



8-2006

Light, Place, and the Temporal Experience: A Proposal for a Live Work Building in Nashville, Tennessee

Robert G. Thompson III
University of Tennessee, Knoxville

Follow this and additional works at: https://trace.tennessee.edu/utk_gradthes



Part of the [Architecture Commons](#)

Recommended Citation

Thompson, Robert G. III, "Light, Place, and the Temporal Experience: A Proposal for a Live Work Building in Nashville, Tennessee. " Master's Thesis, University of Tennessee, 2006.
https://trace.tennessee.edu/utk_gradthes/4490

This Thesis is brought to you for free and open access by the Graduate School at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Masters Theses by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

To the Graduate Council:

I am submitting herewith a thesis written by Robert G. Thompson III entitled "Light, Place, and the Temporal Experience: A Proposal for a Live Work Building in Nashville, Tennessee." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Architecture, with a major in Architecture.

Barbara Klinkhammer, Major Professor

We have read this thesis and recommend its acceptance:

Marleen Davis, Scott Wall

Accepted for the Council:

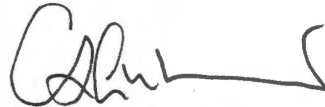
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

To the Graduate Council:

I am submitting herewith a thesis written by Robert G. Thompson III entitled "Light, Place, and the Temporal Experience: A Proposal for a Live Work Building in Nashville, Tennessee." I have examined the final paper copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Architecture, with a major in Architecture.

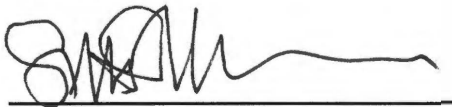


Barbara Klinkhammer
Major Professor

We have read this thesis and
recommend its acceptance:

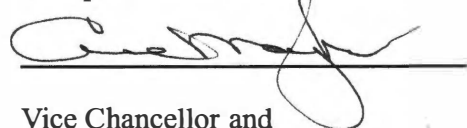


Marleen Davis



Scott Wall

Accepted for the Council:



Vice Chancellor and
Dean of Graduate Studies

Thesis
2006
.TH6

LIGHT, PLACE, AND THE TEMPORAL EXPERIENCE:
A PROPOSAL FOR A LIVE WORK BUILDING IN
NASHVILLE, TENNESSEE

A Thesis
Presented for the
Master of Architecture Degree
The University of Tennessee, Knoxville

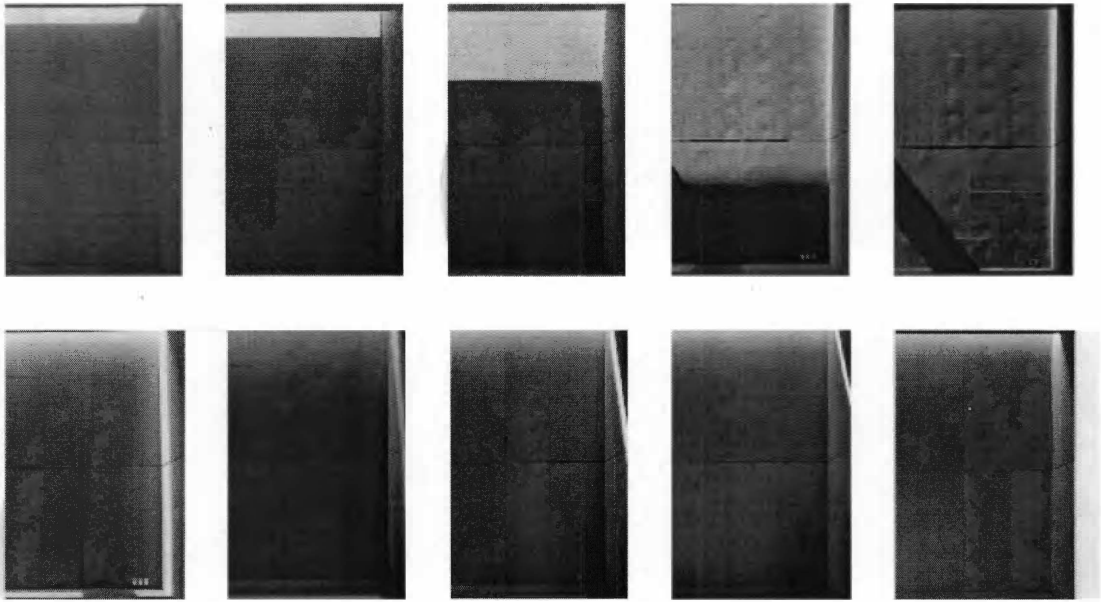
Robert Guerin Thompson III
August 2006

DEDICATION

This thesis is dedicated to my grandparents: Bob and Francis Thompson and my parents Bob and Sarah Thompson. Their support and guidance made this possible.

ACKNOWLEDGMENTS

I would like to acknowledge Barbara Klinkhammer, Marleen Davis, and Scott Wall. Their guidance was invaluable in the development and success of this thesis.



ABSTRACT

“An architecture must have the religion of light. A sense of light is the giver of all presences, because natural light gives the mood of the day. The season of the year is brought into a room.”

Louis Kahn

The understanding and manipulation of natural light lie at the heart of any architectural project, but it is also a universally available, physical manifestation of the passage of time. Natural light signals the times of the day, providing different qualities of light as the sun penetrates the atmosphere at different angles. Seasonally, the summer sun shines high in the sky through more pronounced foliage while low winter sun angles produce long shadows and light with vastly different strengths and tones. Natural light has a profound ability to convey, at any point in our built environment, a remarkable immediacy of ‘place’ and ‘time’ (Ando, 471).

However, the abundance of natural light does not in itself communicate temporality. It is the interaction between natural light and architecture where the temporal experience is realized. The few architects who have conveyed this phenomenon so successfully have drawn from antiquity, designing simple forms with calculated approaches to cap-

turing, manipulating, and displaying natural light. The task of contemporary architects should be to reestablish the temporal experience, reminiscent of Tadao Ando, Le Corbusier, and Louis Kahn. In doing so, architecture will regain the sensual experiences and meaning it has lost.

This thesis will investigate the use of light and the temporal experience in architecture as a vehicle to reestablish man's sensory experience of the natural world. The proposal for this architectural investigation is a live work studio environment in Nashville, Tennessee, where residences have the unique experience of occupying a single building 24 hours a day. The great majority of us occupy several different buildings throughout the day, resulting in the loss of the complete temporal experience. To experience how natural light engages, enlivens, and transforms a single work of architecture throughout an entire day and throughout the seasons is to fully understand the sensual qualities that it possesses.

The site for this investigation is a Brownfield area of North Nashville, scarred by large scale manufacturing and industry. Currently, the area is in the beginning stages of redevelopment into a collection mixed use, residential, and retail properties. Reestablishment of the sensual experience within this desolate and highly urbanized environment will be extremely valuable in this curative process.

TABLE OF CONTENTS

Chapter		Page
1	A Case for Temporality (Time, Place, and the Sensual).....	1
2	Physical Light..... <i>Koshino House – Tadao Ando</i>	6
3	Space and Light..... <i>Monastery at La Tourette, Eveaux-sur-l'Arbresle, France – Le Corbusier</i>	11
4	Material and Light..... <i>Kimbell Art Museum, Fort Worth, Texas – Louis Kahn</i>	15
5	Vernacular Architecture..... <i>East Tennessee Barn – Phillips Family Farm, Rogersville, Tennessee</i>	18
6	Precedent Analysis..... <i>Simmons Hall, Cambridge, Massachusetts – Stephen Holl</i> <i>Villa VPRO, Hilversom, Netherlands - MVRDV</i> <i>M-House, Tokyo, Japan - Kazuyo Sejima and Associates</i> <i>Atlanta LiveWorks, Atlanta, GA - Duany Platter Zyberk</i>	21
7	Program..... <i>Qualitative Program</i> <i>Quantitative Program</i>	32
8	Site.....	36
	Bibliography.....	40
	Appendix.....	44
	Vita.....	64

LIST OF FIGURES

Figure

1	Passage Grave at New Grange.....	1
2	New Grange, Light Diagram.....	2
3	Koshino House Exterior.....	7
4	Koshino House, Daily Light Sequence.....	8
5	Physical Light Diagram.....	8
6	Light as Rhythm.....	9
7	Rhythm Diagram.....	9
8	Light and Shadow.....	10
9	Light and Shadow Diagram.....	10
10	La Tourette Exterior.....	11
11	Light Guns.....	11
12	Lower Church Interior.....	12
13	Upper Church Interior A.....	12
14	Upper Church Interior B.....	13
15	Focused Light Diagram.....	13
16	Pantheon.....	14
17	Kimball Art Museum Exterior.....	15
18	Light Reflectors.....	16
19	Top Lighting Diagram.....	16
20	Side Lighting Diagram.....	16
21	Kimball Interior.....	17
22	Weathered Board Sketch.....	18
23	Tree and Light Sketch.....	18
24	Simmons Hall Exterior.....	21
25	Summer Light Diagram.....	22
26	Winter Light Diagram.....	22
27	Dormitory Interior.....	22
28	Antelope Canyon.....	23
29	Communal Space Interior.....	23
30	Building Section with Light Wells.....	23
31	Villa VPRO Exterior.....	24
32	Interior Terrace.....	24
33	Sectional Montage Showing Exterior Spaces.....	24
34	3rd Floor Plans.....	25
35	Plan Diagrams.....	25
36	M-House Exterior.....	26
37	Light Well.....	26
38	Floor Plan.....	27
39	Basement Level Interior.....	27
40	LiveWorks Exterior.....	28
41	Loft Floor Plan.....	30

42	Live Above Floor Plan.....	30
43	Lifespan Floor Plan.....	31
44	Nashville, TN.....	36
45	East Germantown Neighborhood.....	36
46	Proposed Site.....	37
47	Existing Site.....	37
48	Photomontages and Sketch of Neuhoff Facility.....	45
49	Photomontage of Slaughterhouse Interior.....	46
50	Black and White Photos of Neuhoff Facility A.....	47
51	Black and White Photos of Neuhoff Facility B.....	48
52	Study Model Sequence A.....	49
53	Study Model Sequence B.....	50
54	Study Model in Context.....	51
55	2nd Floor Plan.....	52
56	4th Floor Plan.....	53
57	Section A.....	54
58	Section B.....	55
59	Section C.....	56
60	West Elevation.....	57
61	North Elevation.....	58
62	Charcoal Perspectives.....	59
63	Basswood Model South Facade.....	60
64	Basswood Model East Facade.....	61
65	Basswood Model North Facade.....	62
66	Basswood Model West Facade.....	63

Chapter 1

A Case for Temporality – (Time, Place, and the Sensual)

“Have you ever felt a sort of fear in the face of the ageless, a fear that in that room you might lose all consciousness of the passage of time, that untold years might pass and upon merging you should find you had grown old and gray?”

Jun'ichiro Tanizaki
Novelist

Temporality is defined as relating to the sequence of time or to a particular time. It is possibly the most basic of all human experiences, serving immediate, primal, and precognitive needs, instilling an awareness of ourselves as a small part to the larger order of our ancestral past (Plummer, *Masters of Light*, 10). It is what binds us to our surroundings as sensual beings in the endless cycles of night and day and the changing of the seasons, and the natural world itself.



Figure 1 - Passage Grave at New Grange

Many of the earliest examples of prehistoric structures were built solely for the purpose of capturing light to mark or signify dates of particular mythological or spiritual significance. Known in Gaelic as *Uaimh na Greine* or ‘the cave of the sun,’ New Grange, County Meath (3100 BCE) is a massive, monolithic, subterranean passage grave which was designed to channel direct sunlight deep into the structure’s interior. A south facing, rectangular opening above the entrance serves as a transom, channeling early morning sunlight on the winter solstice through the passage and into the cruciform burial chamber (Figure 1). For fourteen minutes, a shaft of light is channeled through the passage and illumi-

nates the rear stone of the central recess chamber (Figure 2). After fourteen minutes, the shaft of light disappears and the chamber is returned to darkness. In addition, stones and cairns create sightlines which clearly indicate that the builders were also aware of other equinoxes, the cross-quarter days, and both major and minor lunar standstills (Brennan, 12). The engineering feat of New Grange demonstrates impressive precision in calculating the sun's cycle and suggests that the 5,000 years old culture that built it deeply values connectivity with the temporal, natural world. With simple stone technology, these people captured significant astronomical events and incorporated time into the built structure in a useful and compelling way.

In ancient cultures such as the one giving rise to New Grange, knowledge was passed from generation to generation through oral tradition and ritual, which were tied to the cosmos and deeply bound to the earthly landscape inhabited by that culture (Abram, 182). Stories and their context were vital to the preservation and prosperity of the culture itself. The immediate natural environment was where ancient people hunted and gathered food, found materials to build their settlements, and found inspiration for religion practices. These ancient perspectives valued a sense of place and sensual connectivity to the world they inhabited. Many ancient human cultures viewed time, and their place in it, as cyclical in nature. "Time, in such a world, is not separable from the circular life of the sun and the moon, from the cycling of the seasons, the death and rebirth of animals – from the eternal return of the greening of the earth" (Abram, 185).

Contemporary man's detachment from the landscape

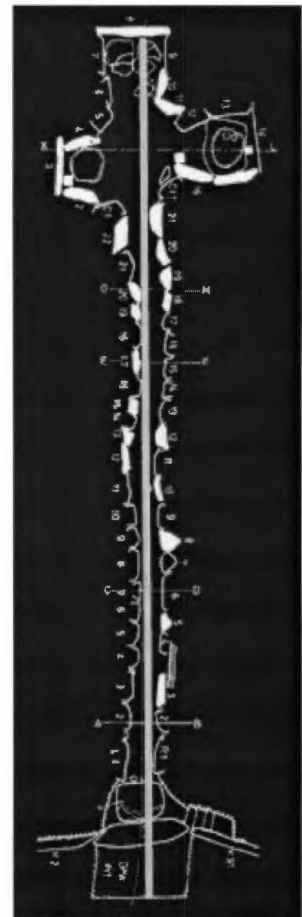


Figure 2 - New Grange Light Diagram

and its accompanying sensual experiences is the result of a myriad of factors over time, primary of which is the advent of the written word (Abram, 185). For the first time in human history, the oral traditions which were essential to a group's sense of place were separated from the environmental context of their origination. Subsequently, the content of these stories no longer derived their meaning from the landscape. Instead, the setting for oral traditions deteriorated from being the focal point to an arbitrary backdrop for human events. "Reading and writing, as a highly concentrated form of human participation, displaces the older participation between the human senses and the earthly terrain" (Abram, 185). Additional factors contributing to man's desensitization to the natural world include the increase in urban environments, man's power and willingness to manipulate the landscape, and technological progress. The oral, location-specific cultures of our ancestors have given way to an increasingly homogeneous, featureless, abstract notion of "space," one devoid of emotional and cultural attachment to the sensual experience of the natural world and the cycle of time.

Accompanying this modern day notion of abstract "space" is the erosion of the cyclical concept of time and the formation of the anthropocentric construct of linear time. Linear time is primarily a Western concept rooted in Christianity with a beginning (Creation) and an end (Armageddon). The concept of linear time and the western concept of history, according to ecologist Paul Shepard, have created a "rejection of habitat," which formulates experience outside of natural environment and tends to reduce place to a mere stage upon which the human drama is enacted (Shepard,

116).

In addition to the perceptual abstractions of space and time, there is a detachment from the sensual experience in our practical, everyday lives. The majority of Americans spend approximately 90% of their lives in doors: in an isolated, enclosed, unvarying environment breathing recycled air (U.S. EPA Publication). The use of natural light has given way to artificial lighting which has become so ubiquitous and devoid of sensitivity that one is no longer made to feel the individual character of places (Ando 471). Our basic quality of life has deteriorated as a result of long commutes, hectic work settings and formulaic office environments. The current United States population of approximately 250 million is expected to reach 300 million by the year 2040. Most of this population will live in urban environments. How are we to avoid the homogenization of space and the loss of a sense of place? In what ways can we ensure that our future built environment satisfies the ancient human need for connectivity to the temporal, natural world?

The modern day problem of temporal fragmentation and loss of the sensual experience can be countered, in part, by the incorporation of time in the perception of architectural space (Holl, 74). Natural light has a profound ability to convey, a remarkable immediacy of 'place' and, with its daily and seasonal transformations is a universally available, physical manifestation of the passage of time (Ando, 471). But to simply provide buildings with large window openings and abundant natural light is insufficient. It is the interaction between natural light and architecture where the temporal experience is most powerful. According to Jahani Pallasmaa

architecture should “concretizes the cycle of the year, the course of the sun, and the passing hours of the day” (Pallasmaa, *The Eyes of the Skin*, 41). Architecture has the ability to transform natural light into discrete, poignant, manifestations of the passage of time. When done successfully, the temporal experience will intertwine buildings with an experience of place and “cultivate the sensual experience of life” (Holl, *Anchoring*,10).

Koshino House - Tadao Ando

“Light is not so much something that reveals so much as it is itself the revelation.”

James Turrell

A departure point for the challenge of infusing architecture with time is a study of natural light. The most obvious subjective experience of time is the constant change of daylight both daily and seasonally. Different times of the day provide different qualities of light, changing infinitely as the sun penetrates the atmosphere at different angles. Qualities of light also vary with the weather and geographically. Seasonally, the summer sun shines high in the sky through more pronounced foliage while low winter sun angles produce long shadows and light with vastly different strengths and tones.

The vast spectrum of natural light can interact with the planes of our built environment in an infinite number of ways, thus offering the potential for a dynamic sensual experience rooted in the cycles of time.

Architects who have most successfully conveyed temporality in their work have drawn from prehistoric precedents; most of which were constructed solely for the purpose of “housing light.” Tadao Ando’s conception of the building as a static shell to be brought alive by the cycles of the sun has ties to the very origins of architectural thought. (Plummer, *Light in Japanese Architecture*, 366).

Ando's architecture is often described as the "architecture of silence." Through strict formalism, elementary geometry and use of simple materials, Ando provides a rigid order upon which light, shade and shadow can be displayed (Lampugnani, 503). It is a reciprocal relationship in which order is provided to the chaos of nature and nature enlivens the static, unadorned planes of the building. "A steady state without movement and change is equivalent to pathology, and eventually death... as is movement and change without some form of stable order" (Plummer, *Light in Japanese Architecture*, 350).

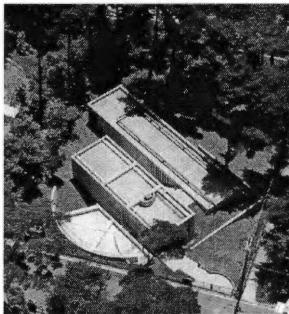


Figure 3- Koshino House Exterior

The Koshino House provides one of Ando's most successful efforts at using physical light to convey the temporal experience and bind inhabitants to the natural world. In an increasingly uniform world where anything can be had at anytime, Ando offers the experience of many realities: heat, cold, sun, rain, wind, snow, light, dark and the infinite gradations and nuances which life creates between such extremes (Lampugnani, 503). The mountain residence consists of three separate units: two rectilinear concrete boxes, connected by an underground passage, and a contrasting curvilinear extension (Figure, 3). The volumes are rotated approximately 45 degrees with respect to the boundaries of the site for maximum exposure to the sun, and partially buried into the hillside to preserve the topographical integrity of the site. The uppermost rectilinear volume holds the living room which is lit by two large rectangular windows and a long narrow skylight. The slot opening shines a light which transforms throughout the day from a horizontal band of varying intensity to a ray of light with varying angles on the adjacent wall (Figure, 4).

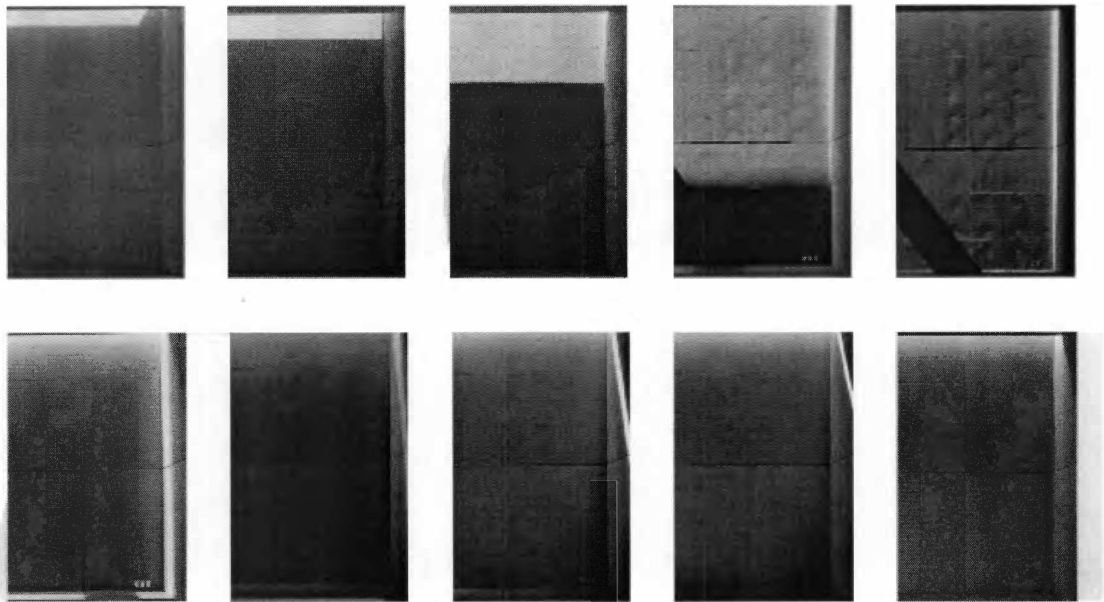


Figure 4 - Koshino House Daily Light Sequence

The bands of light with sharp edges seem like a solid thing, transforming in a qualitative experience of time (Plummer, *Light In Japanese Architecture*, 363)

Within this order, Ando allows light to become a physical thing, assuming equal importance with the structure of the building (Figure 5). The design of his buildings to house and display solar movement reveals the “mobility of the skies” drawing light, shade and shadow into the building’s interior. Shifting rays of light blur interior-exterior boundaries and enliven interior planes where the physicality of walls is “altered, heightened, or obliterated” (Plummer, *Masters of Light*, 350).

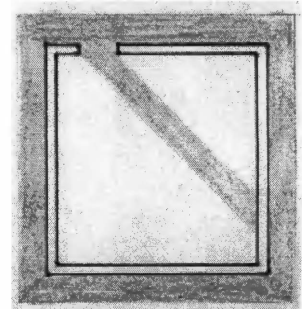


Figure 5- Physical Light Diagram

The lowermost rectilinear building of Ando’s Koshino House is a single loaded corridor containing eight small, south facing, bedrooms. The corridor is lit by eight narrow, vertical slot windows providing a dynamic rhythm of light and dark bands, and a large window on the east end

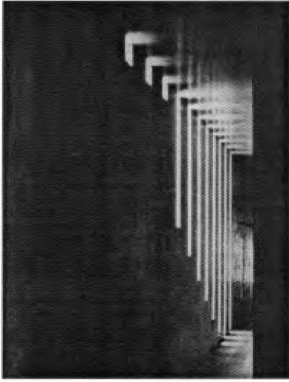


Figure 6 - Light as Rhythm

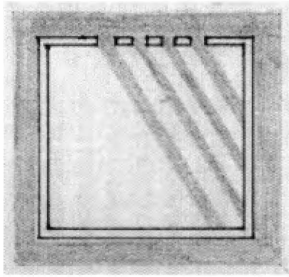


Figure 7 - Rhythm Diagram

channeling morning light through the corridor (Figure 6,7). Between the two buildings is an interior courtyard visible from two of its sides, providing another opportunity to bring nature into the building's interior in a highly artificial way.

The curvilinear volume is the uppermost building and is almost entirely submerged into the landscape. The addition was not part of the original design, but nevertheless, completes the composition and provides one of the most dramatic temporal experiences in architecture. A narrow slot running along the curved roof of the workroom allows a stream of afternoon sun into a dark, cave-like interior. (Figure, 8,9) In the early part of the afternoon, a bright light streams through the opening, covering the walls and floor. Throughout the rest of the afternoon, the light transforms, crawling along the concrete wall, changing in strength and tone. Contrasting the sheet of light along the curvilinear wall are the shadows cast by the rectilinear, overhead beams, which change angles and width with the dynamic path of the sun.

Underlying the changing physicality of the light throughout the building are the textural mutations of the concrete walls changing with the light's varying angles and intensities. Textural changes range from shallow relief from direct light to high relief, when grazed light reveals every ridge, valley and imperfection on the surface of the concrete. The changes in texture are so great that the materiality of the concrete seems to transform from something solid and formidable to something soft and yielding (Plummer, 368).

The mastery of the malleability of natural light, seamless incorporation with natural context, and textural variation culminates in one of the supreme images ever created by an architect to reflect man's own transient existence on earth (Plummer, *Light in Japanese Architecture*, 368).

“Like life itself, the cycle begins with a light emerging out of darkness, struggling to assert itself and come into youthful being, slowly reaching the full force of maturity, in lavish sensuous tones, turned warm and fertile, blazing there in one culminating peak of incandescent glory, only to ebb away in a loss of vitality, a fading energy which ends in a kind of evening nostalgia, and then extinction into blackness or sleep”

(Plummer, *Light in Japanese Architecture*, 368).

Like the passage grave at New Grange, Ando's Koshino House alternately envelopes, forges, and reflects physical light to fulfill its potential as a binding force between man, his world, and the time he exists in it.

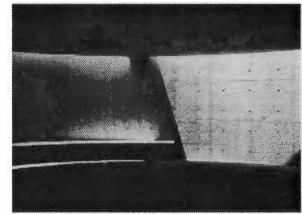


Figure 8- Light and Shadow

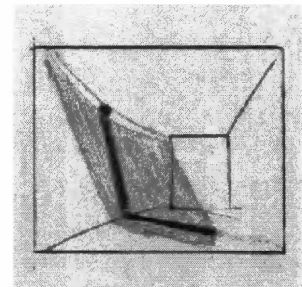


Figure 9 - Light and Shadow Diagram

Chapter 3 - Space and Light

Monastery at La Tourette, Eveaux-sur-l'Arbresle, France – Le Corbusier

“Light and illumination are inseparable components of form, space, and light. These are the things that create ambiance and feel of a place, as well as the expression of a structure that houses the functions within it and around it. Light renders texture, illuminates surfaces, and provides sparkle and life.”

Le Corbusier

While Ando manipulates light into a poignant visual manifestation of the passage of time, Le Corbusier adopts a more subtle approach using orientation, form and reflection of natural light to create certain moods and accommodate programmatic requirements. He pays particular attention to which rituals take place where, the spiritual significance of each and the appropriate natural lighting condition for that space. The monastery consists of two main parts: the living quarters for the monks and the church. These buildings are arranged in a courtyard pattern, the design of which is dictated by the flow of natural light. Le Corbusier’s courtyard design allows for moderation of light within the interior courtyard and reserves the opportunity for direct light on the exterior (Figure, 10). In contrast to the layout of the monastery’s structures, the church on the north side of the complex consists of a highly-controlled manipulation of natural light.

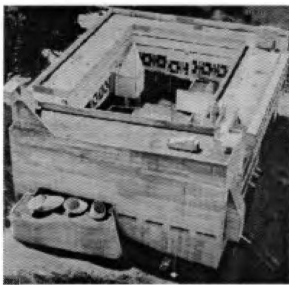


Figure 10 - La Tourette Exterior

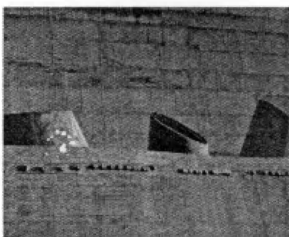


Figure 11 - Light Guns

By placing the church on the north side of the complex, Le Corbusier provides it with constant northern light as well as the dynamic morning light of the east and evening light of the west. Le Corbusier secluded private altars to the lower church in a separate, undulating, volume lit by articulated, telescope openings in the ceiling (Figure,

11). Light is transferred through the telescope openings and into the interior via large overhead barrels, providing a steady, unvarying light by which to pray and read (Figure 12)(Henze, 13). Author Anton Henze describes the lower church as a submarine sunk out of the world, the light of which only reaches it from far away and transformed by the telescopes (Henze, 13). Le Corbusier further demarcates the alter space from the main body of the church by two slender light slots on either side of the entrance. Through this precise direction of natural light, Le Corbusier creates an environment of silence, isolation and self reflection.



Figure 12 - Lower Church Interior

It is also useful to examine Le Corbusier's management of light in relation to the direction, programmatic requirements, and the phenomenological agenda at hand. Comparison of the lower church to the upper church reveals functional distinctions in the use of natural light. Unlike the lower church, the upper church is not fully enclosed on the sides, and allows light from all directions to penetrate the space. The rear, west side of the church has small horizontal windows receiving both northern light and moderated southern light from the interior courtyard. They are situated above the monks' benches to provide a steady light by which to read. Le Corbusier gives particular attention to the lighting openings on the east wall, where the sun will have its greatest phenomenological impact during early morning services. A large rectangular opening extends from floor to ceiling, along the south side of the eastern wall (Figure, 13). The orientation of a church to capture the eastern light is a tactic used since antiquity and further grounds the space with the simple daily rhythms of the sun.



Figure 13 - Upper Church Interior A

In the center of the choir space a skylight is designed to capture morning light which moves toward the west wall of the organ chamber (Figure 14, 15). “On a clear day, the patch of light is focused sunlight. On over-cast days, a soft edged scallop of light falls on the wall. In the afternoon the wall is dark” (Formal Light). The single patch of light not only reflects the position of the sun, but also gives a visual indication of the quality of the exterior light. It is much the same phenomenon as experienced in the Pantheon in which a disk of light travels within the interior of the space as a qualitative experience of the sun’s daily cycle (Figure 16)

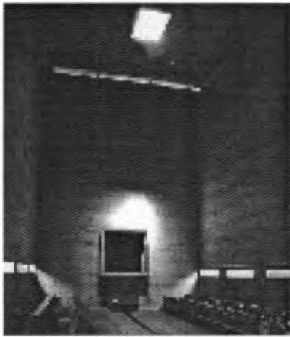


Figure 14 - Upper Church Interior B

Some of the same tactics used in prehistoric structures to signify times of the day and significant dates of the astrological calendar are used here as well. Le Corbusier was inspired by his visit to Villa Adriana in Tivoli, Italy where he experienced a tomb illuminated by a vertical hole in the ceiling. He described the light as “a hole of mystery” where “the sunlight penetrates to the depth of the cavern” an effect which he translated to the sacristy design (Miyake, 259).

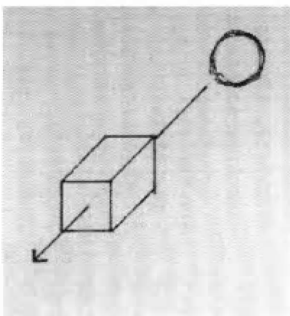


Figure 15 - Focused Light Diagram

The space of the sacristy is small rectangular volume defined by seven light guns oriented to allow direct sunlight into the nave of the church at noon during the equinoxes. It is Le Corbusier’s most poignant effort within the monastery to join the inhabitants of the church to the astrological cycles much in the same manner as the passage grave at New Grange. However, unlike the grave at New Grange, Le Corbusier brings an aspect of practicality to the design by allowing the space to be illuminated throughout

direct light on specific astrologically significant days.

The need to address the programmatic requirements in addition to the poignant phenomenological aspects of a building become increasingly constrictive as the program becomes more demanding. Residential designs such as Ando's Koshino House provide the greatest flexibility in the manipulation of light for phenomenological effect, while the Monastery at La Tourette and the following Kimball Art Museum by Louis Kahn require an increasingly refined treatment of natural light.

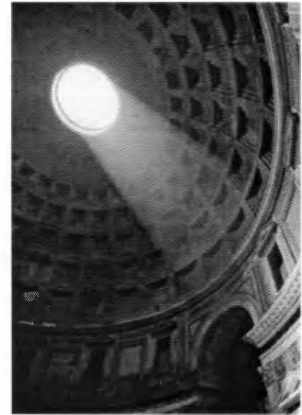


Figure 16 - Pantheon

Chapter 4 - Material and Light

Kimbell Art Museum, Fort Worth, Texas – Louis Kahn

“I said that all material in nature, the mountains and the streams and the air and we, are made of light which has been spent, and this crumpled mass called material casts a shadow, and the shadow belongs to light”

Louis Kahn

Louis Kahn’s architectural career is most essentially characterized by the consideration of light. In his early works, Kahn took a practical approach, attempting to allow sunlight to permeate a building’s interior while eliminating glare. He initially addressed this problem through applied devices rather than structure. In the late 1950’s, Kahn approach to light became more sophisticated with increased understanding of light’s metaphysical implications. By 1960, he was a renowned speaker on the unpredictability of natural light, its dynamism, and the ability of daylight to transform a room.

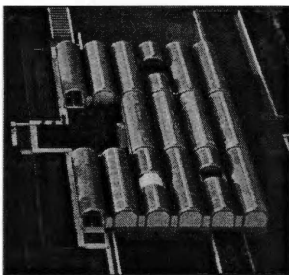


Figure 17 - Kimball Art Museum Exterior

As one of Kahn’s culminating works, few buildings have the quality or bearing of changing light than that found in the Kimbell Art Museum (Figure 17) . In this design, Kahn sets out to create spaces where light speaks metaphysically (Tyng, 42). The commission to design the museum came late in his career when Kahn was increasingly using skylights, reflectors and filters to create ambient light which possesses a wider spectrum and lends itself to greater ranges of tone and feel. These techniques are in place throughout the Kimball.

The overall structure of the museum is based on

the repetitive implementation of one element: a rectangular vaulted hallway. Each of six parallel vaulted hallways is windowless, creating a monolithic impression. A narrow slit at the top allows sunlight to enter the interior of the gallery. A perforated reflecting device placed ten feet below the opening reflects direct sunlight to the sidewalls, protecting the artwork from the damaging sunrays (Figure 18,19). The room therefore receives light not only directly through the perforated fixtures, but also indirectly as reflected from these blades, and in turn from the cycloid vault (Büttiker, 139).

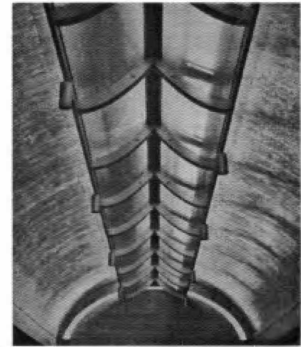


Figure 18 - Light reflectors

In addition to protecting the artwork from the damaging effects of direct light, Kahn uses the changing light to subtly affect the color of the concrete, travertine walls, and the artwork. A powerful connection to the outside world is experienced in the background as the strength and tone of natural light changes daily and through the seasons (Figure 20). Over-passing clouds are experienced as moving shadows; a subtle reminder of the dynamic, natural world. At a time when the modernist norm was complete control through artificial light, the Kimball contains spaces in which occupants are aware of daylight as it moves through the individual vaults and shifts from gallery to gallery. This design originates in Kahn's philosophy that the building and artwork were dynamic such that the changing intensity of light might provide viewers with a cycle of discovery and rediscovery over time.

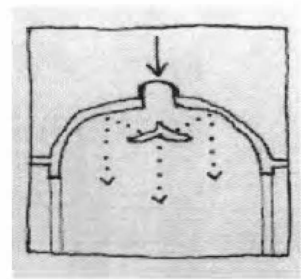


Figure 19 - Top Lighting Diagram

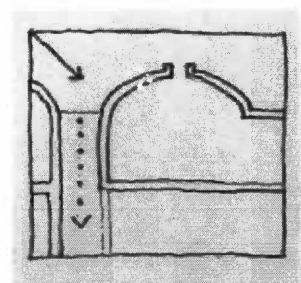


Figure 20 - Side Lighting Diagram

In conjunction with the dynamic reflected light of the space, Kahn implements certain materials to maximize the subtle changes brought to the room by natural light. He



Figure 21 - Kimball Interior

defined these materials as spent light. “The mountains are spent light, the streams are spent light, the atmosphere is spent light, we ourselves in our making, our physical being are spent light” (Louis Kahn Silence and Light DVD). Travertine walls, concrete structure, oak floors, and lead roofs provide richness in the different ways in which they react to light (Figure 21). The lead roof, an ancient and impervious material easily bends to fit the roof’s curves and reflects a dull sheen in the southwest sun (Lobell, 94). The smooth, concrete vault formwork contrasts with the rough interior surface of the concrete pillars and cutting marks from the quarry have been left untreated on the travertine surfaces, providing textures for light to expose (Büttiker, 137).

Kahn’s “spent light” enables him to ground his buildings to a time and place, and invigorates them with experiential qualities which are found decreasingly in contemporary architecture. Contemporary philosopher Martin Heidegger, whose work is central to contemporary existential thought, had a view of existence and of human being similar to Kahn’s. Heidegger saw neglect in our being, a “darkening of our world” as we become more interested in manageable, planned, systematic tasks, at the expense of insight, understanding, and sensual experience of the world (Lobell, 69). He saw two consequences of such an environment; one is that being itself has become an ambiguous existence because we are no longer aware of ourselves as sensual beings. The second is that we are overwhelmed with the details of the material world, and have no sense of what stands beyond that world and what our place might be in the larger scheme of things (Lobell, 69).

Chapter 5 - Vernacular Architecture

East Tennessee Barn – Phillips Family Farm, Rogersville, Tennessee

In addressing the use of natural materials, simplicity of form, and the experiential qualities of light and the natural world, it is appropriate to examine one of the oldest examples of vernacular architecture of the southeast region of the United States. It is a simple, enclosed space constructed by man from natural materials, and provides a very distinct experience of light and its effects on the built environment.

Enclosure – The barn is a shell of vertical 1” x 6” boards nailed over a post and beam structure. When initially constructed, the 1” x 6” boards would have been nailed flush, side by side. Over the years, summer sun, rains, freezes and thaws, the boards have warped and constricted, pulling away from their neighbors to allow seams and slivers of light to penetrate the interior of the barn (Figure 22). The small openings themselves are a product of the cycling of the seasons and its effect on the aging of the material. The foliage of a nearby tree breaks the constant streams of light flowing through the openings in the barn wall, giving the light a disparate quality (Figure 23). It is the contrast of the darkness of the interior to the brightness of the exterior which allows these flickering slivers of light to become so powerful.

The large volume of the space inside the barn is an important quality in the experience of light as well. The barn is approximately 40 feet x 70 feet and 50 feet high to the center of the gable. The fact that much of the light and shadow

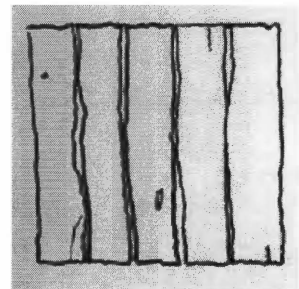


Figure 22 - Weathered Board Sketch

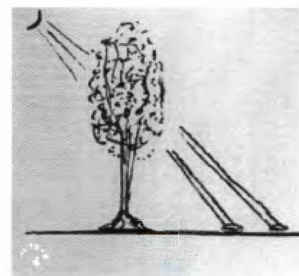


Figure 23 - Tree and Light Sketch

is overhead within a large volume gives an enveloping quality to the experience: a sense of being a small part to a larger order.

Structure – Posts, beams and rafters are essential, intrinsic elements to the building itself which fragment light, and cast shadows on the interior of the building. The experience of the most basic structural elements' interplay with light is inherently different than that of applied shades or screens. The building itself transforms throughout the day instead of acting as a backdrop or framework on which to view changing patterns of light and shadow.

Materiality – The light's dynamic qualities are magnified against the weathered, wooden boards of the barn. When the sun is low in the horizon and grazing the side of the barn, the natural textures of the wood are thrown into high relief. Fine dust from the dry, dirt floor of the barn is released into the air reveals light as discrete beams and shafts penetrating the interior of the barn.

Although the intention in the construction of the barn was never to convey the temporal experience to its inhabitants, we can still learn a great deal about the experiential qualities of such a place. As we have learned from ancient precedents as well, the temporal experience within the architectural environment can be accomplished with the most basic of building methods and materials. For instance, the works of Ando, Le Corbusier, and Kahn are relatively simple structures, constructed primarily of wood, concrete and glass, however; the resulting designs successfully incorporate the tremendous power of natural light.

Each architect approached the challenge of connecting with the environment through natural light differently. Tadao Ando frames and “houses” light so it becomes a physical, almost tangible, manifestation of the passage of time. Le Corbusier’s use of form and reflection harnesses the fluidity of light as it changes throughout the cycle of the day to suit programmatic and experiential needs. Kahn transforms the materiality of his buildings through exploitation of the dynamic quality of natural light. Through the use of simple materials and techniques, each of these architects provided models for a new paradigm in architecture; one which connects humans to the natural environment, heightens primal sensitivities and ultimately provides a broader perspective of the world.

The architectural landscape of any culture provides insight into what that culture values and what unique perspectives color its world view. The builders of New Grange, for instance, were clearly a culture which deeply revered the metaphysical powers of the sun and valued connectivity to the temporal, natural world. In contrast, the scarcity of such sensual experiences in much of contemporary architecture indicates a lower value placed on connecting to the natural world through the built environment. The task for contemporary architects must be to reintroduce the temporal experience into architecture so as to reconnect with our sensual selves.

Simmons Hall, Cambridge, Massachusetts – Stephen Holl

Holl designed, in collaboration with Perry Dean Architects, Simmons Hall: a 195,000 square foot dormitory on the MIT campus (Figure 24). Designed to act more as a community than a dormitory, Simmons Hall contains a system of terraces, atriums and communal spaces to encourage circulation of groups and foster social interaction, as well as let in essential natural light and air. Spaces such as the double height dining area and various other commons rooms such as student lounges and communal work spaces encourage social interaction as well. Although not a live work building by the traditional definition, the same design principles apply in relating the living areas (dormitories) to the academic and social functions of the building.



Figure 24 - Simmons Hall Exterior

In addition to the dormitories, the design includes:

- Study Lounges – 10 Large (5-15 People) and 20 Small (2-4 People)
- Multi-purpose room- for lectures, movies etc.
- A Photography Lab
- Game Room
- Exercise Room
- Offices
- Laundry
- Terraces

The 385 feet long, east-west trending rectangular building lies to the south of Vassar Street on the west end of the MIT campus. Large scale openings in the building relate to main entrances, view corridors and the outdoor activity terraces (Amelar, 205). The exterior walls of the building consist of 18inch thick load bearing concrete panels, which act as a truss for the entire building. The

thickness of the walls provide protection from the summer sun while allowing low angled winter sun to penetrate the building (Figures 25, 26, 27) The thick walls also provide thermal mass to the building to mitigate interior temperature swings. A grid of anodized aluminum covers the concrete panels on the exterior of the building which reflect light during the day and glow with interior light at night as an experience of the 24 hour daily cycle. When the building is viewed at an angle the sheen of the aluminum gives way to colored window jambs. Based on the structural diagram of the building, each color represents the degree of stress on the building's structure (Amelar, 215).

Contrasting the ordered, cubic grid-like pattern of the exterior concrete walls are the intervention of a system of sculptural, eroded volumes lit by skylights (Figures 28,29,30). These spaces connect residential areas of the building vertically, encouraging student interaction, and promoting ventilation and deep penetration of light. These integrated volumes provide a vastly different environment in terms of form, texture, and quality of light within the space, as compared to the smooth, reflective, rectilinear spaces of the living quarters. Within these sculptural volumes, Holl provides a tactile sense of the natural world, experienced in the changing light of the day, with all the visual and textural mutations that accompany the space.

A pavilion, designed by Dan Graham, is installed on the second floor outdoor terrace and embodies the same experiential themes of the self, the natural world and temporality as achieved in the body of the building itself. The pavilion consists of convex and concave, two-way, mirrored glass,

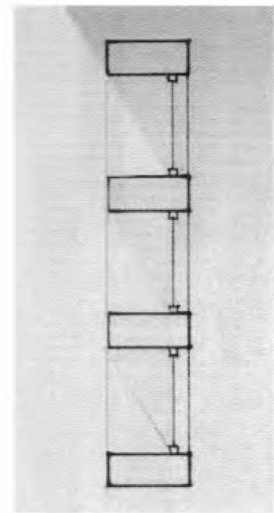


Figure 25 - Summer Light Diagram

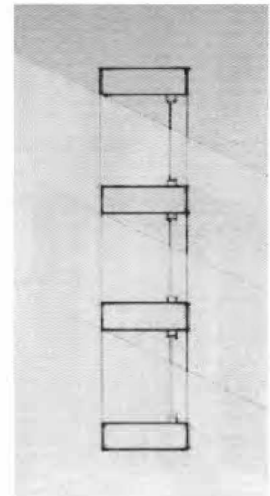


Figure 26 - Winter Light Diagram

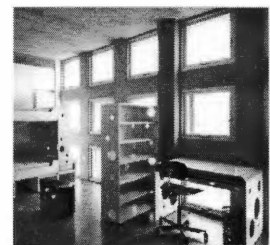


Figure 27 - Dormitory Interior

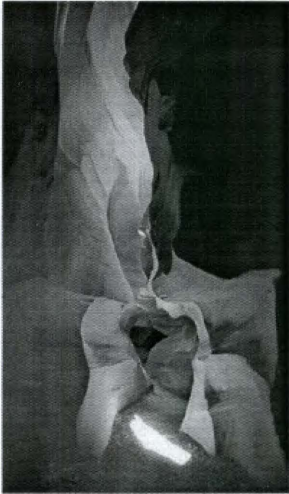


Figure 28 - Antelope Canyon

which create fluctuations of transparency and reflection (Simmons Hall Fact Sheet). The pavilion is activated by viewers who move through and experience reflections of sky, landscape, and other spectators superimposed on one another. “The observer becomes conscious of himself as a body, as a perceiving subject, and of himself in relation to his group (Simmons Hall Fact Sheet).



Figure 29 - Communal Space Interior

Villa VPRO, Hilversom, Netherlands - MVRDV

The Villa VPRO, headquarters and studios of the VPRO Broadcasting Company can be described in terms of compactness, spatial differentiation, and relationship to light and the landscape. Due to the current town planning restrictions, zoning plan boundaries and maximum building heights, compactness has led to the deepest office building in the Netherlands (MVRDV Files, 18). Vertical voids punched through multiple floors are filled with a series of ramps and series of patios which allow access to natural

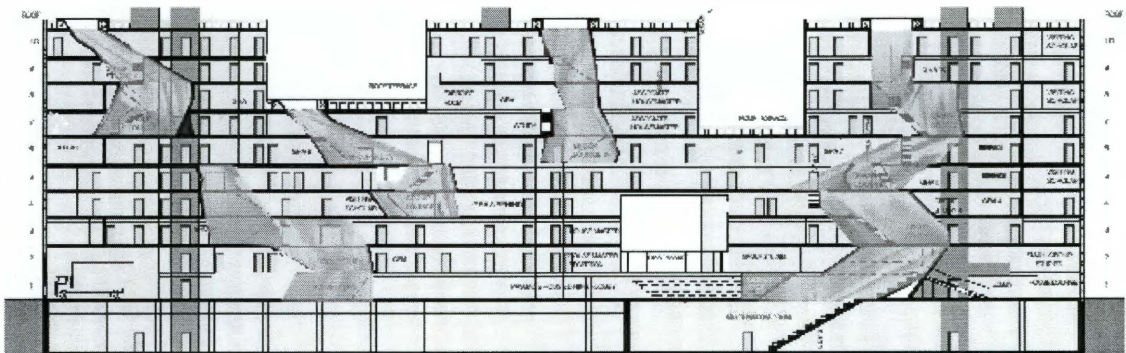


Figure 30 - Building section with Light Wells

light and views to the surrounding natural landscape (Figure 31). There are few spaces within the building which do not have access to a courtyard or terrace (Figure 32). Differences in floor height, combined with unexpected shafts of light created by gaps make possible a wide range of work contexts in different office typologies with different lighting requirements (Figures 33, 34, 35) (El Croquis, 88). The floors are supported by a column grid and stabilizing props which in combination with the open elevation ensure the rooms retain the maximum amount of transparency (El Croquis, 88).

A variety of programs exist within the building including a library and study, workshops, and a refectory. Studios and archives are placed in the basement away from the spatial flow of the rest of the building.

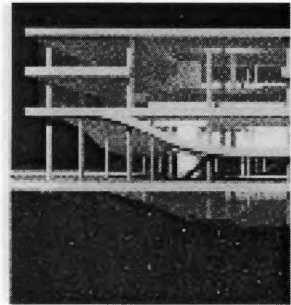


Figure 31 -Villa VPRO Exterior



Figure 32 - Interior Terrace

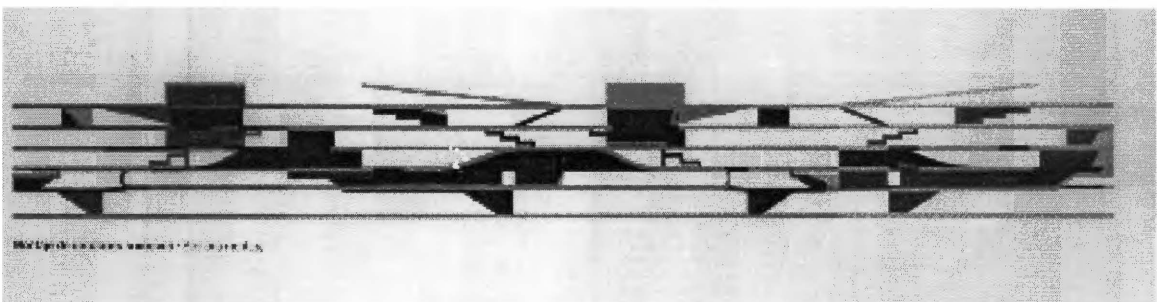


Figure 33 -Sectional Montage Showing Exterior Spaces

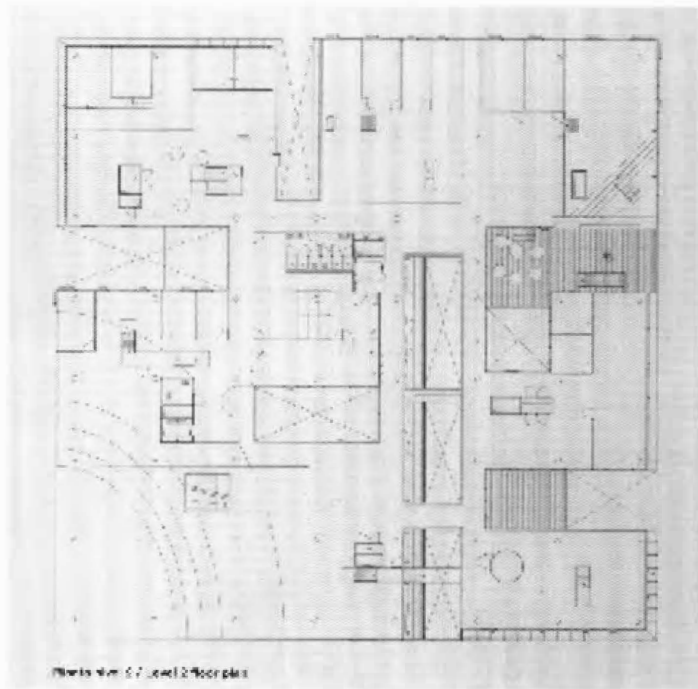


Figure 34 -3rd Floor Plan

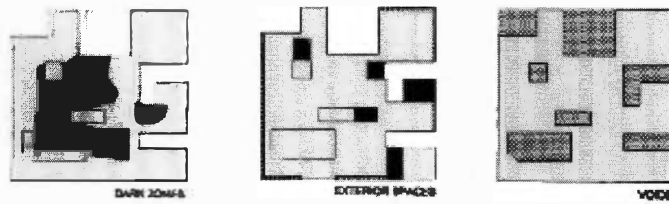


Figure 35 - Plan Diagrams

M-House, Tokyo, Japan - Kazuyo Sejima and Associates

The M House is a residence in the center of Tokyo in a dense upper class residential district (Figure 36). Most of the neighboring houses have large openings on the street which has led to privacy issues in an increasingly dense neighborhood setting. This has created a situation of permanently drawn curtains and high fences. In this environment, the architects were faced with the predicament of bringing the outside into the interior while at the same time securing the privacy of the space (Sejima, 2006). Their solution was to excavate the site to establish a vertical distance from both the street and the surrounding buildings. The master bedroom, guest room and parking garage were placed on street level while the dining room studio and other open spaces were located on the ground level and around a light well (Figures 37, 38,39). Within the light well, overhead louvers block the surrounding urban environment, and allow only the open sky above to be visible (Sejima, 2006).

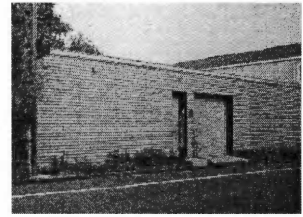


Figure 36 - M-House Exterior

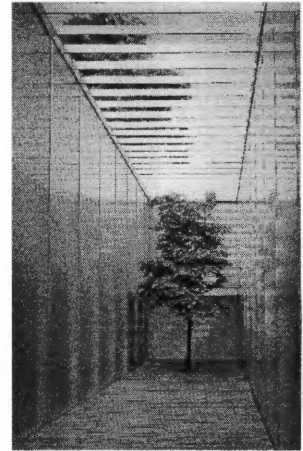


Figure 37 - Light Well

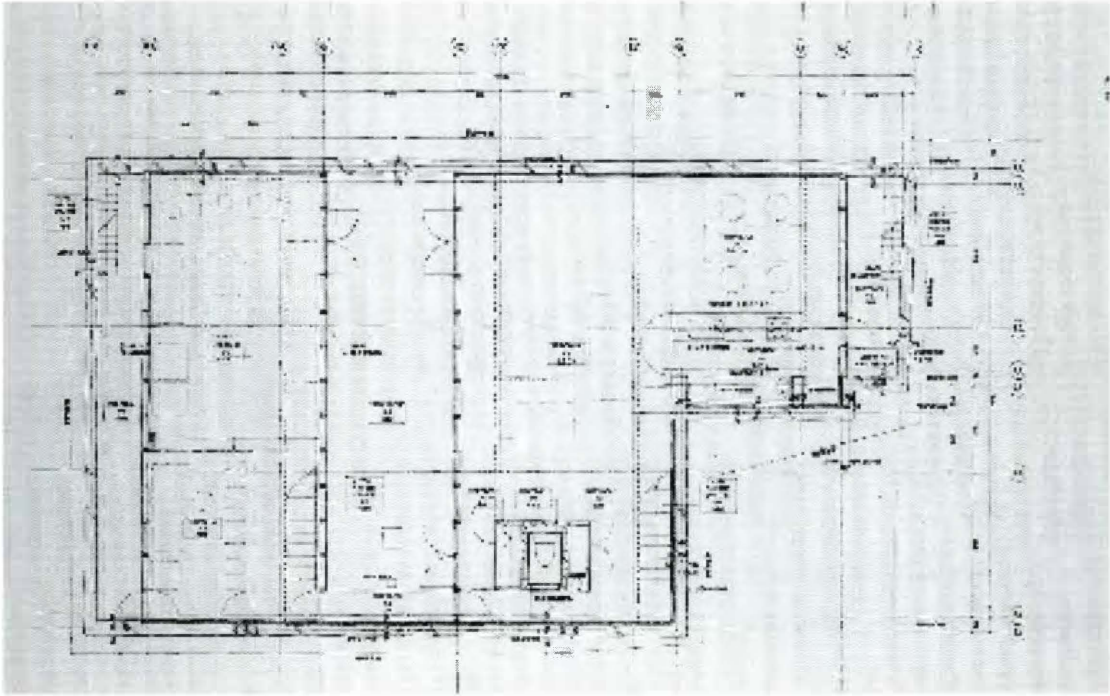


Figure 38 - FloorPlan

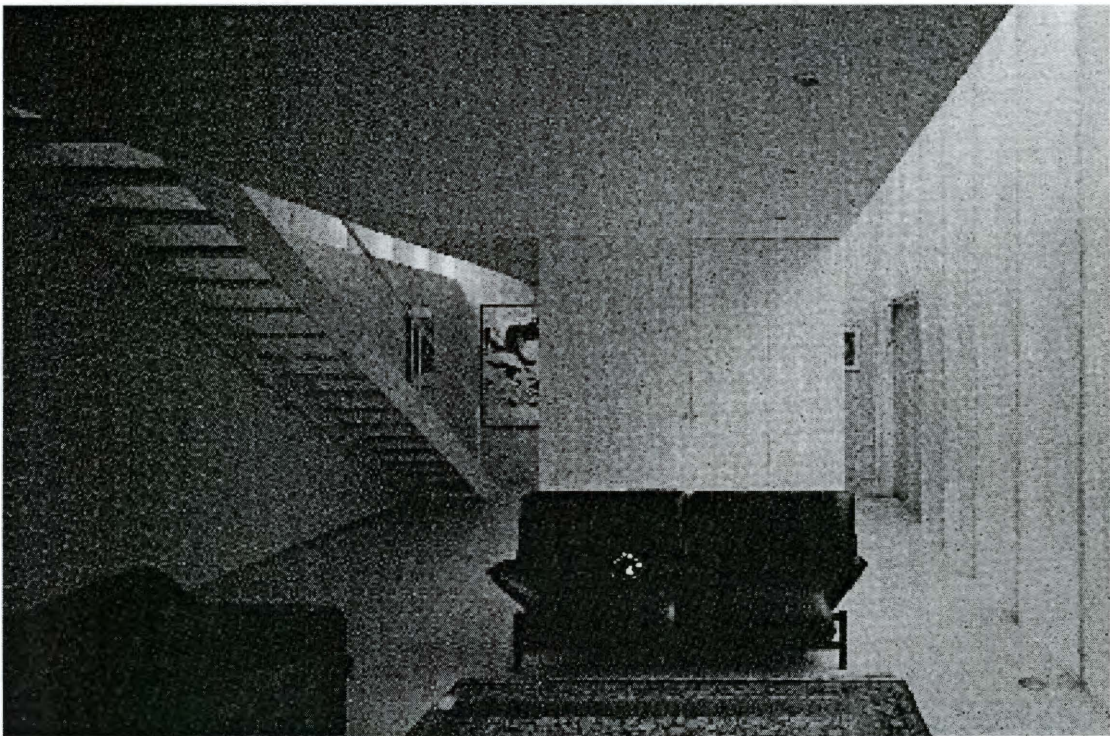


Figure 39 - Basement Level Interior

Atlanta LiveWorks, Atlanta, GA - Duany Platter Zyberk

Duany Platter Zyberk's Live Work design, referred to as the "flex house" contains three distinct types of live work arrangements in the same building: the Loft, the Live-above, and the Lifespan (Figure 40). These different layouts are not only designed to accommodate different types of businesses but also a broad range of homeowners from first time home buyers to semi-retired couples wanting to work on a part time basis.



Figure 40 - Live-Works Exterior

Loft

The loft spaces consist of a small open residence, typical of a Live-With™ design (Figure 41). The primary work area is on the first floor within a double height space. A smaller work area on the second floor overlooks the primary work area. The upstairs bedroom can remain a single or be divided into two rooms.

Live-Above

The live-above is a three story unit also known as a "shop-front." The first floor is designed for retail or office space and very adaptable as it can be either separated or connected to the residential unit above (Figure 42). A rear entrance allows owners to rent the rear bedroom and deck. The third story loft space can accommodate 1 or 2 bedrooms.

Lifespan

Also described as the Live-behind, this live work type places residential space behind commercial or work space. The design allows a number of different spatial configurations which can accommodate an extended family and can adjust to change over time (Figure 43). Doors can be closed to the kitchen and the front workspace combines with 2 bedrooms and a bath upstairs to create a separate residential unit, with 2 separate front entries.

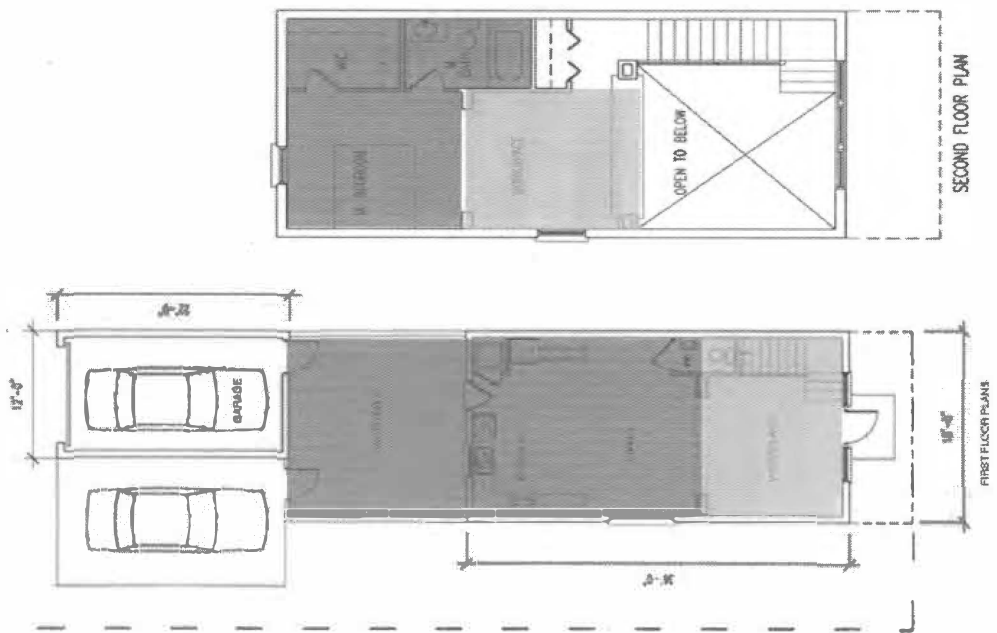


Figure 41 - Loft Floor Plan

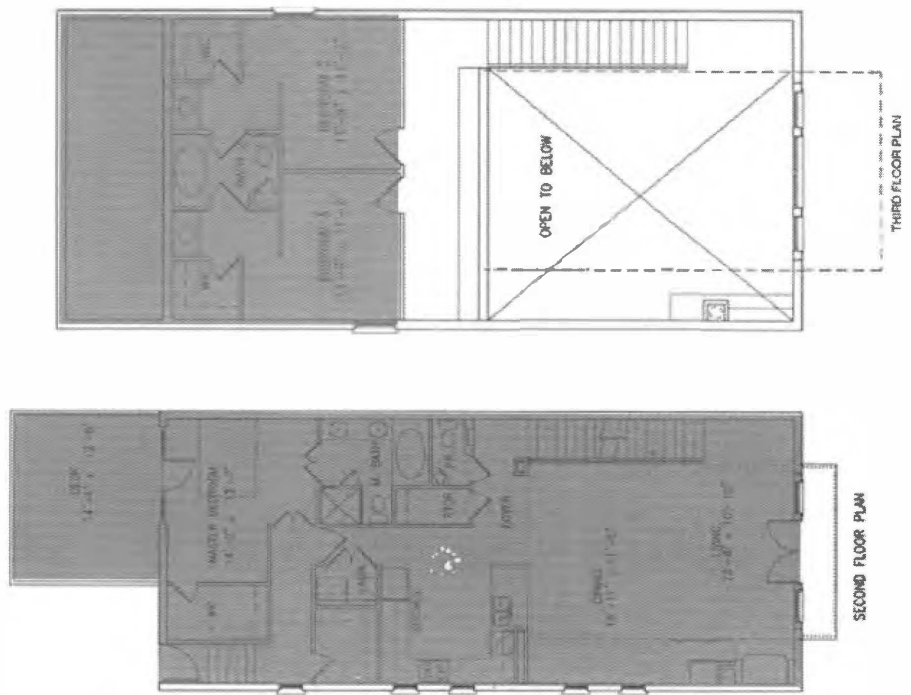


Figure 42 - Live Above Floor Plan



Figure 43 - Lifespan Floor Plan

Qualitative Program

The ideal program type for this architectural investigation is a live work community in an industrialized, urban environment; where the reestablishment of man's sensual experience of the natural world will be both the most valuable and the most challenging. Within a live work community, the residences have the unique opportunity to experience a work of architecture 24 hours a day, seven days a week. Typically, we spend only fractions of our day within a single building without experiencing how it may interact with natural light over the course of an entire day or throughout the year. To experience natural light's daily and seasonal rhythms and mutations and how that light engages, enlivens, and transforms a single work of architecture is to fully understand the sensual qualities that it possesses.

In addition to the phenomenological opportunities created by a live work community, there is an opportunity to contribute to the overall health of the residents as well. Recent medical research has discovered significant detrimental health effects attributed to the lack of dynamic natural light. The detrimental effects are largely attributed the interruption of circadian rhythms, or the human body's ability to experience 24 hour, daily cycles. "Light is the main stimulus that helps "set" the circadian clock, and thus circadian rhythms keep a synchronized rhythm with the solar day. If we are not exposed to sufficient amounts of light for a sufficient amount of time and with the right timing

our biological clocks become desynchronized with the solar day”(Monroe). A building in which people will often spend their entire day requires sufficient natural light in all parts of the building in conjunction with the phenomenological aspects previously discussed.

Communal Spaces

One of the potential drawbacks of the live work facility is isolation. Most residents in live work communities work alone, necessitating a need for social interaction throughout the day. It is the task of the architect to maximize opportunities for social interaction. Spaces should be positioned along the entry path and other major zones of circulation which encourage casual interaction among neighbors. The character of the communal spaces can make the difference between an alienating structure and a fully functioning community (Thomas Dolan Architects).

The facility will have a combination of outdoor and indoor communal spaces. The outdoor communal spaces consist of a system of courtyards and terraces which will serve as the major communal spaces of the facility. Light into these courtyards will be moderated by the surrounding building volume, trellises, and screens. Local deciduous trees and water will be incorporated into the design whenever appropriate.

Interior communal spaces will be smaller and more intimate and the flexible lighting requirements of the program provide an opportunity for a broad range of lighting possibilities. Most will be double or triple height spaces

which manipulate overhead light in conveying the temporal experience.

Studios

All studio areas will be lit by natural light and clearly demarcated yet connected to the communal functions of the building. Several painting studios will be incorporated and only allow northern light into the work space. The remainder and great majority of the studios will be designed for a variety of work types with eastern, western, and southern exposures to maximize the opportunities for the manipulation of changing light throughout the day. Unfinished and natural materials will be used whenever possible to maximize textural mutations caused by the changing natural light.

Common Gallery

A common gallery will be provided on the first or second floor which will be open to the public and provide an opportunity for the resident artists to display and sell their work. The gallery will also be designed to accommodate visiting art shows and lectures.

Quantitative Program

Communal Spaces

Vestibule – 200 sf

Main Lobby – 1000 sf

Intermittent Communal Spaces – 2, 000 sf

Terraces - 2,000 sf

Subtotal – 5,200 sf

Studios

1 BR Studios

10 at 1000 sf = 10,000 sf

2 BR Studios

5 at 1200 sf = 6,000 sf

3 BR Studios

5 at 1500 sf = 7,500 sf

Communal Studio Space (Adaptable) – 3,000 sf

Common Gallery – 3,000 sf

Subtotal – 33,500 sf

Offices

Administrative Offices - 5 at 100 = 500 sf

Subtotal – 500 sf

Service Space

Mailroom – 500 sf

Laundry – 500 sf

Bathrooms - 500 sf

Mechanical Room – 1000 sf

Subtotal – 2,500 sf

Total Net Square Footage – 37,700 square feet

Total Gross Square Footage – 49,010 square feet



Figure 44 - Nashville, TN



Figure 45 - East Germantown
Neighborhood

Site -

Neuhoff, Nashville Tennessee

The Neuhoff Complex is a former slaughterhouse and meat packing facility in the East Germantown neighborhood, lying just north of downtown Nashville on the Cumberland River (Figures 44, 45). Jefferson Street bounds the neighborhood to the south and serves as the traditional “main street” of the area. The Cumberland River bounds the neighborhood to the east, 4th avenue to the west, and the city’s water treatment plant to the north. In the 1830’s and 40’s residential development occupied largely by German families replaced the existing agriculture; prominent among these immigrants were the Neuhoffs who were meat packers and distributors (Kreyling, 141). Travel to and from downtown was relegated to what is currently 4th and 5th avenues. The area along the river was largely avoided due to the industries, stockyards and slaughterhouses.

with mixed use and multi family housing at the center of the plan (Kreyling, 154). The McRedmond Family along with the Neuhoff Trust and Nashville Cultural Arts Project (NCAP) began a three year program cleaning the site and restoring some of the buildings on the site (Neuhoff Redevelopment Project). Since then, the site has become a focal point for the arts and environmental studies with the establishment of the Nashville Jazz Workshop and the installation of green roof prototypes for the packing plant. However, there is still significant development and renovations required to re-establish the area as a livable, vibrant community.

The project site is a 28,800 square foot vacant lot located within the Neuhoff complex at the corner of Monroe Street and First Avenue. Exposed frontage lies along First Avenue to the southwest and Monroe Street to the southeast, thereby providing maximum opportunity for direct sunlight into the building. The immediate context is a conglomeration of 2 to 3 storey warehouses and industrial buildings some of which are already converted into residential and small business spaces.

One of the most powerful aspects of using the phenomenon of temporality to reestablish man's sensory experience is that it can be implemented at any site where natural light is available. The appropriateness of the site chosen for this architectural investigation is based on the value of such a daily sensory experience in re-inhabiting an area scared by heavy manufacturing and industry. For the sensual experience of temporality is not dependent on views of nature but rather the interaction of dynamic natural light with the form

and spaces of the building. Especially in the current transitional stage of the area, temporality can establish valuable sensory experiences within the building while simultaneously protecting itself from unsightly views of the surrounding industrial landscape. “Nature” and its accompanying sensory experiences are introduced into the building in an abstract and more powerful way.

Bibliography

Bibliography

Ando, Tadao. "Light" Tadao Ando Complete Works.
Milan, Italy. Phaidon Press: 1995.

Abram, David. The Spell of the Sensuous, Perception and Language
in a More Than Human World. New York. Pantheon Books: 1996.

Amelar, Sarah. "Simmons Hall." Architectural Record May 2003.

Brennan, Martin. The Stars and the Stones: Ancient Art and Astronomy in Ireland.
London: Thames and Hudson, 1983.

Büttiker, Hans. Louis I. L Kahn, Light and Space.
New York: Watson- Guptill Publications. 1994.

Henze, Anton. La Tourette: The Le Corbusian Monastery.
New York: (George Whittenborn, Inc.)

Holl, Stephen. Anchoring: Selected Projects 1975-1991.
New York. Princeton Architectural Press: 1991.

Holl, Stephen, Pallasmaa, Juhani, Pérez-Gomez, Alberto. Questions of Perception:
Phenomenology of Architecture. Tokyo. Architecture and Urbanism
Publishing Ltd: 1994.

Kreyling, Christine. The Plan of Nashville, Avenues to a Great City.
Nashville, Tennessee: Vanderbilt University Press: 2005.

Lampugnani, Vittorio Magnago. "Three Houses by Tadao Ando" Tadao Ando Complete
Works. Milan, Italy. Phaidon Press: 1995.

Lobell, John. Between Silence and Light: Spirit in the Architecture of Louis I. Kahn
Boulder, CO. The Haddon Craftsman, Inc. 1979.

MVRDV Files Projects 002-209, Architecture and Urbanism November 2002

MVRDV. El Croquis. Milan, Italy. 1997

Miyake, Riichi. Light and Space: Modern Architecture.
Tokyo: EDITA. 1994.

Pallasmaa, Juhani. The Eyes of the Skin: Architecture of the Senses.
Hoboken, NJ. John Wiley and Sons: 2005.

Plummer, Henry. Masters of Light, First Volume: Twentieth Century Pioneers
Tokyo. Architecture and Urbanism Publishing Co. Ltd: 2003.

Plummer, Henry. Light in Japanese Architecture
Tokyo. Architecture + Urbanism Publishing Co. Ltd: 2003.

Sejima, Kazuyo. Kazuyo Sejima, 1983-2000 + Ryue Nishizawa, 1995-2000
Milan, Italy. Fiorucci International: 2001.

Shepard, Paul. Nature and Madness. Athens, GA. University of Georgia Press: 1998.

Tanizaki, Jun'ichiro, In Praise of Shadows. New York. Leete's Island Books: 1977.

Tyng, Alexandra. "Silence and Light", Beginnings- Louis I. Kahn's
Philosophy of Architecture. New York: John Wiley and Son. 1984.

"Formal Light: Monastery of Sainte Marie de La Tourette" Light Revealing Architecture

Video Resources:

Louis Kahn [videorecording] : silence and light / Michael Blackwood Productions in as
42

sociation with Saarländischer Rundfunk ; producer & director, Michael Blackwood.[New York, N.Y] : Michael Blackwood Productions, c2004.

Website Sources:

Simmons Hall Fact Sheet, www.web.mit.edu/evolving/presskit/pdfkit/fact-simmons.pdf

Thomas Dolan Architecture, www.live-work.com.

Neuhoff Redevelopment Project: www.tva.gov/ed_news/neuhoff.pdf

Duany Platter Zyberk Architects, www.dpz.com

Monroe, Linda. "Light and Human Health" www.buildings.com/Articles/detail.asp?Article ID=1781

United States EPA Publications: The Inside Story: A Guide to Indoor Air Quality
www.epa.gov/iaq/pubs/insidest.html

Appendix

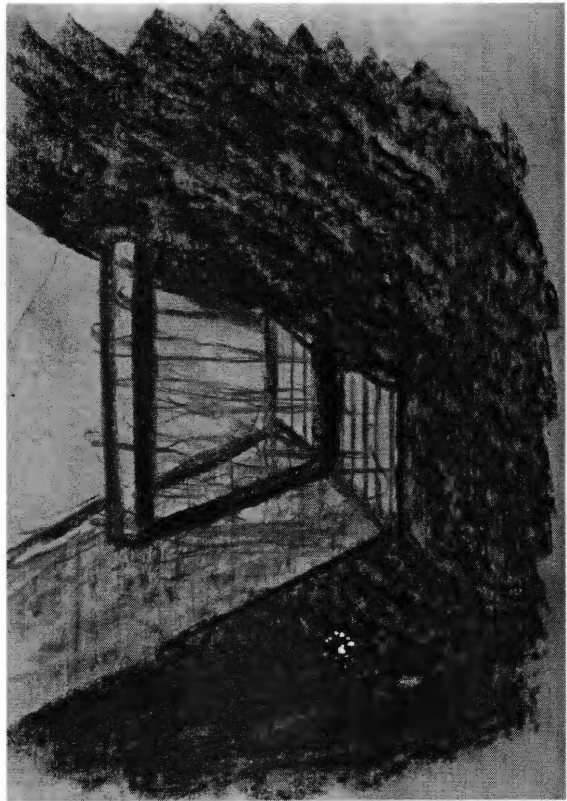
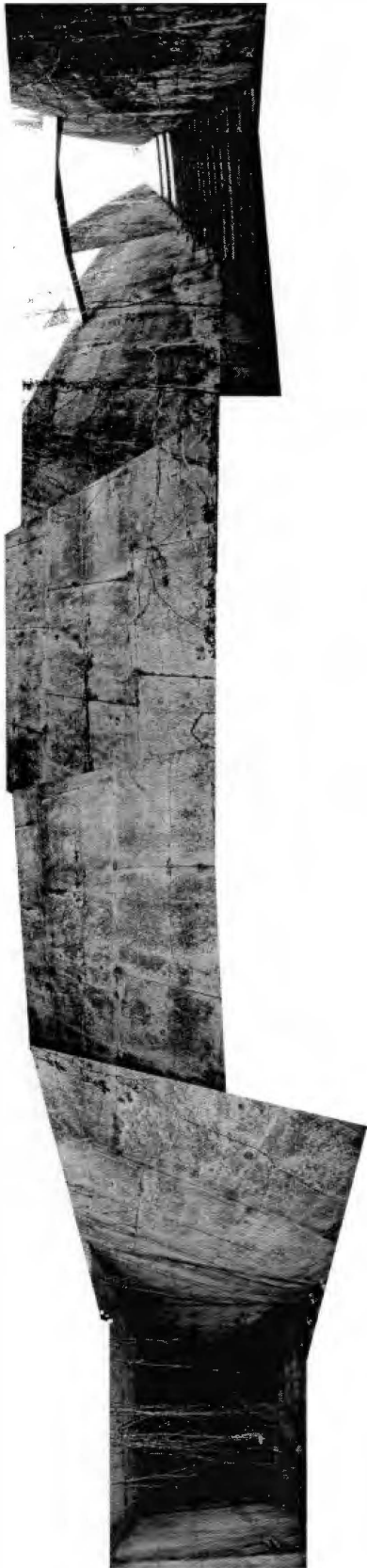


Figure 48 - Photomontages and Sketch of Neuhoff Facility



Figure 49 - Photomontage of Slaughterhouse Interior



Figure 50 - Black and White Photos of Neuhoff Facility A

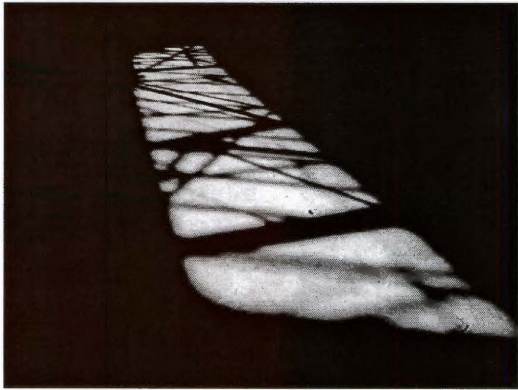
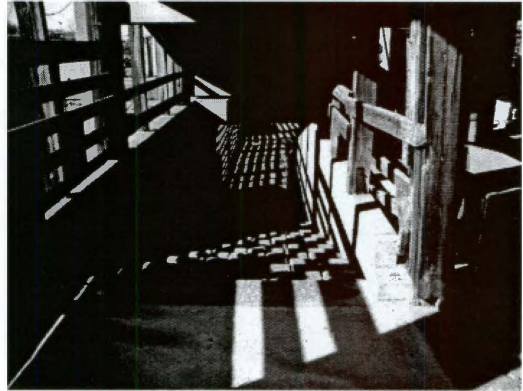
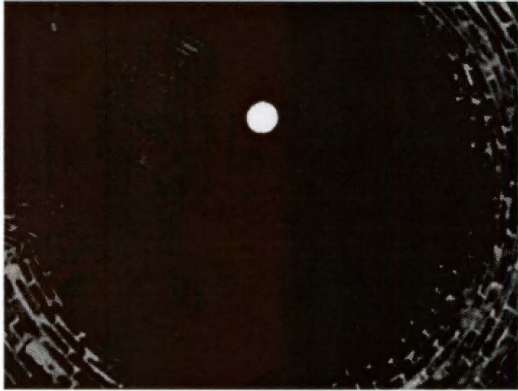


Figure 50 - Black and White Photos of Neuhoff Facility B

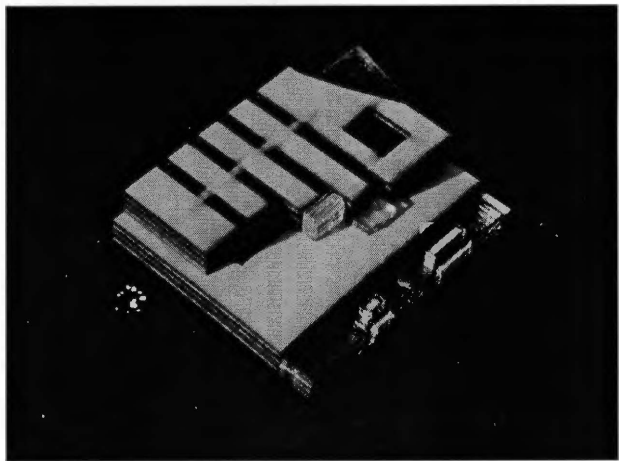
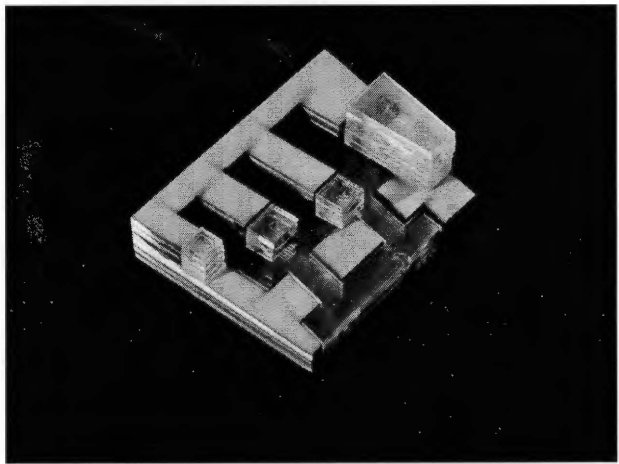
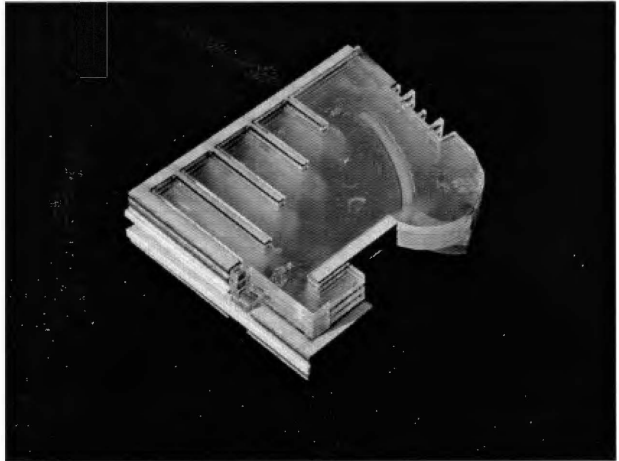


Figure 52 - Study Model Sequence A

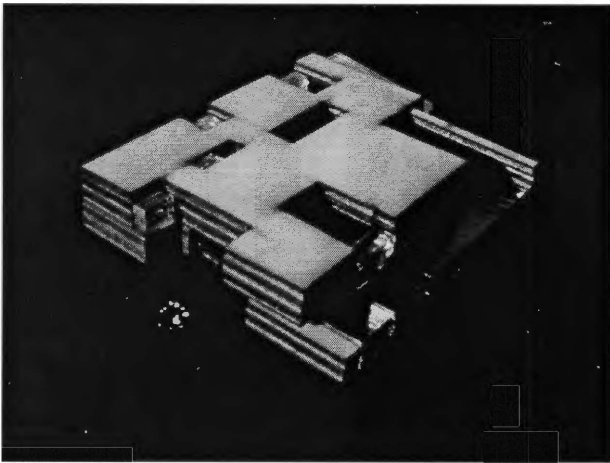
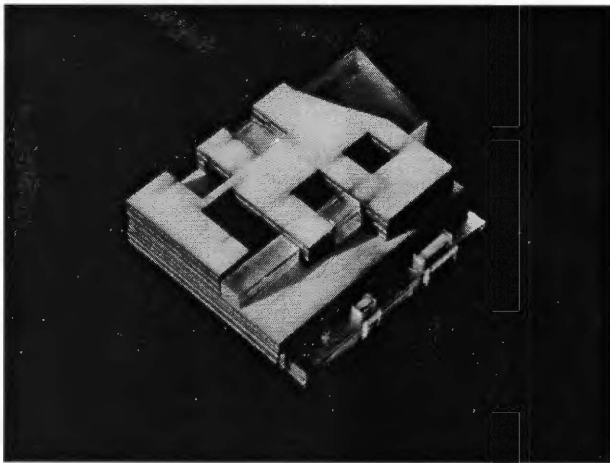
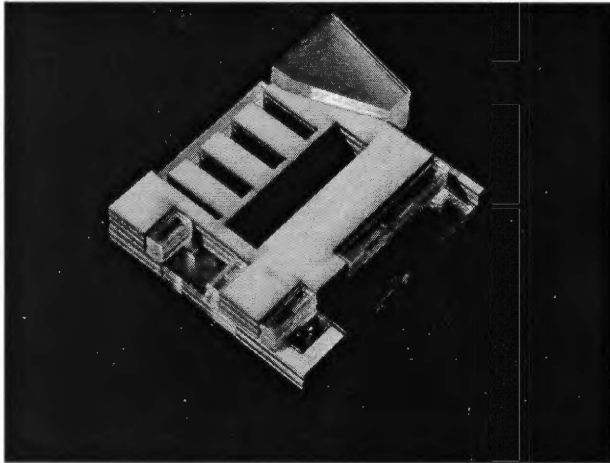


Figure 53 - Study Model Sequence B



Figure 54 - Study Model in Context

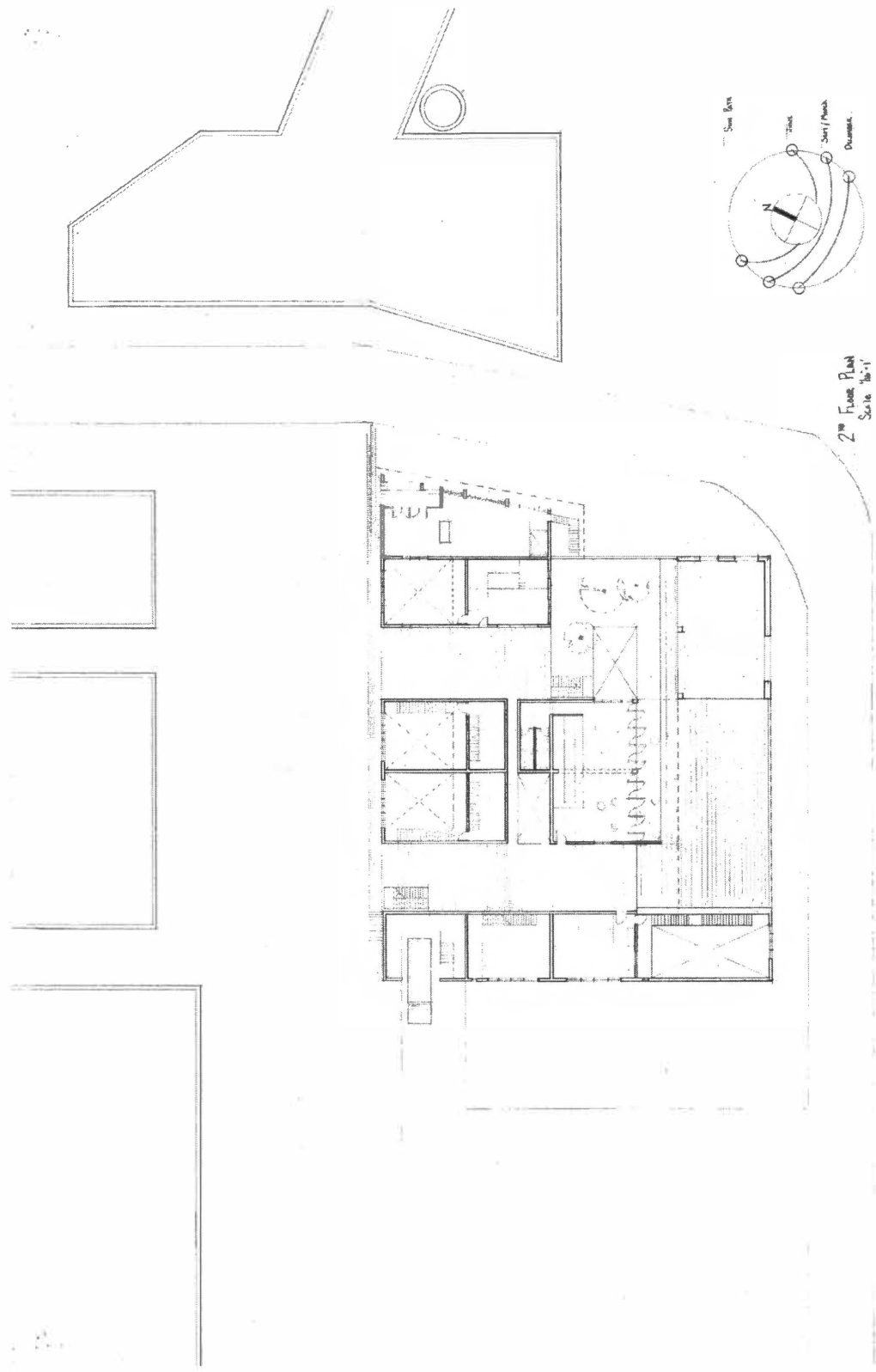


Figure 55 - 2nd Floor Plan

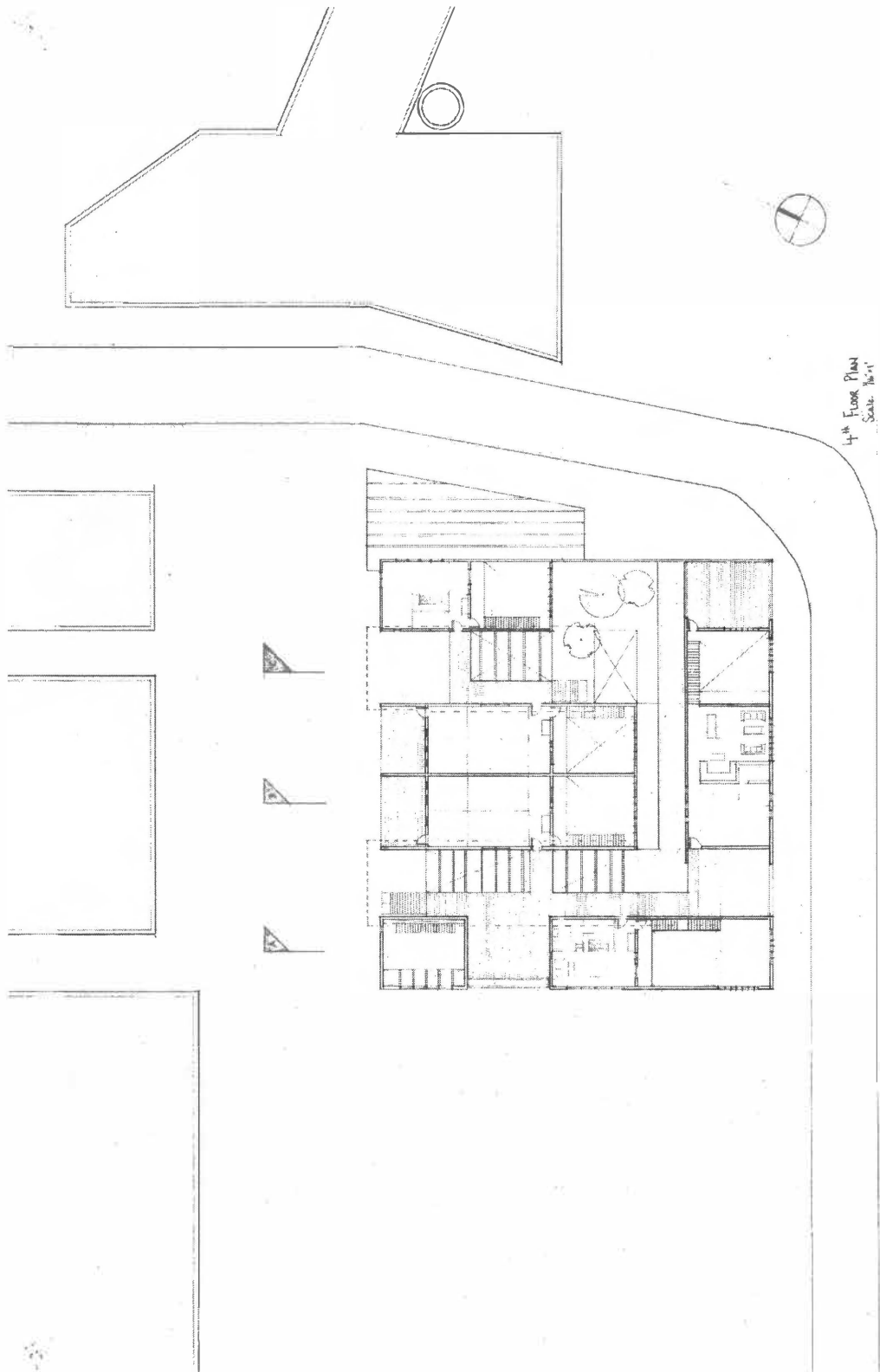


Figure 56 - 4th Floor Plan

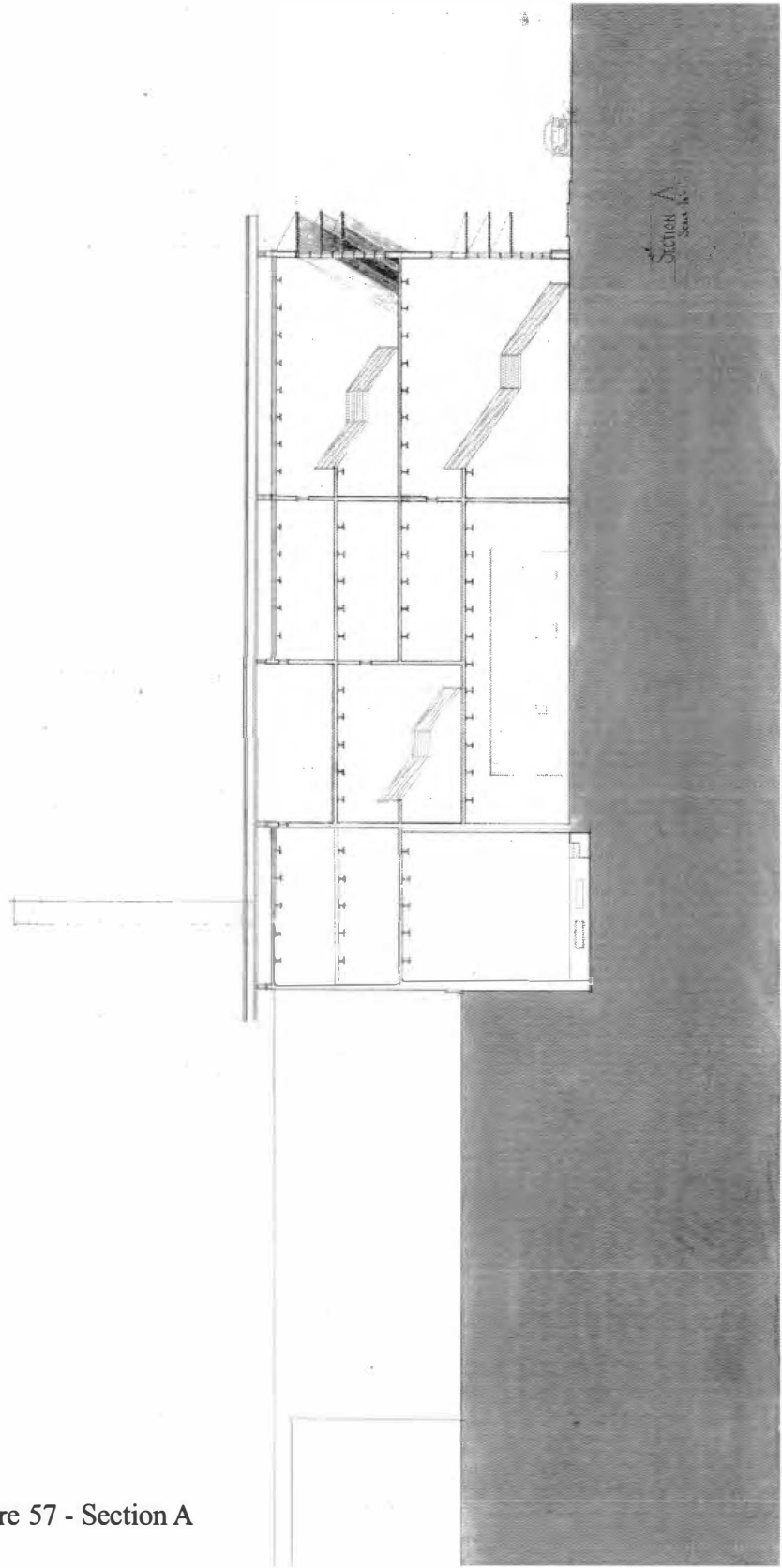


Figure 57 - Section A

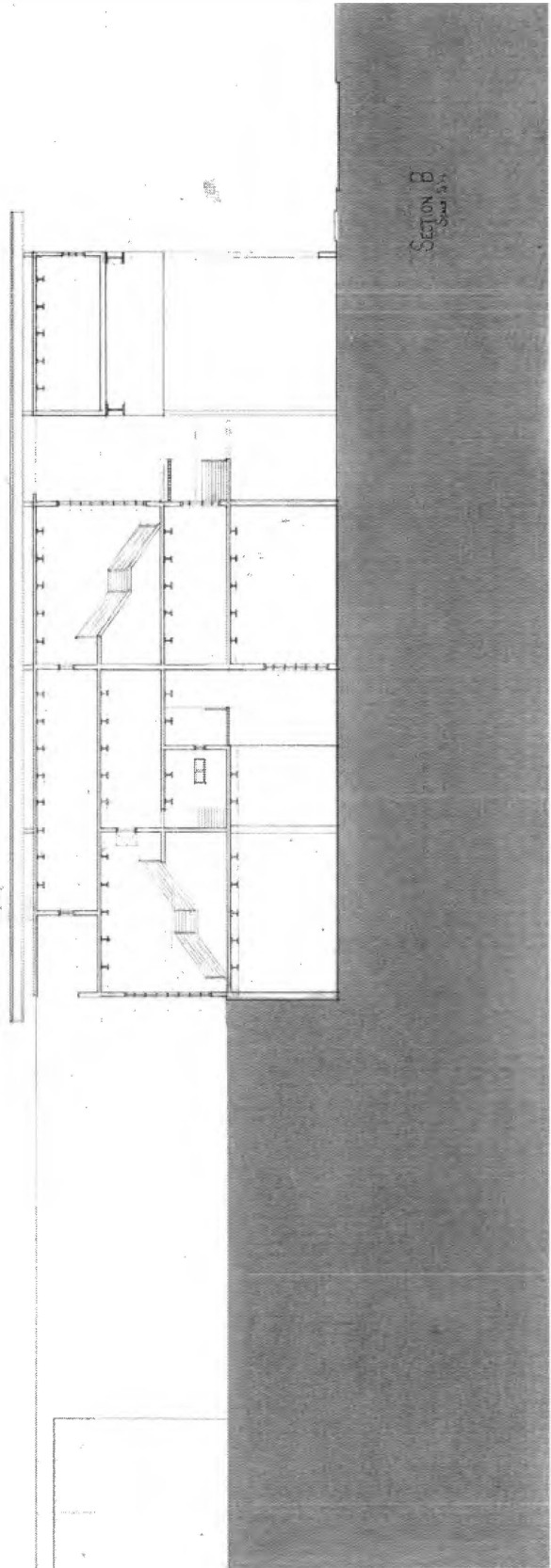


Figure 58 - Section B

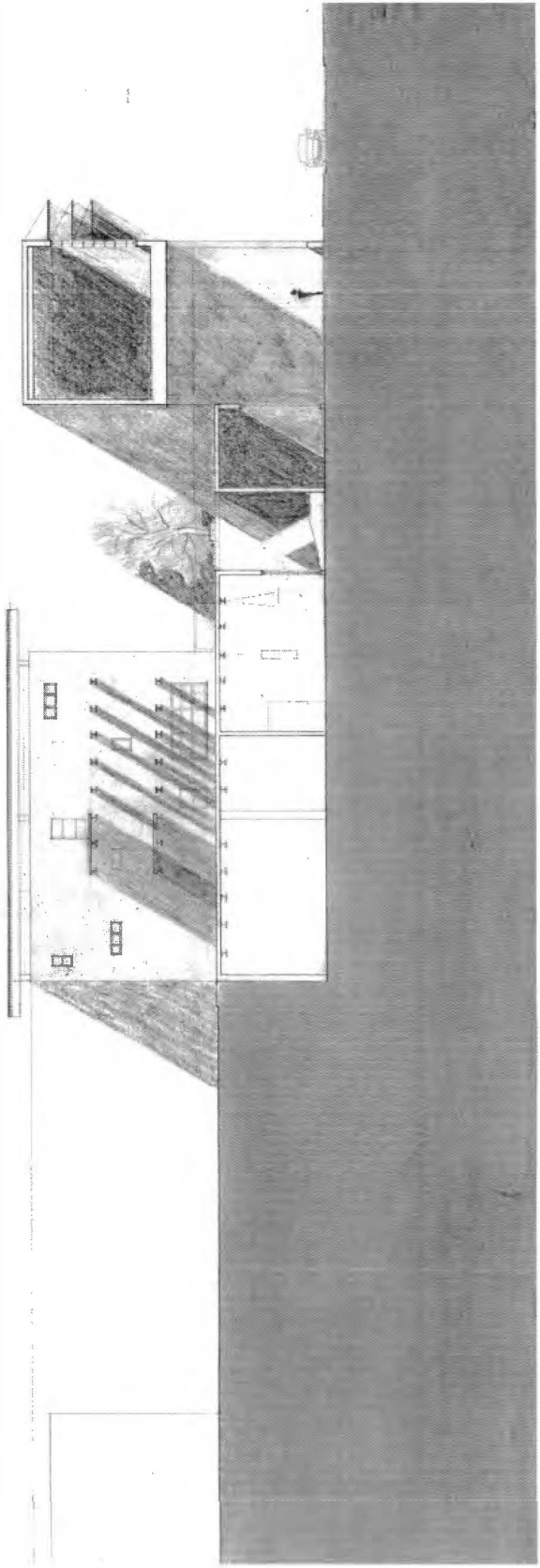
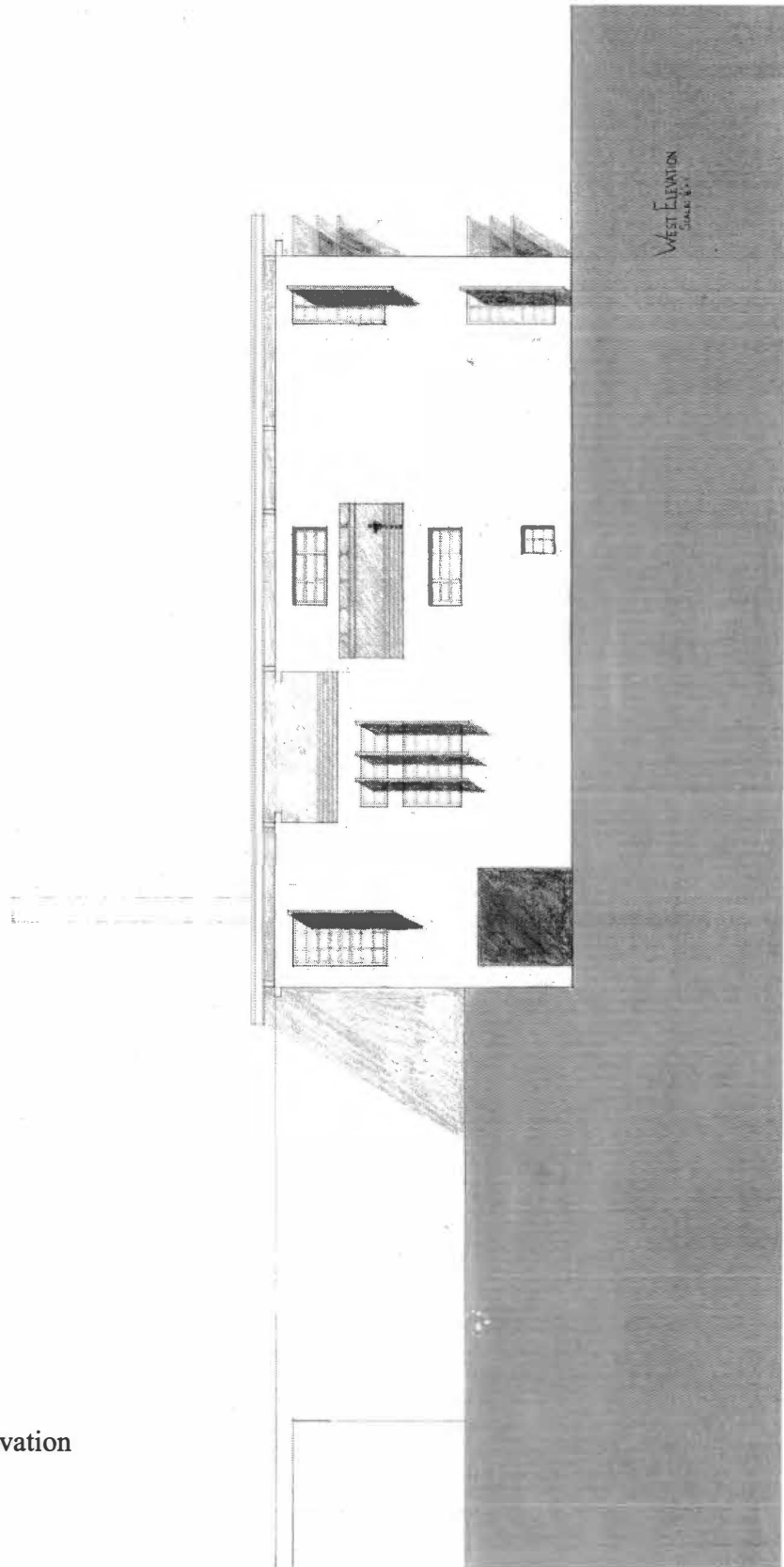


Figure 59 - Section C



WEST ELEVATION
SCALE 1/4" = 1'-0"

Figure 60 - West Elevation

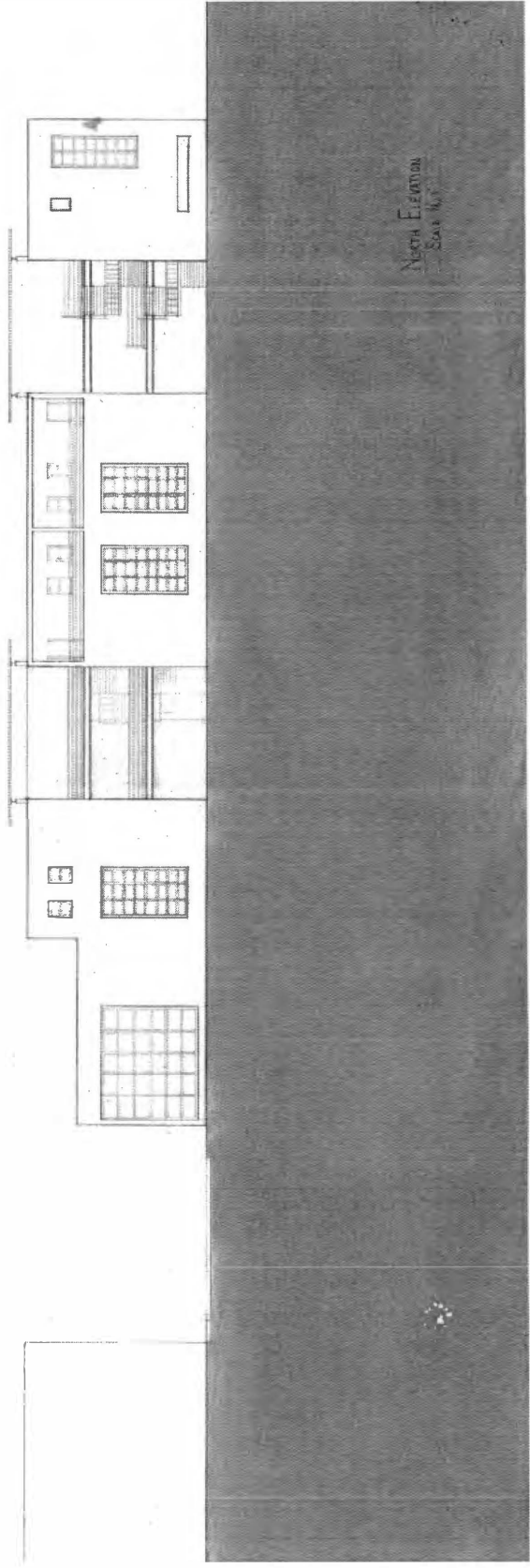


Figure 61 - North Elevation

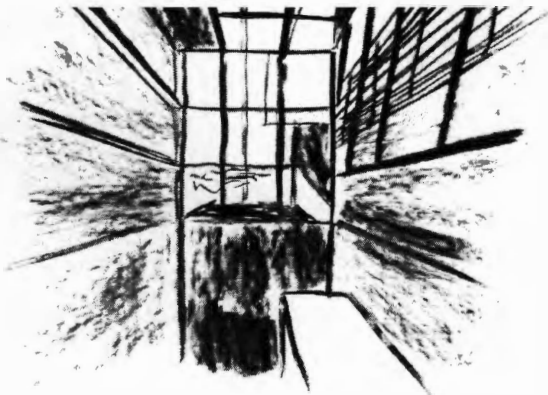
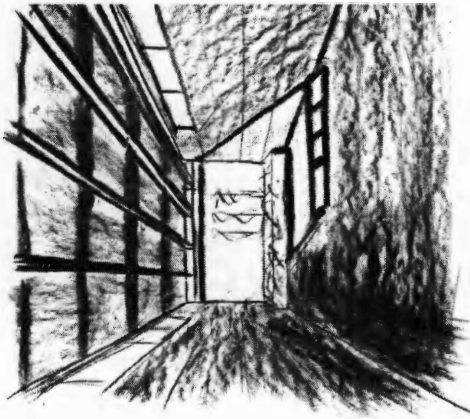
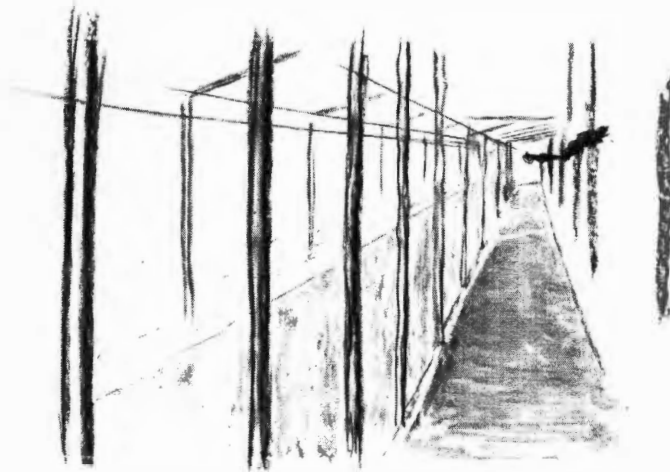


Figure 62 - Charcoal Perspectives



Figure 63 - Basswood Model South Facade

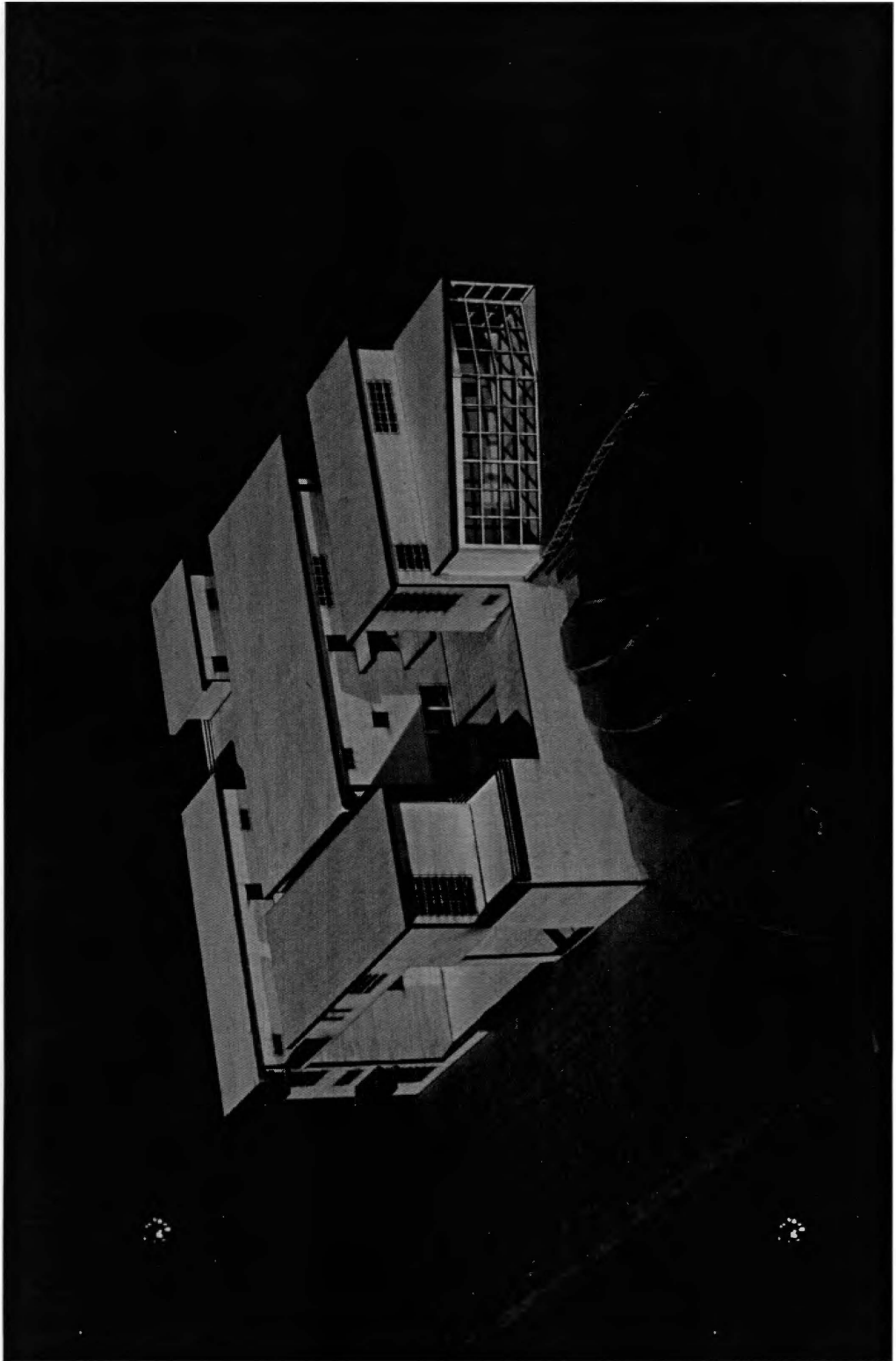


Figure 64 - Basswood Model East Facade

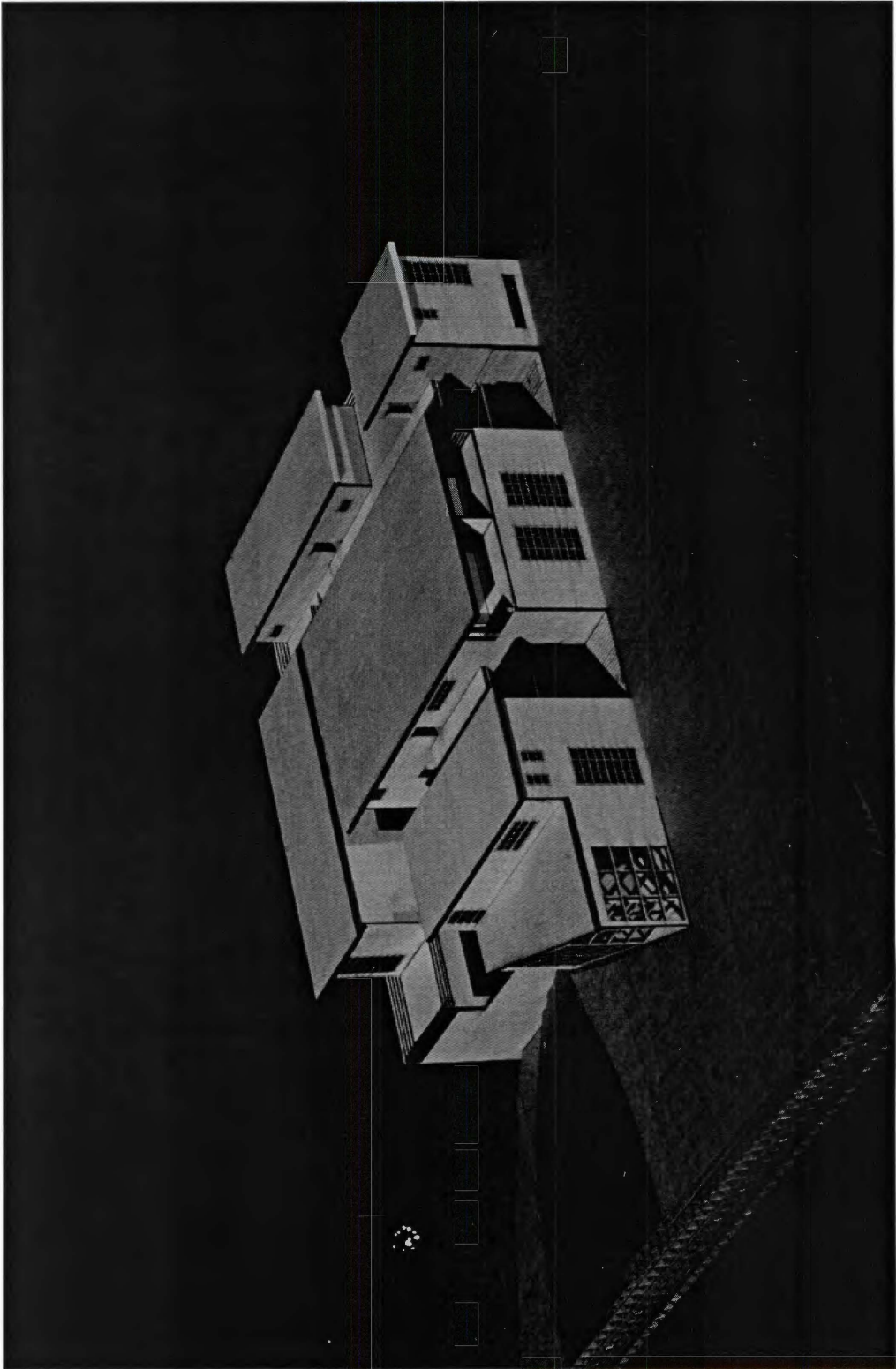


Figure 65 - Basswood Model North Facade

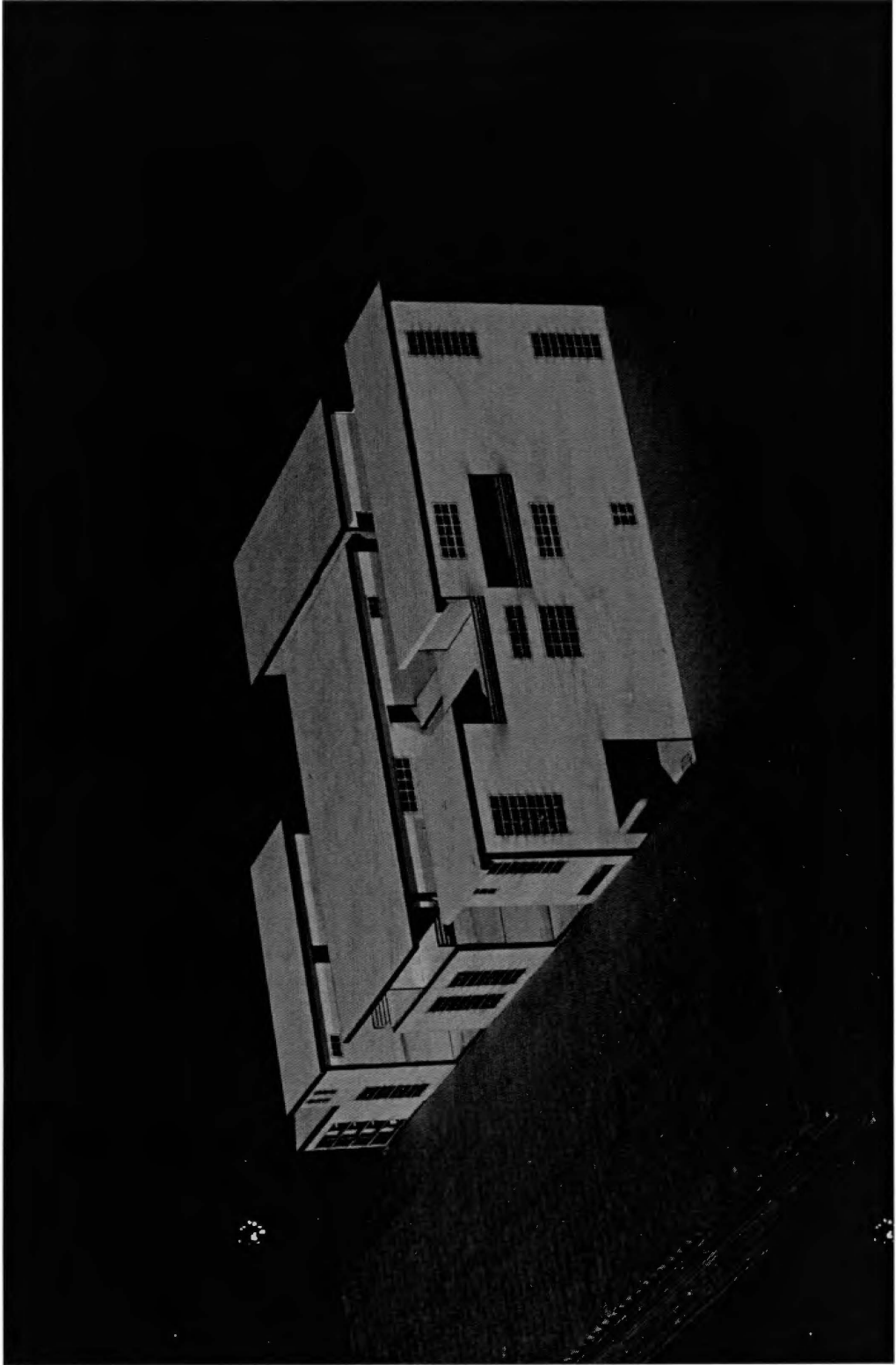


Figure 66 - Basswood Model West Facade

Vita

Robert G. Thompson III received his B.S. in Geology from the University of the South (Sewanee) in 1999. He worked for three years as an environmental geologist/emergency responder in Nashville, Tennessee and Washington DC before pursuing his Master of Architecture degree at the University of Tennessee, Knoxville. He is originally from Columbia, Tennessee, and currently resides in Nashville.