

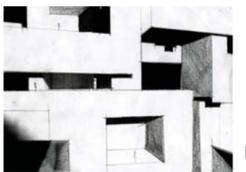
Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfilment of the requirements for the degree of

Master of Architecture

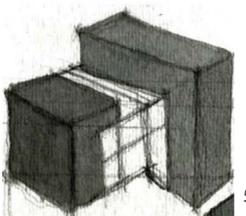
In Architecture



44



II



56

William . U. Galloway Committee Chair

Steven .R. Thompson

Howard .S. Gartner

Key words

Form - Place - Villa - Village - Framing

A Harmony of Form and Place

By

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June 11th 2012
Blacksburg, Virginia

Abstract

My thesis explores an idea about a spatial transformation within a volume. This transformation occurs internally and externally with the introduction of light. The volumes become objects that can be studied, analyzed and transformed again.

This constant transformation is guided by certain proportional relationships that are formed within the formal construction of the cubic volume. Sections and models are generated to study aspects of the cube that may realize an architecture of place.

A villa is used in this mode of study as a basic unit of human habitation. The hierarchical relationships within the parts of the villa mirror that within the formal construction of the object and the interactions that are necessary between the parts.

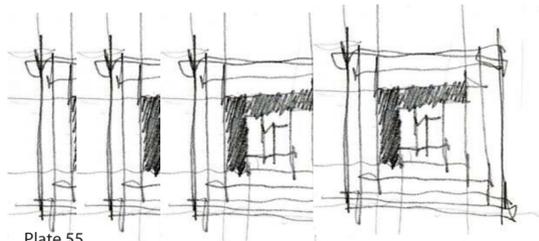
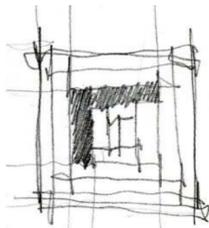


Plate 55



Transformation of a spatial diagram

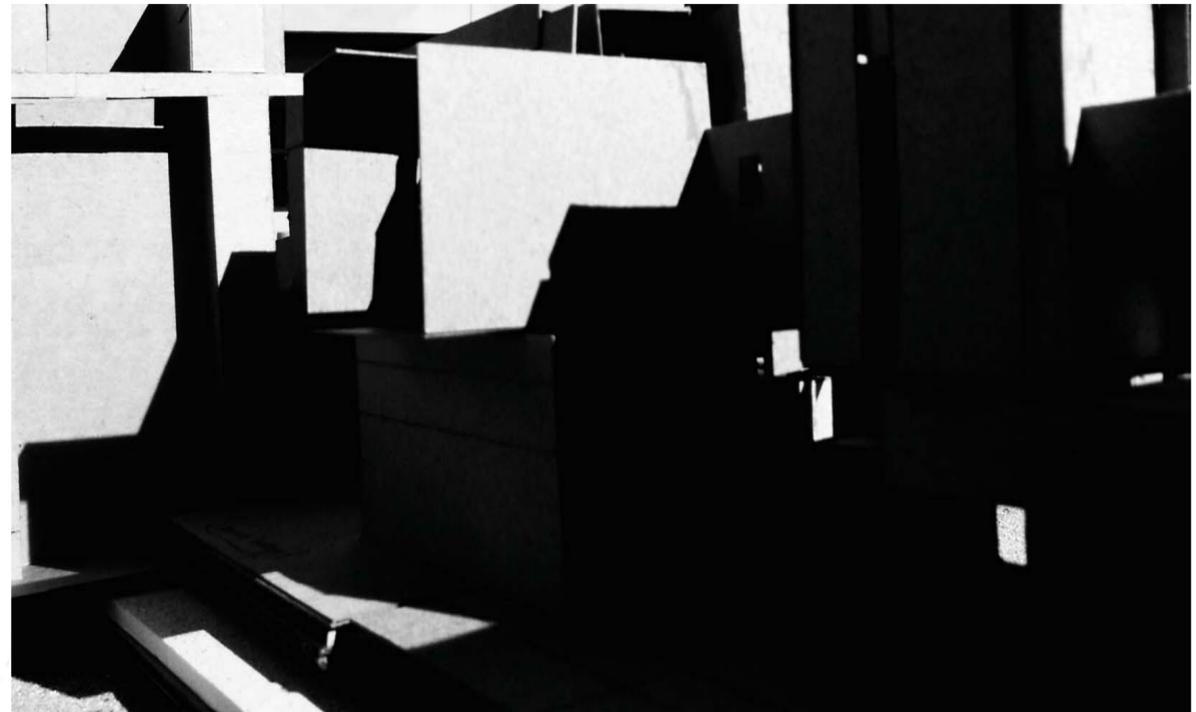


Plate 1

Things Anticipated

Acknowledgement

To William Galloway, Steve Thompson and Scott Gartner,
Thank you for challenging me to greater achievements.

To Hans Rott and Gene Egger,
For getting me back on track.

To My Mother, Helen Nnadi
For the hand holding and therapy sessions throughout the year

To my friends and Colleagues,
For the conversations and words of encouragement through the years

THANK YOU ALL.
It would not have been possible without you.

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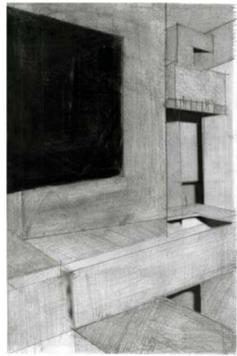
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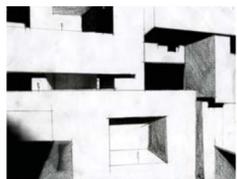
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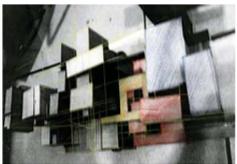
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I



II



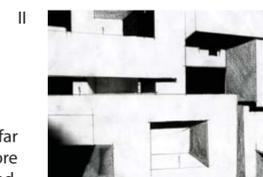
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Plate 2

Ruins of Hadrian's Villa

BOOK ONE
The Villa
From Ancient To Modern



The villa is the place where one could retreat into seclusion, far from the trials of everyday life in order to enjoy nature, restore one's spirits and enrich the mind.

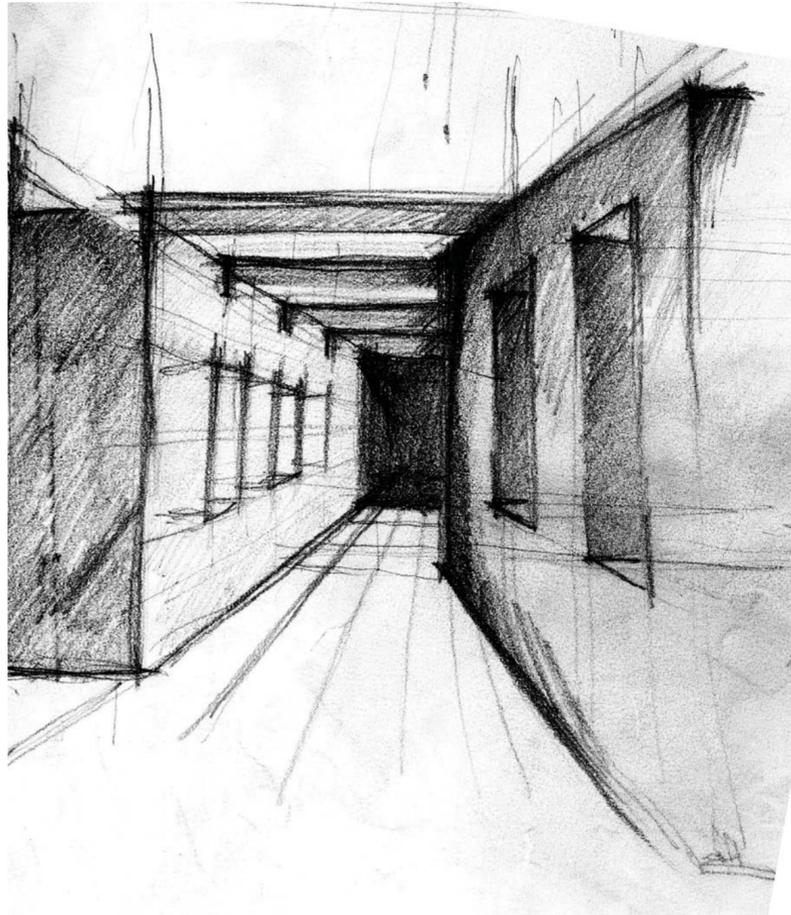


Plate 3

Where two VOLUMES meet

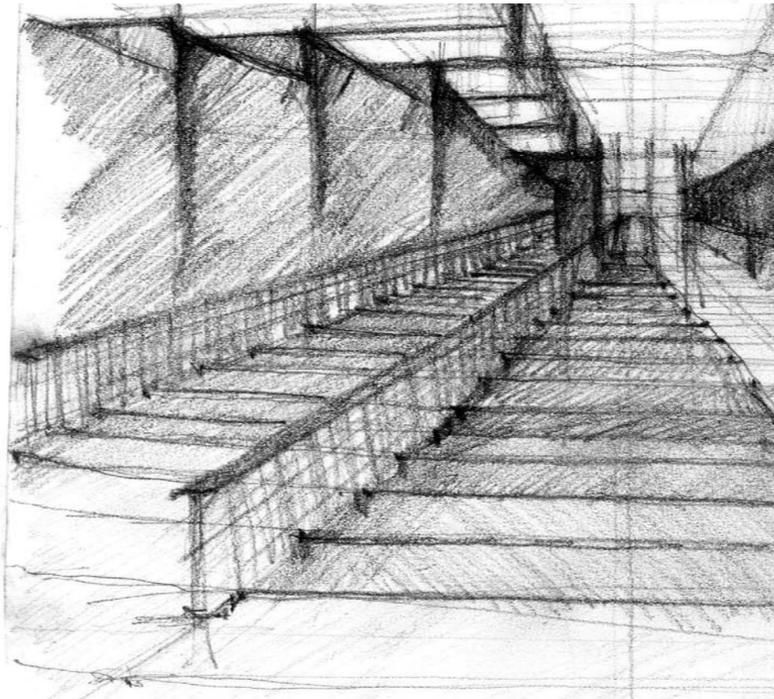
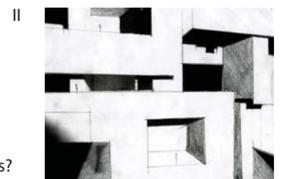


Plate 4

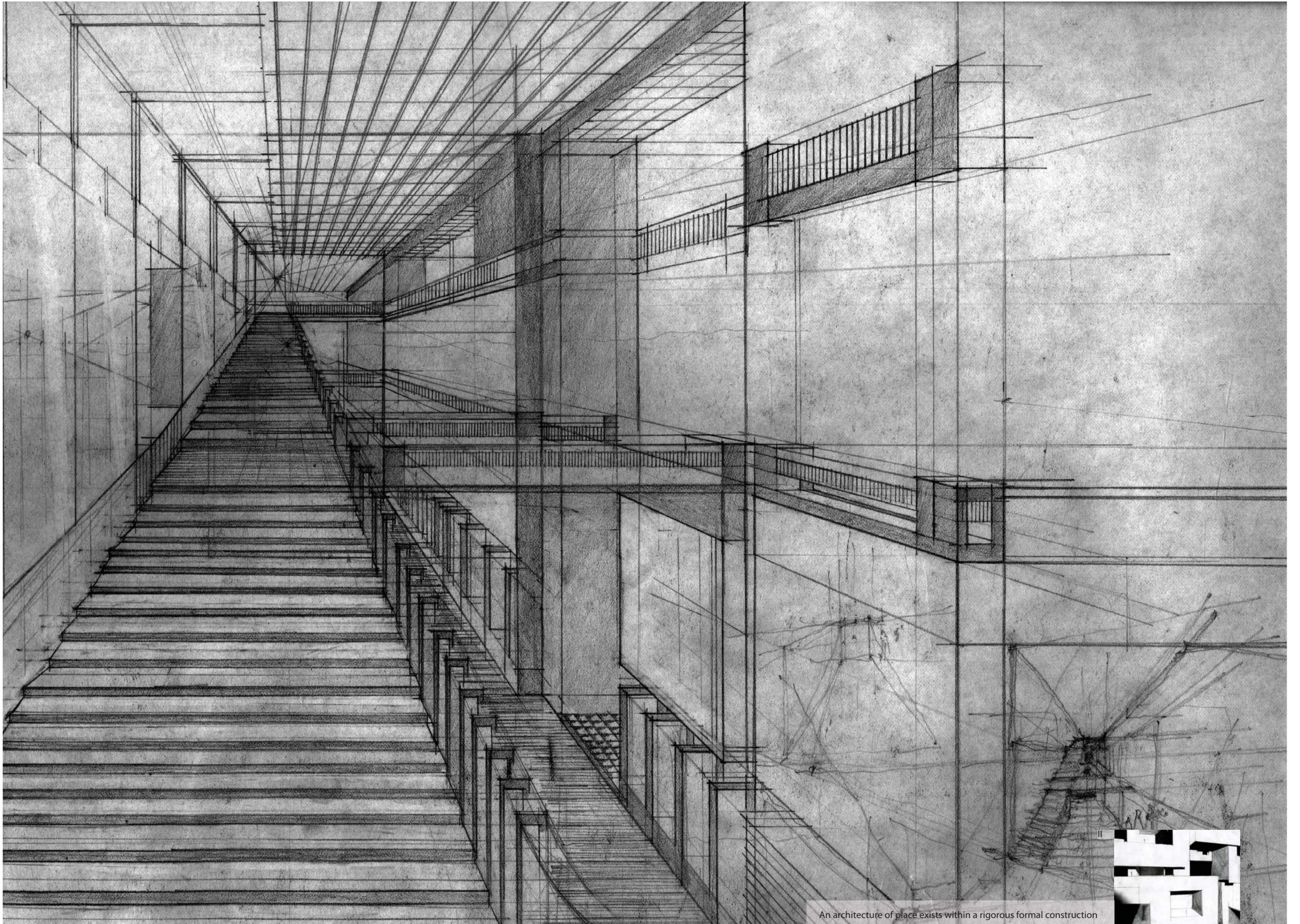
Where two PLACES meet

"Necessities compels us to depart from symmetry so as not to impede utility" - Vitruvius

The basis of the formal composition is geometric and proportional within the application of design principles. The methods of geometric design employed are easily interpreted because they reinforce the construction principles within it.



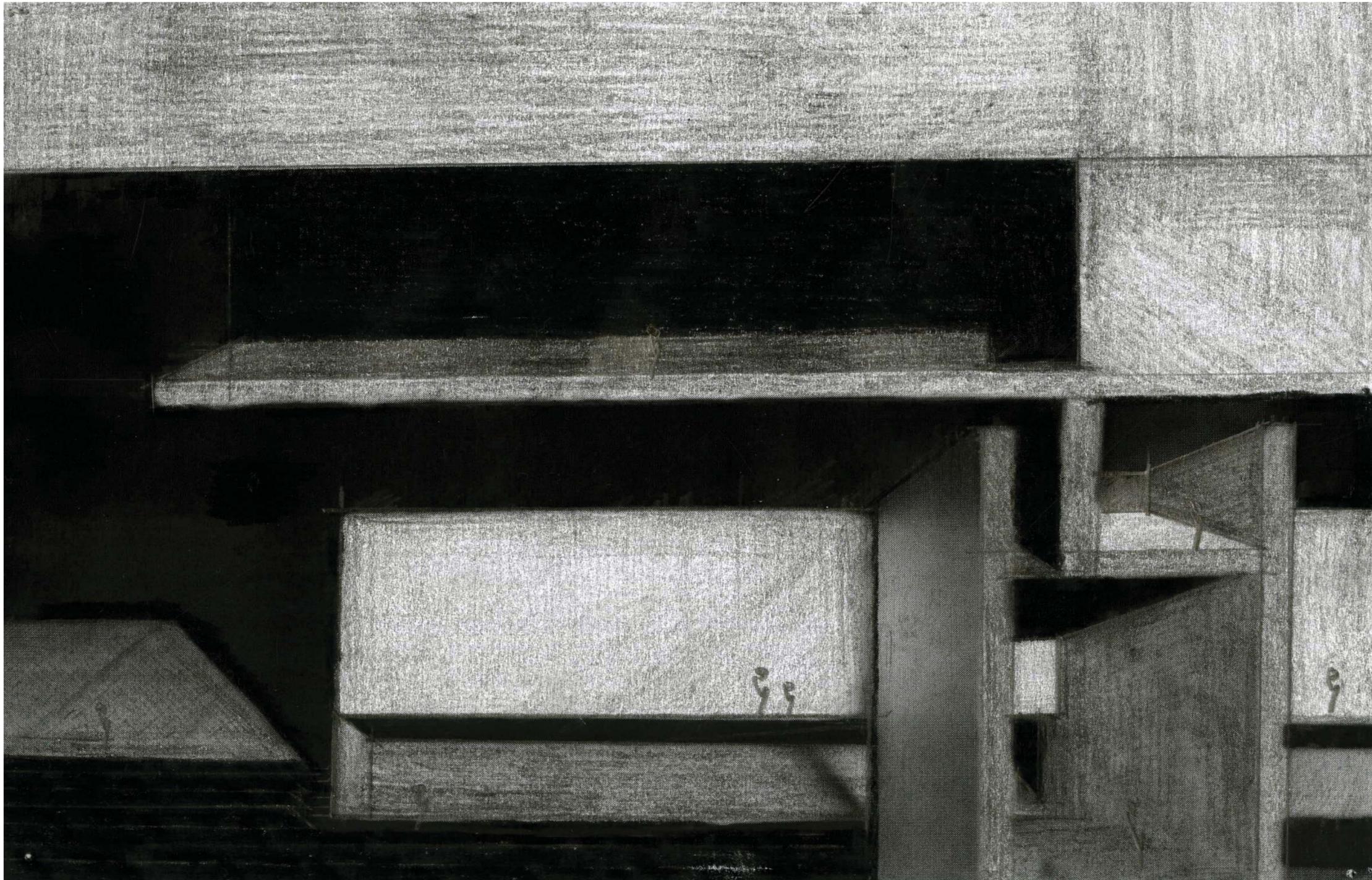
Is it Place-ful or Place-less?



An architecture of place exists within a rigorous formal construction

Plate 5

Where two PLACES meet- The Grand Stair Promenade



Roof promenade

Living Space

Attic

Mezzanine

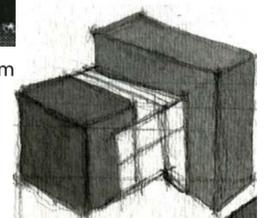
Interstitial Space

Living Space

Basement

Plate 6

Things remembered - Interior sketch of promenade around the Grand Atrium



To preserve the form, only window walls are adopted

44

A study of the Palladian villas revealed the ideal form of a cube and often compositions organized around two axes intersecting at right angles. The primary axis running from front to back through the house, the center line or axis of symmetry divides the house into two parts. In this proposed iteration of the villa, a distinction is made between the closed facade on the east and west elevations where the intersections are apparent and the theatrical facade that opens up to the south. Programmatically and architecturally, the two facades are worked out in totally different composition. At the center of the main house sits the gathering room (Atrium) which holds *the altar of the household gods*.

Major openings in the house are located on the south side to visually extend the living areas into the garden and pool. It sets a stage for all the activities public and private that go on in the main living quarters.

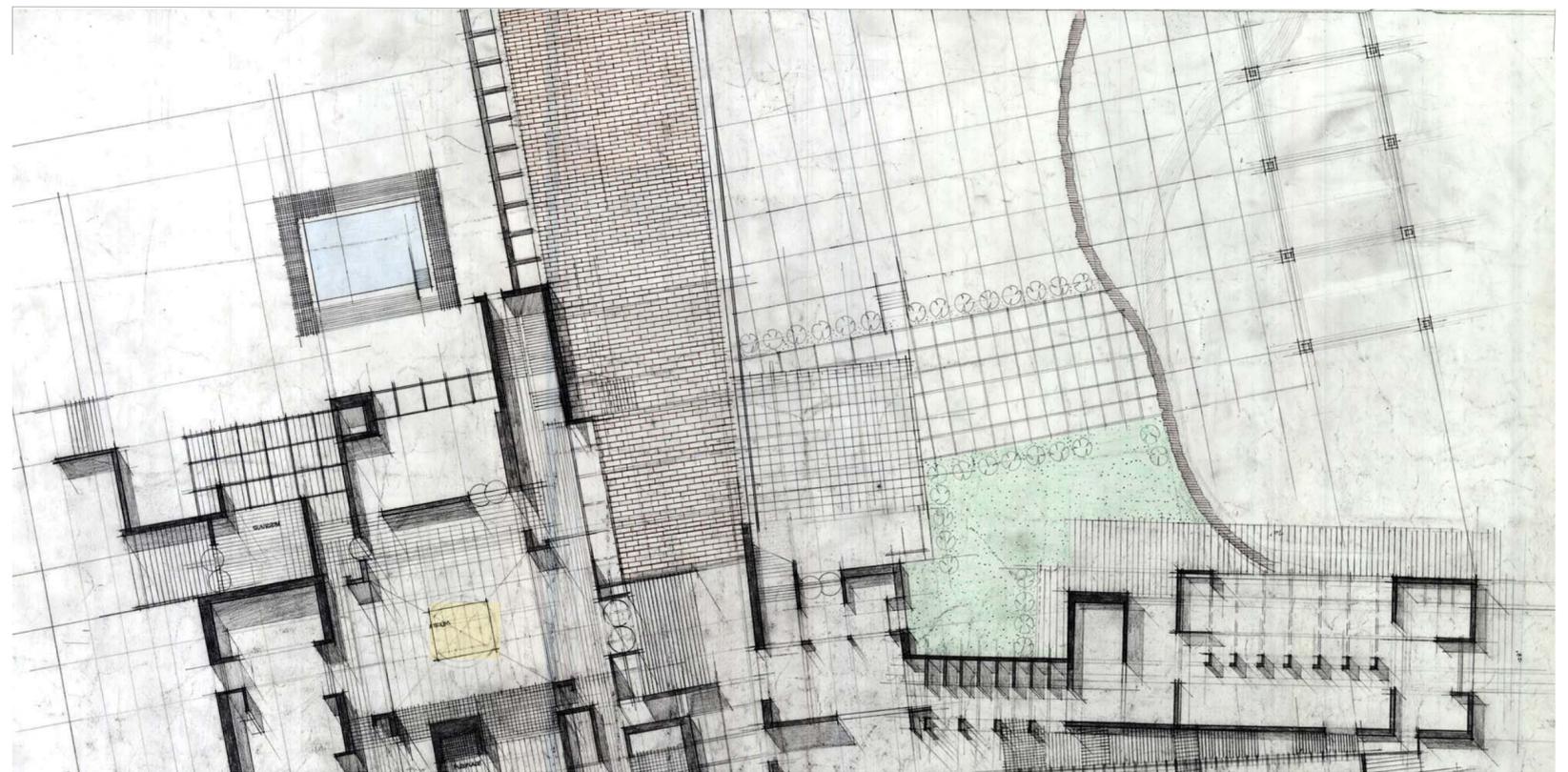
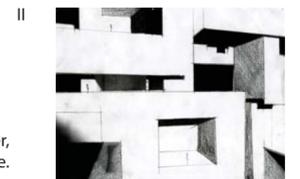
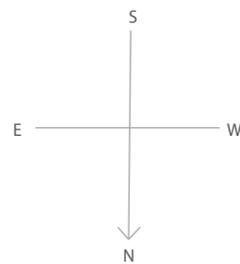


Plate 7

Partial Floor Plan -A room in the Landscape.



The Brick in the Walkway, The Green in the Lawn, The Blue in the Water, The Image of the House.

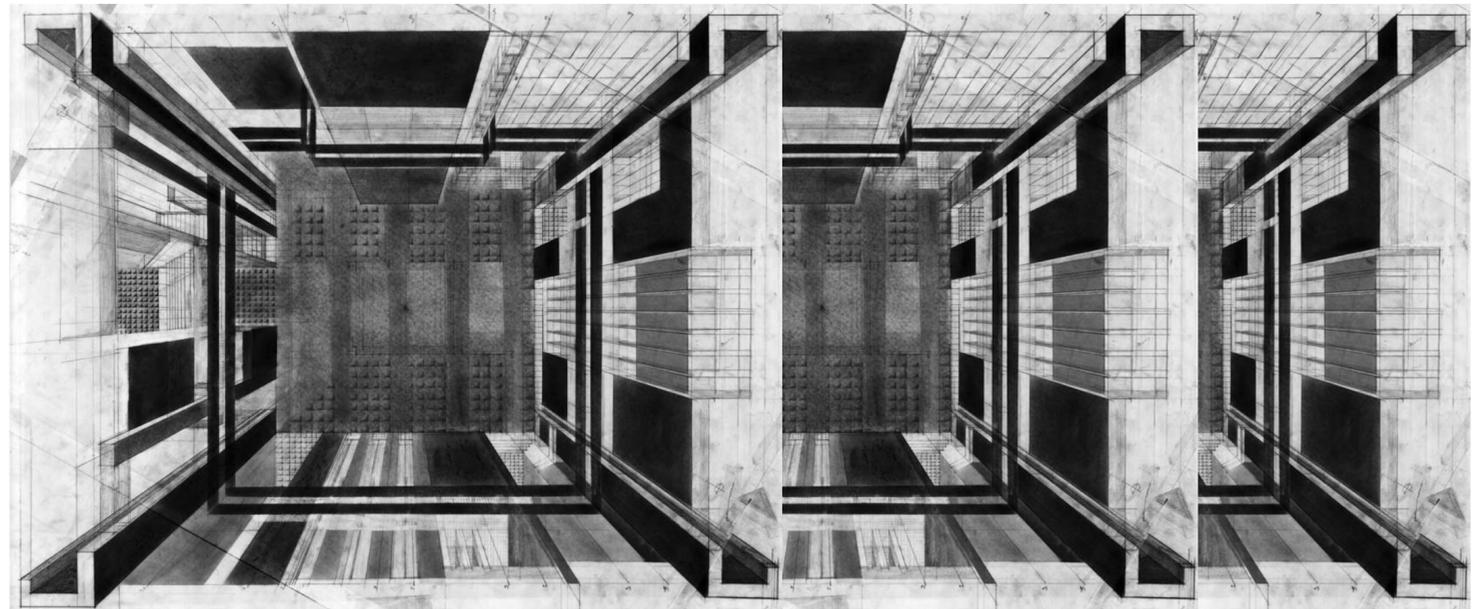
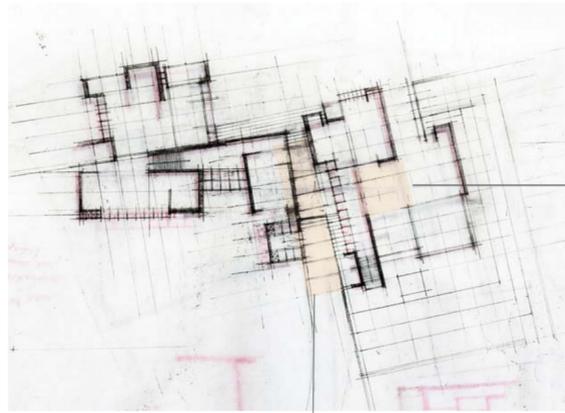


Plate 8

Atrium Proposal - Scheme 1

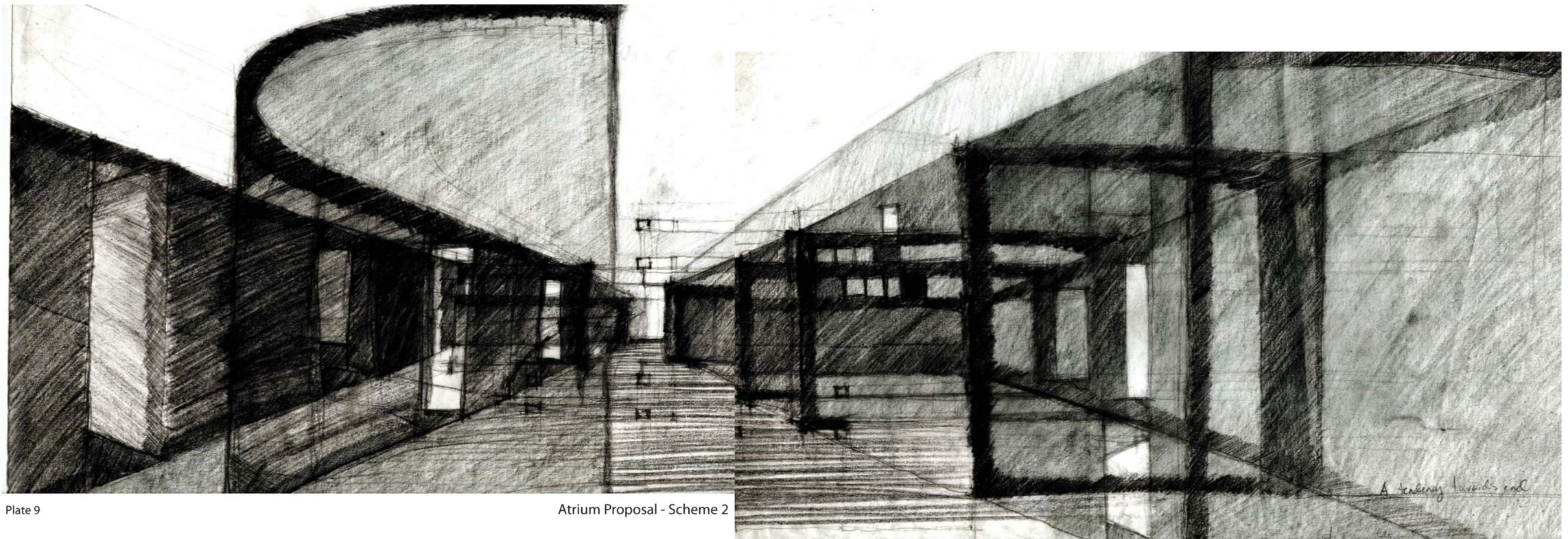
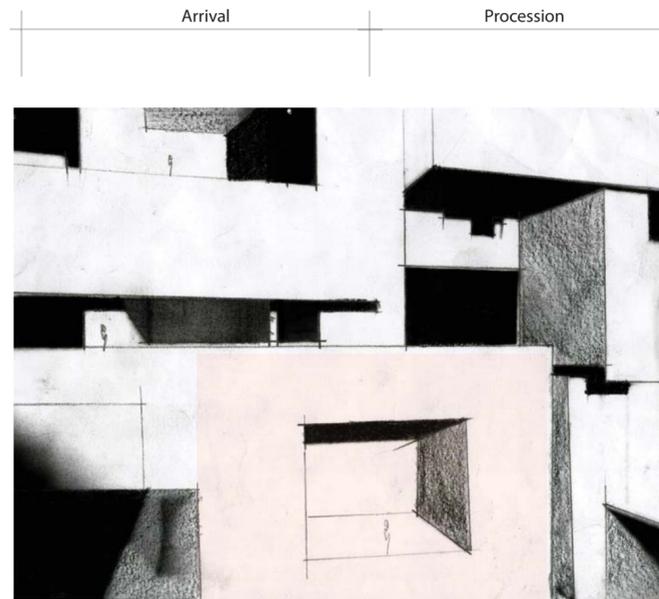


Plate 9

Atrium Proposal - Scheme 2



II Scheme 1

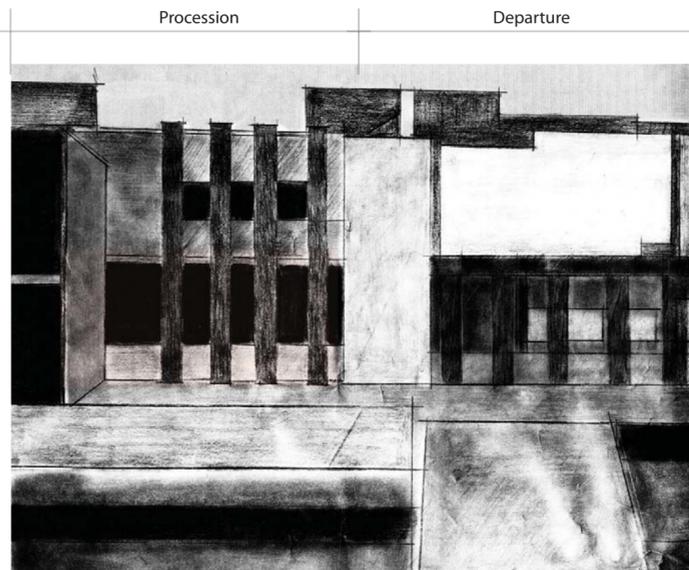


Plate 11 Composition of the Facade - Scheme 3

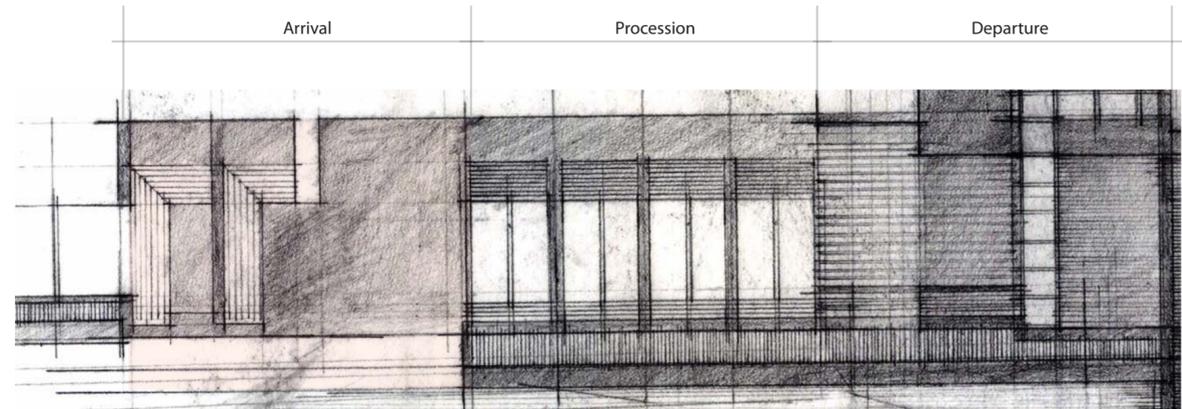


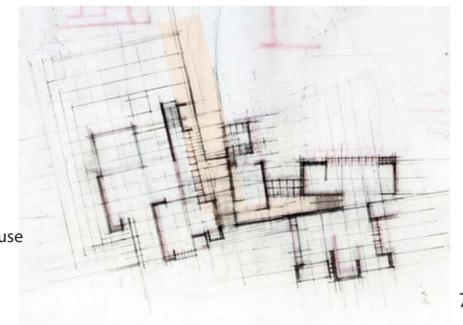
Plate 10 Composition of the Facade - Scheme 2

As with Palladio's characterisation of the city as a big house and a house as a small city, the landscape within the villa is treated as a small city. The structure of the main house is set on a plateau that extends above the surrounding ground level. The facades are also transformed to be interpreted at different scales when viewed from the exterior and interior. The procession through the house is celebrated and attempts to make the user aware of the movement of the body in space.

"I tried to place five objects on the table, a vase, a glass, an ashtray, a box of cigarettes and a matchbox... It was not at all easy. It lacked geometry, frame. There was an absence of order. Then I tried to implement the laying out method and the subdivision of distances according to the analogies of the golden section. The result was much more solid, the picture much more precise, the reference more visible".

- Dimitri Pikionis, Architect 1887-1968

L shape procession through the house



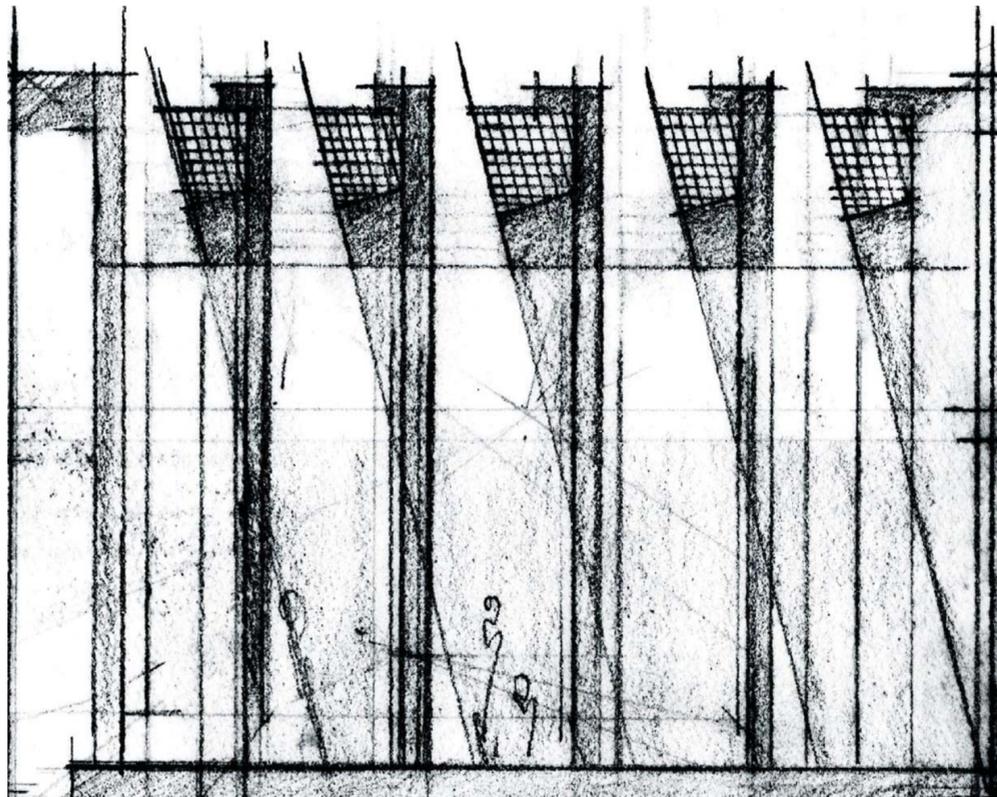
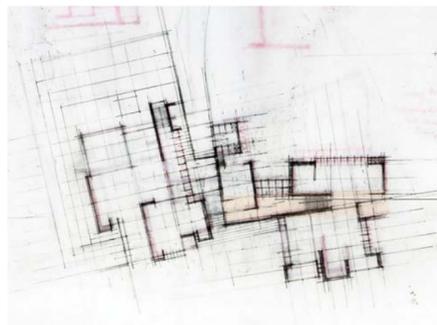


Plate 12

Exterior Elevation - Skylight of the Grand Stair

The incidence of light as a constituent given in the elaboration of the interior spaces, this is as much an element in the spatial plan of the villa as links which connect it to the landscape.



Guest Dining

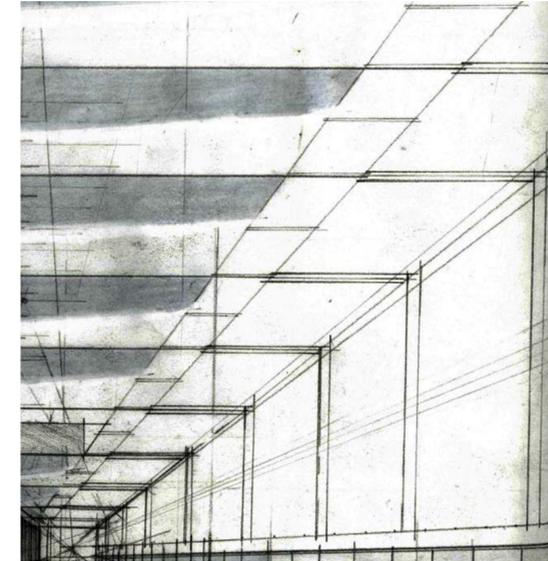


Plate 13 Interior elevation- The light becomes the object

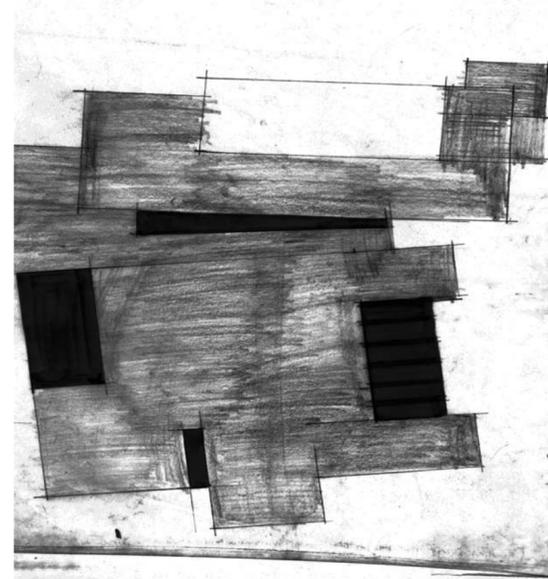
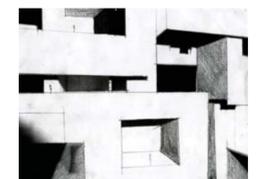


Plate 14

The roof lights



Interaction With Light

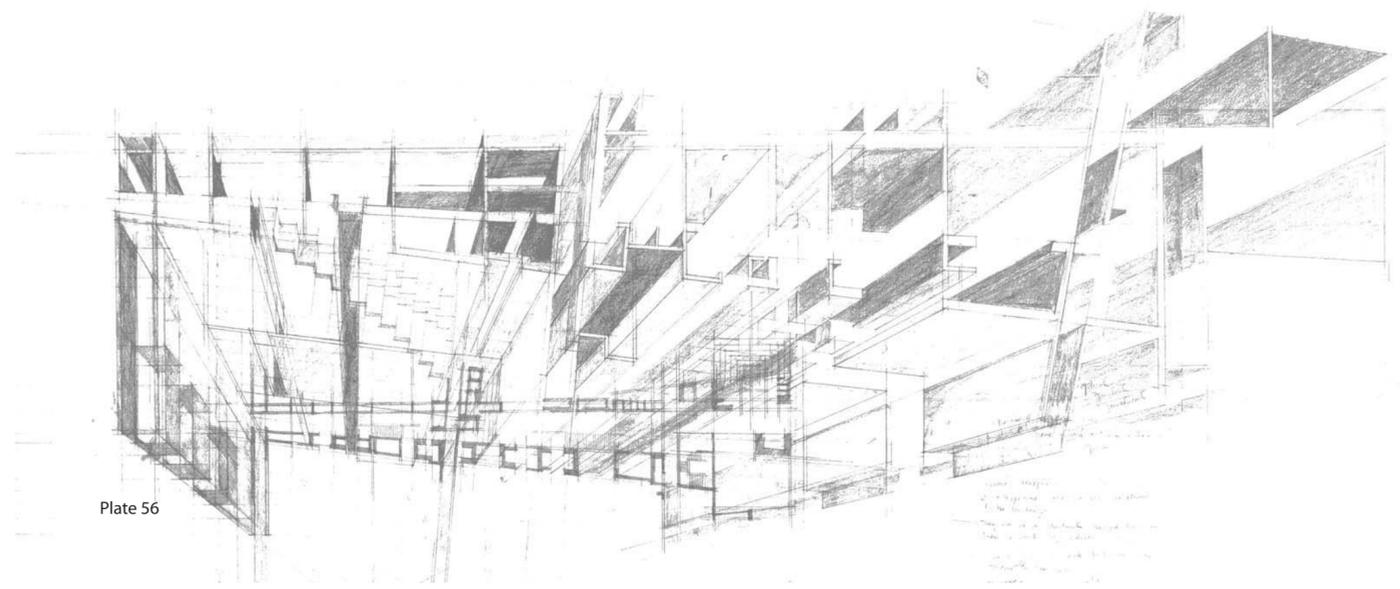
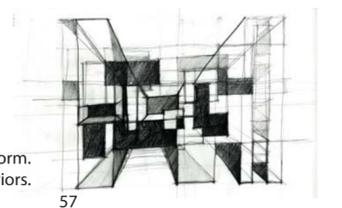


Plate 56

BOOK TWO
Towards An Architecture Of Place

The Model is based on a series of geometric interventions generated from a simple cubic form. The volumes are continuously shifted along a spatial grid and displaced to project light into their interiors.



57

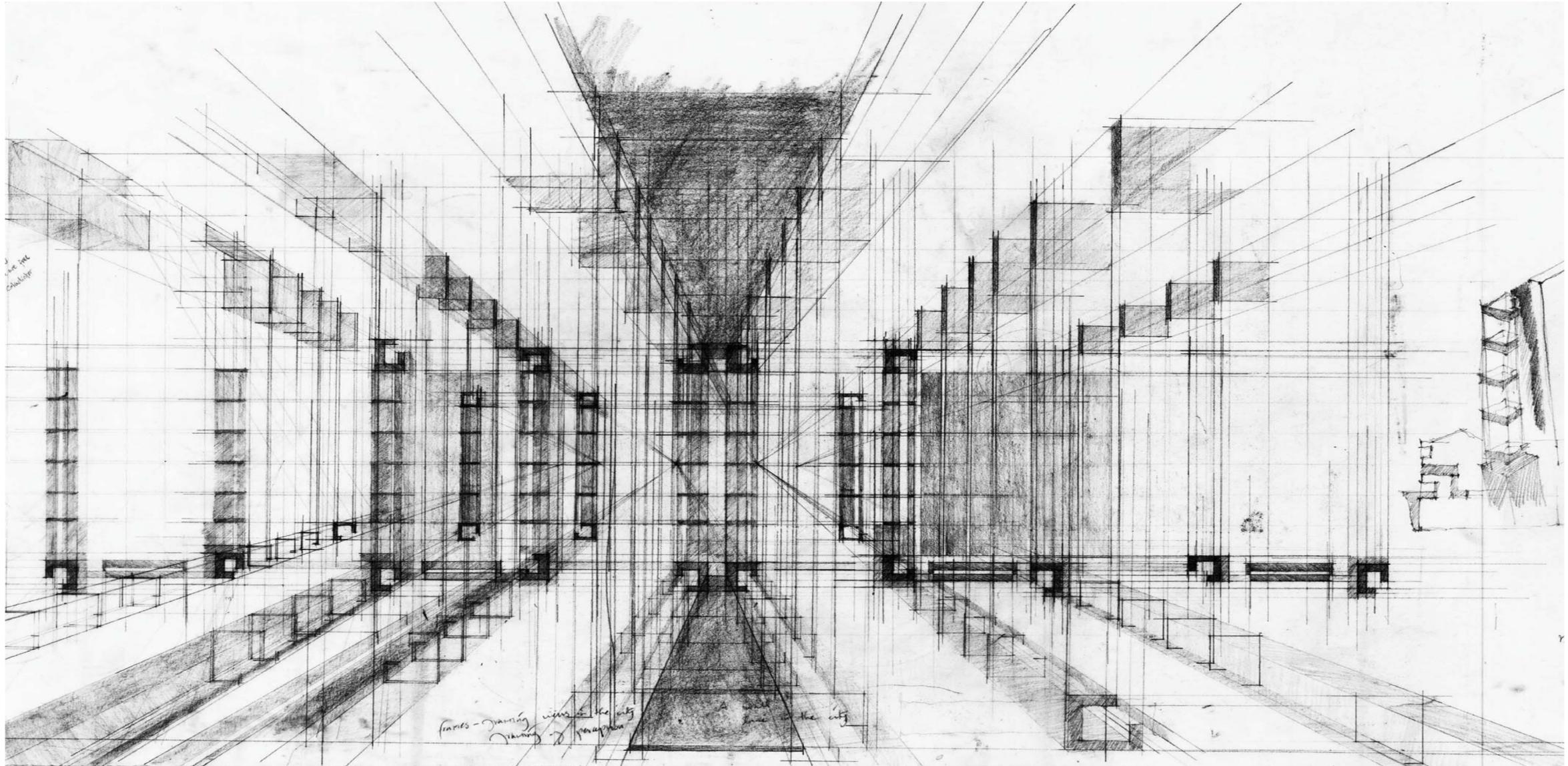


Plate 15

Conceptual drawing showing the L rotation within a spatial container in the ceiling, wall and floor planes.

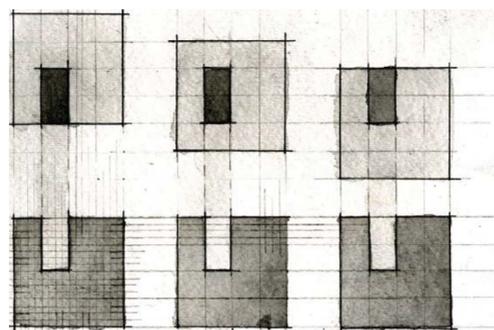
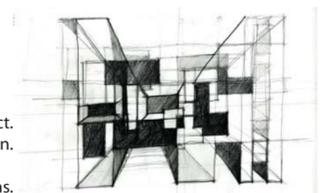


Plate 55

Within this exploration, the *L-shape* is developed. This finding engaged the L-shape as a solution for the *formal and literal* expression for the making of the object. The L-shape is reminiscent of the space that is taken away or leftover after the intervention and starts to take on its own expression.

The L-shape is rotated within a spatial grid in the vertical and horizontal axis to create floor, ceiling and wall planes in a series of configurations.



57

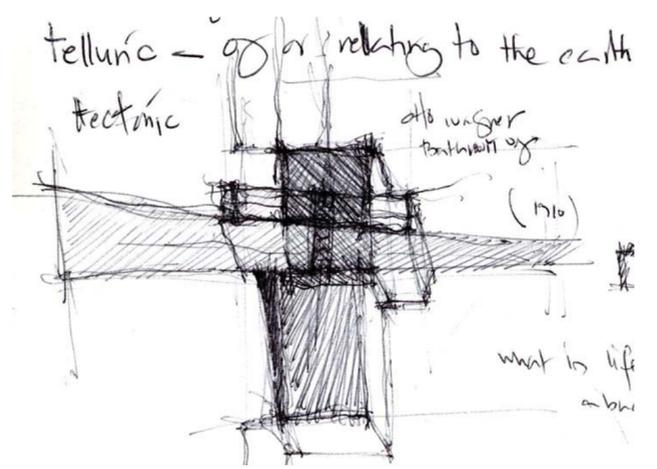


Plate 16 Intersecting two volumes by rotation

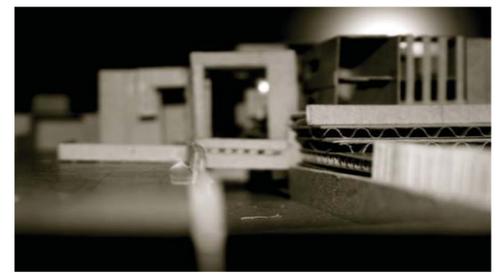


Plate 17 The relationship between solid and void

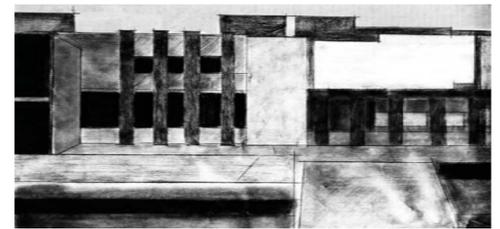


Plate 11

There are three reasons for the wall's articulation by open and closed parts,

- To allow for entry and experience the space within,
- To reveal the wall's thickness and so make it visible as a form
- To make the quantity of the wall knowable.

This articulation enables us to relate the form of the wall as a whole to that of the smaller parts and through these articulations to ultimately relate the wall to an elementary part that acts as a unit of size. The form arises between the volumes and the architectonic space is in the mutual neighborhood of the walls.

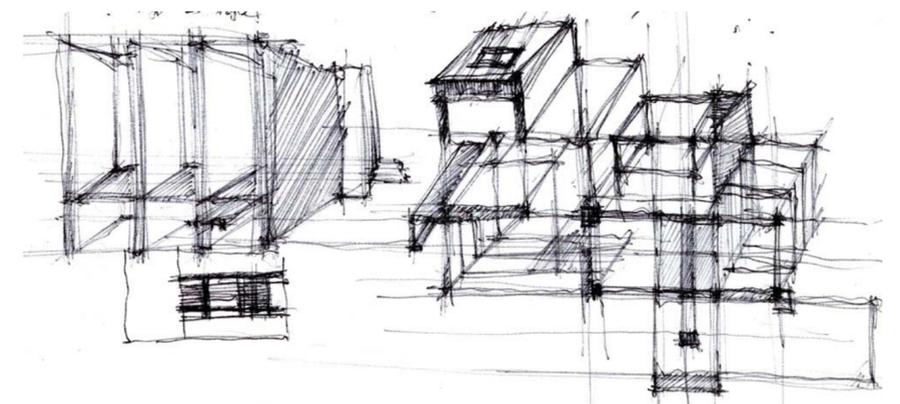
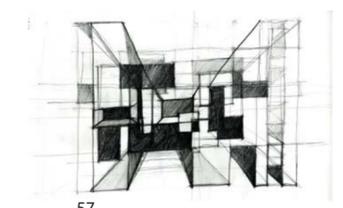


Plate 18 Finding Structure within the L framework



57

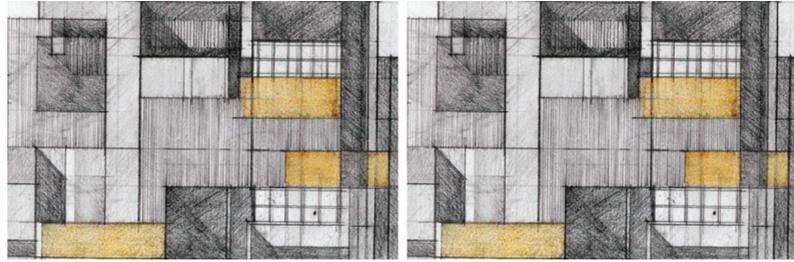


Plate 19

Within the facade as a frame
In a window wall.

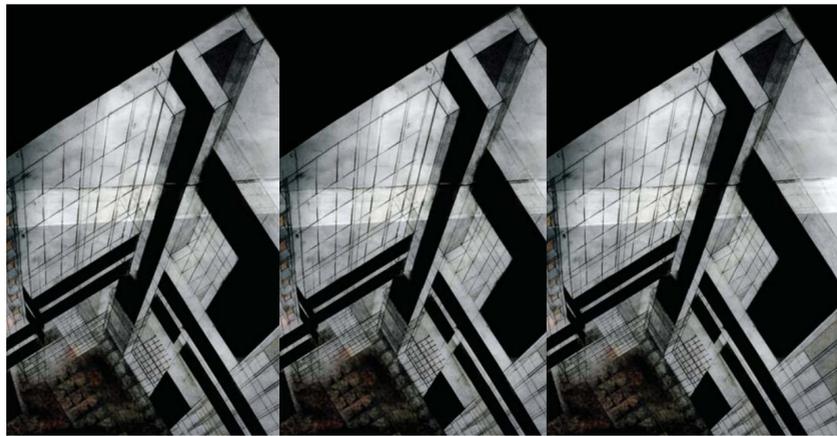


Plate 20

Within the Structure as a detail
In a row of Columns

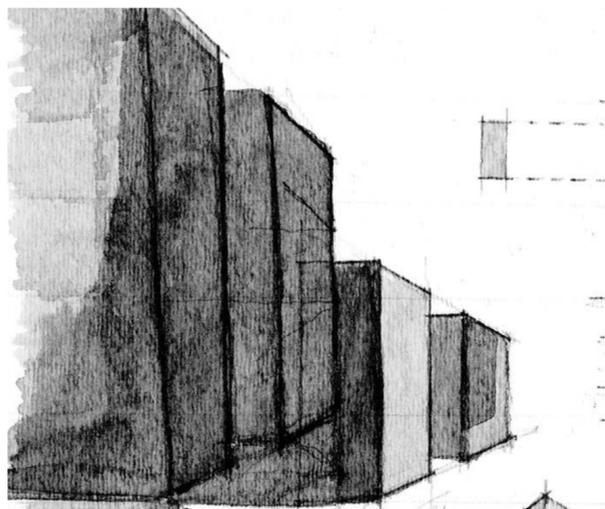
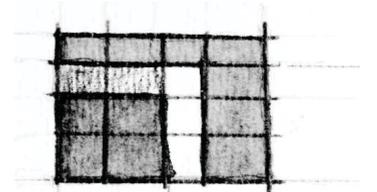
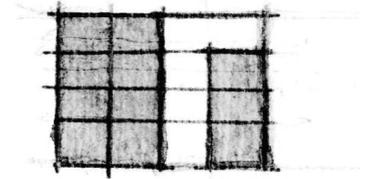


Plate 21

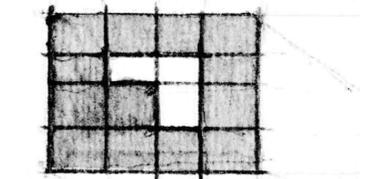
Within the wall at a larger scale
In the building facade



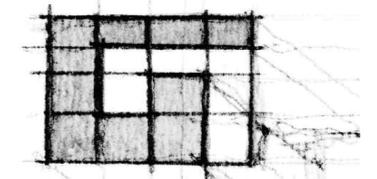
Intersection on 1 axis - cube - 2Ls



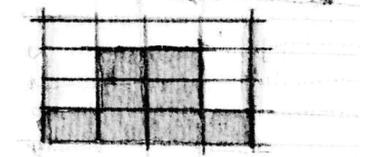
Intersection on 1 axis - 2 cubes - 1L



Intersection in centre - 1 cube 2 Ls

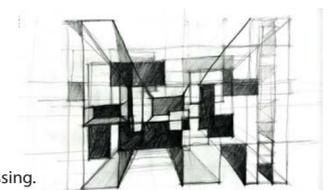


Intersection on 2 axis - 4 Ls



Intersection on 3 axis - 1 cube 4 Ls

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57

The L-shape informs as a diagram, a spatial exploration and a study of Massing.

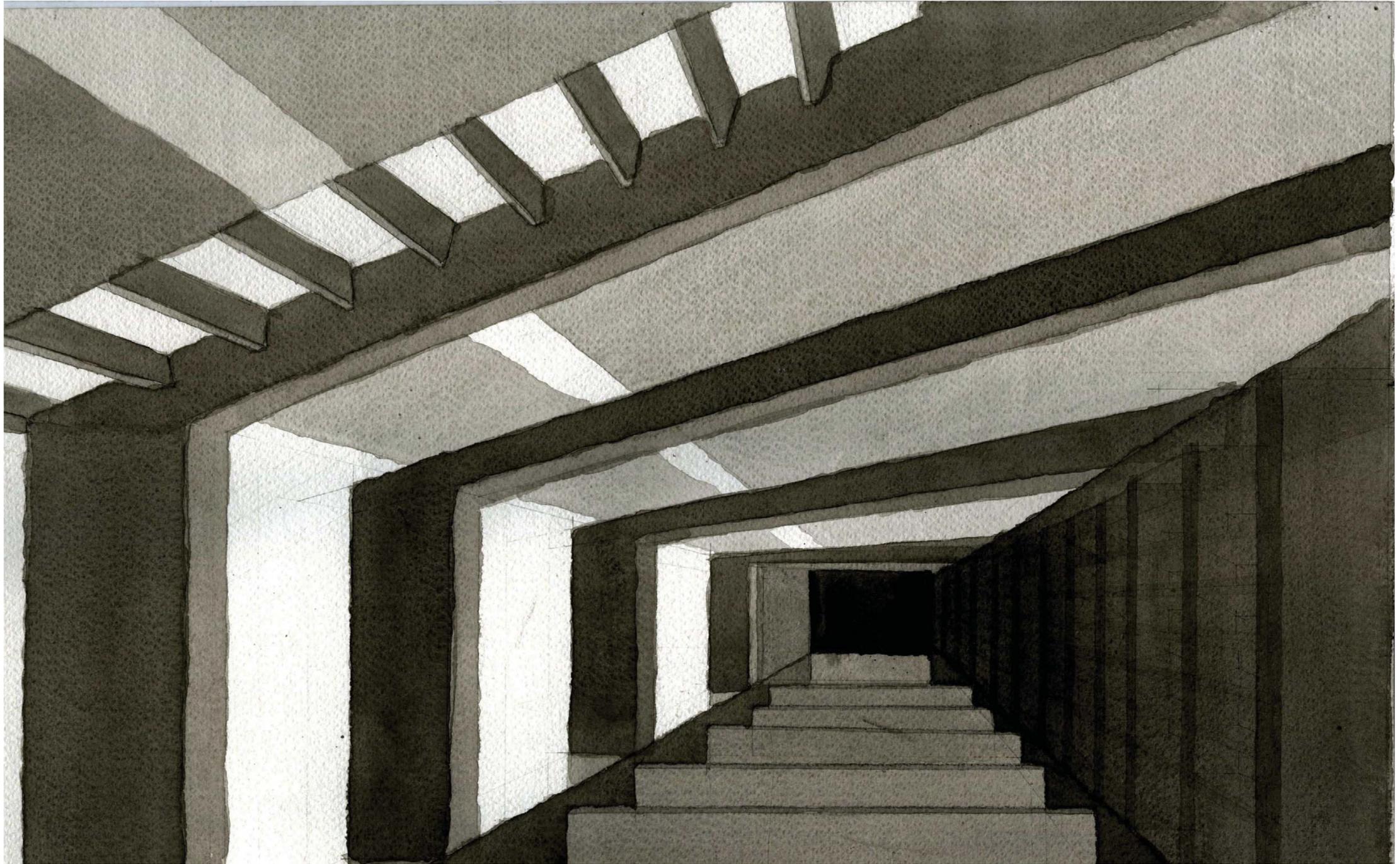


Plate 22

A Public Promenade- Play of Light and Shadow within the volume- Scheme 1

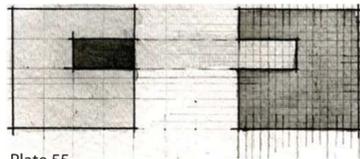
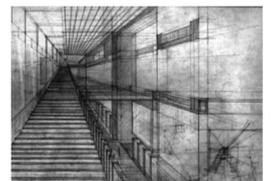


Plate 55

An architecture of place within a rigor of geometric order.
The architectonic expression of the Formal order produces an opportunity for Place making



5

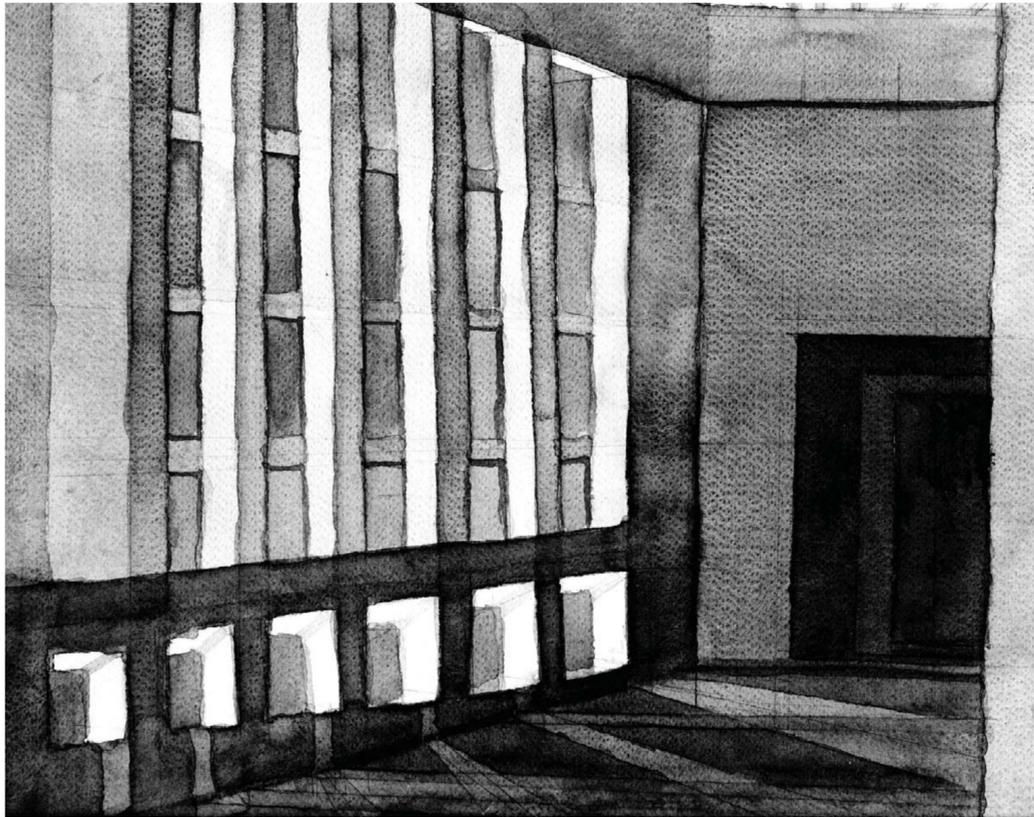
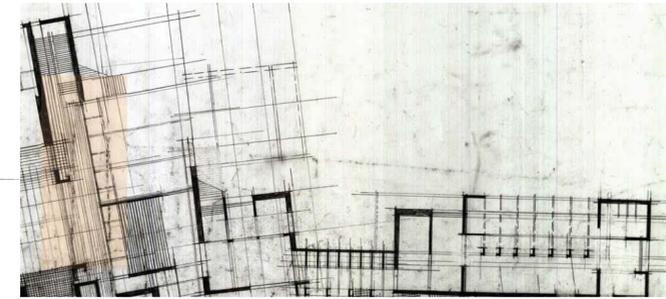


Plate 23

A Public Promenade- Play of Light and Shadow within the volume- Scheme 2



7

My project engages the human aspect of the building and is a balance between the architectural form and shaping the human experience. It engages the human innate sense of place. Whether the building is viewed as a purely formal object is another matter and not of sole significance. What is truly significant is whether architecture creates a place where meaningful human interactions can occur. In the last decade, some architecture embodies a kind of "new brutalism" which is synonymous with a monolithic disregard for human scale or connection to the surrounding streetscape. My architecture adopts the grandeur for which a villa is known but an interior that respects the human scale. The movement through the building encourages different readings and perceptions from the user.

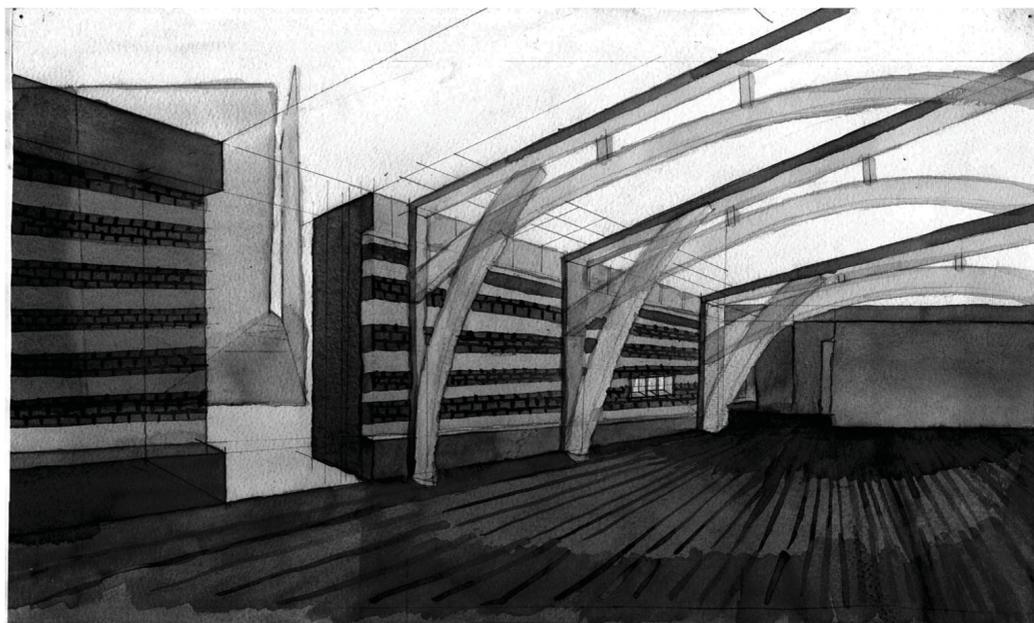
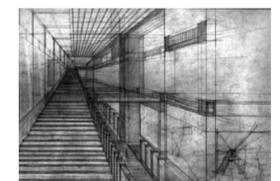


Plate 24

A Public Promenade- Play of Light and Shadow within the volume- Scheme 3

The program of the house is adopted as a basic unit of human dwelling to engage a viewer in this exploration. The hierarchical relationships within the parts of the house (service cores, window frames and structure) are mirrored in the hierarchical relationship within the geometry of construction. The villa as a unit of dwelling is adopted because it is a cluster of human activities that require interaction between its parts, sameness and similarity which are also being studied in the formal composition.



5

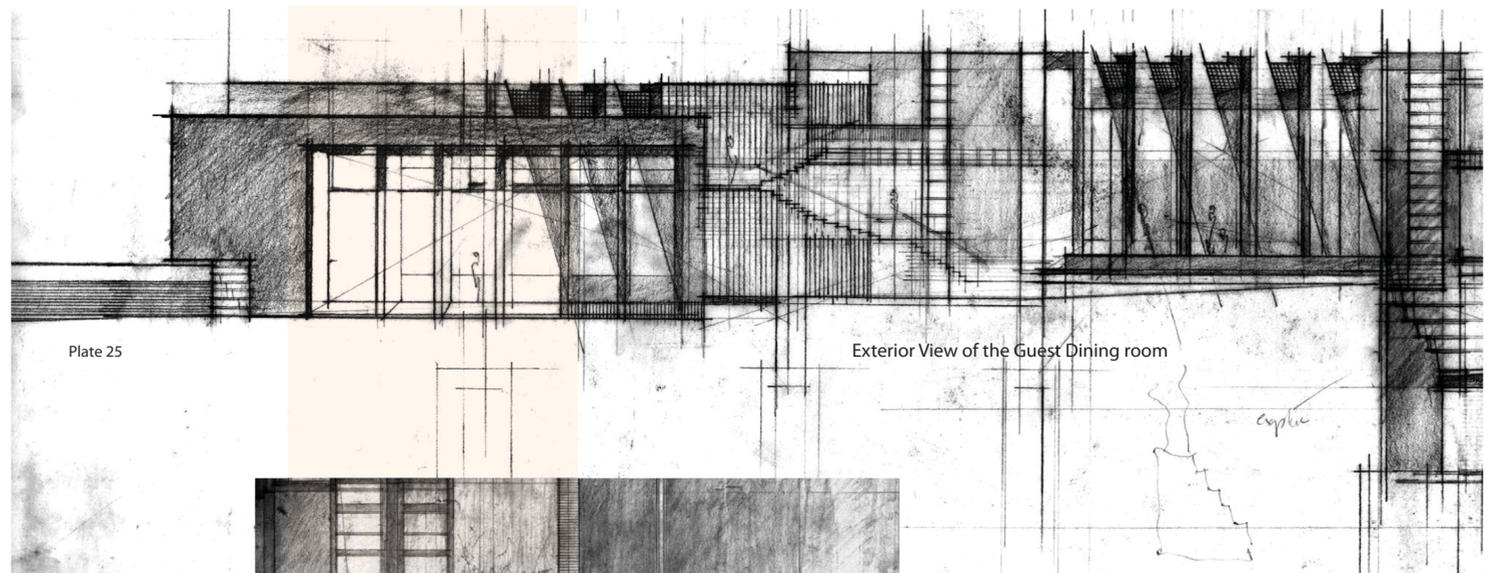
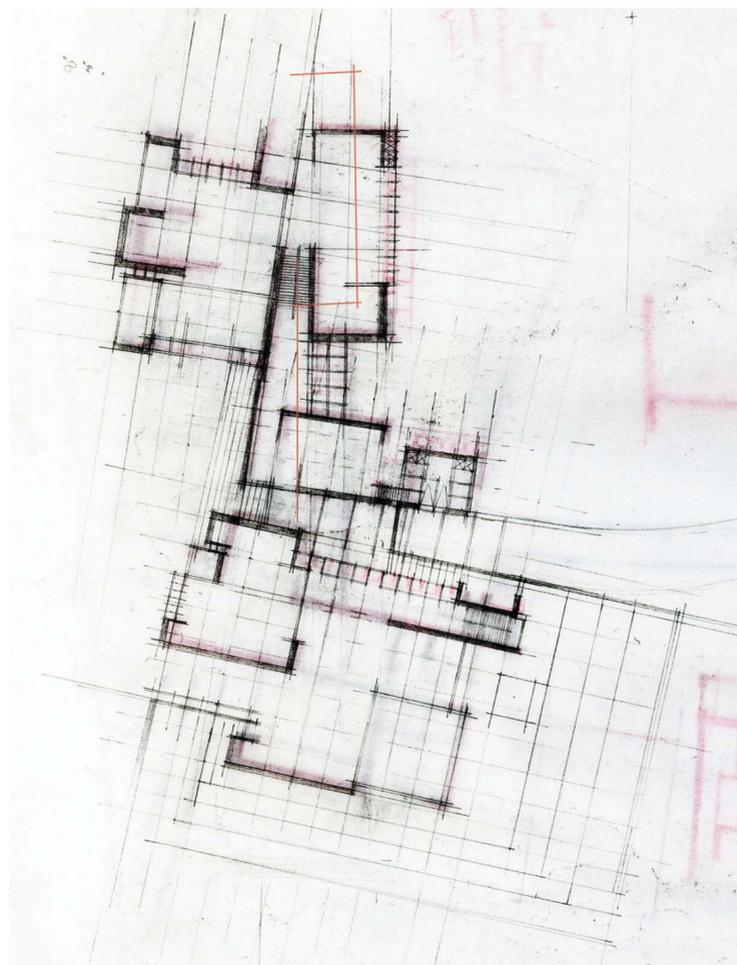


Plate 25

Exterior View of the Guest Dining room

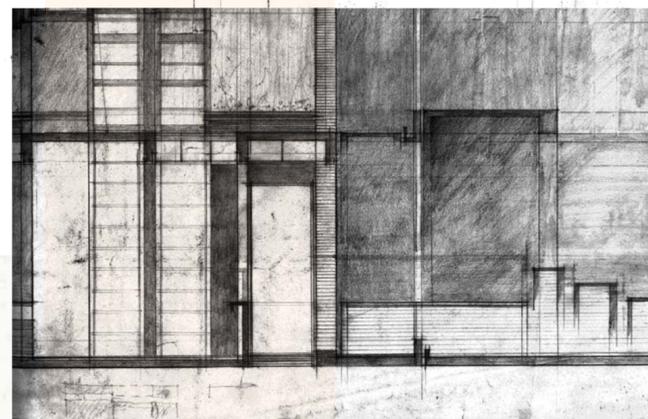


Plate 26

Interior View of the Guest Dining room

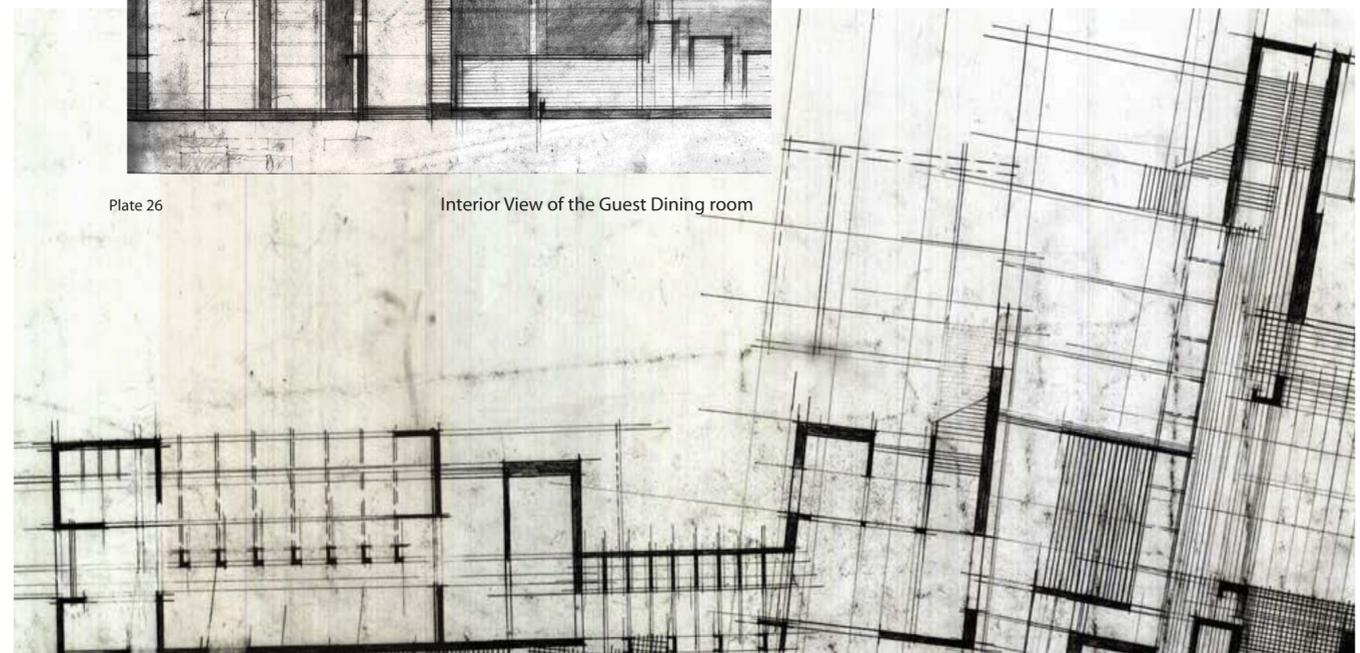
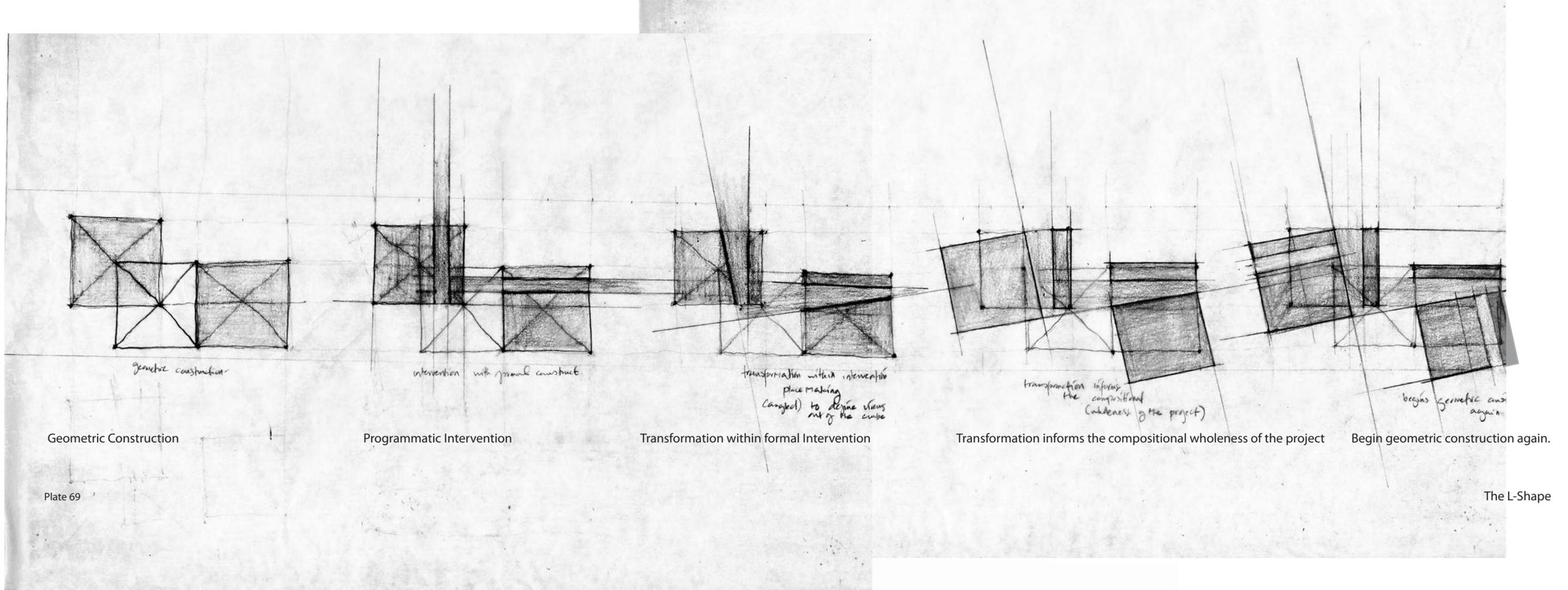


Plate 7

Floor Plan of the Guest Dining room



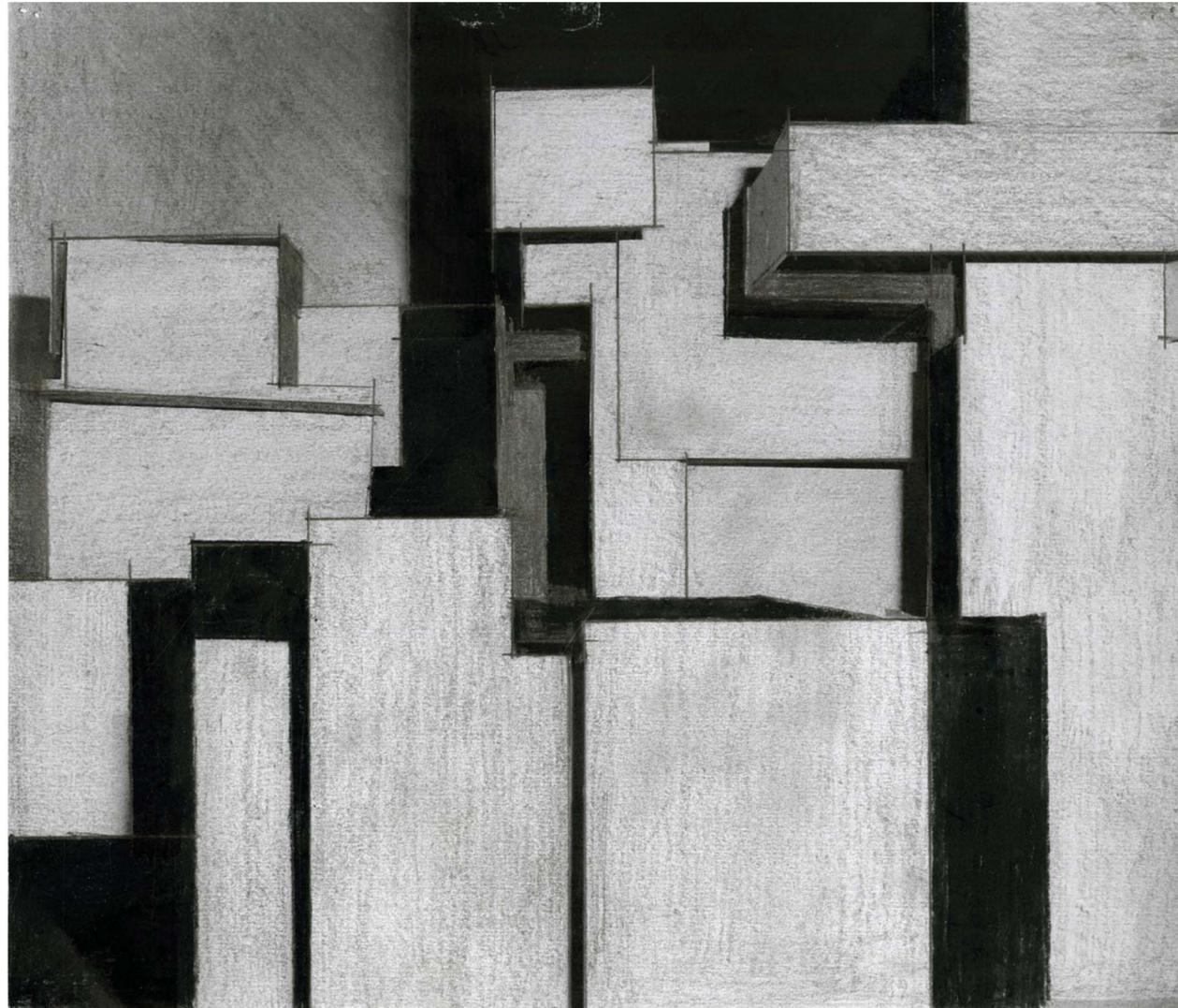


Plate 28

Massing Study

The diagrams are used to find spatial relationships in all dimensions of the building. In the plan, they act as organizing elements for the activities and in elevation, they are framing elements that reinforce the idea of framing in the Shape.



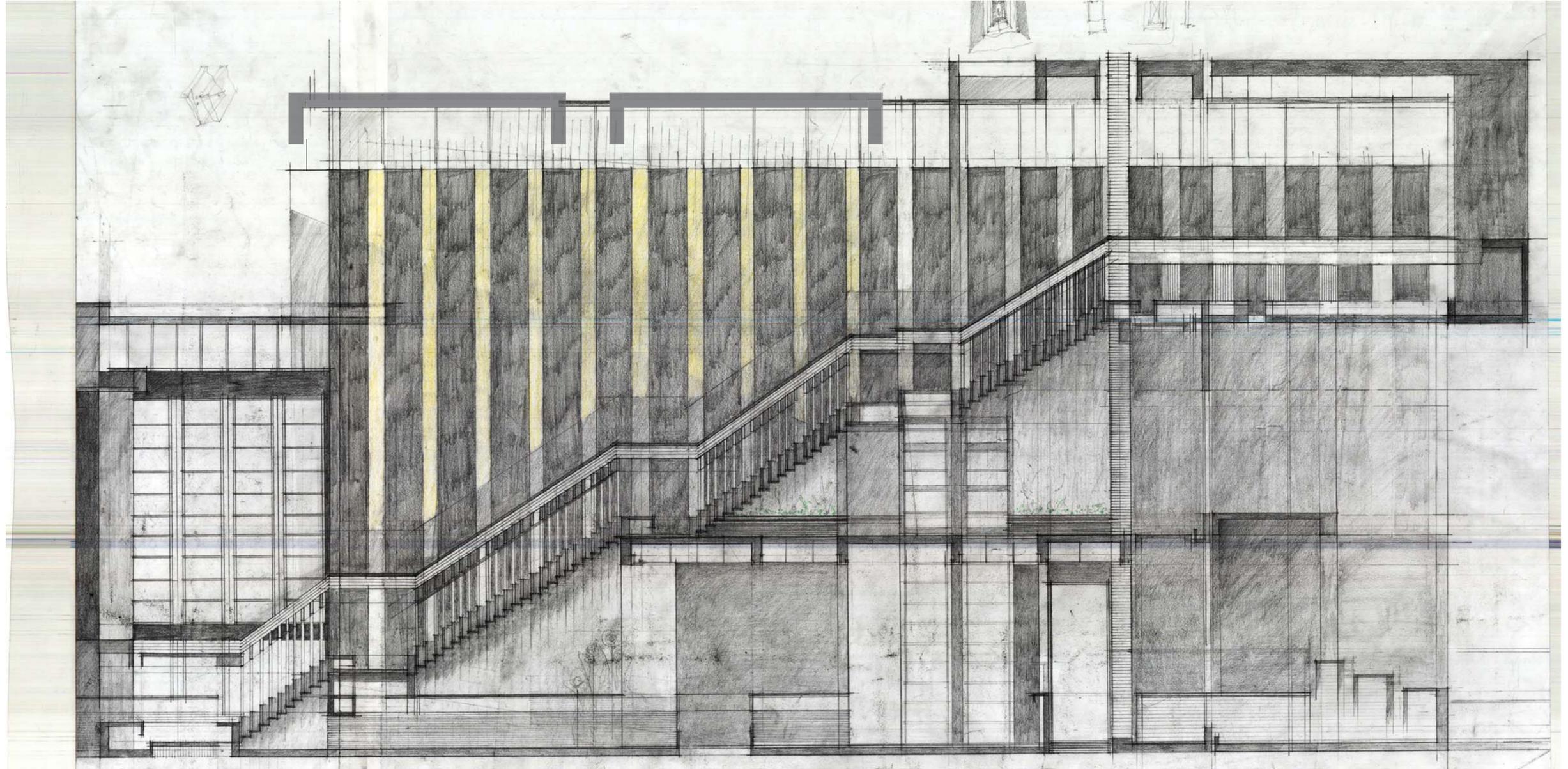


Plate 29

Section Elevation- Grand Stair Promenade

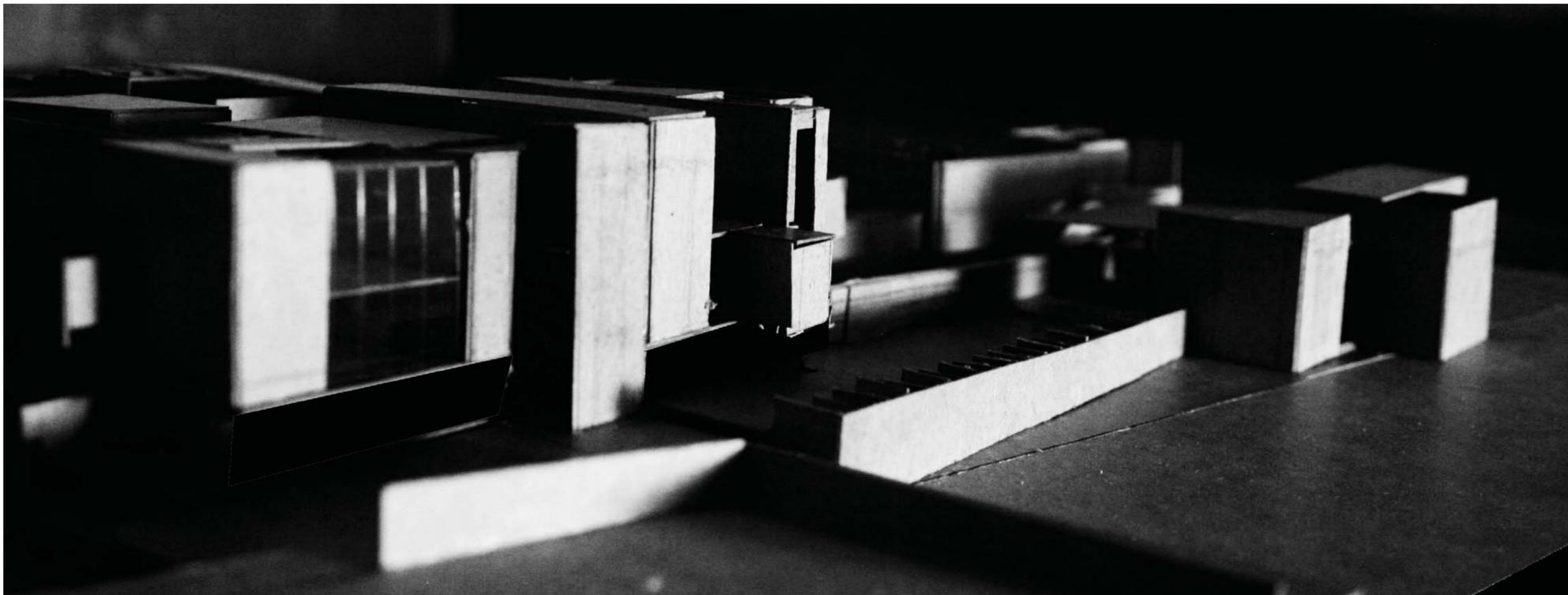


Plate 30

North View - Sunrise over the summer solstice

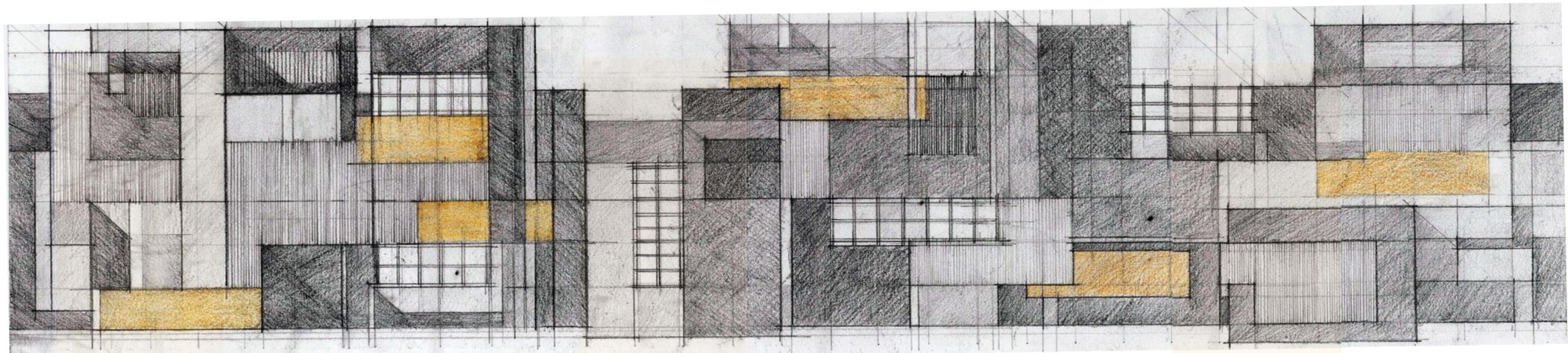


Plate 19

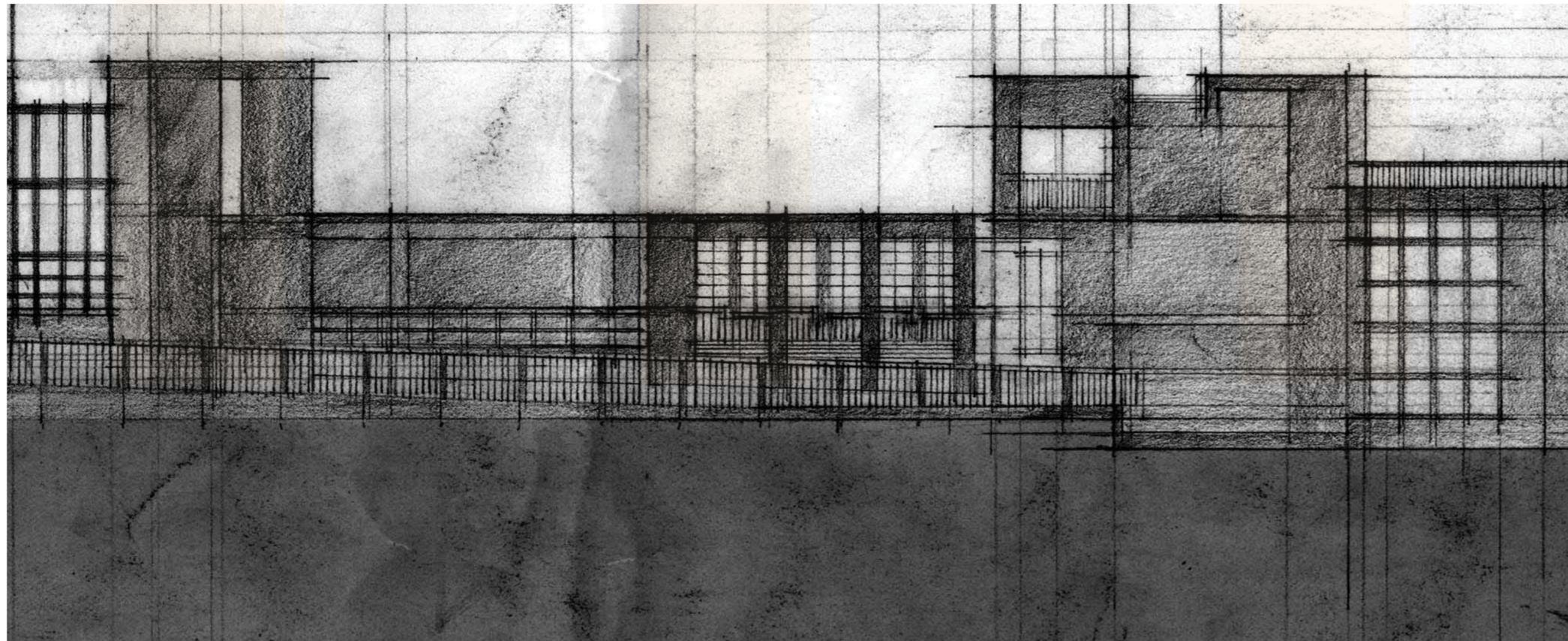


Plate 31

North Elevation - Negation of Space

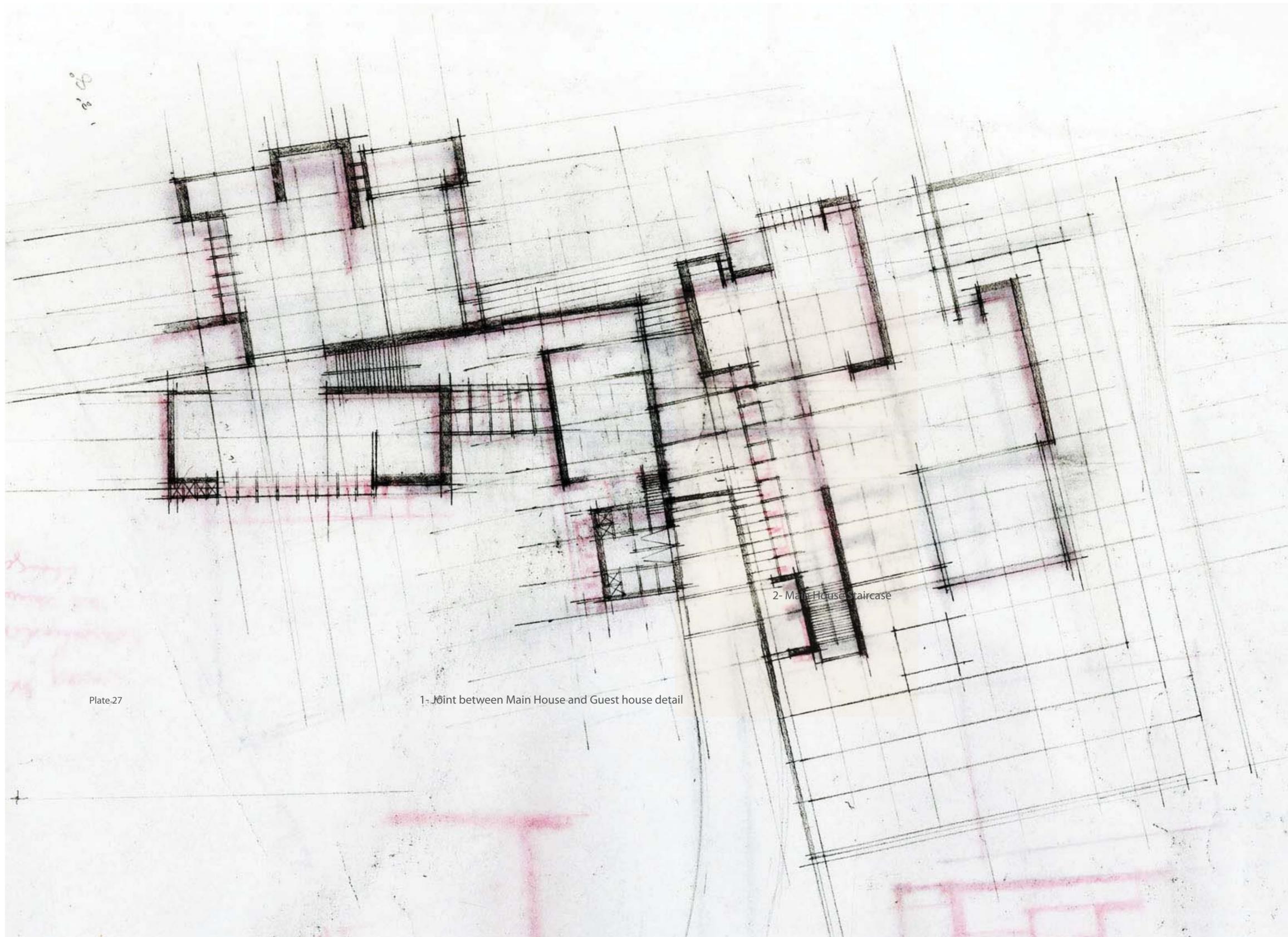


Plate.27

1- Joint between Main House and Guest house detail

2- Main House staircase

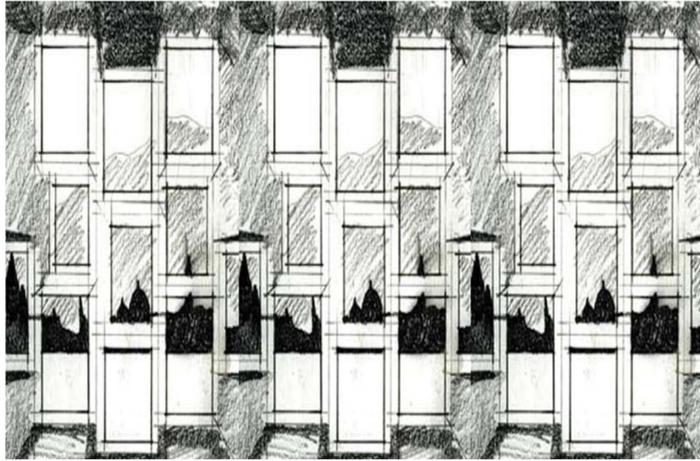


Plate 32

Window detail at the Joint - Proposal I

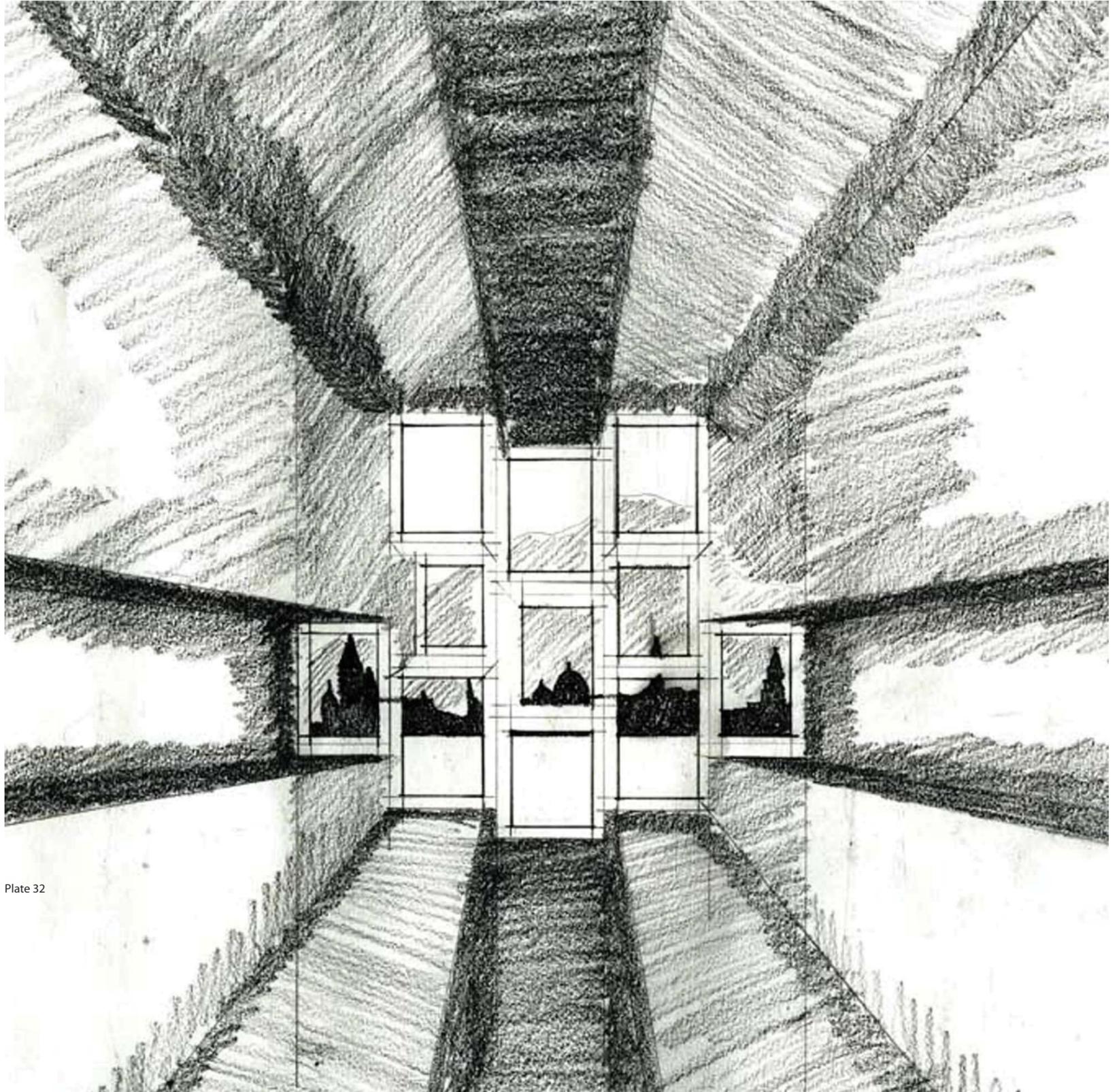


Plate 32

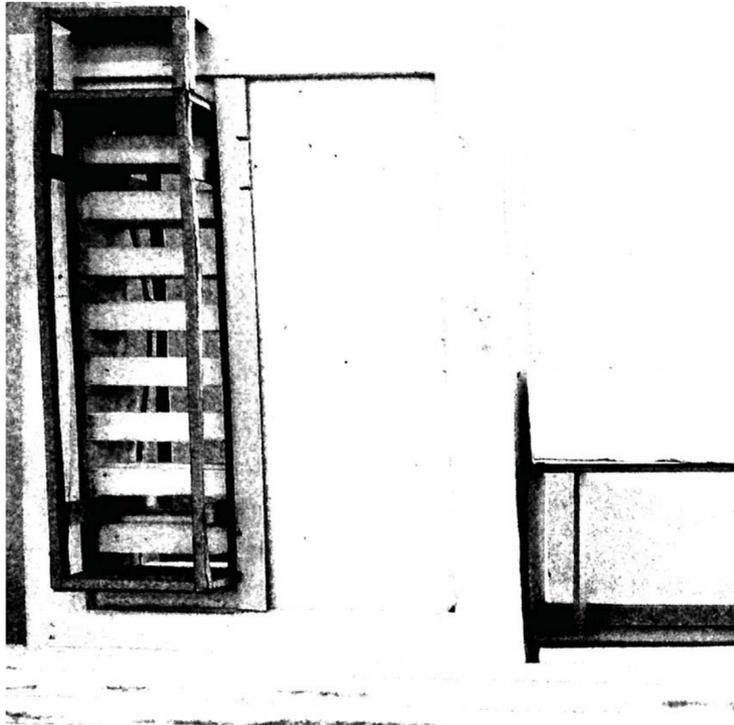


Plate 33

Window detail at the Joint - Proposal II

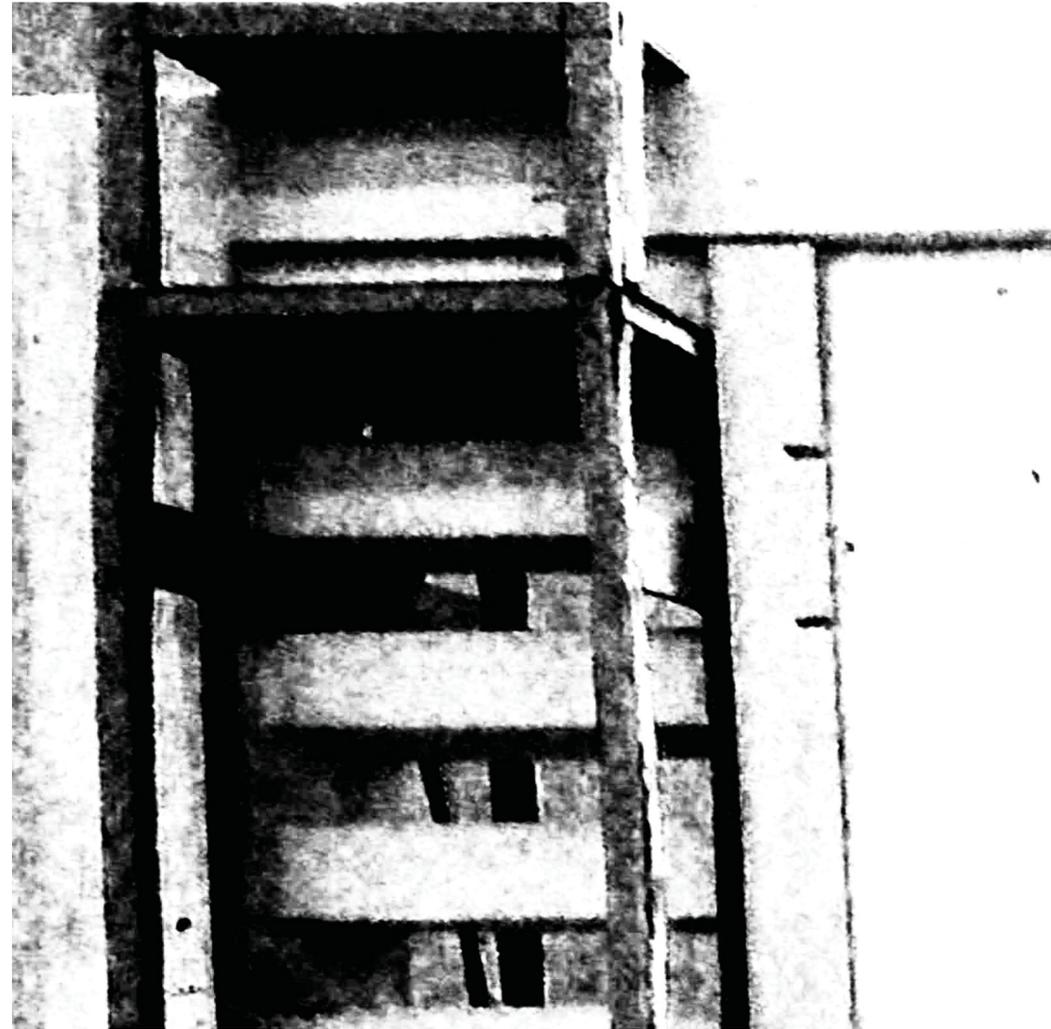


Plate 33

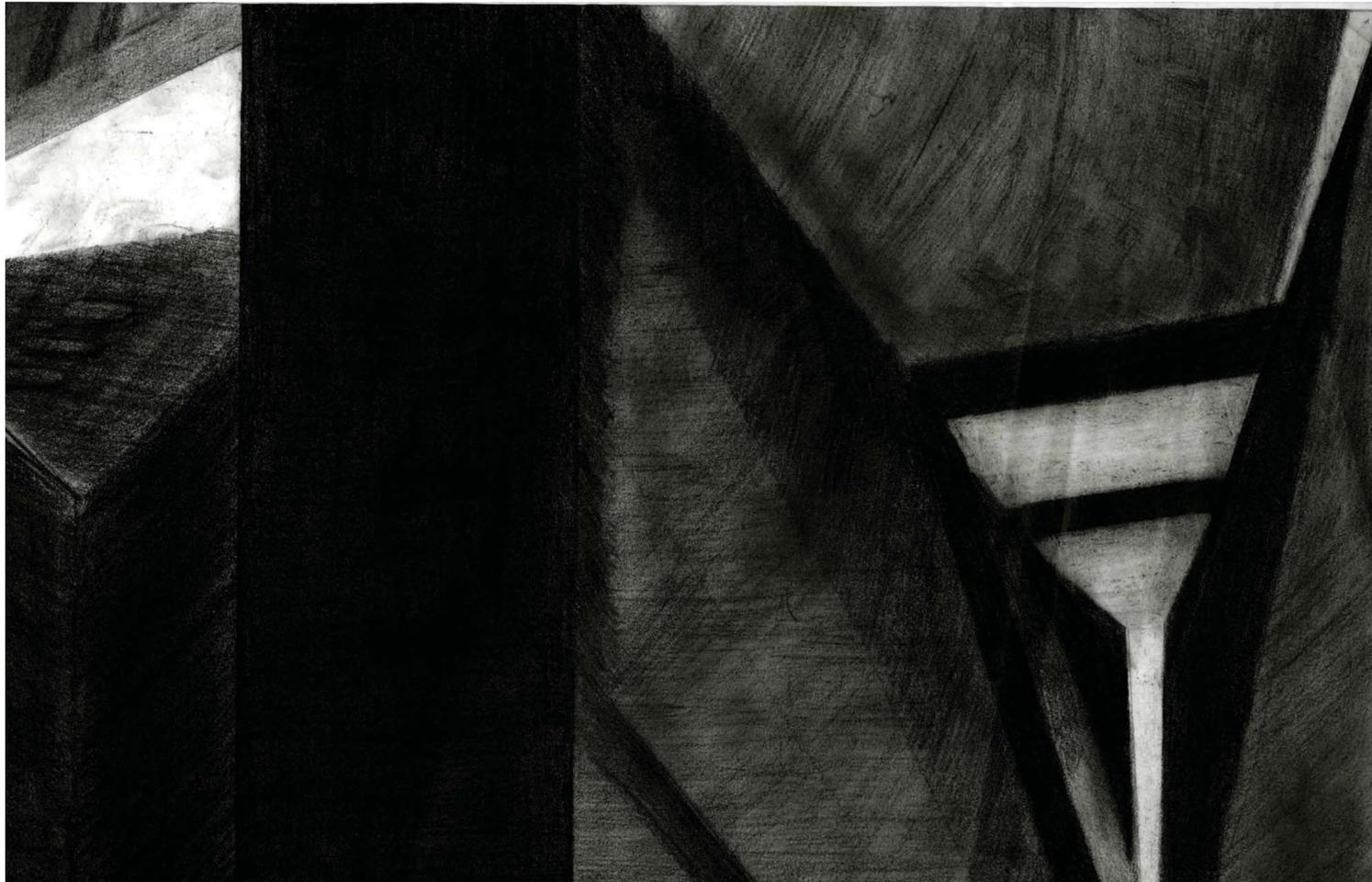


Plate 34

Window detail at the Joint - Proposal III



Plate 68

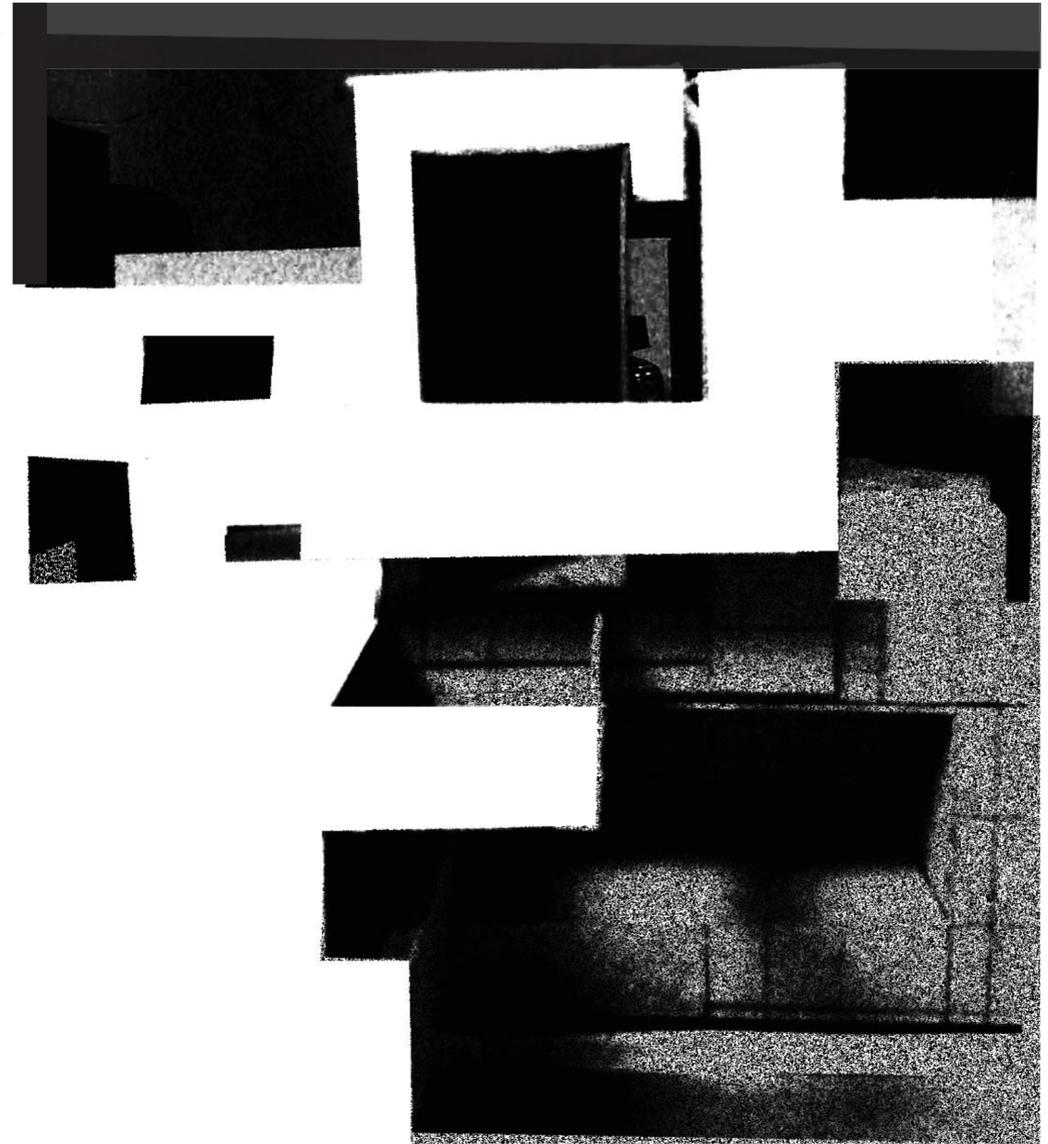


Plate 68 The relationship between solid and void in the elevation. A window opening is a framing element to the interior.

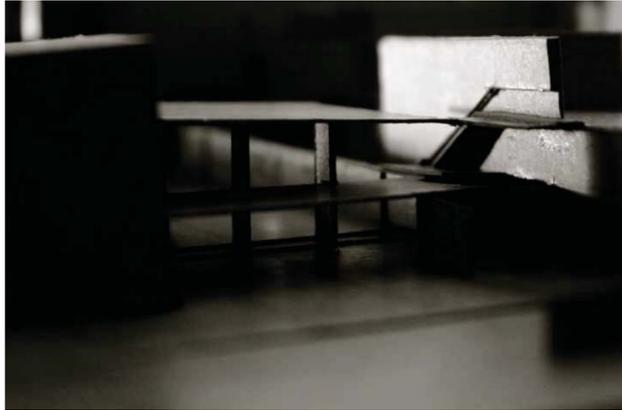


Plate 35

sunrise reflecting on the grand stair wall.



Plate 36

Interior Staircase represented within a pictorial rendition showing effects of light and shadow

Character and Composition

The presence of good composition and appropriate character is essential in a successful building and the presence of one is not automatically productive of the other. Character for my project necessarily accompanies the securing of good composition. The composition is informed by a search for character. The process of the composition was a Vitruvian one involving a process of Invention and transformation.

Movement is essential to this process, it expresses the rise and fall, the advance and recess with the other diversity in form, in the different parts of the building so as to enhance the effect of the composition.

Movement also serves to produce an agreeable and diversified contour that creates a variety of light and shade which gives spirit, beauty and effect to the composition.

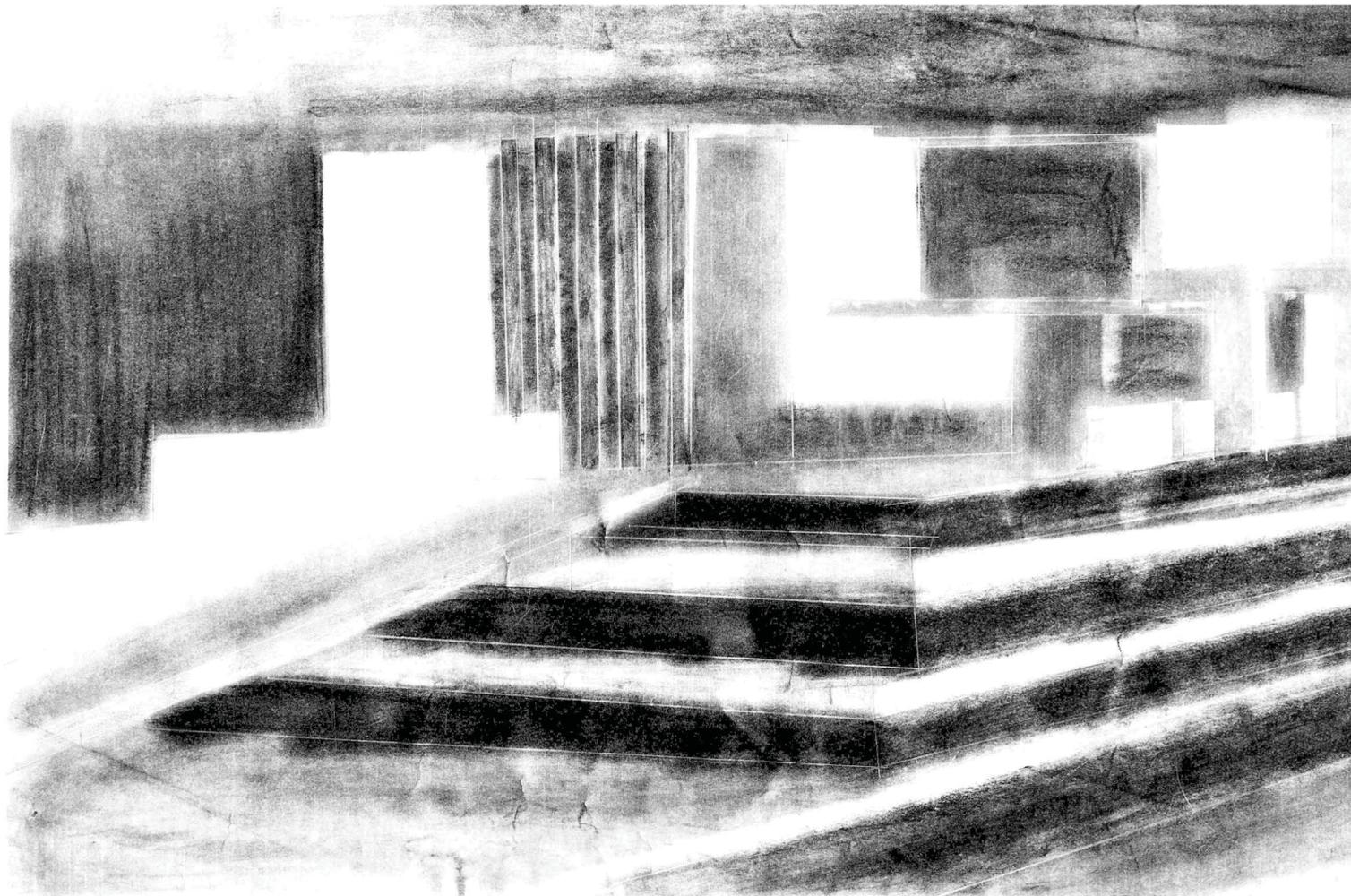


Plate 45

West Elevation

BOOK THREE
Engaging The Site

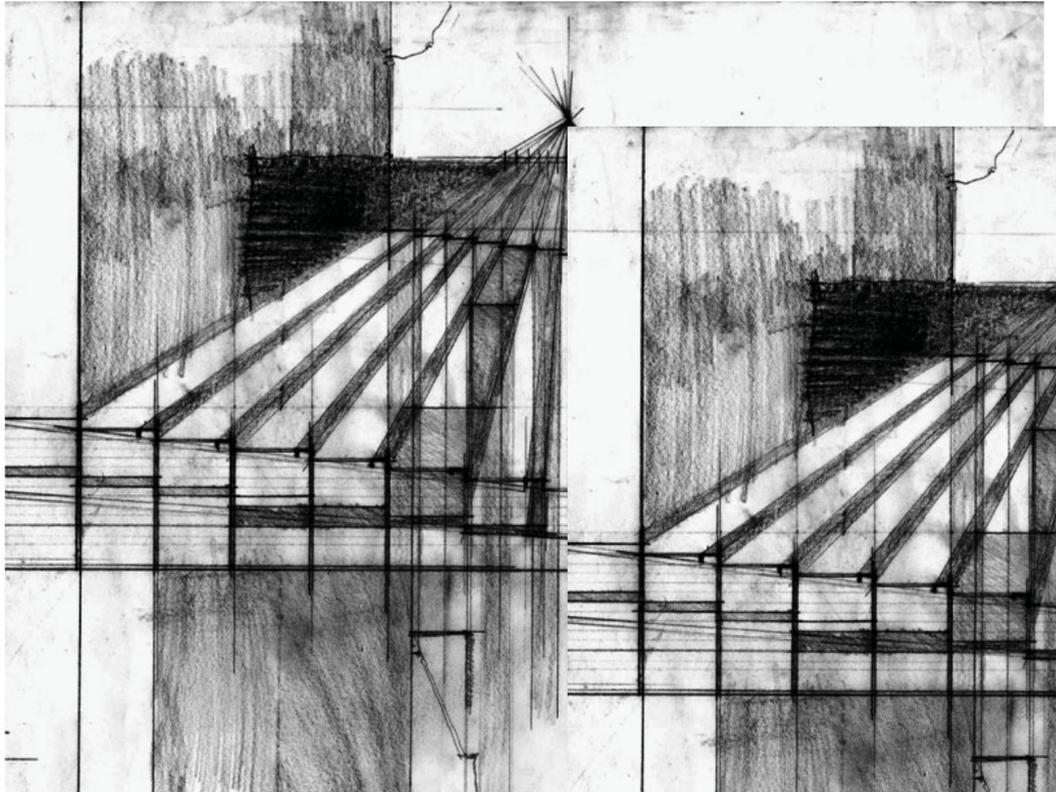


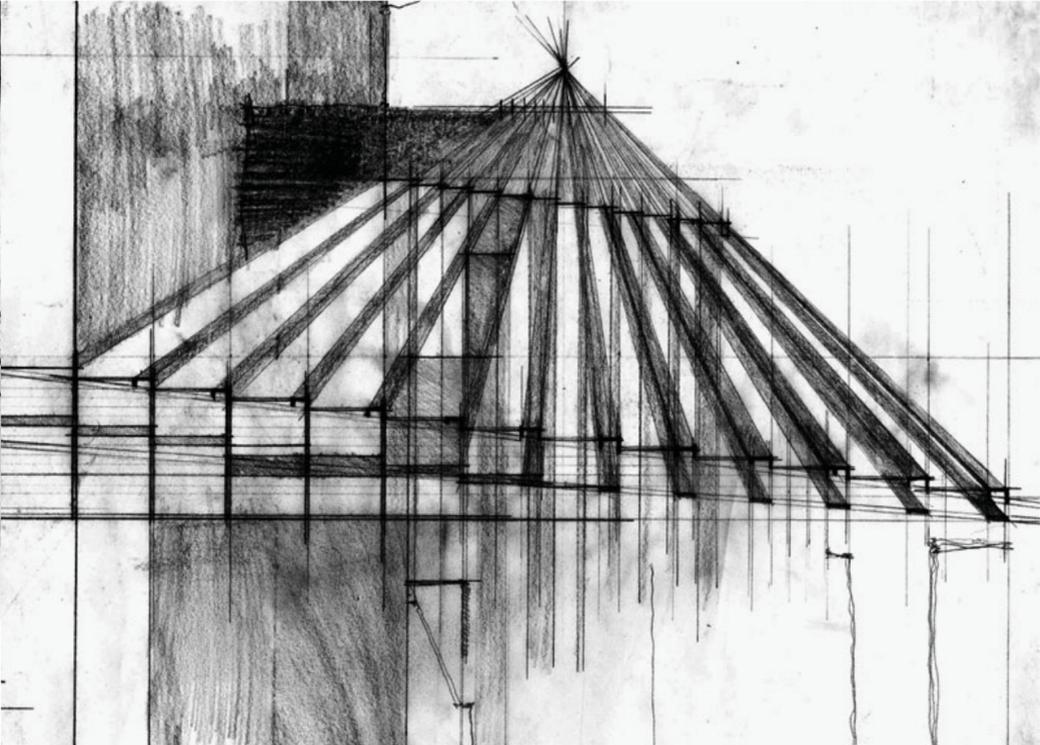
Plate 37

Site Terrace

As we walk upon the earth, our hearts experience anew that rapturous joy we felt as children when we first discovered our ability to move in space, the alternating disruption and restoration of balance which is walking. We rejoice in the progress of our body across the uneven surface of the earth and our spirit is gladdened by the endless interplay of the three dimension that we encounter at every step. We walk past a rock, or a tree trunk or a shrub's tufted foliage, we move up and down following the rise and fall of the ground. Tracing its convexities which are the hills and mountains and its concavities which are the valleys.

Plotinus, A walk to the Acropolis.

This deserted country lane in which the project is located is far superior to the thoroughfares of the large modern city, the infinite change of perspective show us the divine hypostasis of singularity when submitted to the harmony of the whole.



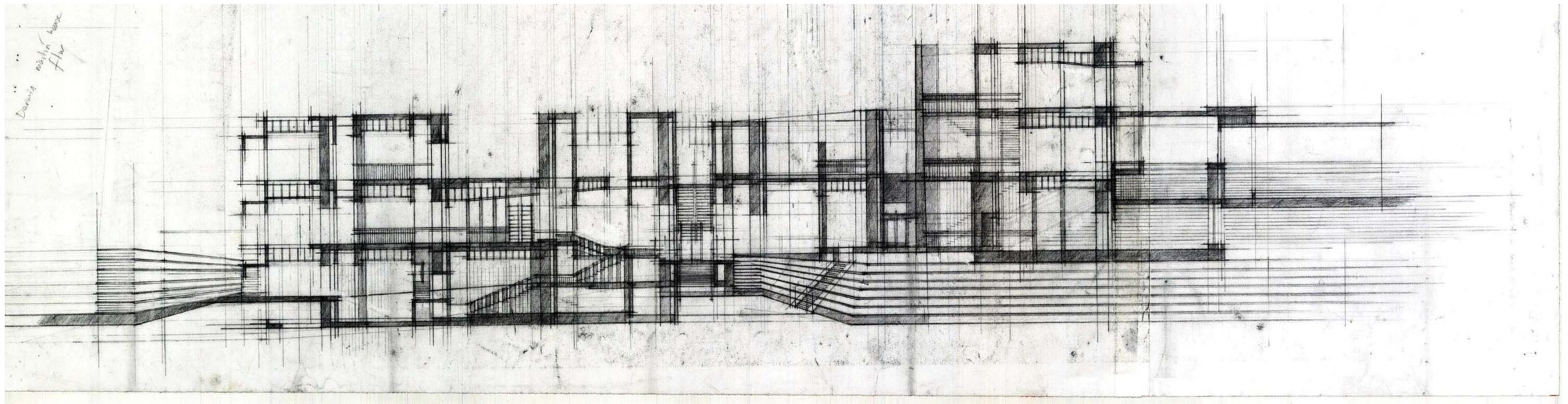


Plate 38

House on a Platform



Plate 47 Vista into Palladio's Villa

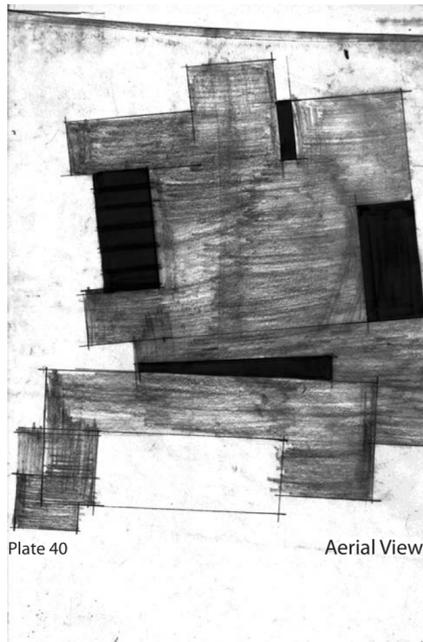


Plate 40

Aerial View

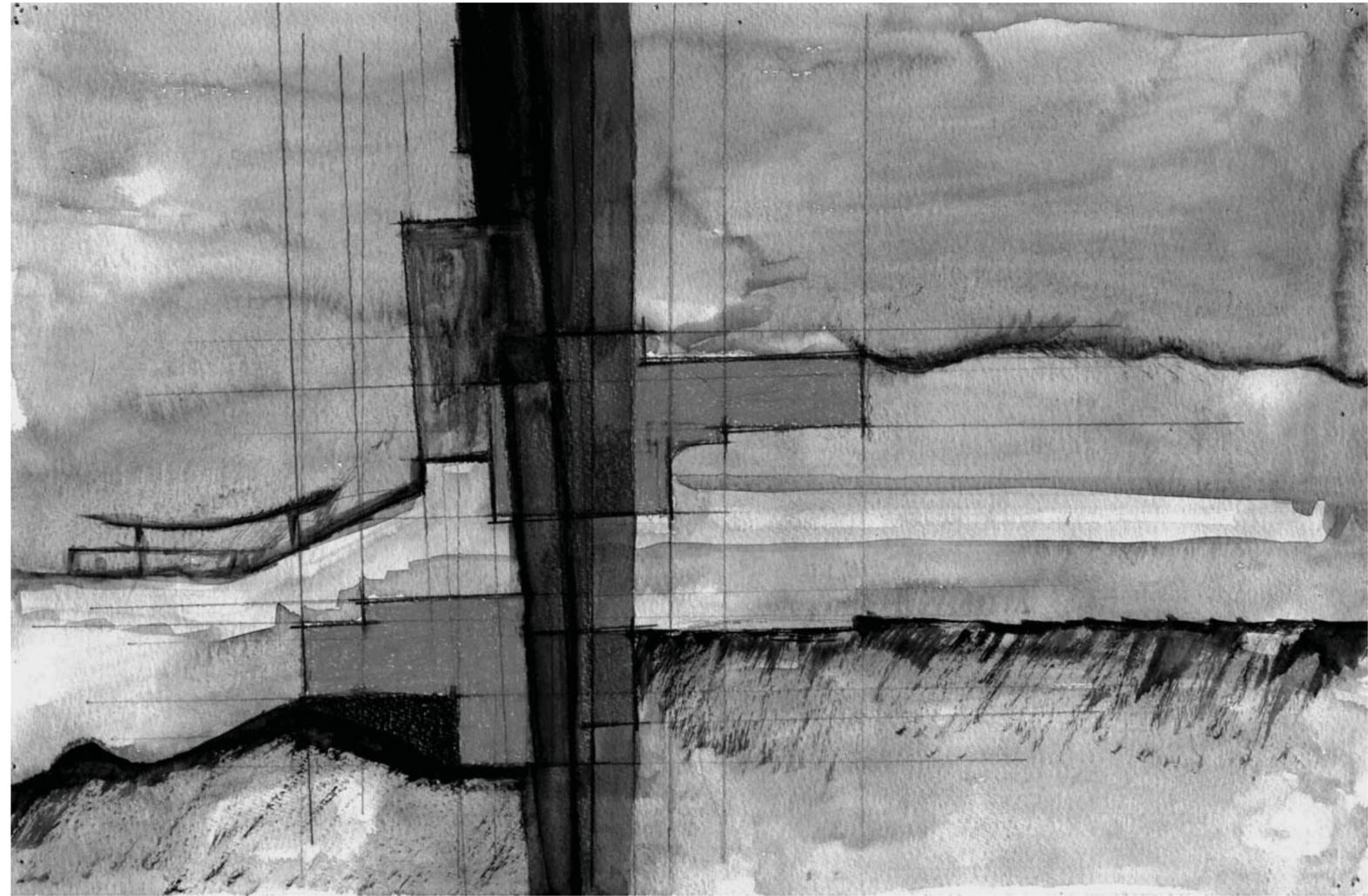


Plate 39

Engaging the Site

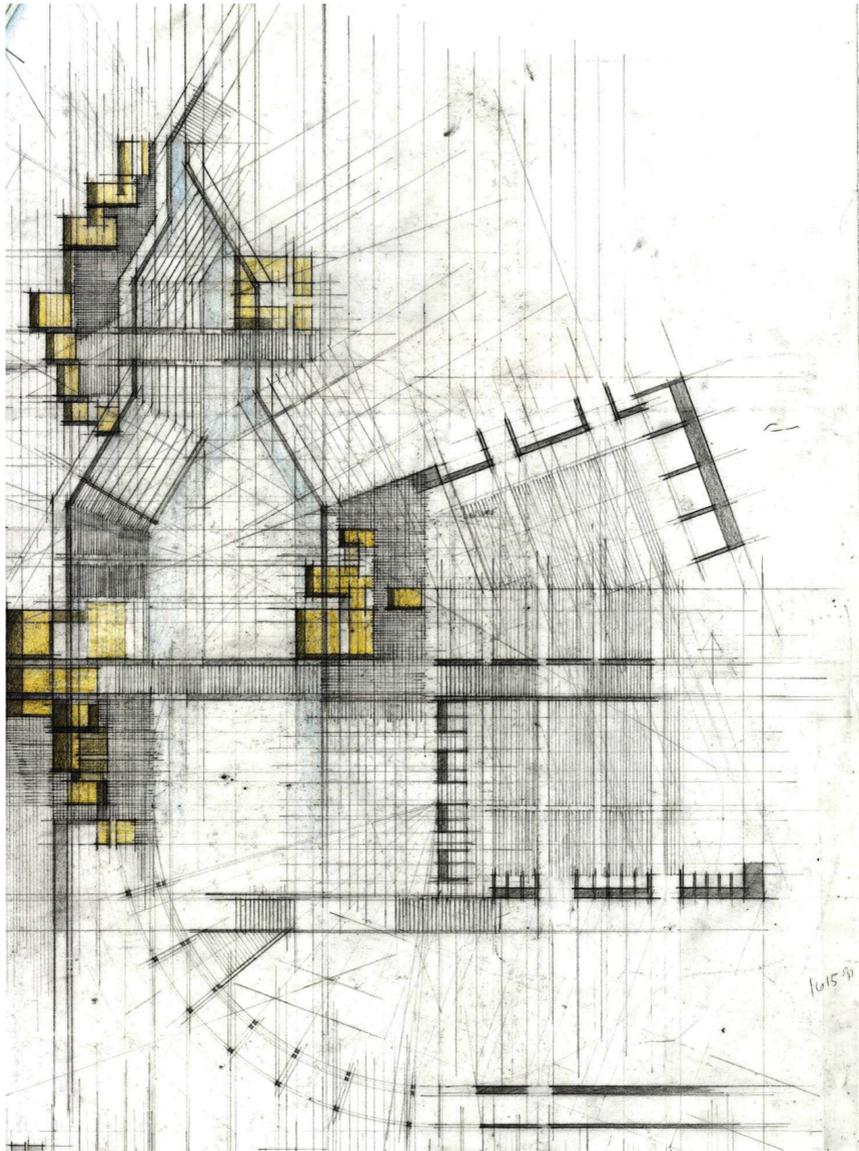


Plate 41

Aerial View over commercial area of site

The house completes the space of nature.
Out of this experience of natural space by architectonic space, there arises a natural space image that can be harmonized with the space image of our experience.
The walls enable the space of our human experience to be assimilated into the greater space.

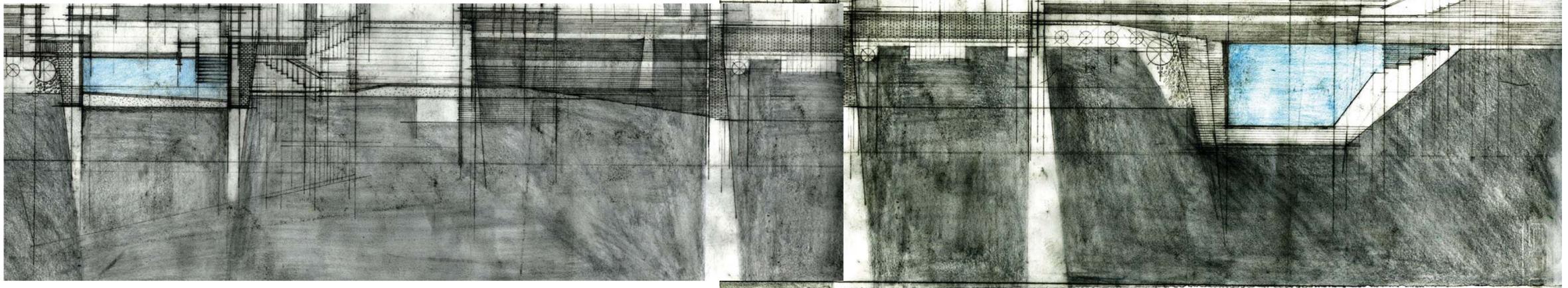


Plate 42

Site section

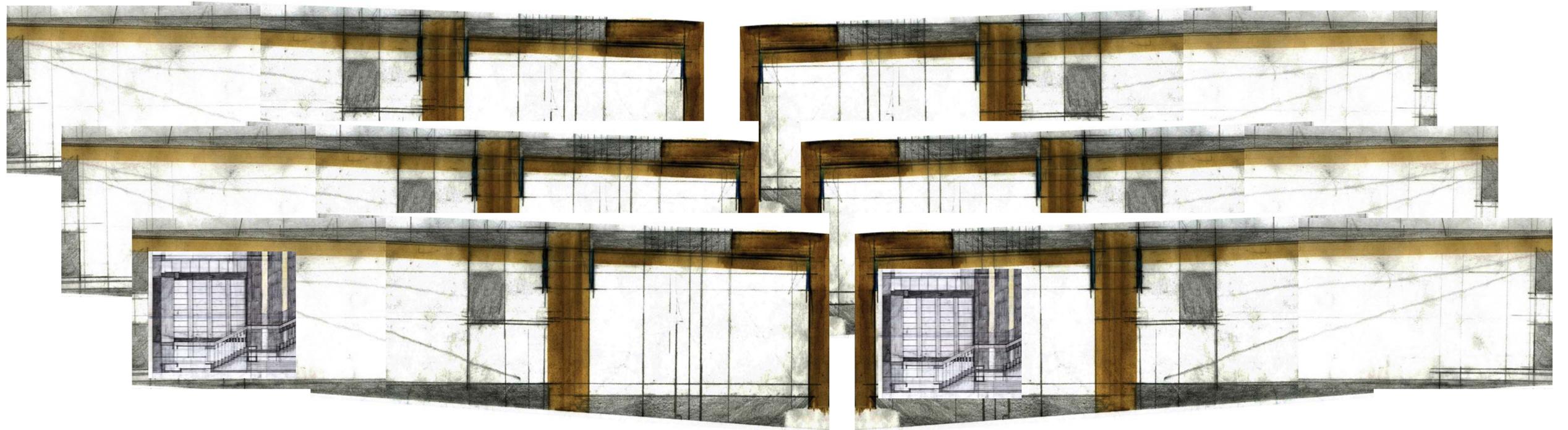


Plate 43

The 3 Villas interact to form a cluster (Village).
The parts within the villa and outside represent parts that are brought together to make up a whole.



Plate 41

Character in the site is attained by the prevalence of certain distinguishing features by which the villas are distinguished at once from other villas of the same kind. It consists of the L shape which is repeated in all aspects of the formal arrangement

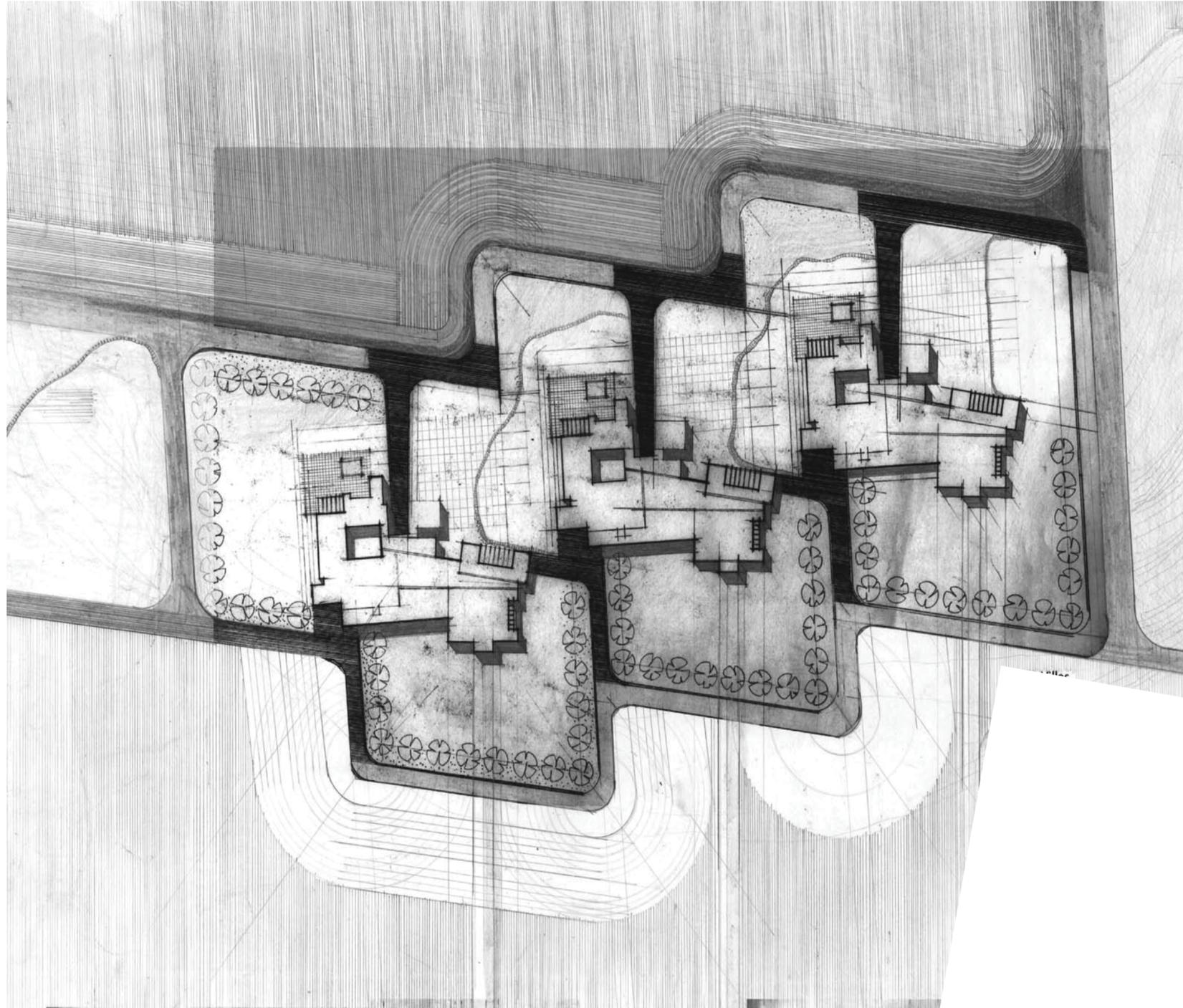


Plate 67

3 Villas - A Village

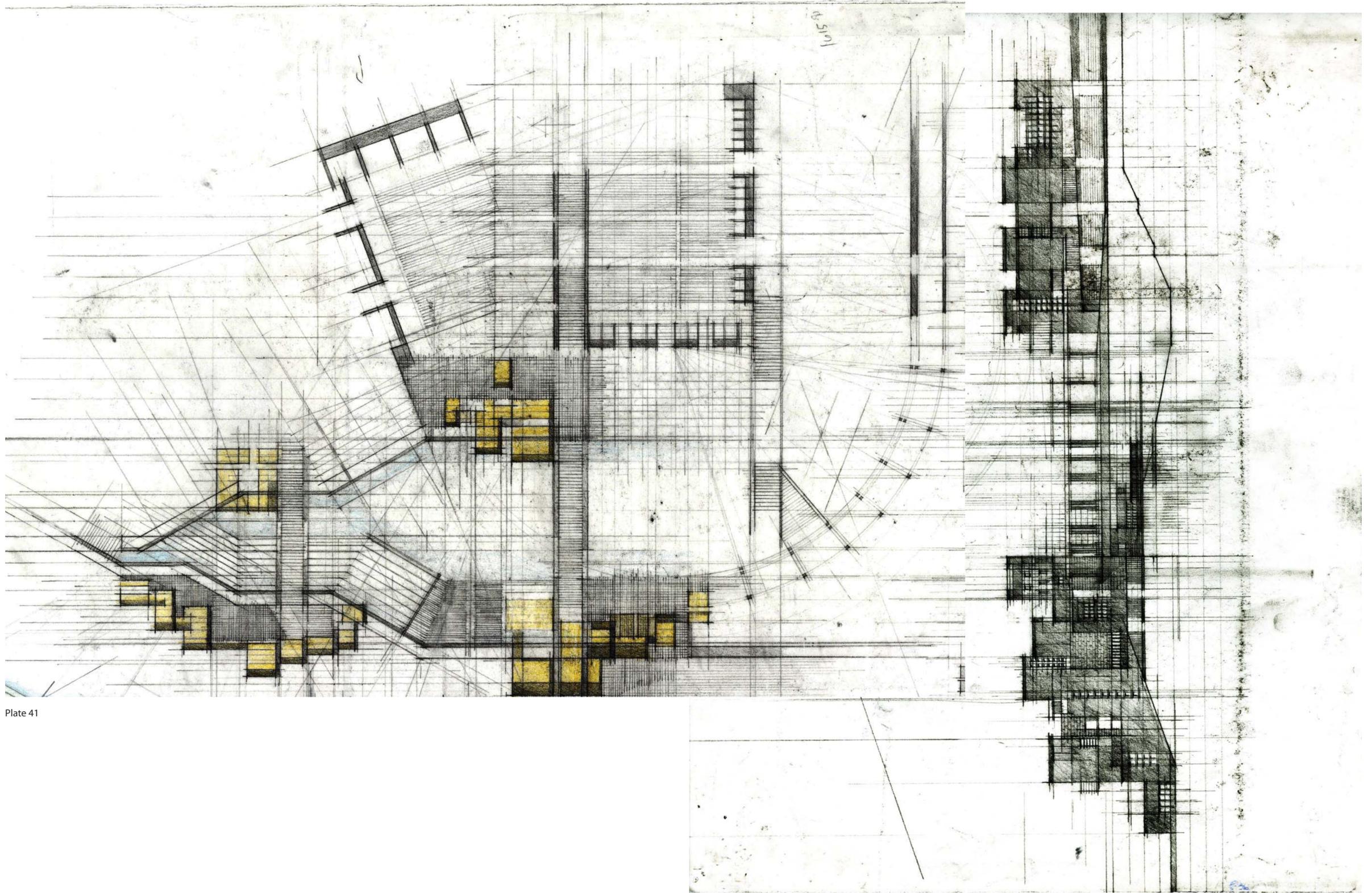


Plate 41

Plate 49

Bridge Elevation Commercial Area

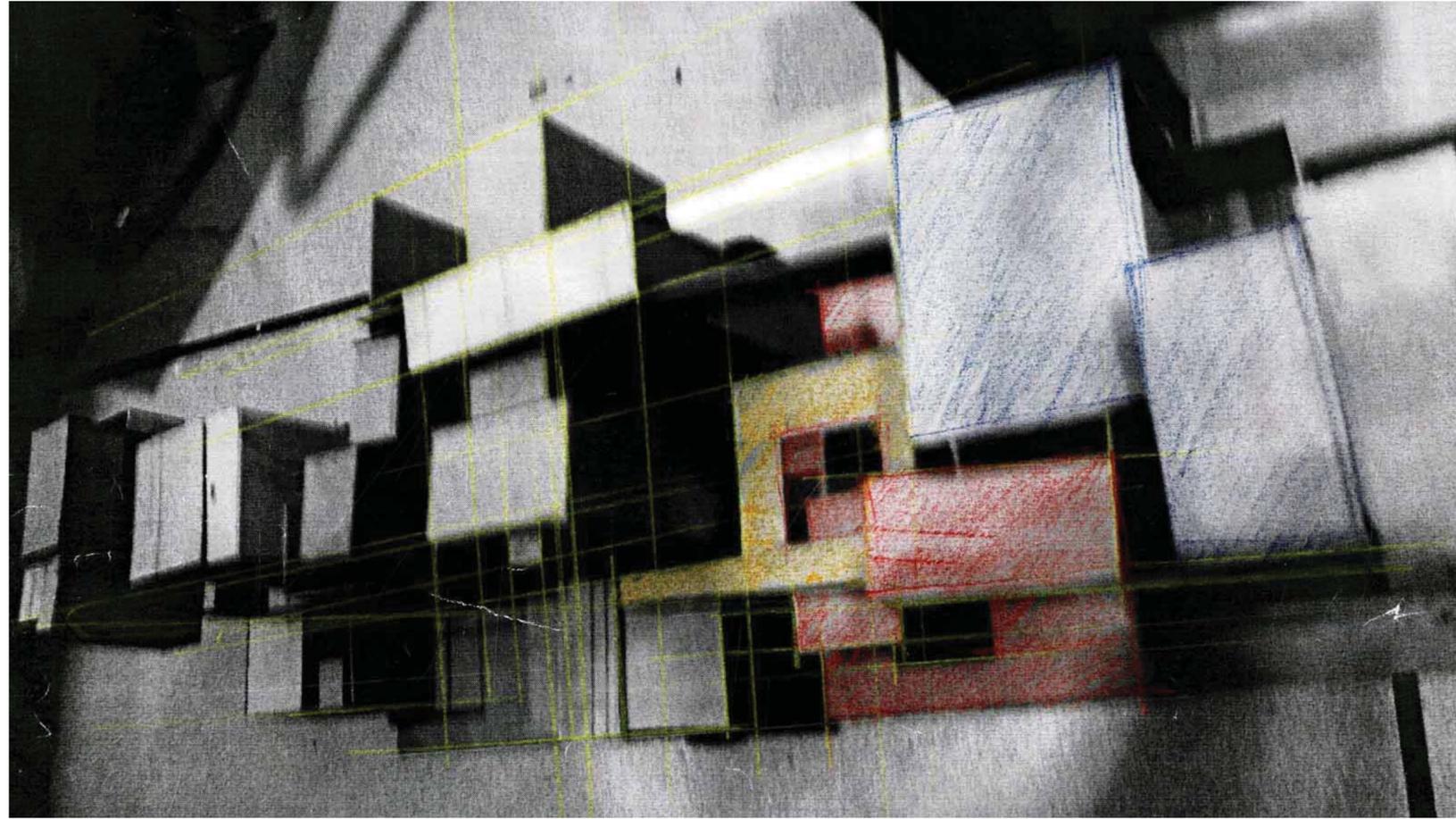


Plate 48

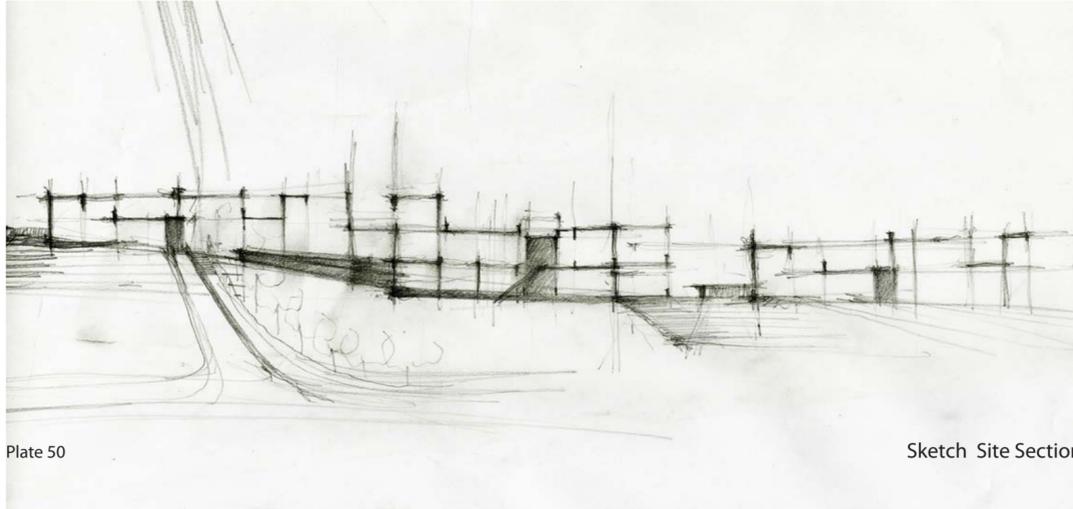


Plate 50

Sketch Site Section

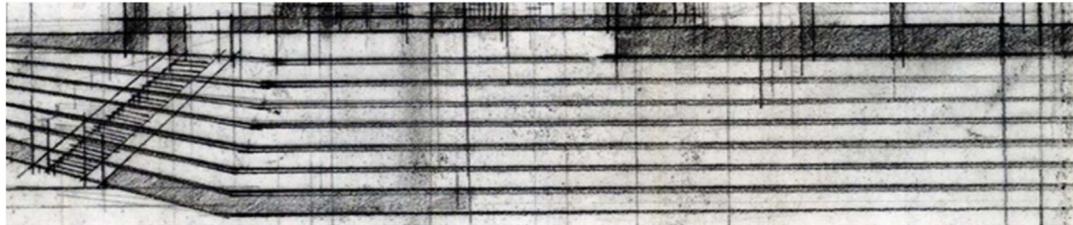


Plate 51

Sketch Platform



Plate 52

Path Finish- The brick in the pavement

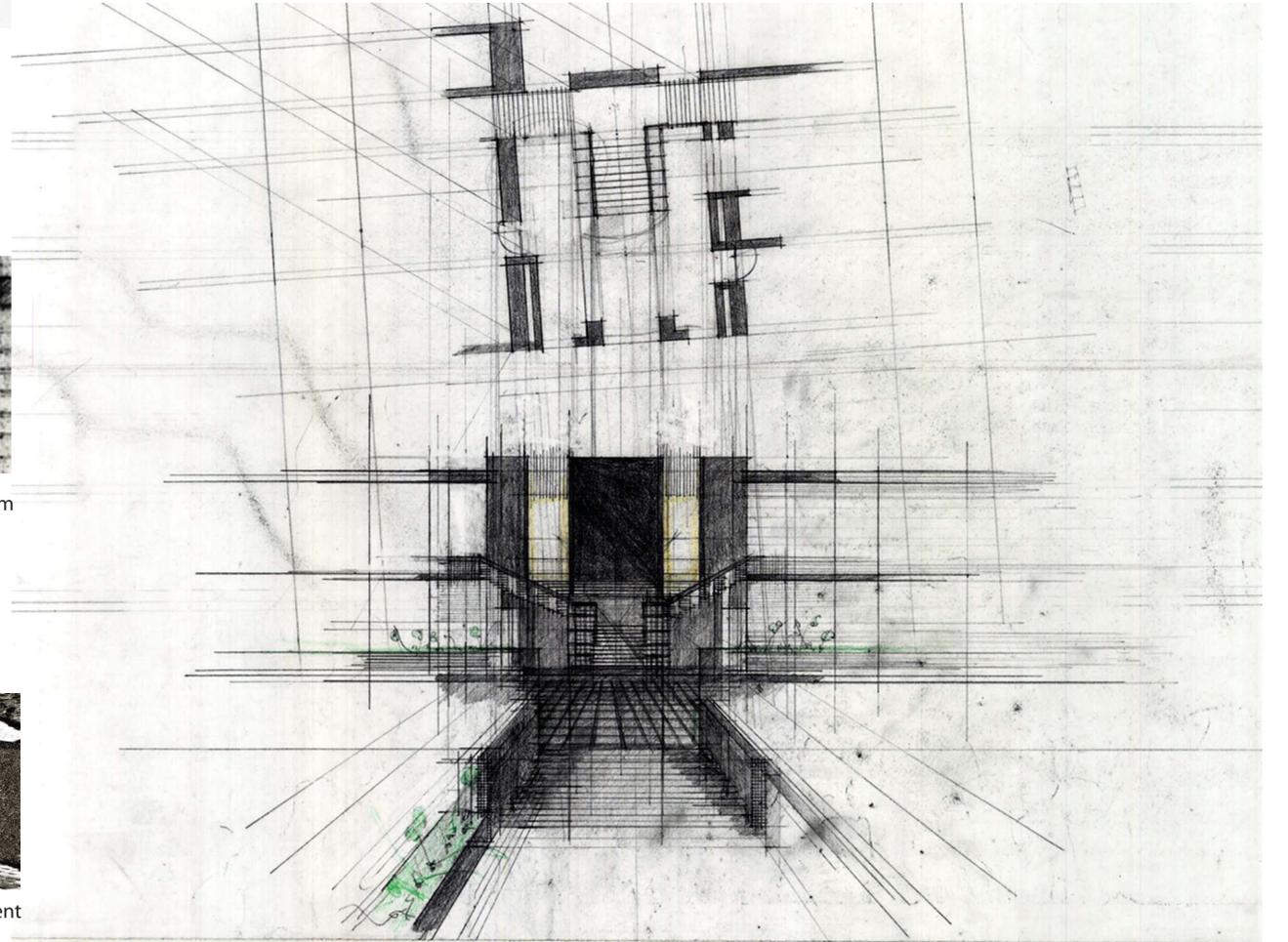


Plate 53

Approach Condition

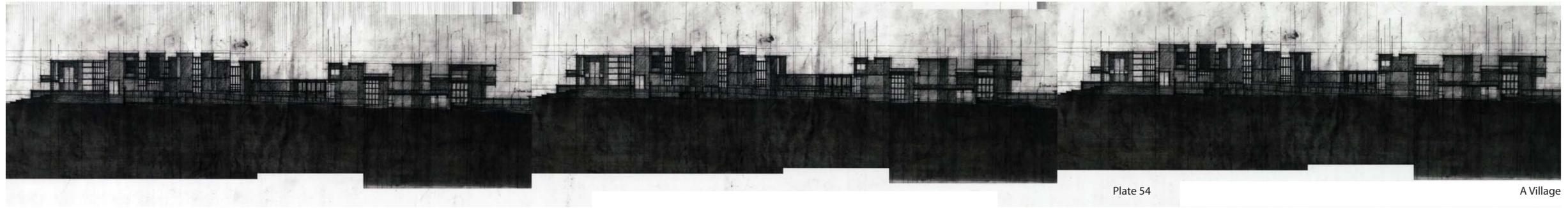


Plate 54

A Village

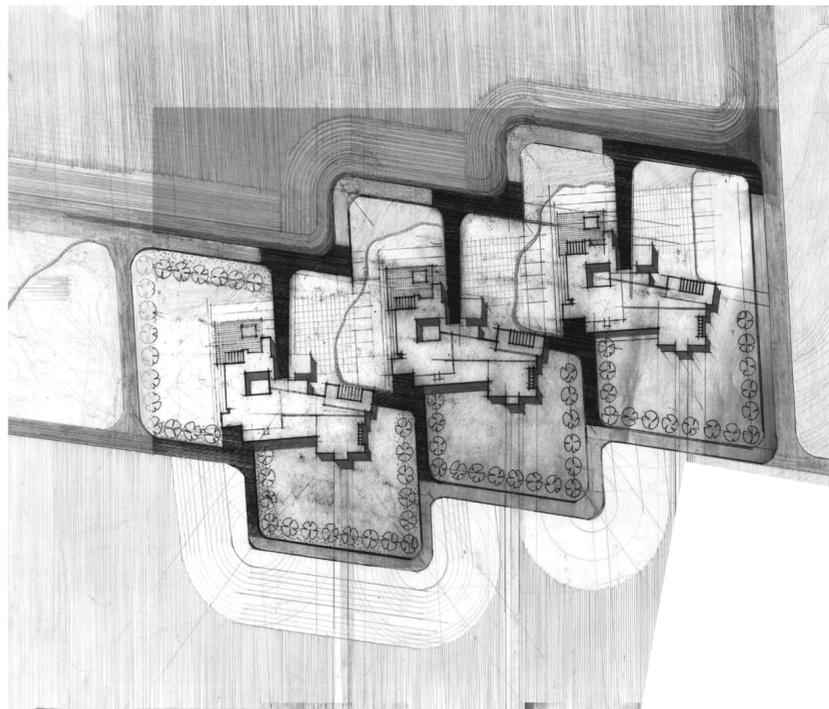


Plate 67

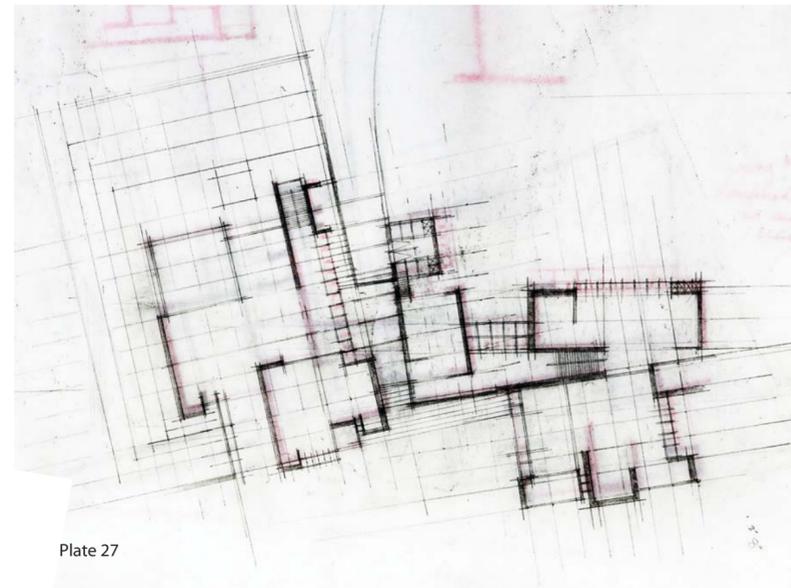


Plate 27

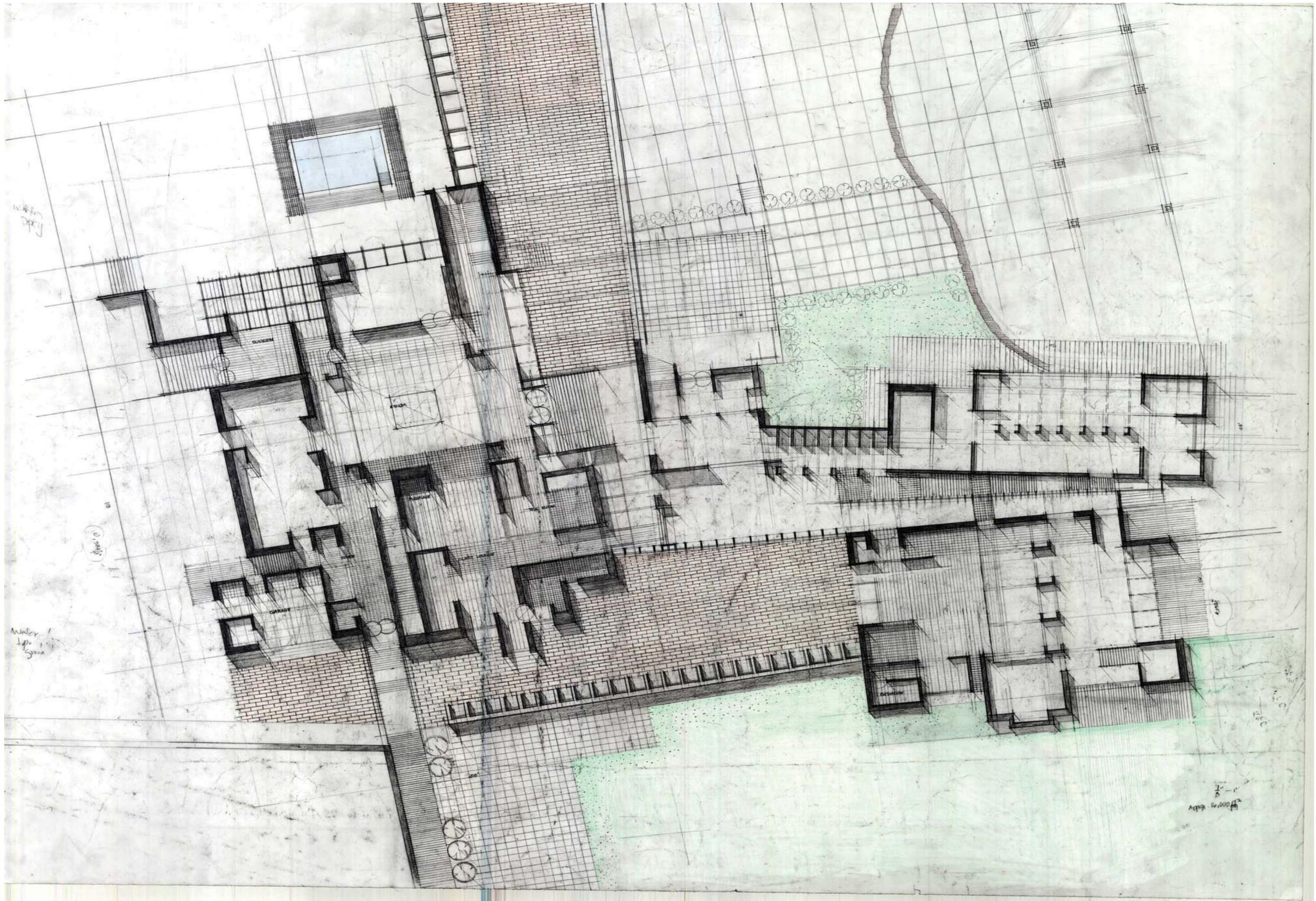


Plate 59

Ground Floor Plan



Plate 60

Second Floor Plan

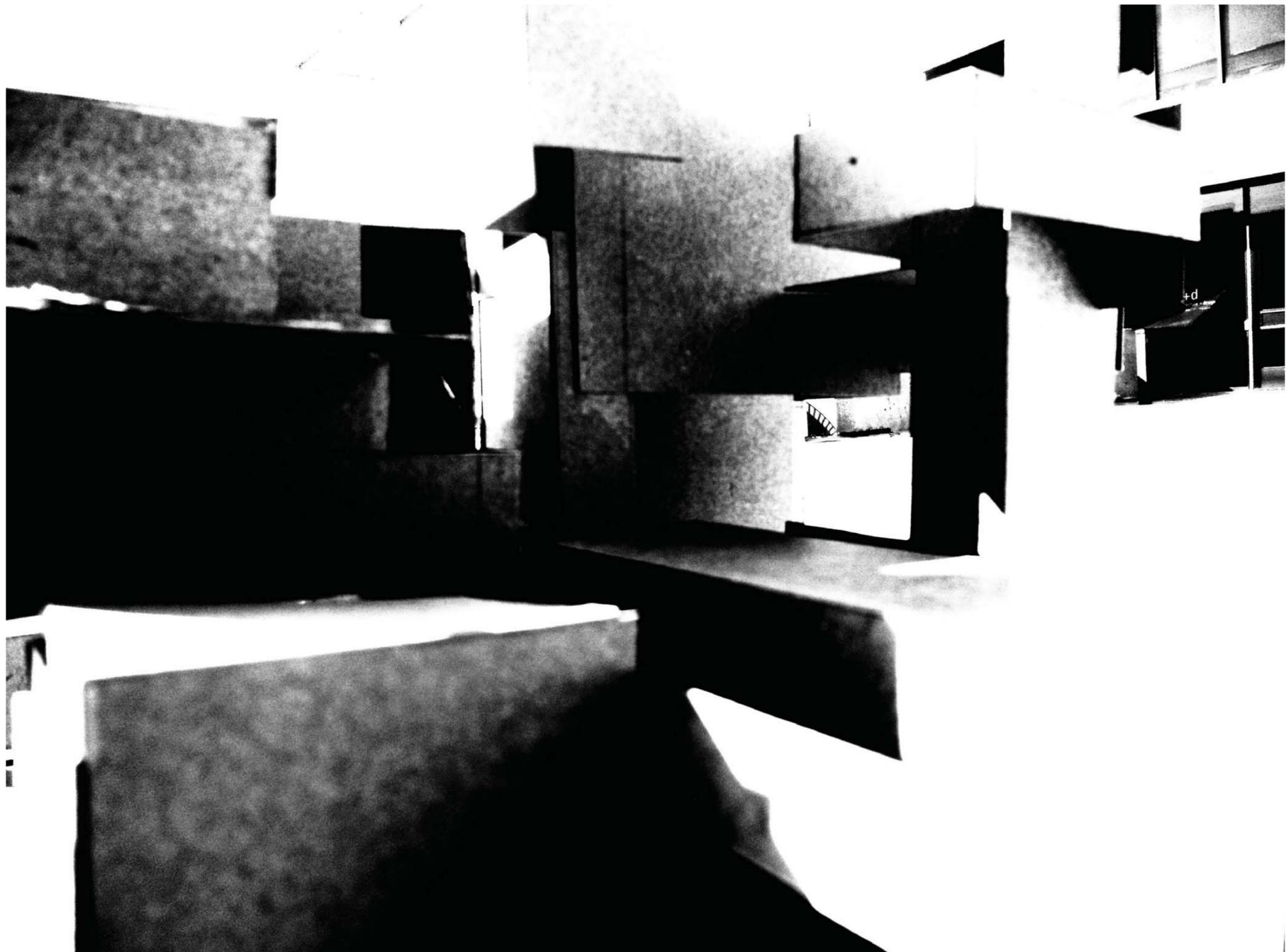


Plate 61

Extruding the Plan



Plate 59

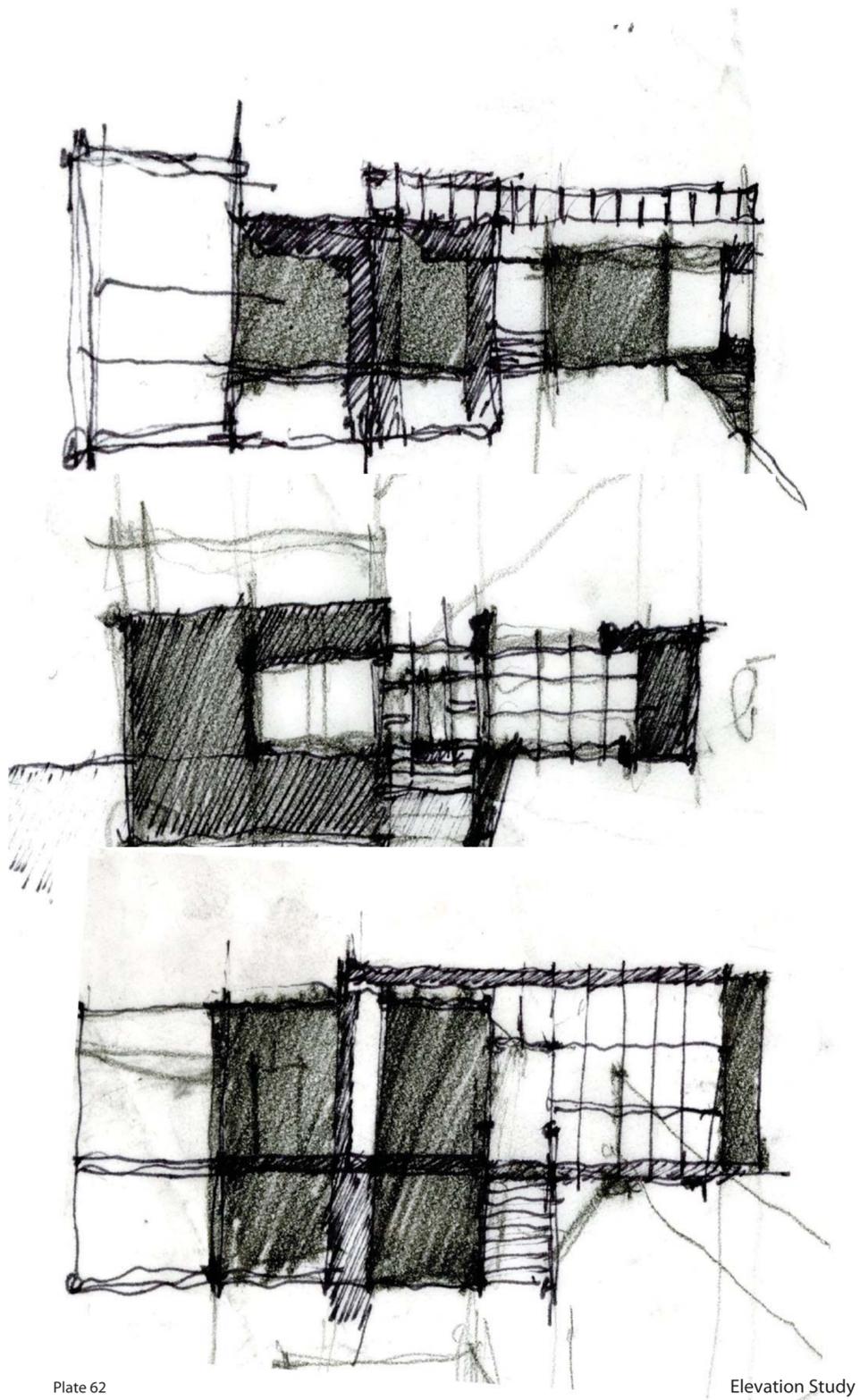


Plate 62

Elevation Study



Plate 63

Window wall in elevation

My Journey at Virginia Tech began in January of 2009, where I like so many others before me had questions that I hoped would be answered in any school of architecture. How to make a Good building, How to get a Job and advance in the profession among other concerns.

Leaving now, I realize that while graduation may signal the end of formal schooling, it is by no means a signal that my architectural education is complete. Architecture as a science and art must accomplish different things for different people and diverse skills are required of architects to deal with the complexities of the design and construction process. Some of the intellectual fulfillments of practicing architecture lies in applying diverse skills to complex processes and problems, and while your education is a significant milestone, that which follows may be far more challenging. Not only because of continuing work load, competition and complexity but also the graduate architect may find new array of choices and challenges in the horizon.

Architecture entails the activities of both the mind and body acting in union, thinking, crafting, drawing, seeing. Ideas have to be communicated and explained graphically and verbally. Order and direction have to be created out of disorder and chaos. The ability to compose aesthetically successful visual form in two or three dimensions is one of the backgrounds of my thesis exploration.

For the purposes of this exploration, I found drawing to be an extremely satisfying and a stimulating use of time and energy that produced its own rewards and when I look back, I think I may have found a mode of working that defines me.

Most of the ideas were solidified by models that were made earlier in the process and then studied for what they had become. Sometimes, the original idea was lost in the translation and it was a constant struggle to make something physical that still possessed the core of ideas that I was working with.

The Idea of the villa is a way to bring the project to an end. In the wake of completing my book, my thesis remains open as a search for new discoveries and possibilities that will shape me as an architect. Finding all the ideas that drove the work evident in the house. To achieve an architecture of place in the process and a harmony of the formal construction and an architecture of place is the point where my book *ENDS* but where my thesis *BEGINS*.

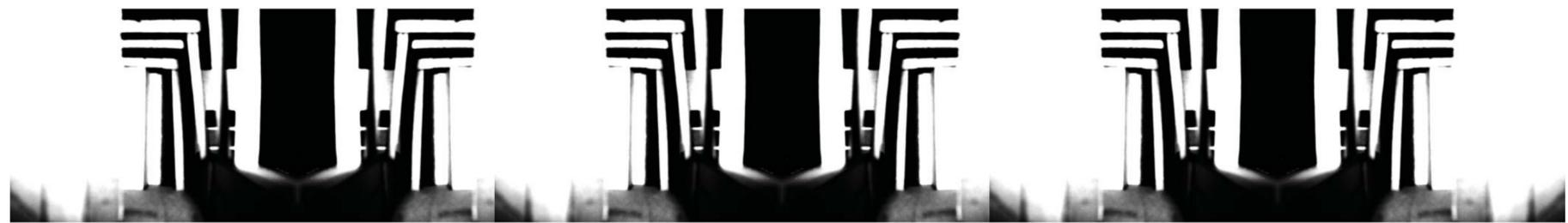
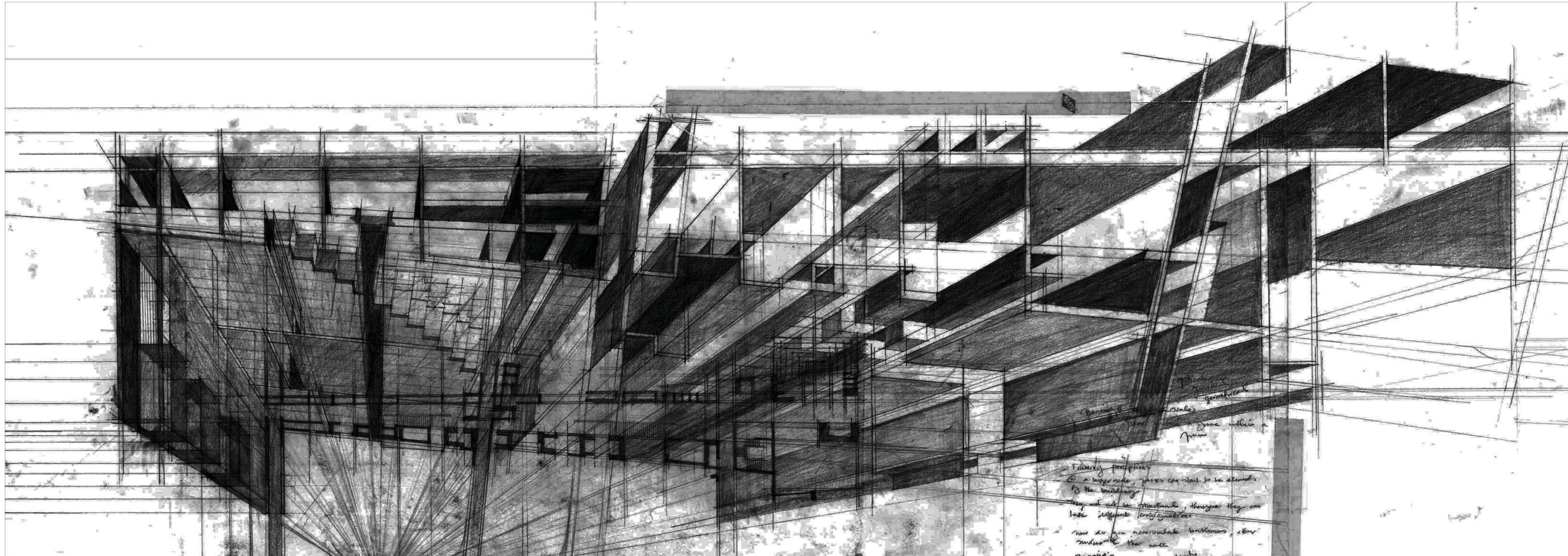


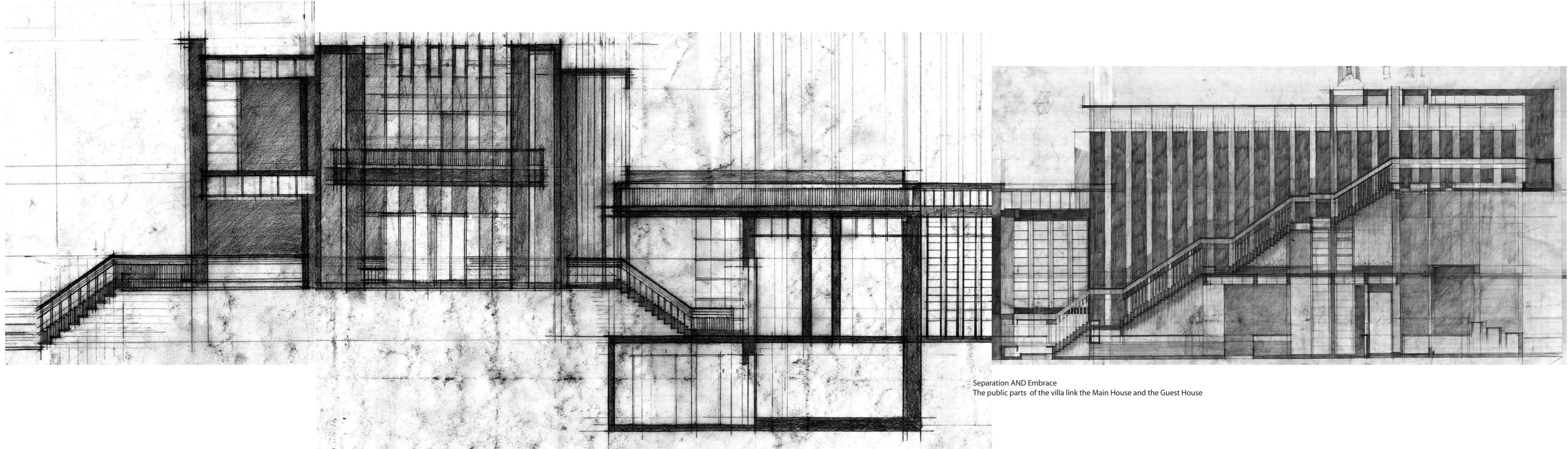
Plate 64

Bringing back the whole

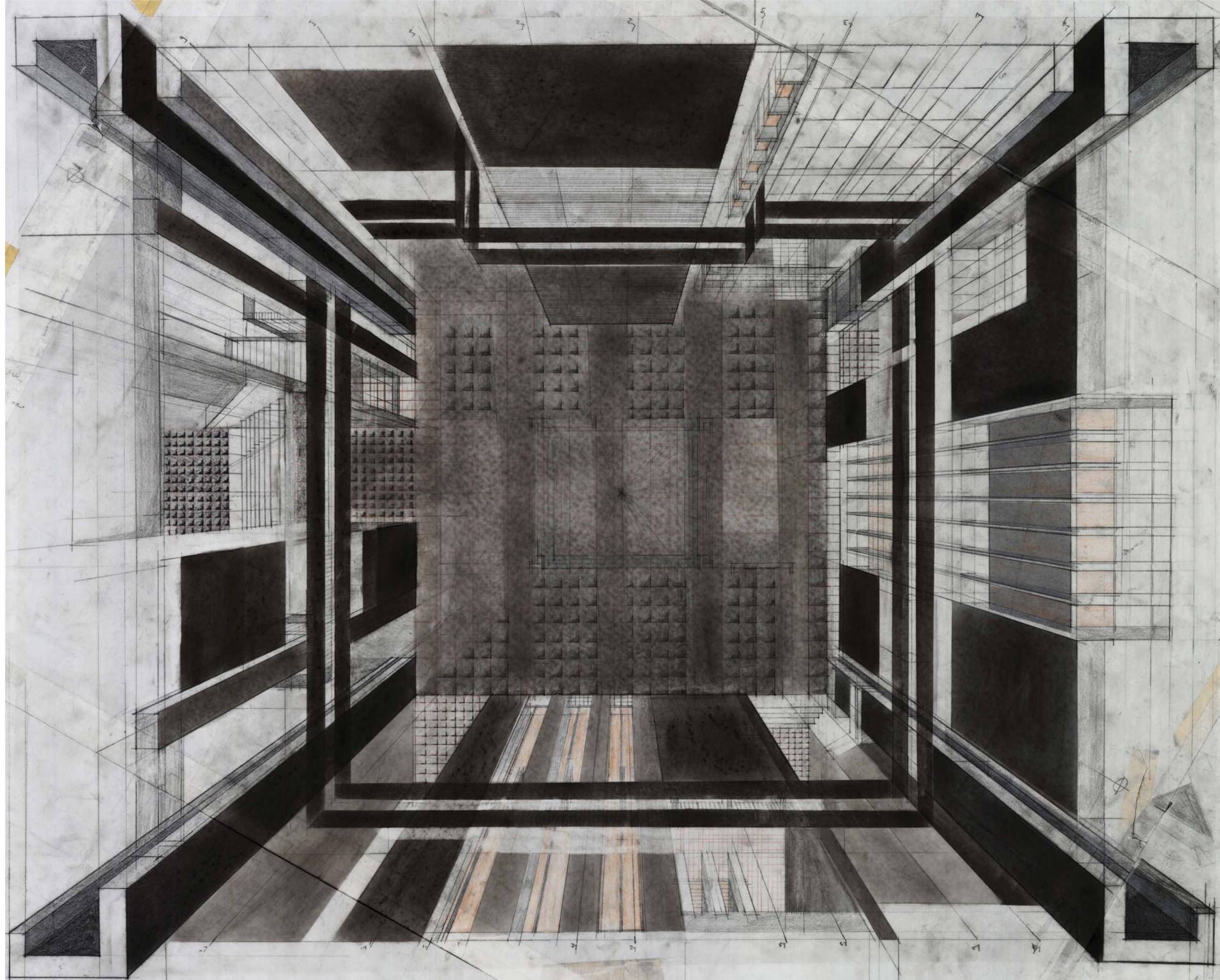


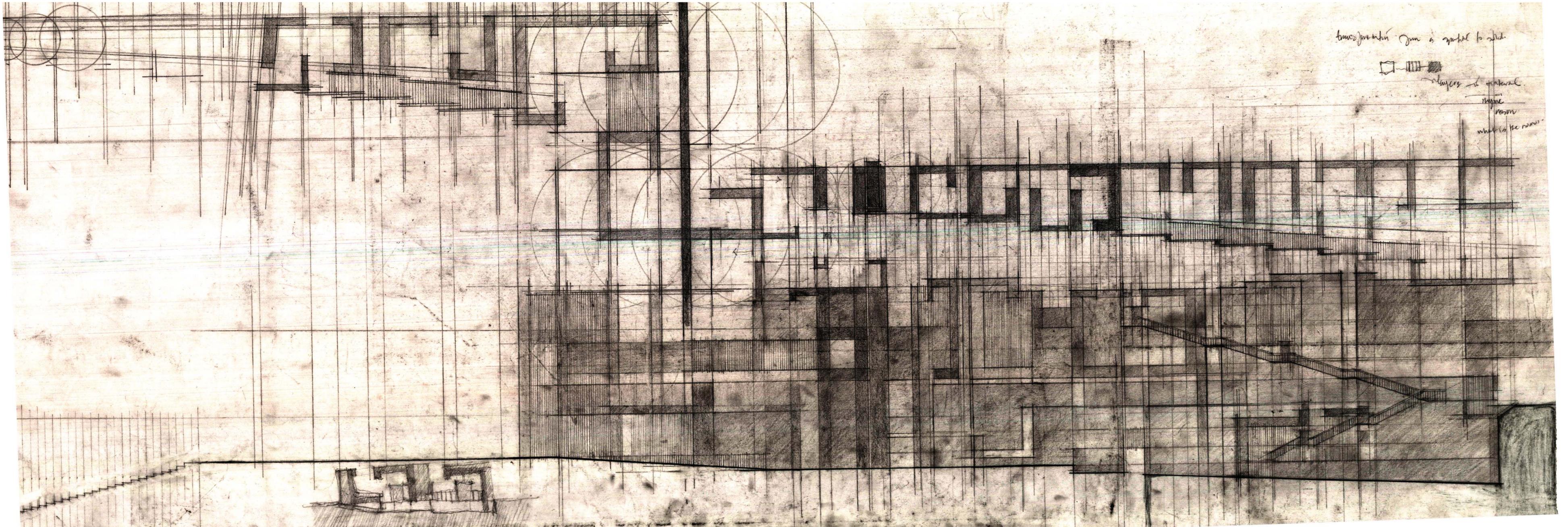
Handwritten notes in the upper right section of the sketch, including the word "structure" and other illegible text.

Handwritten notes in the lower right section of the sketch, including the phrase "Primary perception" and several lines of text.

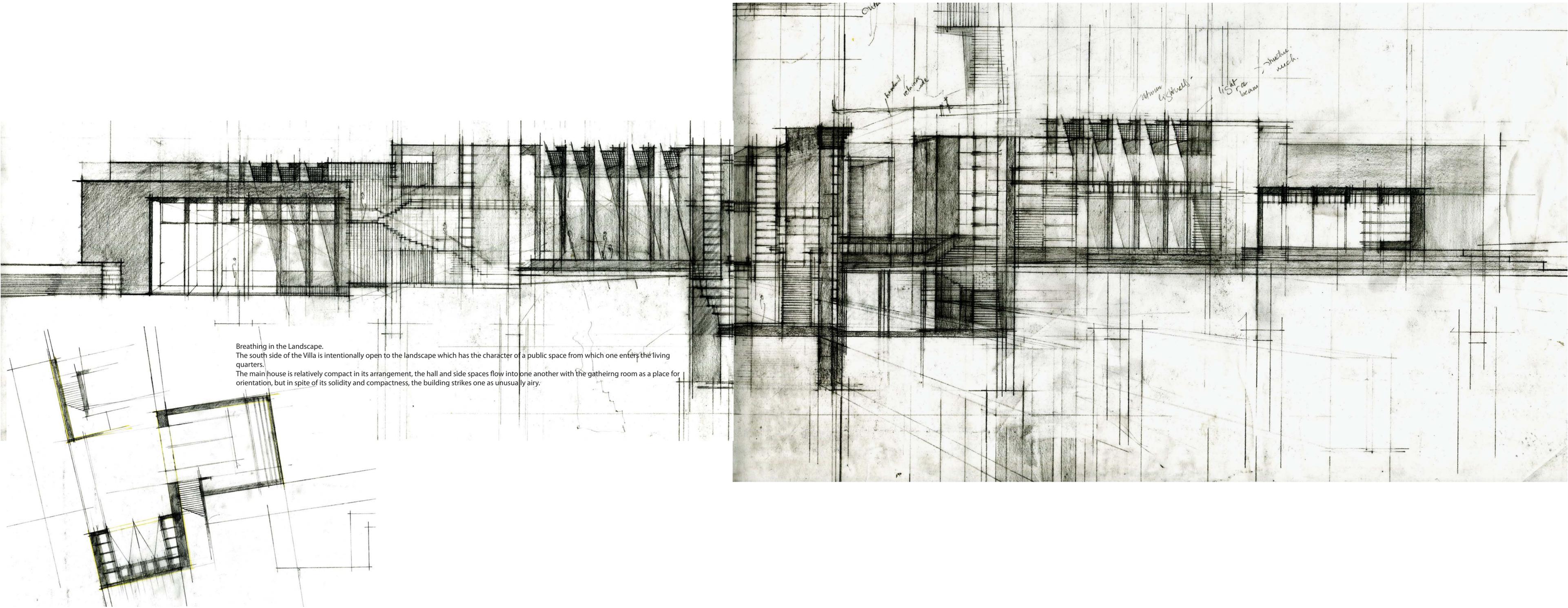


Separation AND Embrace
The public parts of the villa link the Main House and the Guest House

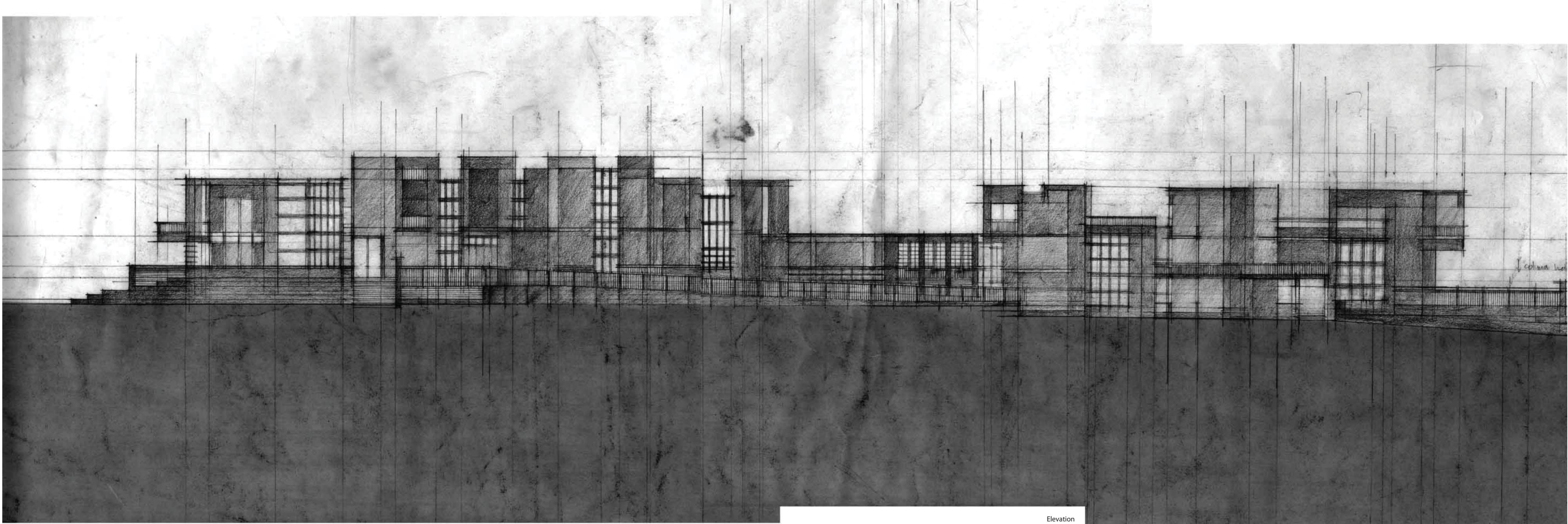




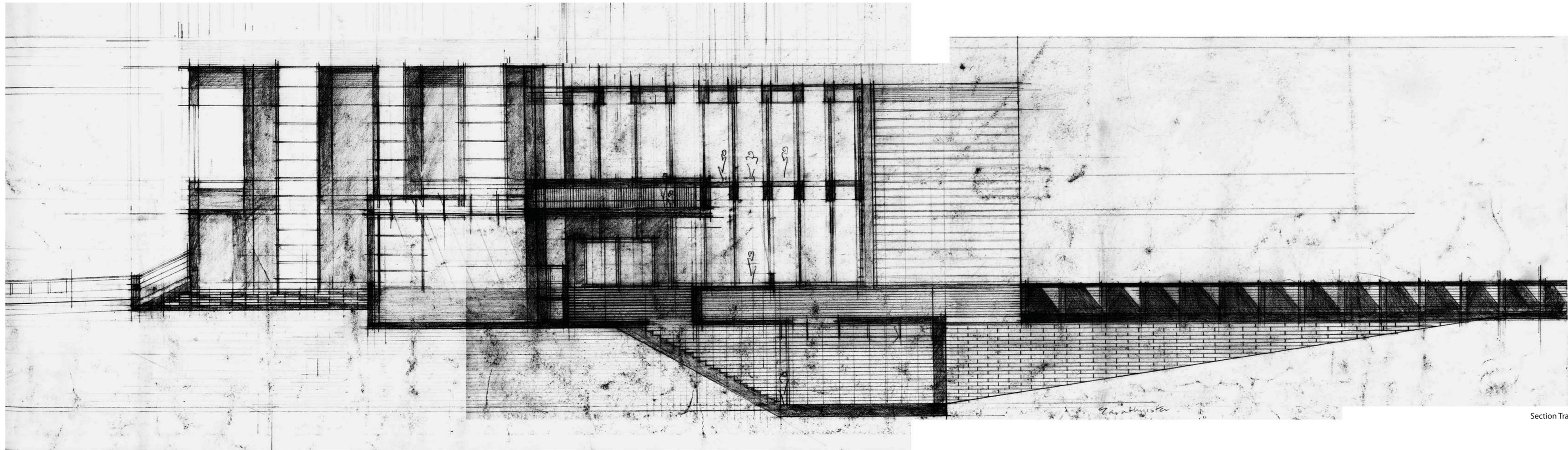
All round symmetry and different on all sides.



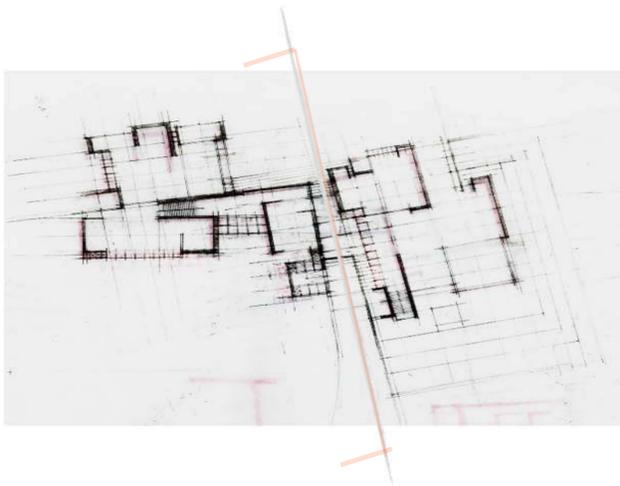
Breathing in the Landscape.
The south side of the Villa is intentionally open to the landscape which has the character of a public space from which one enters the living quarters.
The main house is relatively compact in its arrangement, the hall and side spaces flow into one another with the gathering room as a place for orientation, but in spite of its solidity and compactness, the building strikes one as unusually airy.

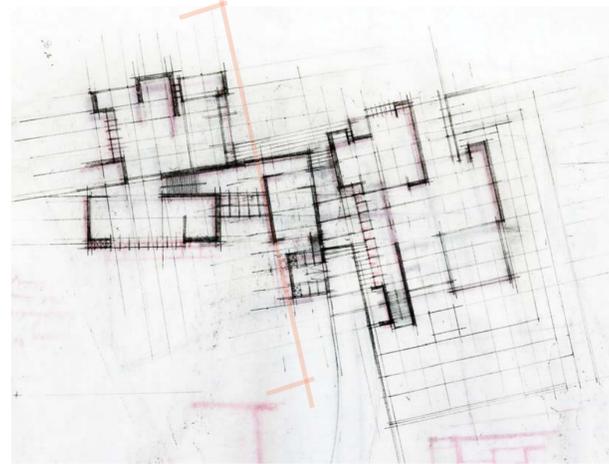


Elevation

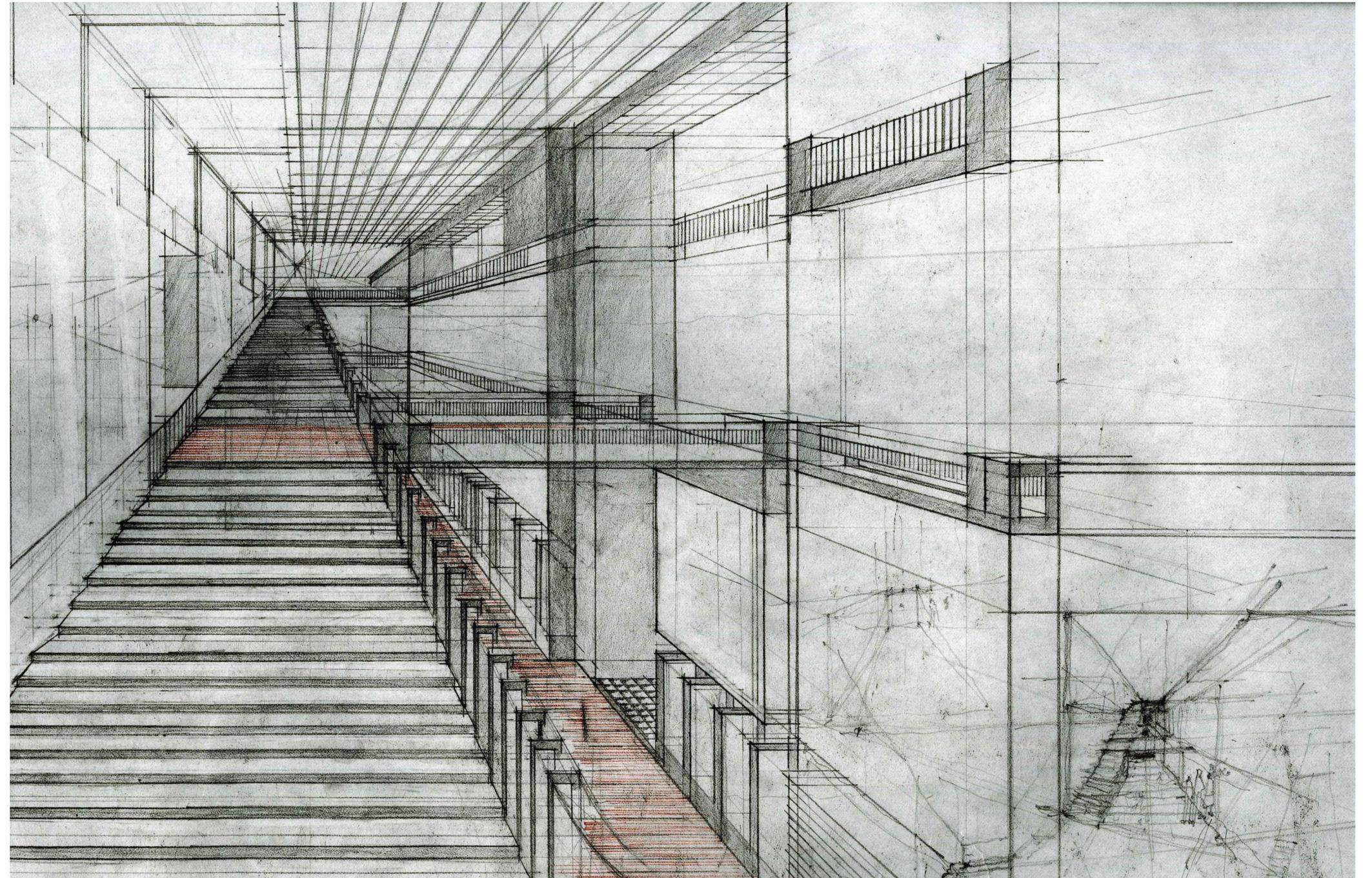


Section Transverse





Grand Stair Perspective





Discoveries/ Conclusion

Each volume of this book is devoted to a single architectural idea explored and elaborated to include the overall idea of Harmony of form and Place.

In making the all aspects of the building, the parts have been singled out for emphasis. The walls, windows and doorways emphasize the transformation of the Lshape in all dimensions horizontally and vertically.

The Placing of a Window

No room ought to be without a window, by which the enclosed air may be let out and renewed, because else it will be corrupt and grow unwholesome. The windows will be best contrived for admitting the sun if they are made large, and yet may avoid being troubled by the winds at the same time, if we place them high so that the cold air may not blow directly upon the people within it. Lastly from whatever side we take in the light, we ought to make an opening for it may always give us free sight of the sky, and the top of the opening ought never to be too low because we are to see the light with our eyes and not with our heels.

Alberti, Leon Battista De re aedificatoria, 1485

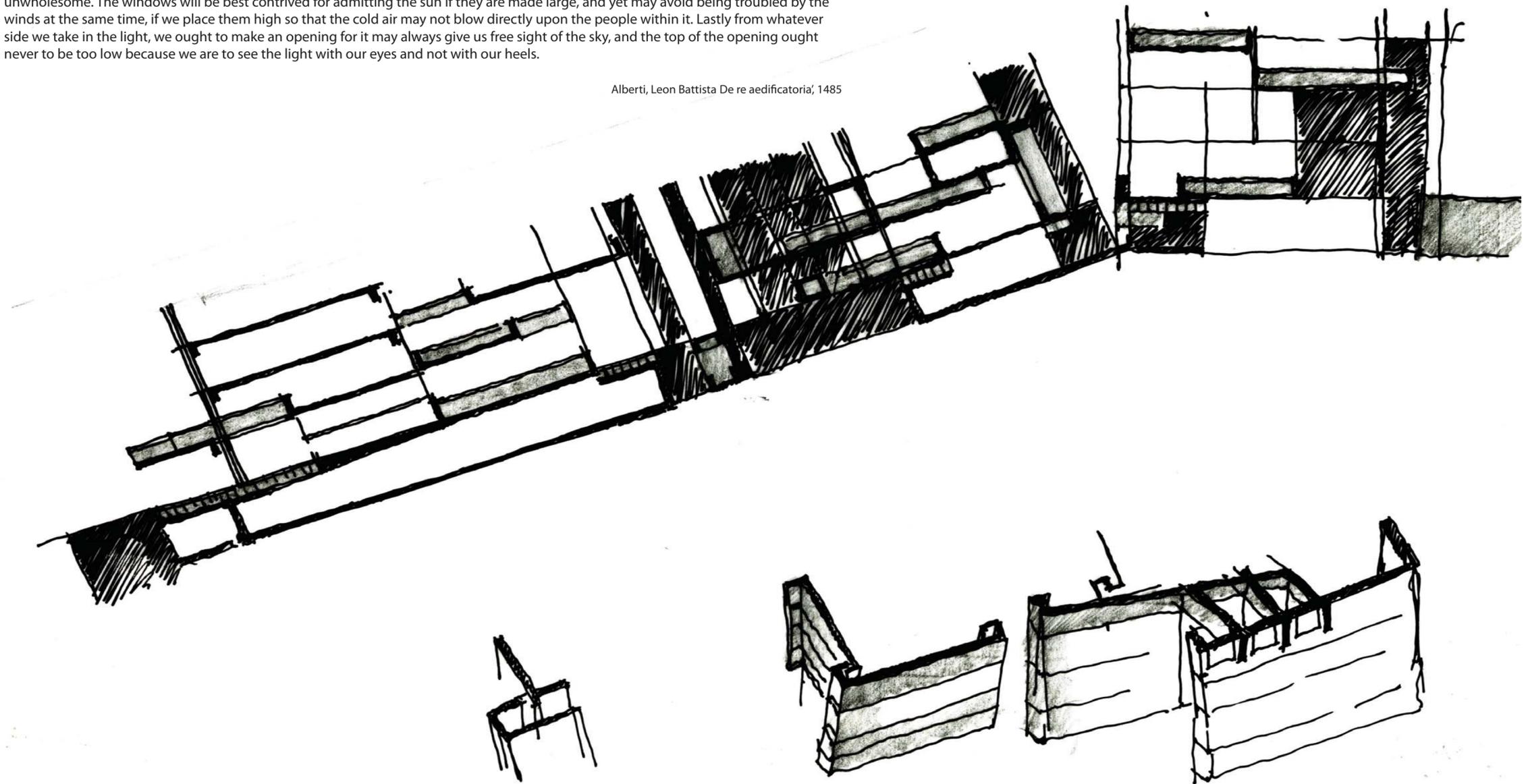


Plate 65

Structure and Framing

Selected Writings

Beny, Roloff
The Romance of Architecture

Pikionis, Dimitri
Architect 1887-1968

Rossi, Aldo
The Architecture of the City

Rowe, Colin
The Mathematics of the Ideal Villa

Ruskin, John
The Seven Lamps of Architecture

Rykwert, Joseph
The Villa

Smienk, Gerrit & Niemeijer
Palladio, The Villa and the Landscape

Cited Works

Ruins of Hadrian's Villa

Plate 1, Plate 46

Authorized photograph from book
The Villa by Rykwert, Joseph

Vista into Palladio's Villa

Plate 47

Authorized photograph from book
Palladio, the villa and the Landscape by Smienk, Gerrit & Niemeijer



Plate 66

Sketching the Volume

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- Plate 62 -pg. 43
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- Plate 68 -pg. 25
- Plate 69 -pg.16
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- Sketch of where two places meet
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- Composition of facade - Scheme 3
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