

# ALLEY-GALLERY

Graduate Thesis Project  
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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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William Brown  
Chairman

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William Galloway

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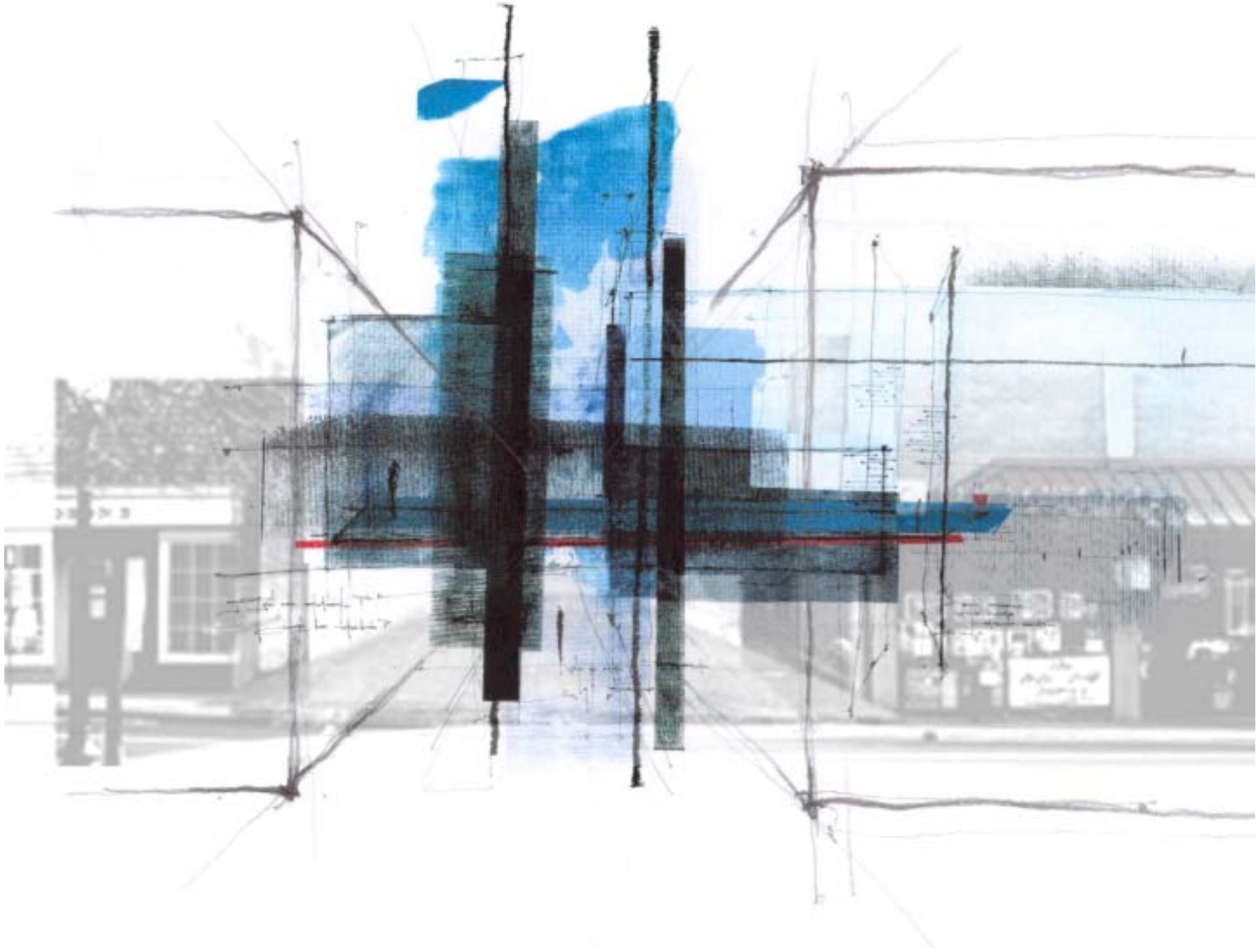
Pia Sarpaneva

**Rebeca Vicéns Sánchez**

January 2002  
Blacksburg, VA



**ALLEY-GALLERY**





**ABSTRACT** The site chosen for this thesis project is located in downtown Blacksburg, Virginia. It consists of a 30'x110' infill lot and an alley running parallel to it. An initial desire to blur the boundary between the alley and the proposed building led to a study of the potential of parallel planes overlapped along the shared border. Representation of these planes in two dimensions allowed almost simultaneous perceptions of multiple spatial and geometrical configurations among them. The architectural consequences of this phenomenon became the main subject of inquiry. Exploration through silkscreen prints and model studies culminated in the design of an outdoor art gallery.

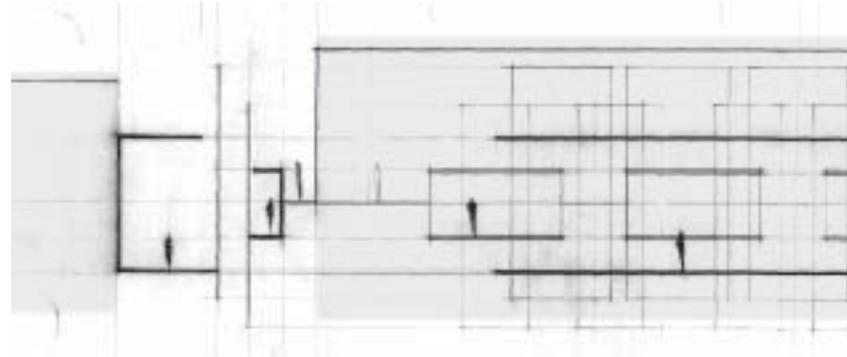
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Left. Front View. Initial study of planes overlapped along the site.



**INITIATION**

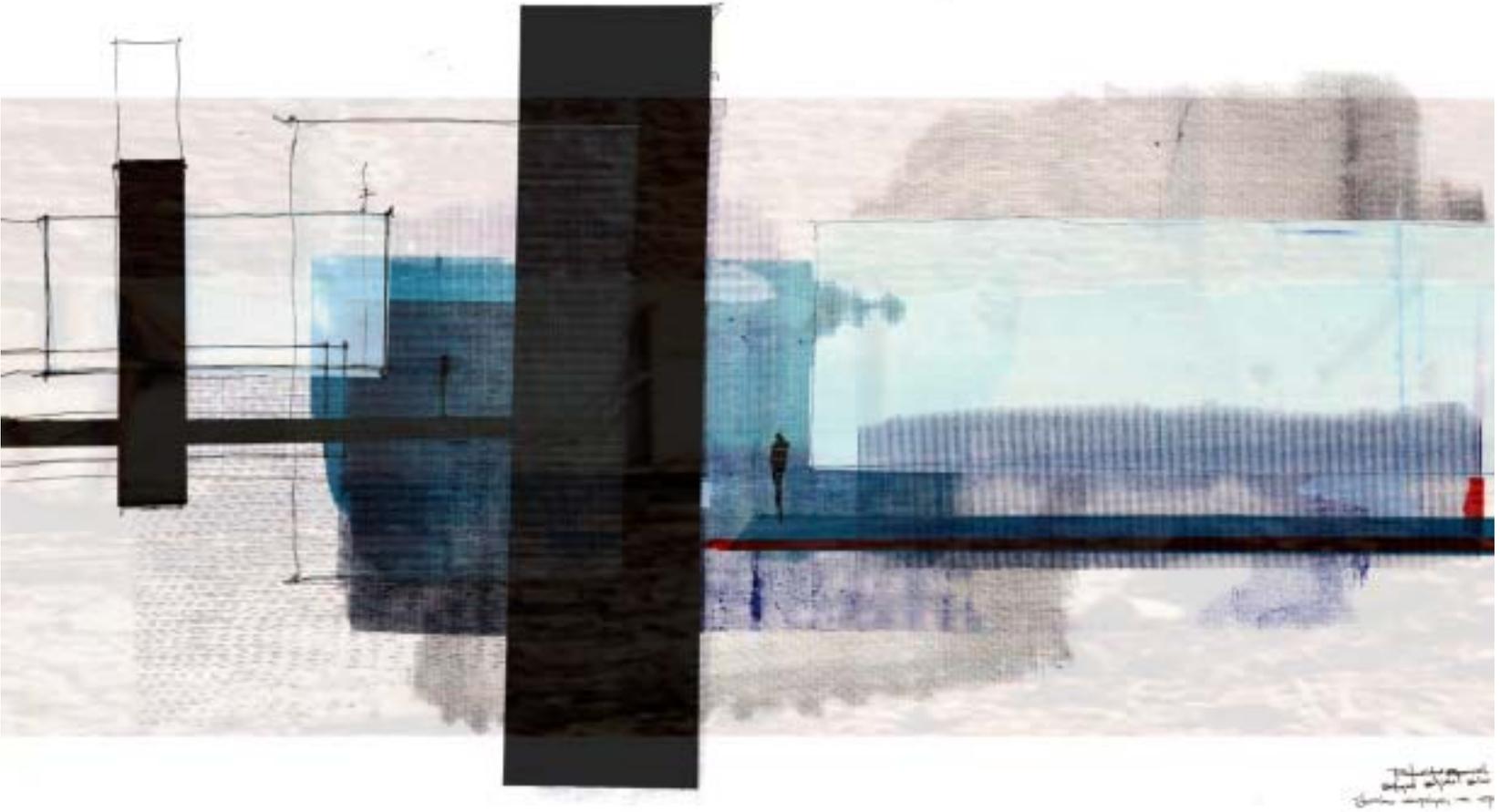




**BOUNDARY** All throughout downtown conditions exist, some random, others planned, that allow pedestrian transit between and around buildings. These conditions form a network of paths that connect different parts of town. The chosen site contains an alley, already part of this network. The primary intention became to incorporate the proposed building into this system; to make the proposed building an integral part of a person's walk through the alley. The boundary between alley and building became the starting point. The degree of visual and physical connection between the two would determine the degree of interaction of the passerby with the building. Permeability became the main objective. A permeable boundary could slow down, maybe even stop momentarily, a person's pace at certain intervals with openings through which a glimpse of the other side could be possible. These openings could provide alternative routes through rooms within it that could ultimately blur the distinction between alley and building to the extent that they became one.

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Left. Site Plan with Proposed Building. Shaded areas between buildings mark existing paths. Above Left. View towards the Back of the Site. The existing alley runs along the right side. The proposal preserves it in this position. Above Right. Transversal/Longitudinal Section Study. Parallel planes overlapped along the shared border diffuse the boundary by defining areas through which a person's path can be woven. Their configuration determines the views as well as the degree of penetration from one side to the other.



**TRANSPARENCY** Silkscreen printing initially served as a means to represent the layers of parallel planes that would constitute the boundary. During this process the prints unexpectedly hinted at some of the perceptual phenomena possible by overlapping figures in two dimensions. Ambiguous relationships among them became slightly apparent and as a result various different readings of the same figures could begin to be made. In order to understand how these phenomena occurred and how they could be translated into architecture a closer look at the concept of transparency followed.



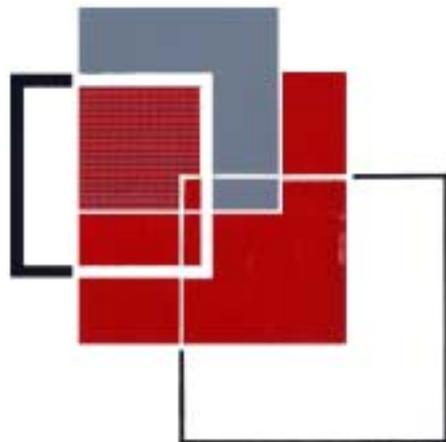
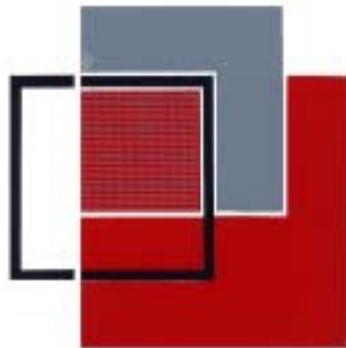
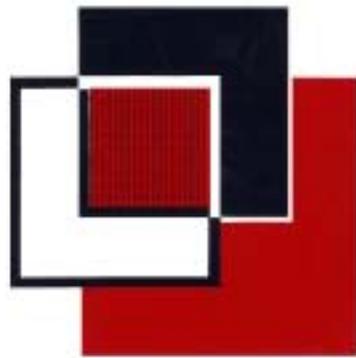
Left. Longitudinal Section/Elevation Study (Elevation towards Alley). In some of the overlapped conditions the shared areas could begin to be read as independent or as part of either of the two planes that define them. Their position in space also begins to be ambiguous because it becomes difficult to determine in some areas which one is in front of the other. Above Left. Front View of Site. Above Right. Party Wall. This wall was shared by the adjacent building and the previous building on the site. It was an unexpected coincidence to find its resemblance to the silkscreen prints. Layers of interventions made on it throughout the years remain visible. The proposal keeps them exposed. Together they constitute the last visible layer from the alley into the building.

**TRANSPARENCY (2D)** *“If one sees two or more figures overlapping one another, and each of them claims for itself the common overlapped part, then one is confronted with a contradiction of spatial dimensions. To resolve this contradiction one must assume the presence of a new optical quality. The figures are endowed with transparency; that is they are able to interpenetrate without an optical destruction of each other. Transparency however implies more than an optical characteristic, it implies broader spatial order. Transparency implies a simultaneous perception of different spatial locations. Space not only recedes but fluctuates in a continuous activity. The position of the transparent figures has equivocal meaning as one sees each figure now as the closer now as the further one.”* Gyorgy Kepes, *Language of Vision*, Chicago, 1944, 77; quoted by Rowe and Slutzky in *“Transparency: Literal and Phenomenal”*, in Colin Rowe, *The Mathematics of an Ideal Villa and Other Essays*, Cambridge, 1976, 159-183.

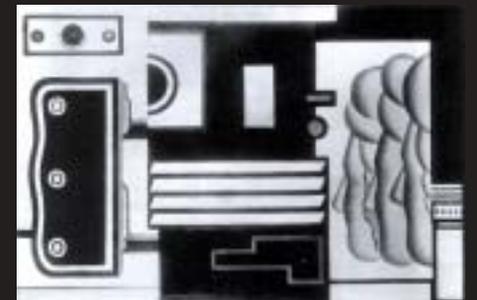
Colin Rowe and Robert Slutzky further develop this definition in their essay *Transparency: literal and phenomenal*. In it they make a more precise distinction between this kind of transparency which may be *“an inherent quality of organization”* and the one which may be *“an inherent quality of substance”* such as that found in glass.\* They named them *phenomenal* and *literal* transparency correspondingly.

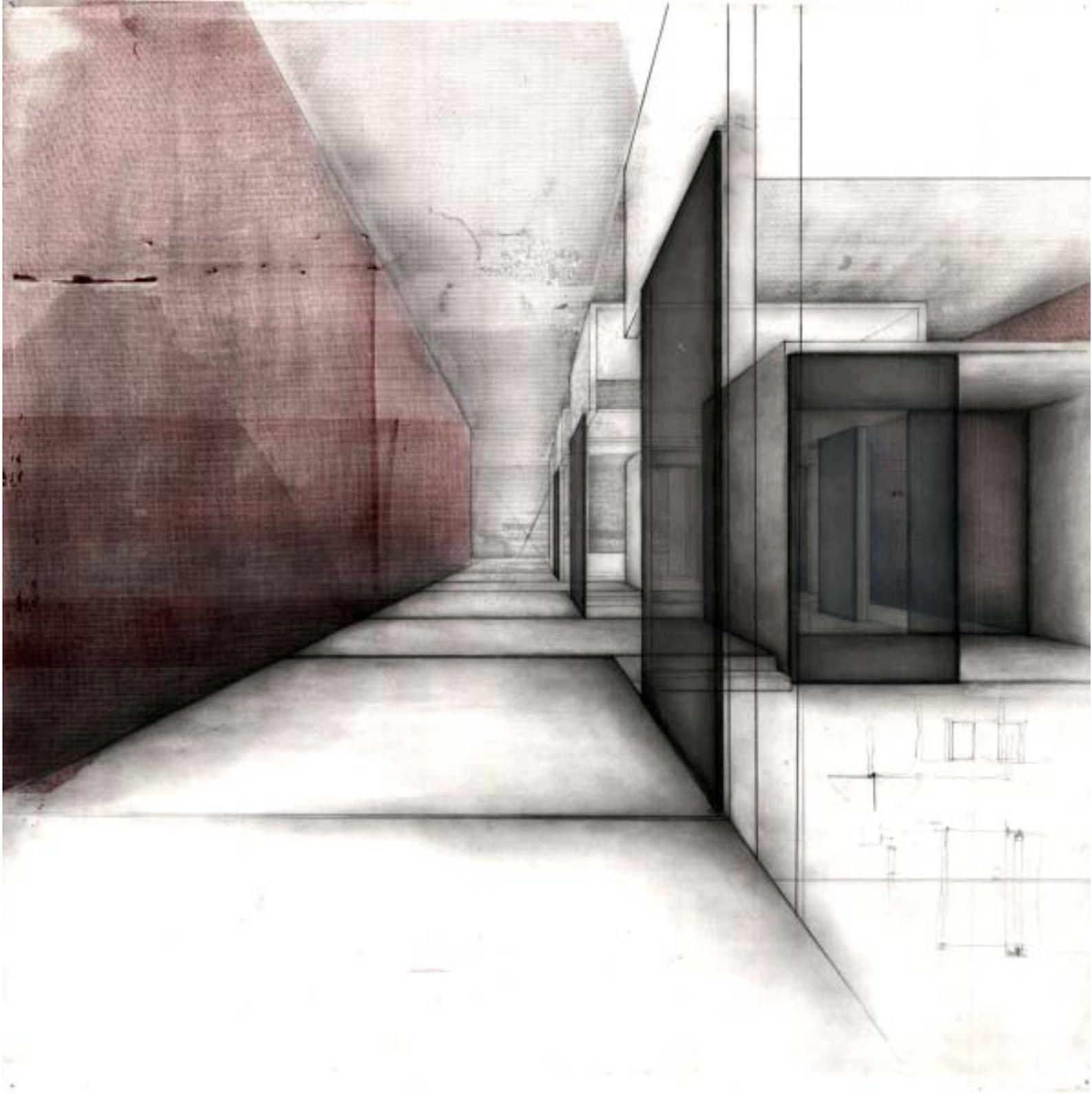
Throughout the first part of their essay Rowe and Slutzky compare several paintings from the cubist period to demonstrate when each kind of transparency is present. They state that simply overlapping figures does not result in phenomenal transparency. By doing this very little is left to interpretation, an inherent aspect of the effect described above. Phenomenal transparency involves ambiguity. Ambiguity in terms of how the figures in a two dimensional composition are related and thus perceived. It is achieved by the implication rather than by the actual existence of multiple relationships between the figures on the canvas. Therefore it is not a matter of simply allowing figures to be seen through other figures, but rather of deciding how much of a figure should be shown and how this portion should relate to the others on it.

Among the paintings discussed in the essay is Fernand Leger’s *Three Faces*. In this painting three highly contrasted areas displaying flat, volume less objects are defined. Shared contours contract the conventional planes of background, middle ground and foreground. As a consequence, the exact position in space of each area becomes impossible to be determined for they appear to shift every time one looks at them. This phenomenon is intensified with the use of color. Careful negative-positive relationships within and between these areas suggest multiple readings not only of their position in space but of their limits as well.



Left. Silkscreen Print Studies. Negative-positive relationships and shared areas allow various readings of the position in space and geometry of the figures. In some instances new figures, product of the shared areas, might also be perceived. Above. Model Photograph. Overlap of two rooms. The opening offers a view into the alley. Below. *The Three Faces*. Fernand Leger, 1926.





**TRANSPARENCY (3D)** Understanding the concept of phenomenal transparency in two dimensions generated new questions regarding its possibilities in three-dimensional space. The main question became how architectural elements could be organized in a manner that could generate the same type of ambiguity found in the silkscreen prints. Rowe and Slutzky state in their essay that *“painting can only imply the third dimension while architecture cannot suppress it”*.\* Foreground and background cannot be compressed in three dimensions. Therefore, the position in space of walls, floors, or ceilings, would never appear to shift as they did in the prints. The translation into architecture would inevitably need to take this new dimension into account.

Cardboard models served as a means to explore how this could be possible. Their construction was based on the prints. The planes were extruded and the differences in color were translated into differences in floor and roof level. Overlapped areas were given different heights as well. As could be expected the first hints of ambiguity were found here. But this time the ambiguity was not in terms of the position in space of the areas that defined them. It was in terms of their limits; where one ended and the other began. With the extrusion of the planes the overlapped areas became rooms within rooms. Rooms with no clear limits for they were shared by larger rooms. The differences in floor and roof levels intensified their perception.

Ambiguity also resulted when several models were placed one in front of the other along a straight line. The visual and physical limits of the rooms were extended and as a result new spatial relationships among them could be established.

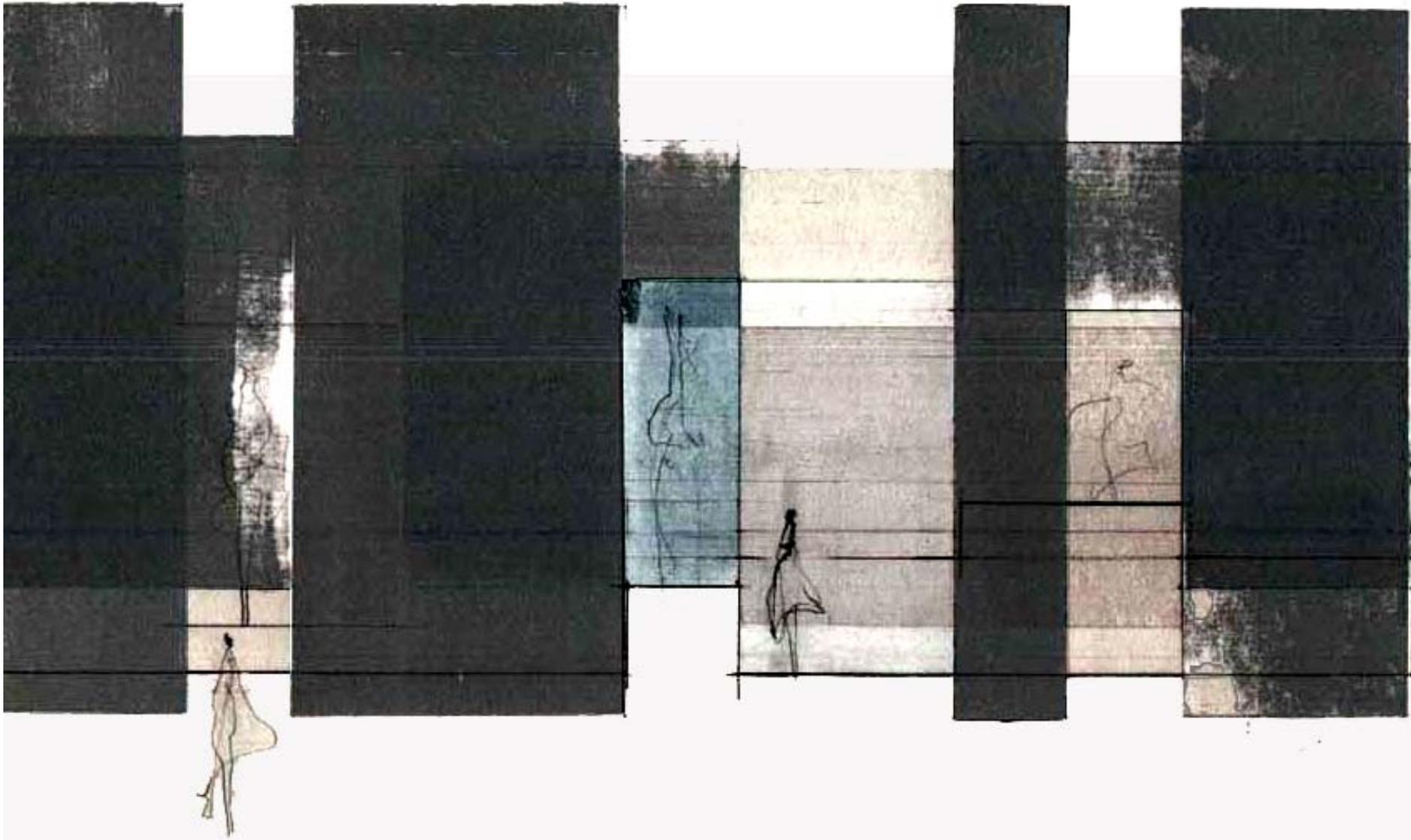
*\*Rowe and Slutzky, “Transparency”, 166*

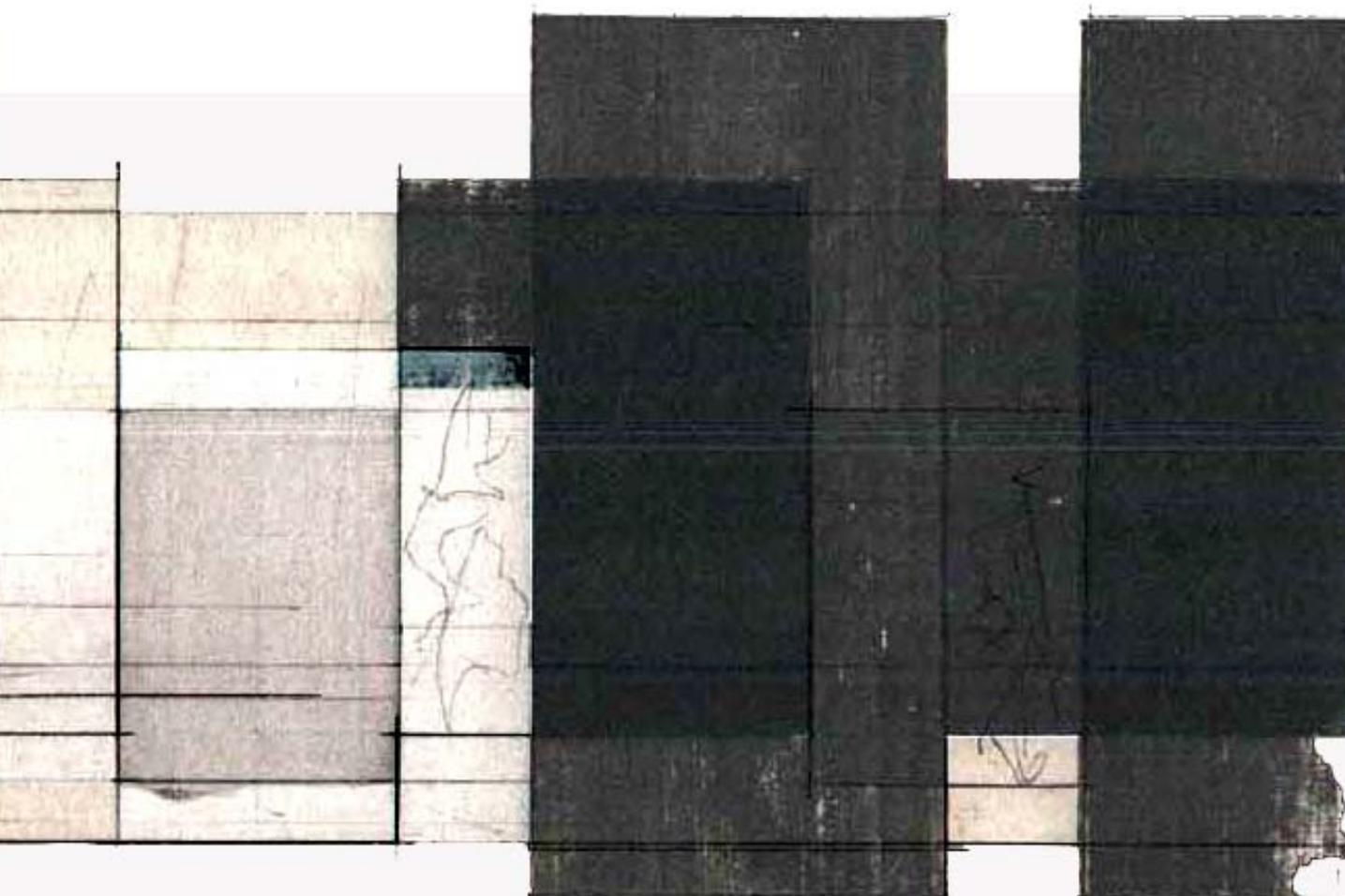


Left. Perspective View from the Alley towards the Front of the Site. Above. Study Models. Their repetition along a straight line causes the definition of new rooms in the areas between them. It also stimulates the perception of longitudinal rooms along it which can in turn be perceived to be intersected by other rooms perpendicular to them. The areas where they intersect can be read as pertaining to either one depending on where a person stands and where he or she focuses his or her sight. The arrangement of the rooms along the site evolved from this configuration. The alley runs parallel to the rooms becoming part of them at moments where they overlap. Shared areas blur the boundary between the two.



**BUILDING**

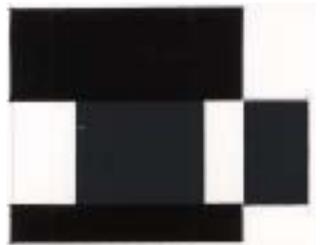
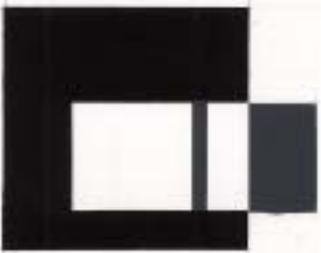
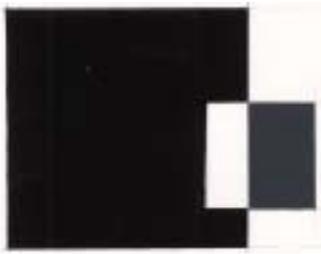




**ALLEY-GALLERY** The possibility of having multiple rooms overlapped along the site without definite boundaries led to the idea of exhibiting art in this place. Seeing art along this chain of rooms could extend the duration of a person's path through the site. The path could be weaved through the rooms; alley and building could become one.

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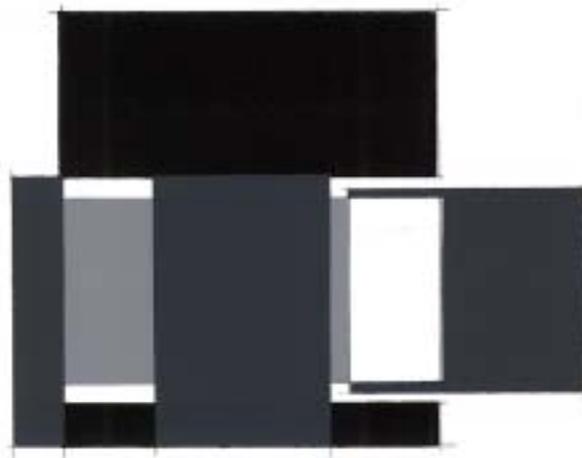
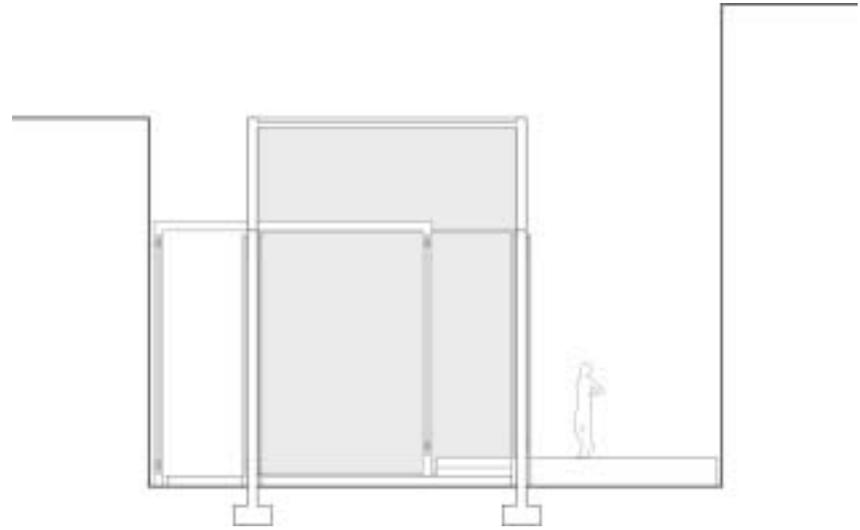
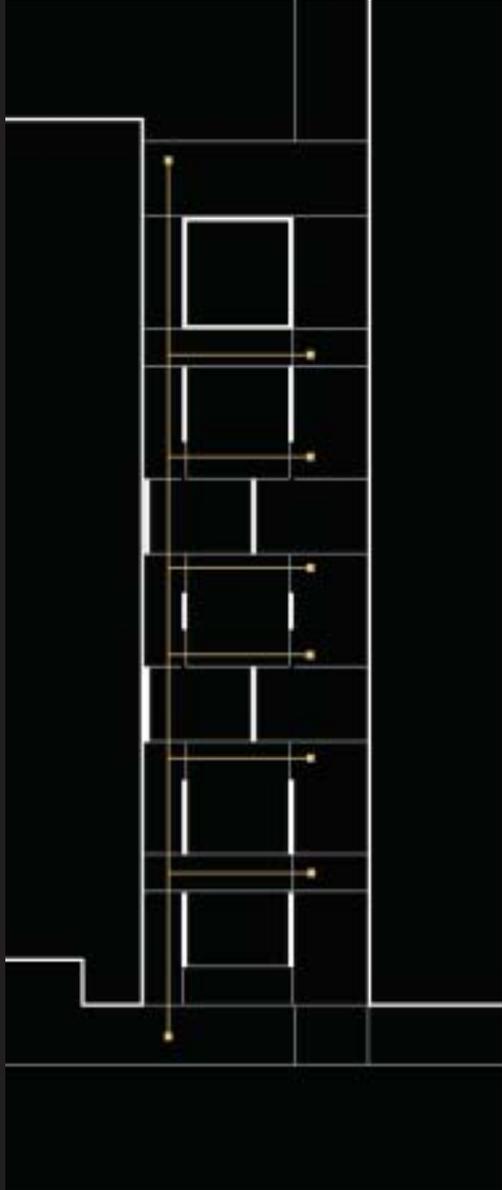
Left. Study of Elevation towards Alley.

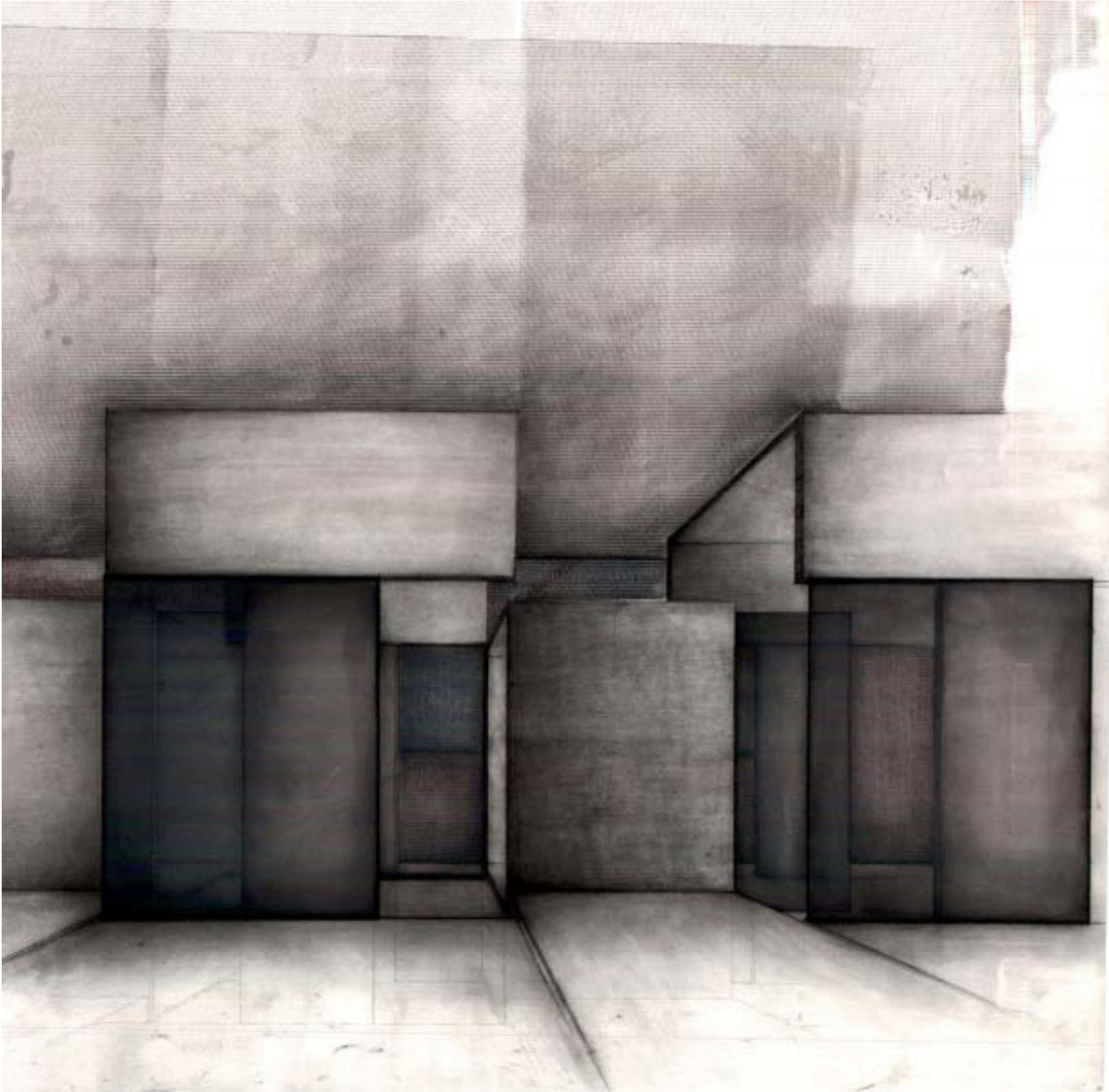


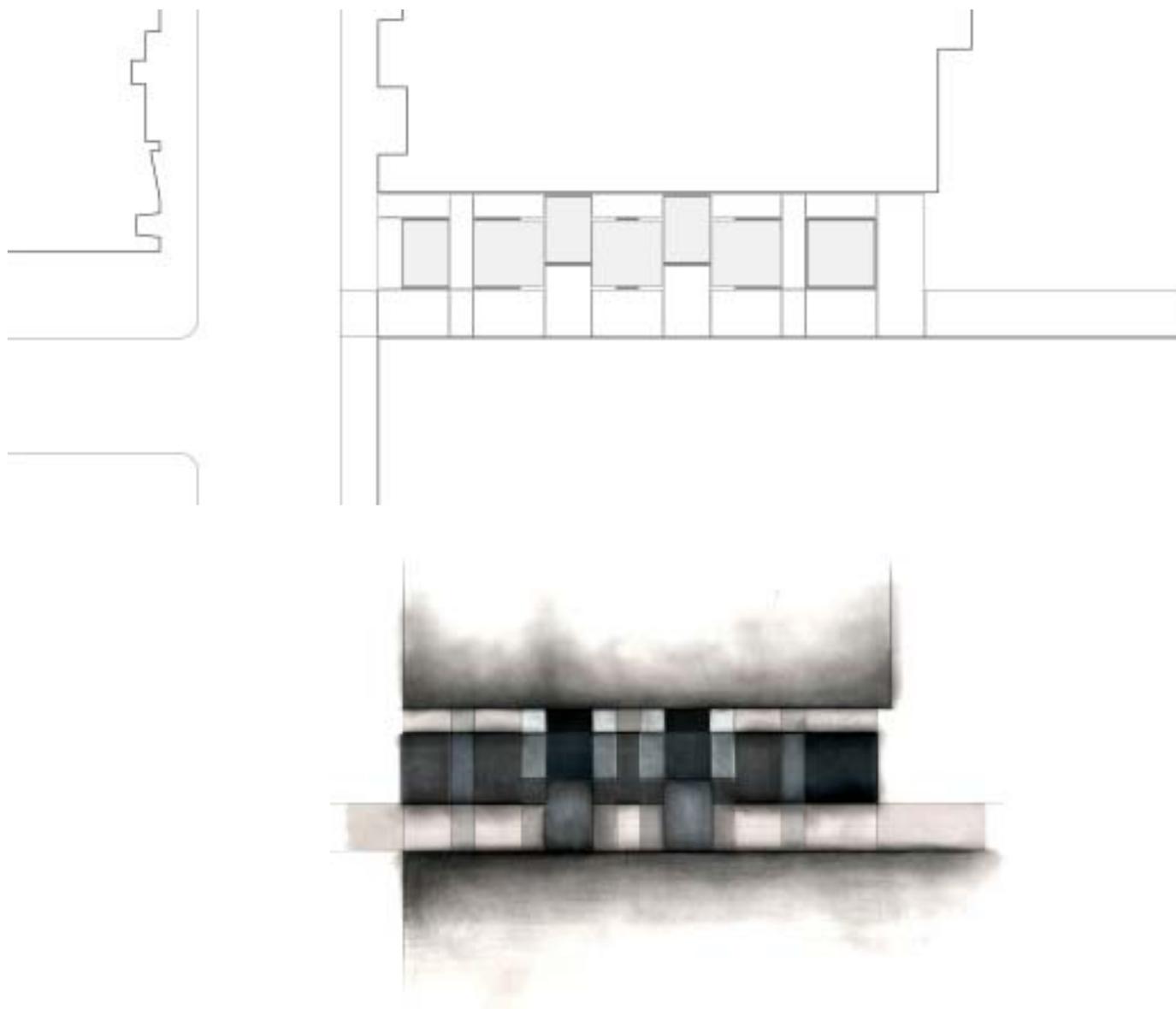
**SECTION** The overlap of the alley with the gallery was initially studied in section. In the first section scheme two zones were established: gray for the alley and black for the gallery. The overlapped part (white) belongs to both. This shared area begins to blur the limit between the two. In the following schemes zones within the gallery are established. They too overlap with the alley and with one another. As a result multiple zones within zones are defined. The final section scheme is composed of three main zones; one constitutes the alley, and the other two constitute the gallery. Each gallery zone has a different height and area. Pre-cast concrete modules define them. They are spread along the site alternating between one and the other. This repetition creates a chain of rooms where long perspective views in one direction intersect with short, compressed views in the other. This intensifies the perception of multiple room configurations as one walks through. It also intensifies the game of seeing art by allowing different views of the same objects.

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Left. Section Studies. Above Right. Plan Diagram of Views. Far Right Bottom. Final Section Scheme. Far Right Top. Transversal Section through Site.



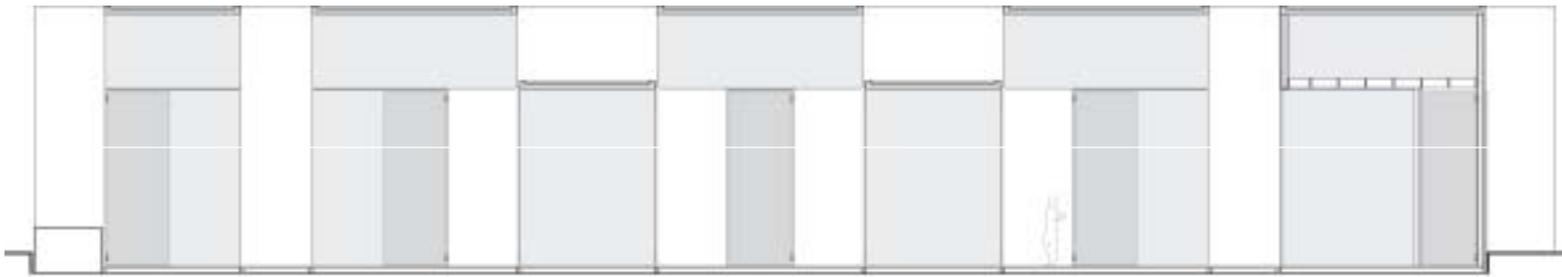
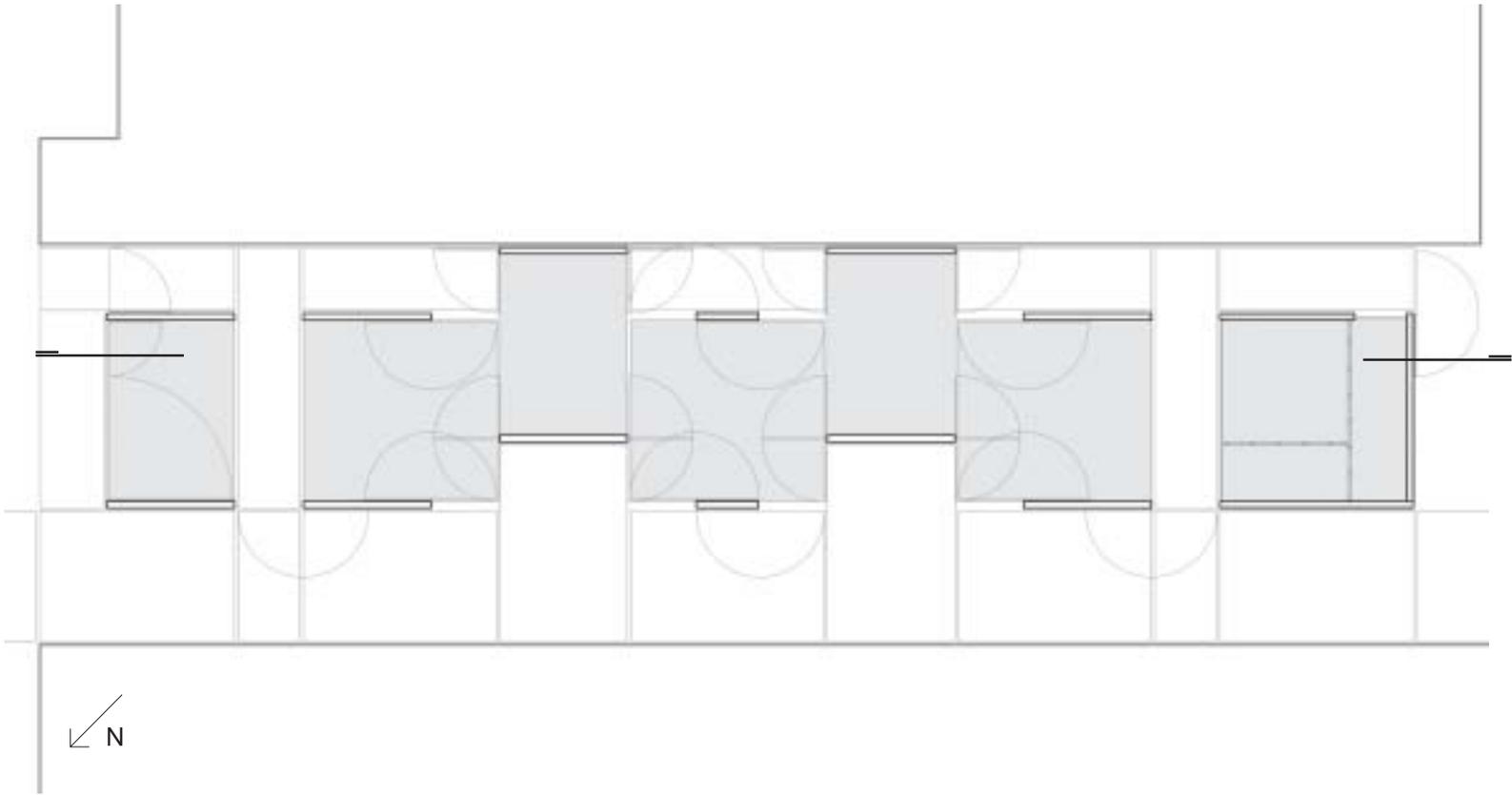




**ELEVATION** The overlap of the modules in elevation is implied with openings on the faces of the taller modules corresponding in height to the smaller ones. Doors on both kinds of modules allow for these openings to be closed defining smaller, shared rooms between them. As a result multiple room configurations and therefore multiple views are possible. A person's path and views change from exhibition to exhibition.

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Left. Perspective View from the Alley into the Gallery. Above. Floor Plan. Below. Floor Plan Study. Study of possible shared areas resulting from various opened-closed door combinations.



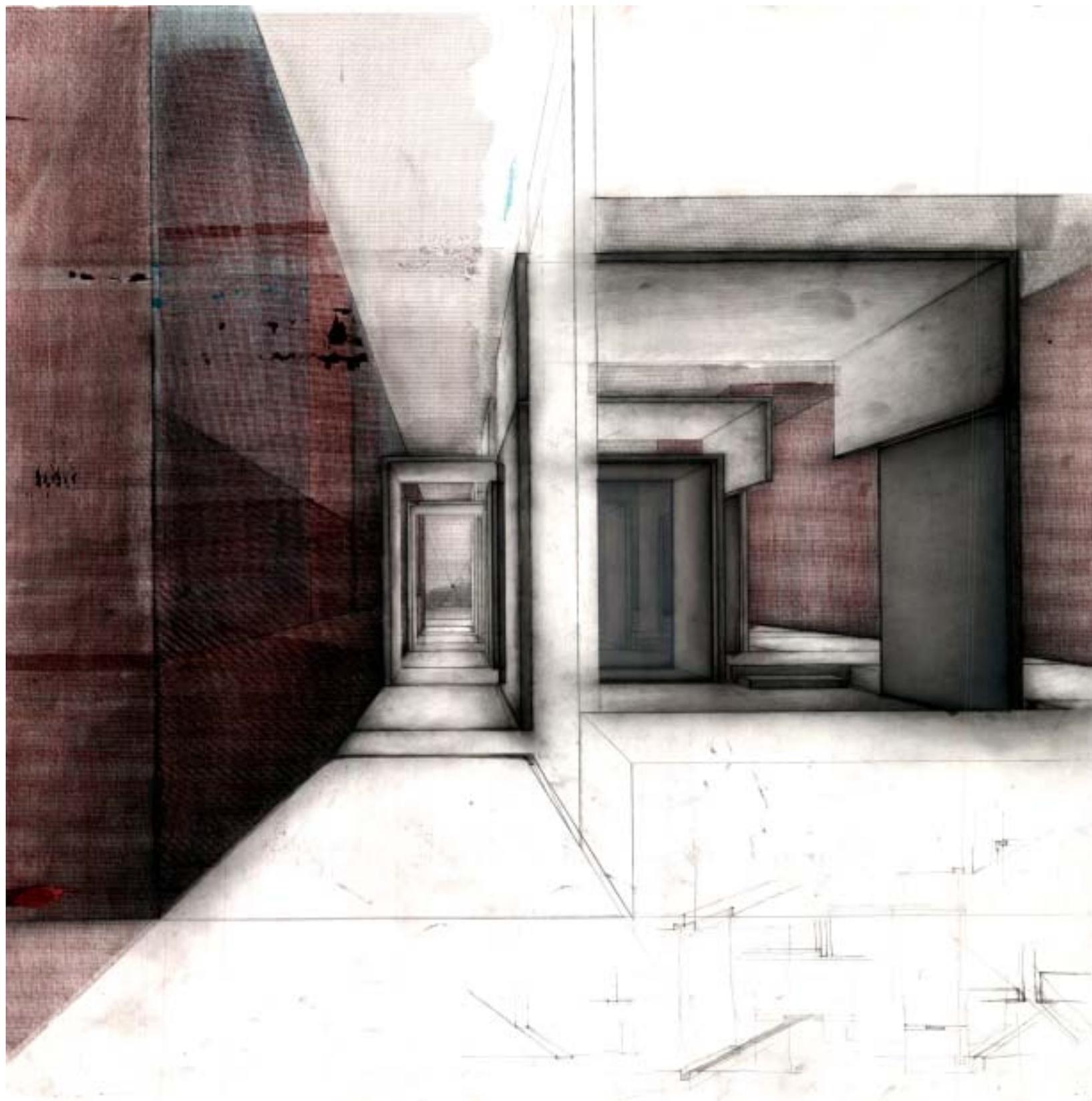
**DOORS** All along the primary intention has been to incorporate the alley with the gallery. Still, alley and gallery have two different functions and therefore need to be able to operate independently at certain times. The doors allow this to happen. During the day they serve to blur the boundary between alley and gallery by defining intermediate rooms. At night they completely separate the two by closing all the openings into the gallery. This way the alley can operate while the gallery is closed.

In addition to changing twice a day, the position of the doors also changes with the exhibitions. Fine wire mesh mounted on steel frames was chosen for this reason. This combination is light yet strong enough to withstand this amount of movement. It also allows some degree of visibility both during night and day. This is important to preserve visual connection between the gallery and the alley at times when the doors are closed.



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Above. Model Photograph. View into gallery. Left. Floor Plan / Longitudinal Section. A diagram of the possible door positions is provided in the floor plan. The module in the back is enclosed to house a small office, service area and storage space for the gallery.



**SURFACE** Two different surface textures were chosen to make a distinction between the interior and the exterior of the pre-cast concrete modules. Interior faces, including floors, are smooth to avoid distraction from art pieces. A slightly rougher texture was chosen for the exterior ones. In the afternoon this texture is intensified with the parallel sunlight coming in from the back of the site.

A change in floor level also makes a distinction between inside and outside. The rooms in the gallery are one foot lower than the alley. This slight change marks the entrance to the gallery. Still, the floors are unified by their modulation. They are modulated according to the placement of the pre-cast modules. Wherever they end or begin a three- inch joint on the floor occurs. This modulation in conjunction with the adjacent buildings defines exterior rooms outside of them. The result is a series of interior and exterior rooms intertwined without clear boundaries along the site.



Left. Perspective View into the Gallery from the Front of the Site. Above Left. Concrete Casting Studies. Various form surfaces and mix component ratios were experimented with to study the possible surface textures for the pre-cast modules. The photograph on the top left shows the result of using a larger small aggregate to large aggregate ratio. The other ones show the results of using the opposite, a smaller small aggregate to large aggregate ratio. It is also possible to perceive from them the difference between the castings made on acrylic forms and the ones made on wood. The acrylic forms produced, as expected, much smoother surfaces than wood forms. This can be seen in the photographs on the far left. Although the method and quantities in this experiment are not used in real commercial processes these studies served to have a better understanding of the broad scope of alternatives concrete offers as a building material. Above Right. Chosen surface textures. Smooth for the interior of the modules; rough for the exterior. Both were achieved using a larger small aggregate to large aggregate ratio. The smooth surface was cast on acrylic. The rough surface was cast on wood.

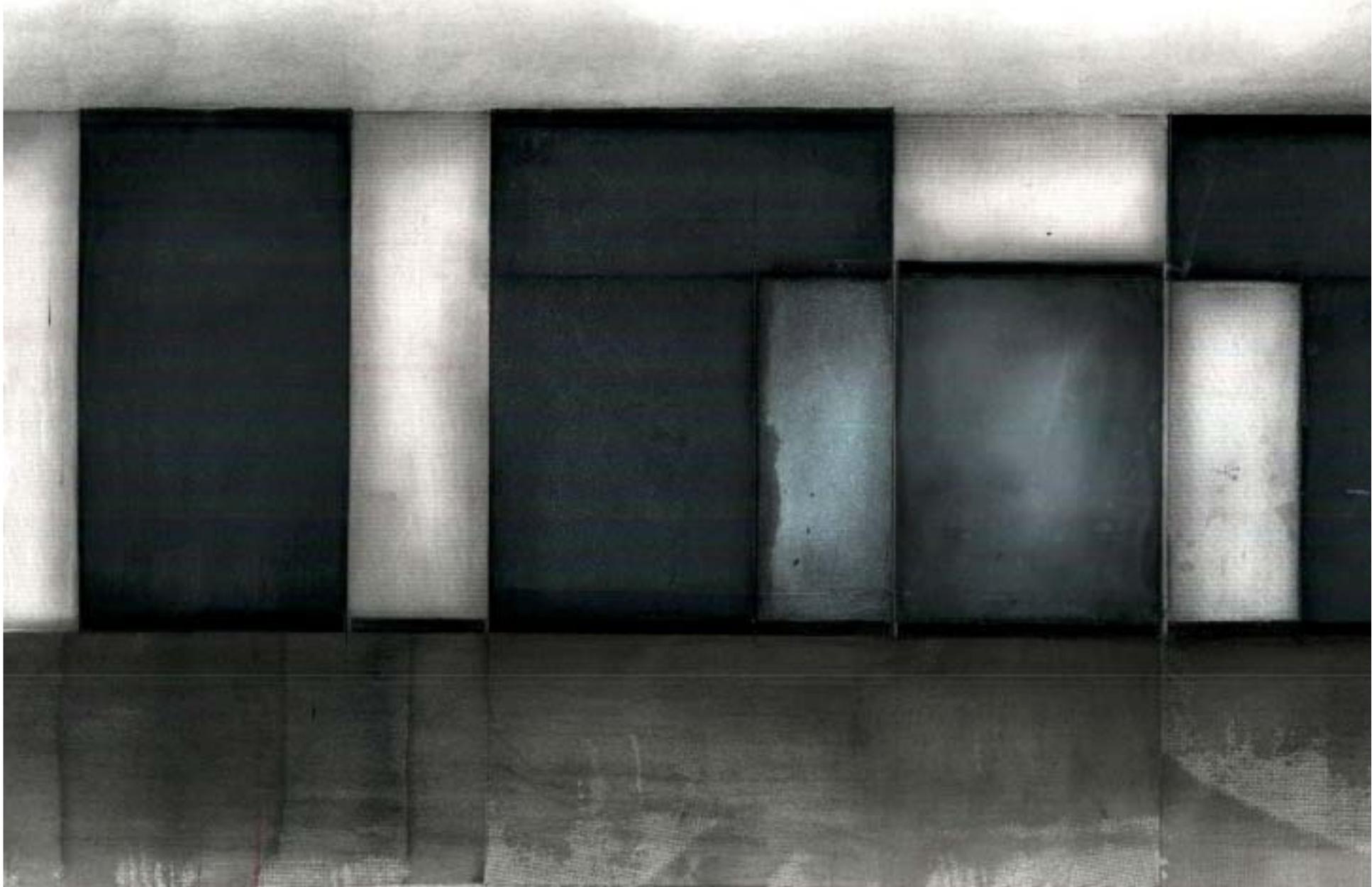


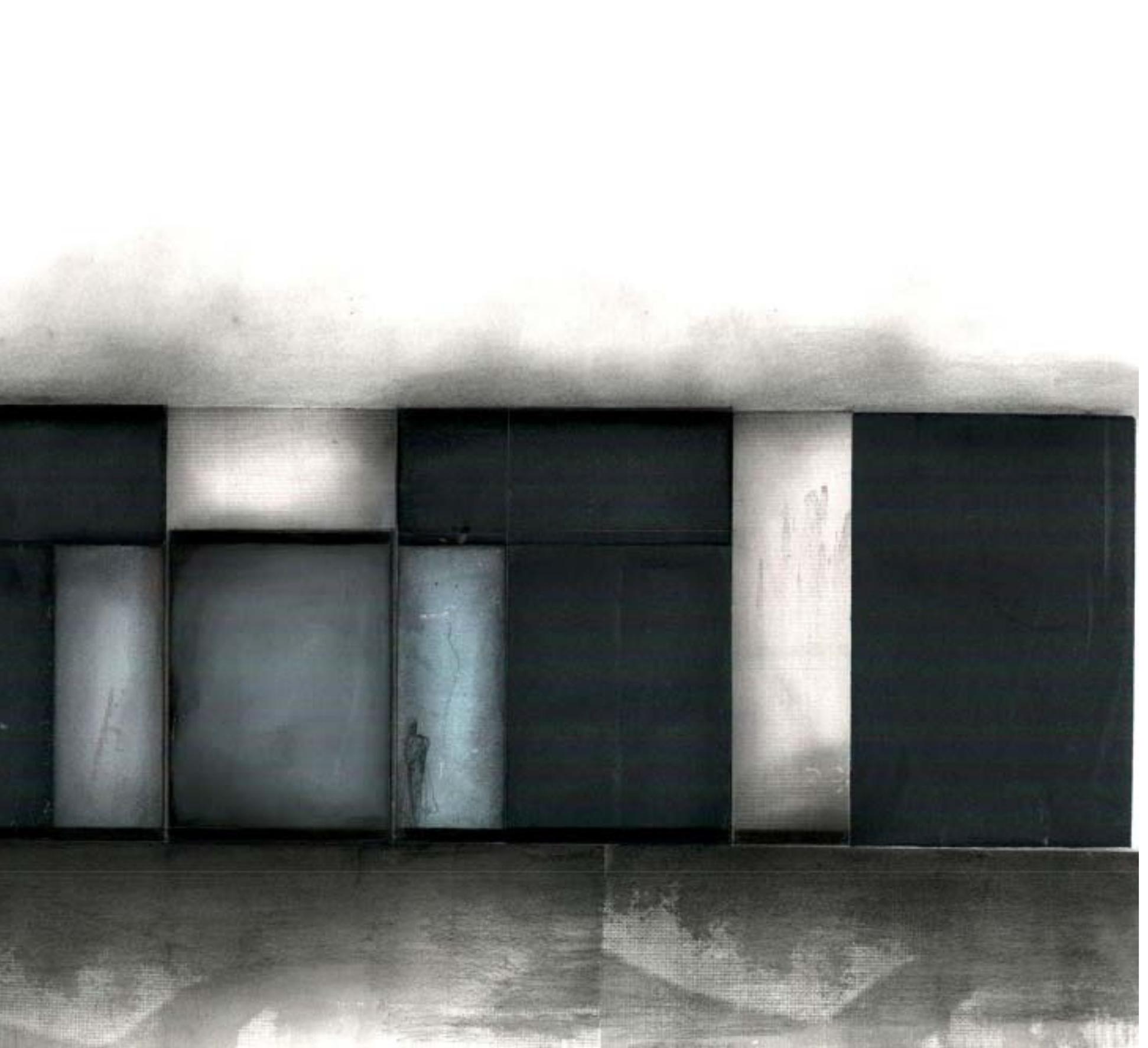
**CONCLUSION**



**PROCESS** The project began with an idea about a place and the spatial relationships that would define its character. The concept of phenomenal transparency clarified this idea by defining what these relationships were and how they could occur. Silkscreen printing served as a means to study and represent them. The result was the development of a design method based on a new way of reading spaces by establishing visual relationships among them; visual relationships possible due to the selective placement and articulation of architectural elements in relation to one another. This method is independent of the site and program chosen and therefore can be applied to any other set of circumstances.

Inherent to this process was the concept of order. Ambiguous spatial relationships were initially sought through the random overlap of parallel planes. Chaotic but not ambiguous relationships resulted. For ambiguity to occur in this case the parts involved needed to be discernible; the basic rooms needed to be defined. And their relationship as well as that of the architectural elements that defined them clearly established. Only then could new rooms within and between them become apparent. Only then could ambiguity result for it could be one or the other. Establishing an order in terms of how the various parts related to one another made it possible to recognize not only the basic rooms but also the new ones produced by their interaction.





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My family for their unconditional love and support throughout every stage that brought me here;

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My friends Cristina, Dawn, and Youcef for supporting me in so many ways throughout the entire thesis process;

Finally, to all others who kindly gave me a hand along the way.



## VITA

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### Education

12/03	Virginia Polytechnic Institute and State University (Virginia Tech) Master of Architecture
05/98	University of Puerto Rico B.S. Environmental Design

### Professional Experience

2002-present	Outerbridge Horsey Associates, PLLC Washington, DC
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Fall 1998	Manuel Bermudez Arquitectos San Juan, Puerto Rico

### Academic Experience

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2000-2001	College of Architecture, Virginia Tech Graduate Teaching Assistantship

### Awards / Activities

Summer 2003	Habitat for Humanity Washington, DC
Spring 2003	Architecture in the Schools (Volunteer teaching program sponsored by the Washington, DC Architectural Foundation) Janney Elementary School, Washington, DC
Spring 2002	Critical MASS, Southeastern Graduate Student Symposium College of Architecture, University Of North Carolina
11/2000	International Architecture Workshop College of Architecture, Virginia Tech
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Summer 1998	Hispanic Association of Colleges and Universities (HACU) Summer Internship Program Los Padres National Forest, Ojai, California
1997	American Institute of Architecture Students Treasurer, University of Puerto Rico chapter
11/1997	American Institute of Architecture Students Annual Forum Washington, DC

