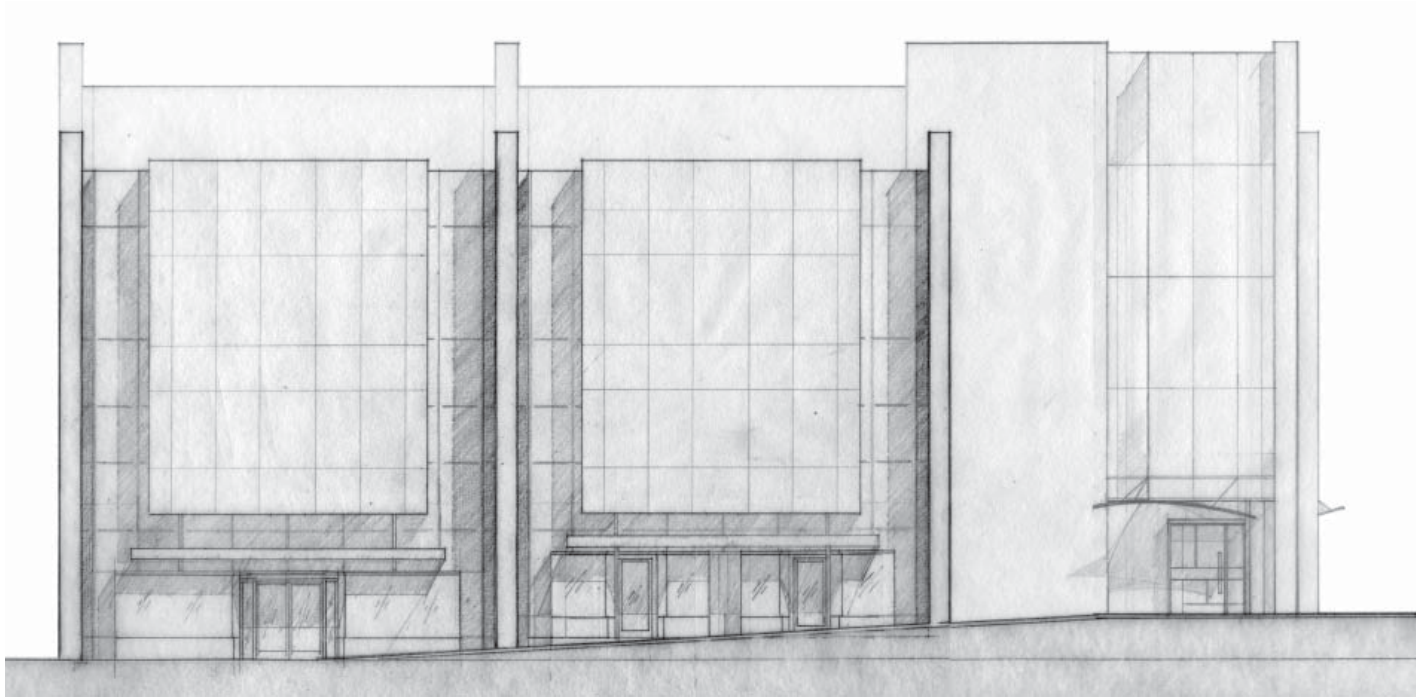


project drawings

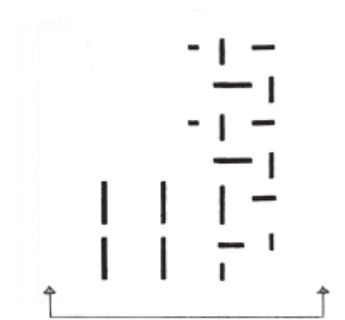


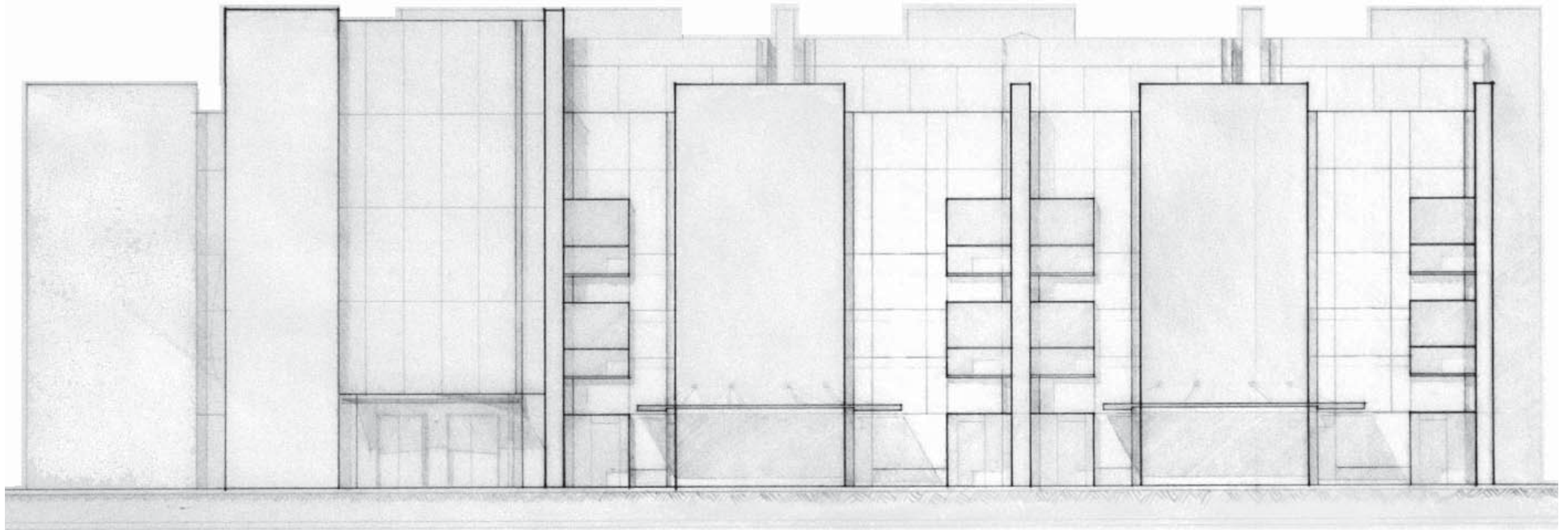






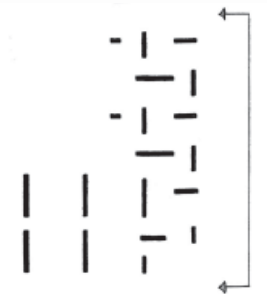
draper road elevation
scale: $\frac{1}{8}'' = 1'$

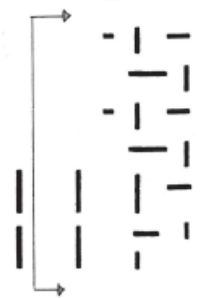
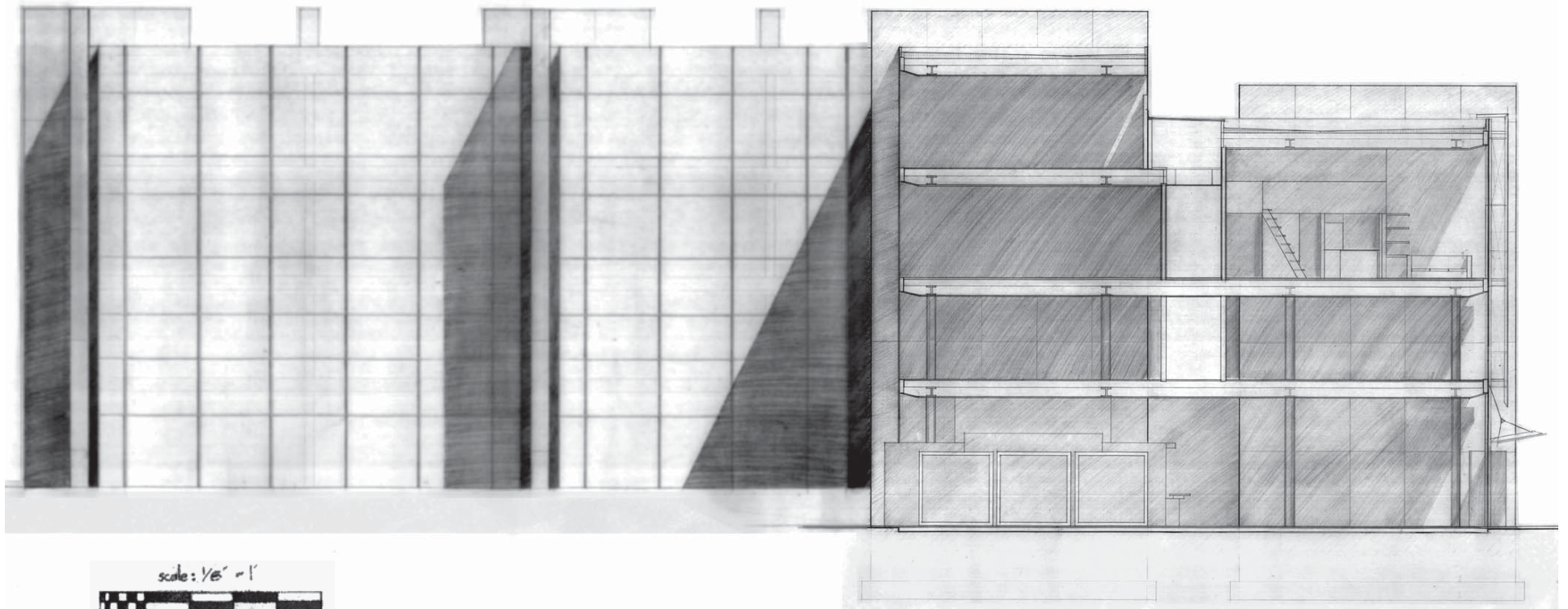


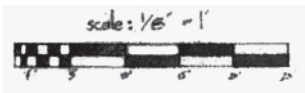
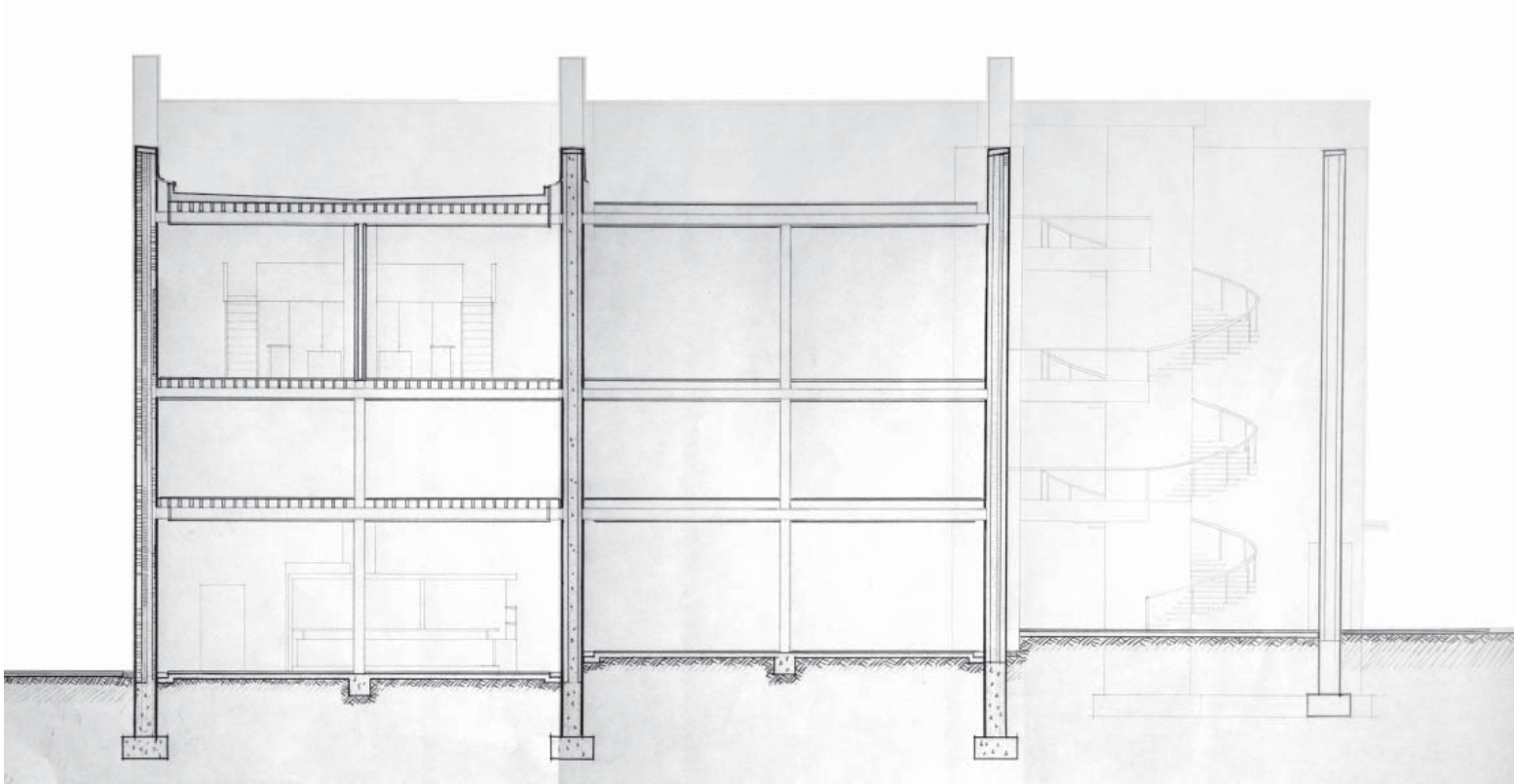


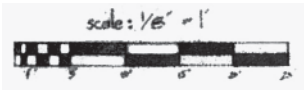
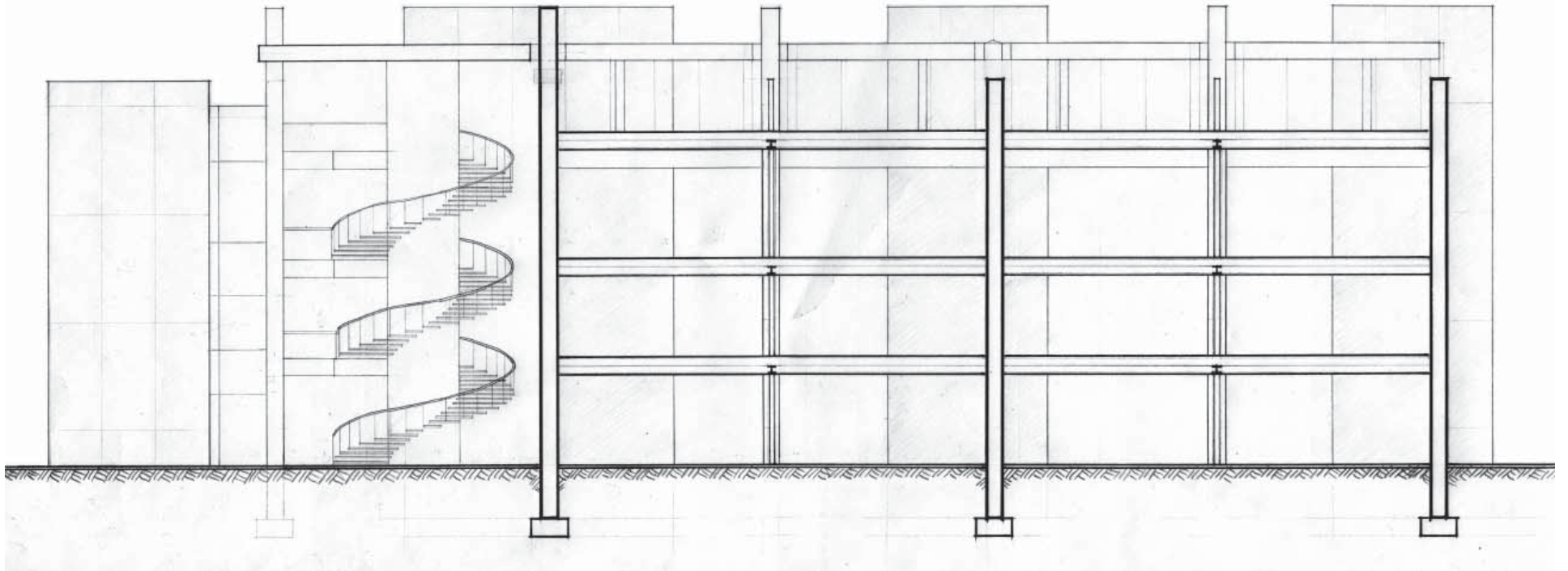
Jackson street elevation

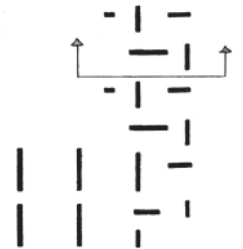
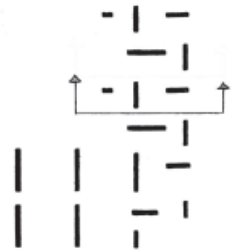
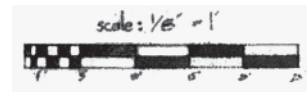
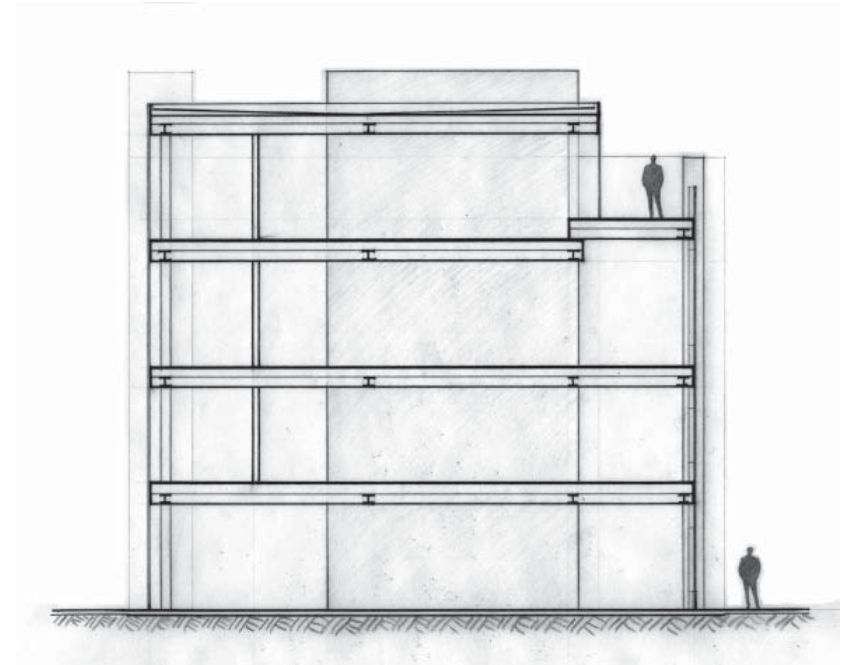
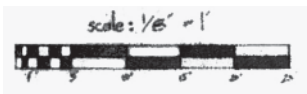
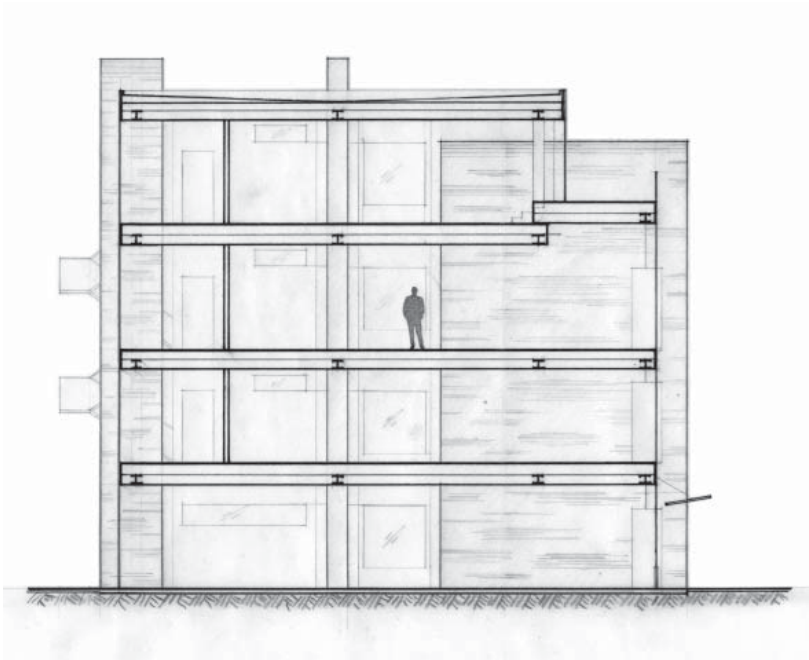
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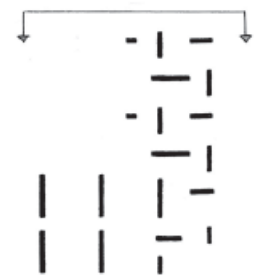
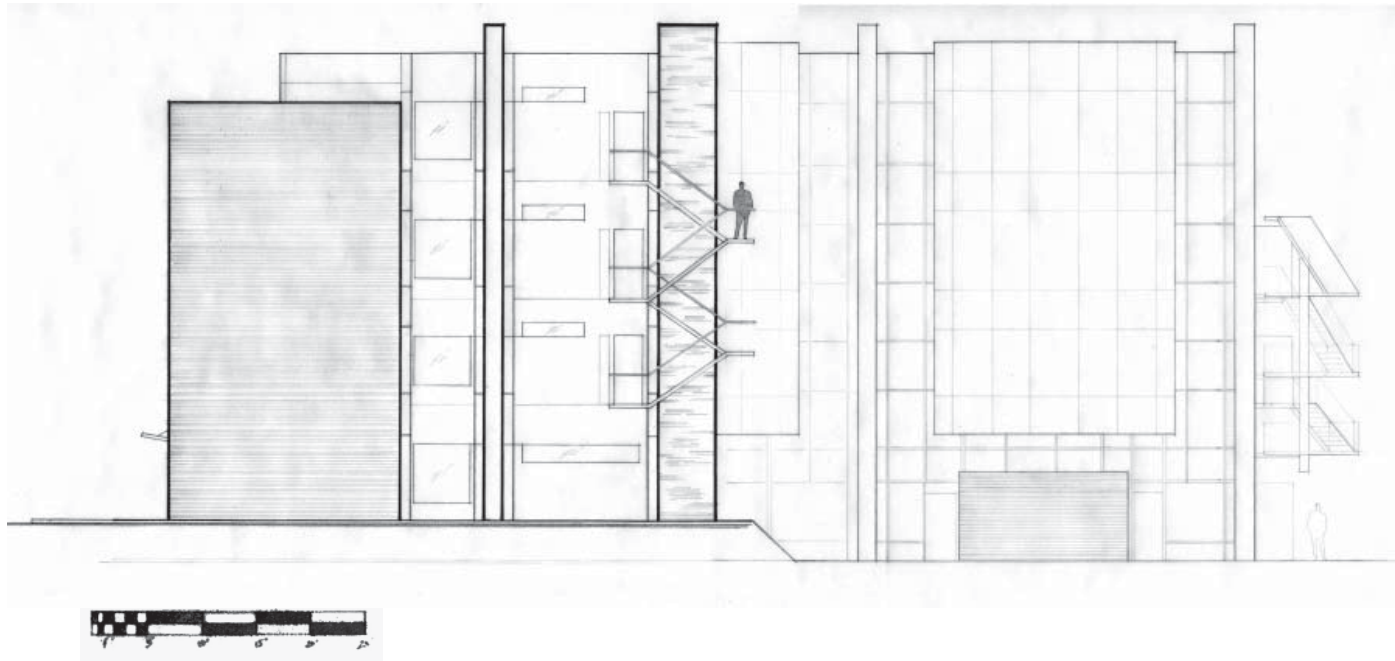


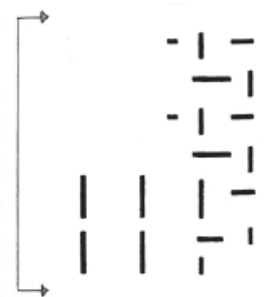
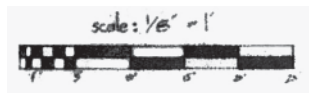
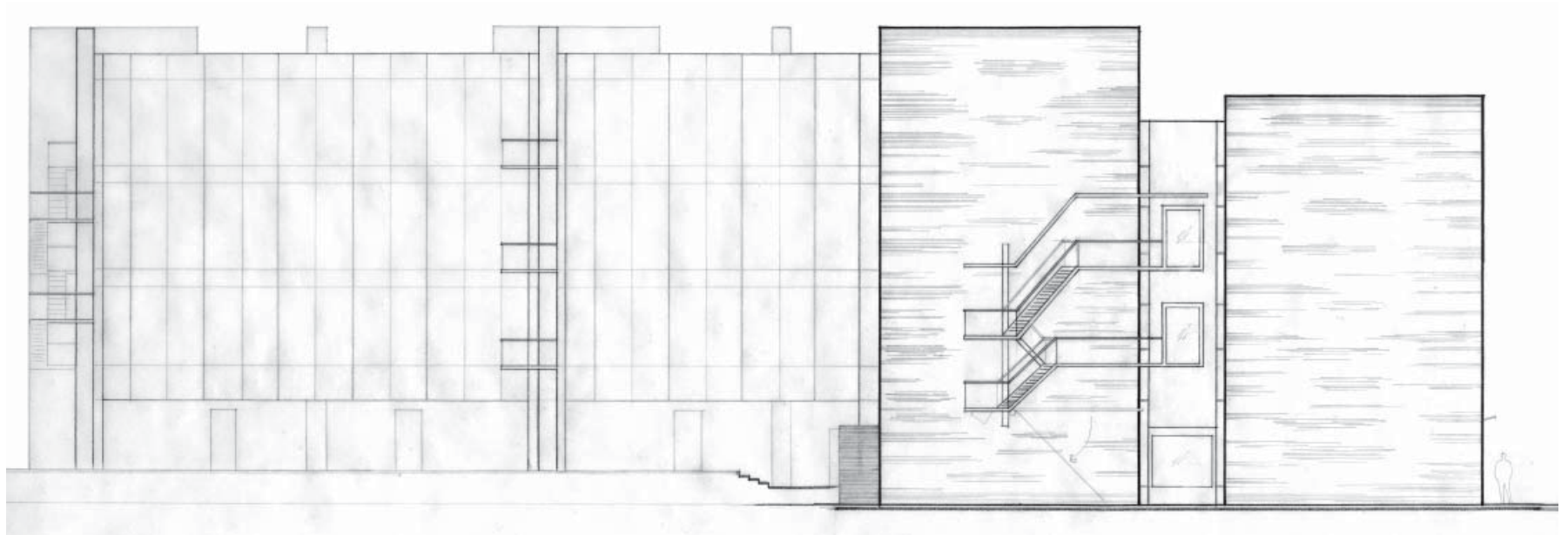


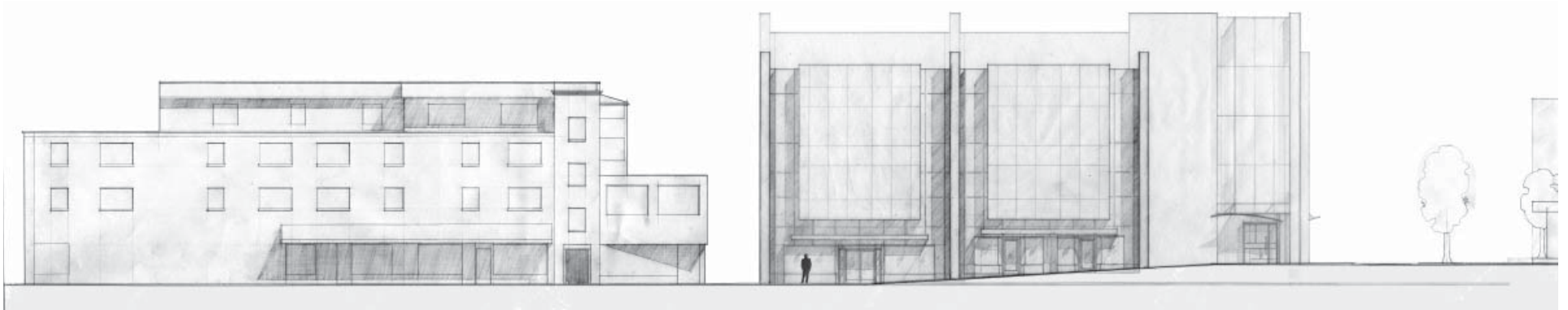




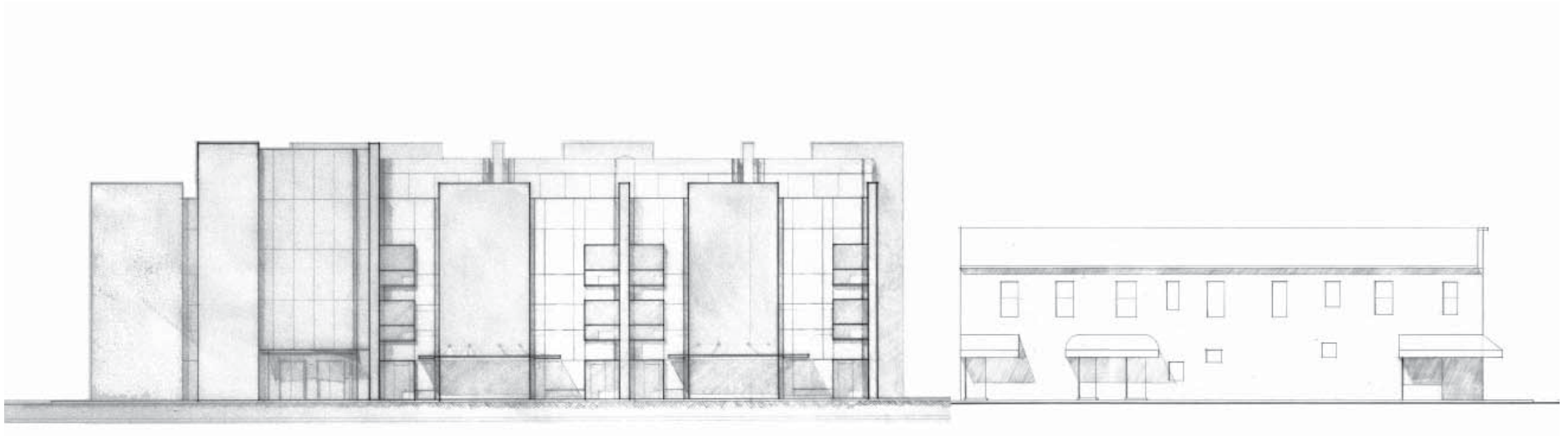




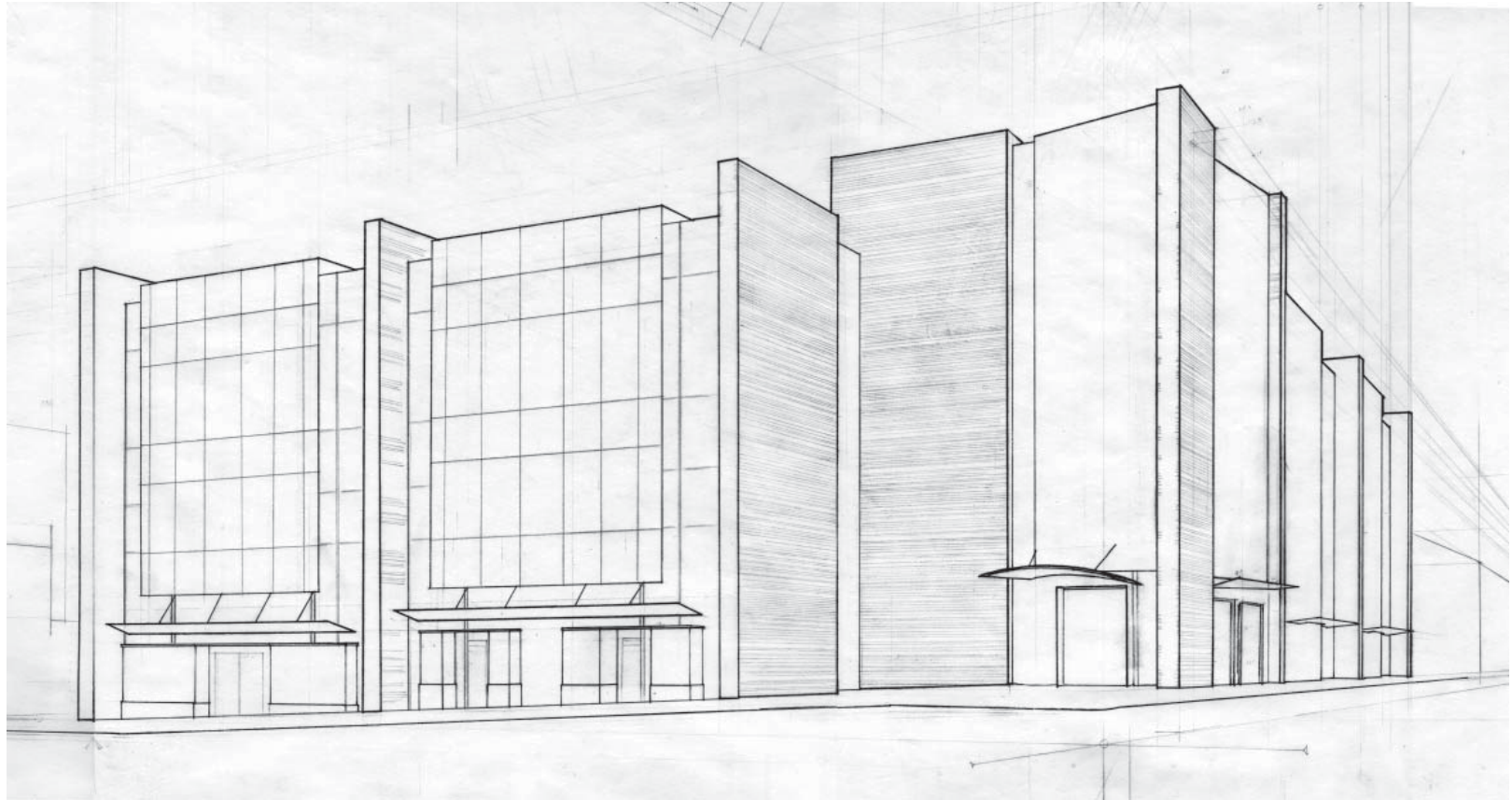


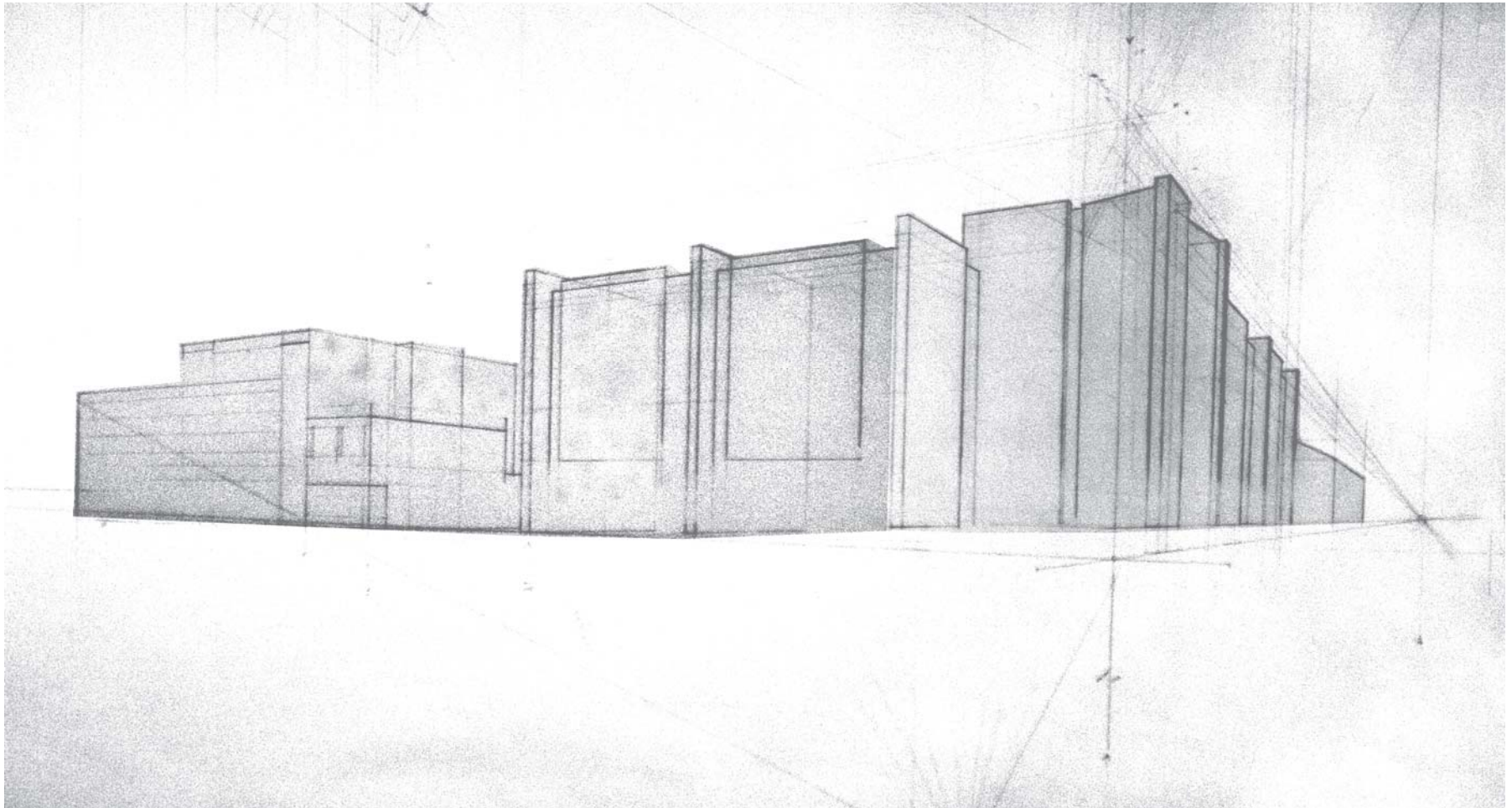


Draper Road



Jackson Street





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