LOUIS I. KAHN’S FISHER HOUSE: A CASE STUDY ON THE ARCHITECTURAL DETAIL AND DESIGN INTENT

Pierson William Booher
University of Pennsylvania, booherp@design.upenn.edu

Follow this and additional works at: https://repository.upenn.edu/hp_theses

Part of the Historic Preservation and Conservation Commons

https://repository.upenn.edu/hp_theses/132

A THESIS in Historic Preservation Presented to the Faculties of the University of Pennsylvania in Partial Fulfillment of the Requirements of the Degree of MASTER OF SCIENCE IN HISTORIC PRESERVATION 2009

This paper is posted at ScholarlyCommons. https://repository.upenn.edu/hp_theses/132
For more information, please contact repository@pobox.upenn.edu.
LOUIS I. KAHN'S FISHER HOUSE: A CASE STUDY ON THE ARCHITECTURAL DETAIL AND DESIGN INTENT

Abstract
The preservation of architecturally significant structures has begun to experience a shift in both style and future use. No longer are Jeffersonian and Antebellum homes the focus of young preservationists and the 'little old ladies' that preceded them; rather, the tide has shifted towards structures that were both disdained and revered during their time. Modernist structures, while simplistic in form and function, contain a high degree of embedded meaning and significance. While the study focuses on the work of Louis I. Kahn – specifically the Norman Fisher house – an understanding of the design intent and overall role of the details within Mid-Century Modernist designs can contribute to future preservation practices involving similar structures. The purpose of this study is to gain an understanding of Kahn's maturation as a designer and his approach to both embedded truths and the layering of meanings within his designs. In the end, the goal was to further the understanding of the Fisher House, its detail work, and its place within the larger context of Kahn's career. Kahn's use of traditional forms – augmented by the precision of modern technology – throughout his late work represents his multifaceted approach to design, attempting to appeal to both the psyche and the materials, themselves, in order to maintain their 'trueness to Form'. Kahn was not merely recycling traditionalism, but rather retranslating 'known' forms – in both assembly and aesthetics – in order to convey a certain aura.

Disciplines
Historic Preservation and Conservation

Comments
A THESIS in Historic Preservation Presented to the Faculties of the University of Pennsylvania in Partial Fulfillment of the Requirements of the Degree of MASTER OF SCIENCE IN HISTORIC PRESERVATION 2009

This thesis or dissertation is available at ScholarlyCommons: https://repository.upenn.edu/hp_theses/132
LOUIS I. KAHN’S FISHER HOUSE: 
A CASE STUDY ON THE ARCHITECTURAL DETAIL AND DESIGN INTENT.

Pierson William Booher

A THESIS

in

Historic Preservation

Presented to the Faculties of the University of Pennsylvania in 
Partial Fulfillment of the Requirements of the Degree of

MASTER OF SCIENCE IN HISTORIC PRESERVATION

2009

Advisor
David G. De Long
Professor Emeritus of Architecture

Program Chair
Frank G. Matero
Professor of Architecture
I would like to thank my advisor David G. De Long for his incredible support and insight, for without his guidance this work would not be possible. Thank you for being honest and critical, available and efficient despite being 3,000 miles away. You taught me a lot about being a strong writer and I appreciate all of the scholarly insight you have passed on to me.

I would also like to thank William Whittaker for allowing me to pester him with a seemingly endless number of questionably relevant insights that I had throughout the past year. Not only were you a great resource, but you were always mindful of the ultimate focus and never afraid to remind me to stay on track. In addition I would like to extend my sincerest gratitude to Nancy Thorne at the Architectural Archives for assisting me with all of my research and always making herself available. Thanks also to Randall Mason for acting as my liaison between the National Trust for Historic Preservation and the Historic Preservation department. You went out of your way to arrange the initial aspects of the study and have been a fantastic resource throughout my time at Penn.

Thank you to the entire Fisher family, specifically Doris, Nina, and Claudia, for opening their home to myself and the students of the Kahn Seminar. Mrs. Fisher, without you and your husband’s dreams this study would have had less traction and I am forever grateful for your hospitality and contribution to architecture.

And finally I would like to thank everyone else who has gone out of their way to assist me in this endeavor. To the students of the Kahn Seminar – Caitlin Smith, Caitlin Kramer, Taryn D’Ambrogi, Melissa Steeley, Meredith Keller, Angela Spadoni, Vincent Leung, and Kenta Fukunishi – thank you for all of your unique insights and your contribution to the study of such a wonderful building. To Patricia Cummings Loud of the Kimbell Art Museum, and both Garry Van Gerpen and Robert Lizarraga of the Salk Institute for Biological Studies, thank you for taking time out of their day to open up your buildings to me, for without your contributions much of this would not have been possible.
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>II</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>V</td>
</tr>
</tbody>
</table>

### CHAPTER ONE | LOUIS I. KAHN
- SCHOOLING | 1
- BEGINNINGS | 2
- IN SEARCH OF AN IDENTITY | 13
- EARLY HOUSING | 20

### CHAPTER TWO | NORMAN, DORIS, AND LOU
- SCHEME ONE | SUMMER, 1961 | 29
- SCHEME TWO | MARCH, 1962 | 32
- SCHEME THREE | SUMMER (AUG-SEPT), 1963 | 41
- SCHEME FOUR | DECEMBER, 1963 | 48
- SCHEME FIVE | MAY 11, 1964; REVISED: JUNE 4, 1964 | 62

### CHAPTER THREE | THE ARCHITECTURAL WOODWORK DETAIL OF THE NORMAN FISHER HOUSE, HATBORO, PENNSYLVANIA
- FOUNDATION | 74
- IDENTITY | 78

### CHAPTER FOUR | THE ESHERICK HOUSE, THE FISHER HOUSE, AND THE KORMAN HOUSE: A COMPARATIVE ANALYSIS OF THE USE OF ARCHITECTURAL WOODWORK DETAIL IN THREE LATE LOUIS KAHN HOUSES
- THREE HOUSES | 104
- IN SEARCH OF A SPIRIT | 105
- STRUCTURE.LIGHT.ORNAMENT | 116

- 121
LIST OF FIGURES |

Fig. 1.1: Kahn’s Richards Medical Facility at the University of Pennsylvania..................8
Fig. 1.2: Kahn’s Rendering of the Proposed Palace of Liberal Arts for the 1926 Sesqui-
centennial Exposition...........................................................................................................8
Fig. 1.3: Watercolor by Kahn of Amalfi in the Winter of 1928-29.................................11
Fig. 1.4: Pastel Drawing by Kahn of San Marco in Venice, ca. 1951...............................15
Fig. 1.5: View of the Courtyard of Kahn’s Trenton Bathhouse........................................15
Fig. 1.6: View of the Window Wall of Kahn’s Yale Art Gallery........................................16
Fig. 1.7: Kahn’s Esquisse for a Modern Cathedral Utilizing Tubular Steel as the Primary
Structural Element.............................................................................................................16
Fig. 1.8: Image Showing the Inverse Pyramidal Slab of Kahn’s Yale Art Gallery.............19
Fig. 1.9: Exterior of Kahn’s Oser House...........................................................................24
Fig. 1.10: Ground Floor Plan for the Unbuilt Francis Adler House...............................26
Fig. 1.11: Ground Floor Plan for the Unbuilt Weber DeVore House.............................26

Fig. 2.1: Scheme One; Ground Floor Plan.........................................................................34
Fig. 2.2: Scheme One; Second Floor Plan..........................................................................34
Fig. 2.3: Scheme One; Dining Room & Master Bedroom Sketches..................................37
Fig. 2.4: British Castle Floor Plan Sketches by Kahn.......................................................37
Fig. 2.5: Scheme One; 3 Aug 1961; Northeast Elevation...................................................40
Fig. 2.6: Scheme One; 3 Aug 1961; Ground Floor Plan....................................................40
Fig. 2.7: Scheme Two; 03/09/1962; Ground Floor Plan....................................................43
Fig. 2.8: Scheme Two; 03/09/1962; Southeast Elevation...................................................43
Fig. 2.9: Early Sketch of the Adler House............................................................................44
Fig. 2.10: Plan of the Trenton Bathhouse............................................................................44
Fig. 2.11: Scheme Two; 03/09/1962; Northwest Elevation................................................47
Fig. 2.12: Scheme Two; Third Iteration; Ground Floor Plan.............................................47
Fig. 2.13: Plan of the Capitol Complex at Dacca, East Pakistan.......................................50
Fig. 2.14: Sketch of the Erdman Hall Plan.......................................................................50
Fig. 2.15: Site Plan of Ledoux’s Chaux Saltworks.............................................................52
Fig. 2.16: Site Plan of Kahn’s Proposal for the Dominican Motherhouse.......................52
Fig. 2.17: Site Plan of Kahn’s Proposal for the Philadelphia College of Art....................53
Fig. 2.18: Site Plan of Frank Lloyd Wright’s Design for Florida Southern College........53
Fig. 2.19: Scheme Three; Early Charcoal Plan.................................................................55
Fig. 2.20: Scheme Three; Early Charcoal Northeast Elevation........................................55
Fig. 2.21: Scheme Three; 09/20/1963; Ground Floor Plan..............................................56
Fig. 2.22: Scheme Three; Sketch of Northeast Elevation with Inverse Living Cube Win-
dow Arrangement............................................................................................................56
Fig. 2.23: Scheme Four; Ground Floor Plan Sketch..........................................................63
Fig. 2.24: Scheme Four; Second Floor Plan Sketch..........................................................63
Fig. 2.25: Scheme Four; Ground Floor Plan Sketch..........................................................66
Fig. 2.26: Scheme Five; Ground Floor Plan.....................................................................66
Fig. 2.27: Scheme Five; Second Floor Plan......................................................................69
Fig. 2.28: Scheme Five; Basement Plan............................................................................69
Fig. 2.29: Dining Room Picture Window........................................................................72
Fig. 2.30: Kahn [Left] and Vincent Rivera [Center] Inspecting the Fishers’ Bridge............73

Fig. 3.1: View of the Norman Fisher House.................................................................75
Fig. 3.2: View of the Norman Fisher House from Mill Road.........................................75
Fig. 3.3: Fisher House Bedroom Door..........................................................................80
Fig. 3.4: Office Cabinets at the Salk Institute.................................................................81
Fig. 3.5: Robert Venturi’s “Vanna Venturi House”........................................................87
Fig. 3.6: Detail of a Watertable and the Joinery of a Window Frame...............................87
Fig. 3.7: Wainscoting Detail Below Two Bedroom Windows........................................90
Fig. 3.8: ‘Living Cube’ Exterior.....................................................................................90
Fig. 3.9: Exterior of the Salk Institute, Showing the Rotation of Concrete Formwork
Along ‘Served’ and ‘Servant’ Spaces.............................................................................91
Fig. 3.10: Salk Institute Conference Room Paneling Detail............................................91
Fig. 3.11: Exterior of Le Corbusier’s Monastery at La Tourette.....................................92
Fig. 3.12: Interior of the ‘Living Cube’..........................................................................92
Fig. 3.13: Image of the Dining Room Shutters...............................................................95
Fig. 3.14: Recessed Joint Separating the Drywall from the Door Frame.......................96
Fig. 3.15: The Built-In Bench Within the Fisher House..................................................98
Fig. 3.16: The Built-In Bench Within the Fisher House..................................................99
Fig. 3.17: Second Story Balcony Post Within the Margaret Esherick House..............99
Fig. 3.18: Exterior Framing Member Composition at the Fisher House........................100
Fig. 3.19: Sketch of the Framing Member Composition at the Fisher House..............103
Fig. 3.20: Kahn at the Fisher House During Construction ca. 1966.............................103

Fig. 4.1: The Front Façade of the Margaret Esherick House.......................................106
Fig. 4.2: The Ground Floor Plan of the Esherick House.............................................107
Fig. 4.3: Exterior Wainscoting Composition at the Esherick House..............................109
Fig. 4.4: Detail of the Plaster Surrounding the Timber Beam at the Esherick House.....109
Fig. 4.5: Closet Door with Traditional Undertones at the Esherick House......................111
Fig. 4.6: Unadorned Master Bathroom Door at the Esherick House...........................112
Fig. 4.7: Exterior Wainscoting Motif at the Fisher House..........................................113
Fig. 4.8: Extruded Interior Woodwork Within the Fisher House Master Bedroom.......113
Fig. 4.9: Partition Within the Korman House Illustrating the Integrated Chair Rail.....115
Fig. 4.10: Conference Room at the Kimbell Art Museum.............................................115
Fig. 4.11: 1951 Pastel Drawing by Kahn of the Temple of Apollo...............................117
Fig. 4.12: Construction Photograph of the Erection of the Window Framing Members at the Fisher House.................................................................122
Fig. 4.13: Staircase Post at the Esherick House........................................................124
Fig. 4.14: Staircase Post at the Korman House.......................................................125
Fig. 4.15: Keystone-Like Element Joining Two Wood Panels Along the Esherick House Stair.................................................................................................126
Fig. 4.16: Exterior Wainscoting Motif at the Korman House.................................128

Fig. 5.1: View of the Salk Institute for Biological Studies from the Bluffs Along the Pacific Ocean.................................................................................................133
Fig. 5.2: One of the Individual Study Towers at the Salk Institute...............................134
Fig. 5.3: Teak Exterior of an Individual Study Unit at the Salk Institute.........................137
Fig. 5.4: Detail of the Recessed Joinery Within a Salk Institute Office..........................137
Fig. 5.5: Wood Office Cabinetry Integrated Within the Concrete Structural System.....138
Fig. 5.6: Wood Paneling Within a Salk Institute Conference Room...........................139
Fig. 5.7: Detail of the Differentiation Between Typical Wall Paneling and Rotated Paneling Situated Below Windows Within the Salk Institute.................................139
Fig. 5.8: South Elevation of the Salk Institute, Showing the Use of Horizontally and Vertically-Oriented Concrete Formwork...............................................................140
Fig. 5.9: Integration of the Period Millwork Detail Within the Brick Partitions.................144
Fig. 5.10: View Upwards From the Lobby of the Exeter Library..................................145
Fig. 5.11: View of the Exeter Library Center Core From the Perimeter Podiums..........147
Fig. 5.12: The Student Carrels at the Exeter Library....................................................149
Fig. 5.13: View Upwards from the Yale Center Entrance Court...................................152
Fig. 5.14: The Wood Wall Paneling and Concrete Matrix of the Yale Center Library Court....................................................................................................................153
Fig. 5.15: The Upper Gallery of the Yale Center for British Art.....................................155
Fig. 5.16: The Research Library at the Yale Center for British Art.............................155
CHAPTER ONE | LOUIS I. KAHN

Louis Isidore Kahn was born on February 20, 1901 on the Island of Saaremaa, Estonia to Leopold and Bertha Mendelsohn. Upon immigrating to the United States in 1906, the family settled in the Northern Liberties neighborhood of Philadelphia and changed their last name to Kahn. The early part of the family’s life in Philadelphia was marked by extreme poverty. It was a transient existence as they moved from house to house throughout their first years in America. Kahn’s father Leopold was a talented designer but struggled to find steady work, and after suffering a debilitating back injury the family was forced to lean heavily on the knitted clothing samples produced by Kahn’s mother.\footnote{Brownlee, David B. and David G. De Long. \textit{Louis I. Kahn: In the Realm of Architecture}, Grand Rapids: Universe, 1997, 12-13.} The modest upbringing led a young Louis, driven by his innate inquisitiveness, to seek out enlightenment. Even as a young boy, Kahn’s interest in the beauty of nature was readily apparent. He had suffered severe burns to his face as a youth because he got too close to a collection of burning coals; when asked about why he defied his senses, Kahn said that he was attracted by the beautiful colors of the embers.\footnote{\textit{Ibid.}}

Along with his sense of curiosity, Kahn was predisposed to the arts; his mother was an accomplished harp player, commonly filling the household with the beautiful harmony of the instrument. Because the Kahn family was so poor during their early life in the U.S., Kahn was forced to seek musical instruction through his schooling rather than in private lessons. During his stint at the Public Industrial Art School, a professor suggested he turn down a musical scholarship in favor of following his talent in the visual arts. As a result, between 1912 and 1920 – in addition to his instruction at the Public Industrial Art
Louis I. Kahn

School between 1912 and 1914 – Kahn attended the Pennsylvania Academy of Fine Arts, the Graphic Sketch Club (later renamed the Fleischer Memorial Art School), and Central High School. During the 1919-1920 academic year, Kahn was awarded first prize for best drawings in the high schools of Philadelphia, an award sponsored by the Academy of Fine Arts. Despite his artistic talent, Kahn became enamored with the field of architecture after taking Professor William Gray’s Architectural History course during his senior year of high school. Kahn’s interest in architecture was strong enough to influence him to forgo plans to study painting at the Academy of Fine Arts, instead enrolling in the University of Pennsylvania’s School of Fine Arts to study architecture.

SCHOOLING |

Kahn’s immersion in the artistic realm was shaped by two individuals, both of whom were products of Thomas Eakins’ “Romantic Realism” teaching method. J. Liberty Tadd, Kahn’s teacher at the Public Industrial Art School, worked directly under Eakins and crafted his teaching style closely to Eakins’ methodology. Central High School teacher William Gray studied under Eakins-disciple Thomas P. Anshutz at the Pennsylvania Academy of Fine Arts from 1889-1891; similar to Tadd, Anshutz pushed students to find their own means of expression rather than teach through regulated norms. In addition, Anshutz discussed European modern art and both Impressionism and Post-Impressionism in his classroom to feed the mind. Eakins was a product of the École des Beaux Arts in Paris, having studied under acclaimed French painter Jean-Léon Gérôme.

3 Ibid.
4 Ibid.
for four years. Gérôme’s teaching style led him to be somewhat withdrawn from his students’ artistic process, as he felt that each artist should mature through self-discovery, thus forcing each to be equally self-reliant. As he focused on his own shortcomings more and more, Eakins developed a drive and individualistic approach to his work that caused him to realize the merits of his instructor’s methodology. Upon returning to Philadelphia and accepting a teaching role at the Pennsylvania Academy of Fine Arts, Eakins used the same approach to instruction that he underwent while in Paris. He critiqued his students’ work once or twice a week and was rather direct yet constructive in his analysis. His students were expected to undertake their studies in a similar fashion to Eakins’ education, in that they should work hard at their craft and never be content with their proficiency. There is a possibility that the educational model of the École des Beaux Arts that Eakins – and later Paul Philippe Cret at the University of Pennsylvania – learned under impacted Kahn both as a professor and as an architect, for Kahn was never content with his work and would constantly rework programs often until the client forced him to stop.

Both Tadd and Gray built off of Eakins’ educational model, but it was Tadd’s revised approach that may have influenced a young Kahn’s artistic growth. Tadd developed a teaching method that encouraged animism, organicism, automatic, subconscious expression, and symbolism, eventually becoming a fundamental teacher in Philadelphia’s public schools. Outlined in his book, “New Methods in Education:

Art, Real Manual Training, and Nature Study,” Tadd’s methodology was not to teach the student a set of fundamental educational principles rooted in definitions and rules, but rather to allow them to seek unique discoveries of natural forms and the products of their relationships – learning-by-doing, if you will.\textsuperscript{10} For instance, shadow studies and perspective drawings were not as much taught as they were discovered and developed by children based on their own drive. The drawing exercises were repeated over and over, similar to a musician practicing their scales, until drawing and sculpting became second nature; thus, the mind and the body worked in unison, translating an image from the eye to the mind and then to the hand, breeding spontaneity.\textsuperscript{11} Even during his teaching career, Kahn was revered for his ability to replicate Tadd’s ambidextrous exercises of drawing specific bio-forms on the chalkboard. Furthermore, the skills learned through studying under Tadd enabled Kahn to record his experiences during his trips abroad. Following his closing remarks at the CIAM Otterlo Congress in 1959, a visit to Carcassonne yielded meaningful clues about Kahn’s thought process:

“A few years ago I visited Carcassonne. From the moment I entered the gates, I began to write with drawing, the images which I learned about now presenting themselves to me like realized dreams. I began studiously to memorize in line the proportions and the living details of these great buildings. I spent the whole day in the courts, on the ramparts, and in the towers, diminishing my care about the proper proportions and exact details. At the close of the day I was inventing shapes and placing buildings in different relationships than they were.”\textsuperscript{12}

Forty years after learning under Tadd, his approach to analyzing that which he saw at Carcassonne was second nature, just as Tadd intended. Interestingly, Kahn exhibited his abandonment of the literal, choosing to redistribute the existing fabric in a manner that suited his rationalization of the place. Based on his account, the elements remained independently whole, only reorganized.

Tadd’s Progressive approach appears to have had a profound impact on Kahn’s process, but it was William Gray’s mentorship that led Kahn to respect architecture and the importance of historicism. Gray was a strong proponent of the City Beautiful movement and used his position to further aesthetic qualities of Philadelphia. Gray admired the work of Inigo Jones, yet he stressed the importance of a valid representation of the past. On numerous occasions he publicly criticized specific designs for muddling the proportions of classical orders. This was especially true in regards to Gray’s extreme distaste for Philadelphia’s City Hall, which Gray proposed be torn down in favor of, “two restrained Neoclassical buildings to house the needs of the city…modeled after those of Gabriel on the Place de la Concorde in Paris.”¹³ Kahn was a student during Gray’s crusade against City Hall, an event that almost certainly had some impact on his own perception of the structure. Several of his later urban redevelopment studies for Center City Philadelphia addressed the City Hall area, the most famous of which was Kahn and Anne Tyng’s spaceframe tower and promenade. While Gray became known as a somewhat outspoken figure in local architecture circles, his progressive approach to design may have impacted Kahn’s personal interest and his appreciation for the past. It is possible Gray exposed Kahn to Greek and Roman architecture in his architectural history course, as well as the Italian towers such as those found in the Tuscan city-state of San

Louis I. Kahn

Gimignano – which is believed to have inspired Kahn’s Richards Medical Building at the University of Pennsylvania (Fig. 1.1).\textsuperscript{14} Gray’s Architectural History course at Central High had a deep impact on Kahn that not only led him to Penn to study under Paul Cret, but contributed to his design approach for the rest of his life.

During the time of Kahn’s studies at Penn, the architecture program mirrored that of the \textit{École des Beaux Arts} in Paris. Headed by former \textit{Beaux Arts} student Paul Philippe Cret, students were taught in the \textit{Beaux Arts} tradition with an emphasis placed on an understanding of the classical arts and architecture of Ancient Greece and Rome. Although Kahn came to be known as one of the great Mid-Century Modernist architects, ironically it is the traditional \textit{Beaux Arts} education and the subsequent emersion in historicism that not only influences him the most, but truly typifies his work.\textsuperscript{15}

A student of Jean-Louis Pascal and Julien Gaudet at the \textit{École}, Cret fundamentally disagreed with Progressivism, opposed to both its conservative affection for outdated historic motifs and its utopian designs that disregarded the past. To Cret, architectural progression was no different from that of society. Cret was a believer in architectural Darwinism, viewing the field of architecture as constantly changing and adapting over time to suit the needs of the public. He believed that there were two ways in which architecture would progress; there is the slow, constant change that mirrors more the status quo than true development, as well as the radical antithetical approach that results in a wholesale rejection of the present in favor of a new direction.\textsuperscript{16} During a 1923 talk to the T-Square Club – a contingent of Philadelphia architects – Cret noted, “Our


\textsuperscript{15} Brownlee and De Long. \textit{Louis I. Kahn}, 14.

\textsuperscript{16} \textit{Ibid.}
Louis I. Kahn

architecture is modern and cannot be anything else.”17 Cret publically noted his belief that an architectural revolution could never be the product of one man’s desire for change. In a 1909 essay titled “Truth and Tradition”, Cret adopted the Darwinian principle that “Nature does not skip steps,” and seemingly defeated the Progressive approach to creating a unique architectural solution through the revolutionary designs of one man.18 In many ways, Cret was correct in that change cannot occur as a result of one man’s design; while the architecture may be significant and innovative, it takes a number of subscribers and their own distinctive interpretations to further the venture toward a new direction.

BEGINNINGS |

After graduating from Penn in the spring of 1924, Kahn went on to work for Philadelphia City Architect John Molitor. Working primarily as a draftsman, Kahn was involved on a number of civic designs in addition to his post as senior draftsman for the 1926 Sesquicentennial Exposition (Fig. 1.2).19 Kahn’s graduation and early professional career came at a time when Philadelphia was undergoing vast changes. Fueled by the rapidly growing population, a variety of urban planning projects long in the minds of civic leaders and designers found themselves at the top of the city’s agenda during the 1920’s. In 1924, newly elected Mayor W. Freeland Kendrick proposed a number of planning and construction efforts that would shape the city’s development plans for the next thirty years. While the city continued to further its planning efforts on the

19 Brownlee and De Long. Louis I. Kahn, 15-16.

development of the City Beautiful-inspired plan formulated during the early part of the 20th Century, the 1920’s marked Philadelphia’s emergence as a burgeoning metropolis. Between 1929 and 1930 alone, some of Philadelphia’s most important landmark buildings were erected, including the Drake, the Girard Trust tower, the Rittenhouse Plaza, and the Philadelphia Savings Fund Society Building.20 Designed by William Lescaze and George Howe, with whom Kahn later collaborated during the 1930’s and 40’s on a number of housing developments – the PSFS Building is noted as the first American skyscraper designed in the International Style.21 This pro-development environment Kahn was thrown into provided him with various opportunities that made him a part of this monumental period in Philadelphia’s history.

Although the Sesquicentennial Exposition failed to gain the attention of the 1893 Columbian Exposition in Chicago, it benefitted Kahn by providing him with experience working on a large urban design. According to David Brownlee, despite the shortfalls of the Sesquicentennial Exposition, “For a young architect it must have been exhilarating to design and build six huge buildings, constructed of wood and stucco over steel skeletons and totaling more than 1.5 million square feet.”22 Furthermore, despite the celebration’s failures from an attendance and economic standpoint, the architecture exposed Kahn to work he had possibly never previously encountered. It is unknown as to the degree in which Kahn was influenced by the work at the exhibition, but both the historic motifs and innovation likely impressed upon him the need to be forward thinking while being mindful of the past.

Following his work as “Chief of Design” for the Sesquicentennial Exhibition, Kahn left Molitor’s office to work as a draftsman for William H. Lee for a brief time before leaving on an 11-month exploration of European architecture. Traveling between April of 1928 and March of 1929, Kahn immersed himself in the architecture, traveling to Greece, Rome, and numerous other Italian city-states. Kahn became interested in the existing housing stock, studying the individual and communal forms through sketched and written analysis. The trip was eye-opening to Kahn, as he began to realize the depth of architecture and the limitless design possibilities (Fig. 1.3). After learning under Cret at Penn, Kahn went on to work for him in his Philadelphia office from 1929-1930. Though in a junior position, Kahn was provided the opportunity to work on major commissions such as the Folger Library in Washington and the General Exhibits Building for the Century of Progress Exhibition in Chicago. As David Brownlee noted, “It must have been very provocative work for Kahn, who found himself, like most intelligent young architects of the time, torn between the lessons of the past and the enticements of the present.”

When Le Corbusier’s Villa Savoy was published around the world in 1929, the classicism that Kahn had learned to adopt – as a result of learning and working under Cret – was turned on its head. As Vincent Scully wrote, “suddenly one could no longer look at buildings that were symmetrical, massive, heavy; one could no longer use the classical order in which Kahn had been trained, because now architecture had to be thin, taut, light, asymmetrical, stretched out to pure idea.” Suddenly, in 1929, Kahn found himself at an intersection of two divergent architectural perspectives; his mentor, Paul

23 Brownlee and De Long. Louis I. Kahn, 16-17.
Cret, was one of the foremost Modern Classicist architects in the world, an approach that was quickly becoming the conservative design approach of repressive political parties around the world. As the Great Depression severely impinged new design work, architecture was no longer afforded the freedom to be romanticized but rather forced to become economized.

Following Kahn’s brief time under Cret, he worked as a designer in the Philadelphia office of Zantzinger, Borie and Medary, as well as becoming the “Squad Head in charge of Housing Studies” for the City Planning Commission under Walter Thomas. After becoming a registered architect in 1935, Kahn would go on to work in private practice as well as collaborate with a number of architects and planners around Philadelphia, specifically Oscar Stonorov and George Howe. Kahn’s early career is marked by a number of post-Depression Era and wartime housing developments and single-family residences. In addition, Kahn was involved in various planning studies for the City of Philadelphia from 1946-1952, working in conjunction with Stonorov and Edmund Bacon. In 1948, Kahn accepted a position as Professor of Architecture at Yale University despite his complete loss of an identity.

---

IN SEARCH OF AN IDENTITY |

The 1929 publication of Villa Savoy piqued Kahn’s interest in the architecture of Le Corbusier and his contemporaries despite Modernism’s philosophical opposition to the design philosophies in which Kahn was educated. As a result, the following two decades of Kahn’s professional career were muddled by his lack of personal identity. Kahn felt drawn to the innovative design values of the Modern Movement, yet the advancement of his ideas remained tied to the Beaux Arts style he was educated under. Perhaps Kahn’s psyche was fundamentally opposed to many of the notions of Modernism, in effect causing him to force his designs to conform to the trend.

It was during Kahn’s second trip to Europe from 1950-51 – while a Resident in Architecture at the American Academy in Rome – that Scully and others believe Kahn found what he was looking for.29 Through the study of Kahn’s drawings, it becomes abundantly clear that he no longer felt the need to express common objects that denote scale. Instead, he used the media – which at this point was typically pastels and charcoal – to convey a sense of mass, geometry, and shadow (Fig. 1.4). It appears what Kahn wished to portray was exactly what he saw; the important aspects of the buildings were not the details or the number of floors, but the scale of the buildings in relation to one another and the conversation between each element and the sun.30 It is possible that this set of discoveries gave Kahn a sense of direction from thereon, driving not only his new look on architecture but aiding the maturation of his seemingly stagnant mantras. Despite two decades in professional practice, Kahn returned to the U.S. somewhat

29 Scully, Louis I. Kahn. Also see, Brownlee and De Long. Louis I. Kahn, 50-54.
30 Brownlee and De Long. Louis I. Kahn, 51.
‘green’. The years following Kahn’s return marked a period of self-discovery that gave him an opportunity to apply his past experiences at a variety of scales. Where the Trenton Bathhouse (1954-59) allowed him to explore ‘served’ and ‘servant’ spaces, the Yale Art Gallery (1951-53) helped him work through his Modernist sympathies while attempting to define his direction (Fig. 1.5, 1.6).

In many ways it is as though Kahn’s greatest realization was not in regards to massing or geometry, but an understanding that everything within his personal architectural identity had come full-circle. The Progressive approach instilled upon him by Tadd, the impact of Gray and the City Beautiful, and the Beaux Arts planning and Modern Classicism of Cret all shaped Kahn’s vision of what great architecture should be. The exposure to these trends as a youth enabled Kahn to accept the experiences he had during his travels, all the while accounting for the recent technological innovations that had thrown architecture into a new realm. Vincent Scully noted, “We get the feeling that he was really seeing for the first time all the things he’d been trained to look at in his youth, as illustrated in the books of Eugene-Emmanuel Viollet-le-Duc and Auguste Choisy.” From thereon Kahn avoided getting caught up in global architectural trends only to become challenged by his own design obsessions. Works such as the Trenton Bathhouse and the Yale Art Gallery reflect Kahn’s educational and professional experiences, as well as his two trips abroad. These two projects spawned numerous lessons that Kahn would transfer to later designs, attempting to refine the gesture of entry, curator-proof an exhibition space, or explore the interaction of served and servant spaces.

Scully credits Kahn with being singlehandedly responsible for what he deems

---


Fig. 1.5: View of the Courtyard of Kahn’s Trenton Bathhouse. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 57.

Fig. 1.7: Kahn’s Esquisse for a Modern Cathedral Utilizing Tubular Steel as the Primary Structural Element. *Source:* Frampton, Kenneth. Studies in Tectonic Culture The Poetics of Construction in Nineteenth and Twentieth Century Architecture. *New York: The MIT P, 2001, 211.*
the most important architectural development of the second half of the twentieth
century – the “revival of the classical and vernacular traditions of architecture and their
reincorporation into the mainstream of modern architecture.” It is plausible that Kahn
had no intentions of re-establishing traditionalism; possibly a product of learning under
Gray and Cret, he simply viewed historic motifs as that which came before him and the
natural target for what he wished to ‘reinvent’. Rather than revive specific forms or styles,
Kahn chose to use them as inspiration or as a starting point. Logically, it makes sense;
to simply invent a unique solution without precedence is arbitrary. Instead, he viewed
architectural progression as intrinsic to the past, required to have some semblance within
modern architecture. Otherwise, the architecture would not have been progressive at all,
but rather an entirely new beginning.

Prior to the large degree of structural innovation that began to take place toward
the end of the nineteenth century, architects were required to be mindful of structure.
As Modernism began to exploit technological advancements, designs of the mind
took precedence above the over-built, antiquated designs of the past. The structural
innovations of long ago, such as the buttress or the arch, found themselves employed as
ornament rather than as structure. Instead of adopting technological improvements as
the new methodology, Kahn pushed architecture in a way that respected the past while
utilizing the present innovations as a supplemental device. Kahn began to exploit the
precision of modern technology through a reinterpretation of traditional forms, enabling
him to update historic assembly methods with cleaner lines and sounder joinery.33

33 This aspect is discussed throughout the following chapters, often in relation to millwork construction
and detailing.
Nonetheless, Kahn recognized the importance of these innovations and how they allowed the modern architect to realize many of the grand schemes of the past in a much more efficient and monumental manner. Kenneth Frampton recalls Kahn’s esquisse for a modern cathedral built of welded tubular steel sections, which he likens to the daring Gothic Beauvais Cathedral of northern France (Fig. 1.7).³⁴ Kahn is quoted as saying:

“Beauvais cathedral needed the steel we have. It needed the knowledge we have. Glass would have revealed the sky and become a part of the enclosed space framed by an interplay of exposed tubular ribs, plates and columns of a stainless metal formed true and faired into a continuous flow of lines expressive of their stress patterns. Each member would have been welded to the next to create a continuous structural unity worthy of being exposed because its engineering gives no resistance to the laws of beauty having its own aesthetic life.”³⁵

Though Kahn understood the benefit modern technological advancements would have had on the colossal structures of the past, he was aware of the opportunity to capitalize on traditionalism and retranslate it into structures that would evoke auras similar to Beauvais. The inverse-pyramidal floor structure of the Yale Art Gallery contains both historical context and structural innovation; despite the impracticality and inefficiency of the slab – as a result of the quantity of concrete, thus its dead-load – Kahn treated the condition as ornament that grew out of the structure (Fig. 1.8). The slab acts as a functional vertical threshold between ‘silence’ and ‘light’. Natural light seemingly dies in the depth and density of the ceiling structure; and while the mechanical and electrical equipment is entirely exposed, the contrast of the at times blinding daylight conceals all

Fig. 1.8: Image Showing the Inverse Pyramidal Slab of Kahn’s Yale Art Gallery. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 53.
the necessities in what Kahn refers to as the “treasury of shadow.”

The aforementioned 1940’s sentiment that architecture should not seek artistic value appeared to be questioned by Kahn following his second trip to Europe. Manifest in his sketches of Greek and Roman ruins, Kahn explored the role of structure in ancient architecture. Structural members were multi-functional elements that supported the building, divided and organized spaces, permitted and shaped light, and received ornamentation. Within this assemblage of components was an order that regulated the scale and relationship of elements. Ornamentation grew out of the individual members as well as the interaction between elements – simply, the joint. This became an important realization for Kahn, a basis and order for his architecture that would shape his approach to each commission for the remainder of his life.

EARLY HOUSING

From the beginning of Kahn’s professional career he had a ‘typical’ approach to each design process; the approach was hardly usual in the traditional sense, as Kahn worked in a manner native only to him. In regards to his method, he was quoted in 1973 as saying, “I always start with a square, no matter what the problem is.” From the square, Kahn would rationalize the spaces based on his justification that the programs would evolve into ‘what they wanted to be’. He always felt it was his duty to re-evaluate

---

36 The following prose of Kahn’s early housing designs is original research based on an analysis of the original design development and (where applicable) construction documents held in the University of Pennsylvania Architectural Archives.

every program, regardless of budget, to identify the essential aspects of each project, a product of Kahn’s hypercritical tendency as a designer that led to the downfall of countless commissions. If anything, Kahn hybridized the bubble diagram, orienting the desired programmatic elements in a fashion that followed his logical clustering of functions. The most important aspect of a building’s organization lay in the relationship between ‘served’ and ‘servant’ spaces; in terms of residential structures, the ‘served’ being bedrooms and living rooms and the ‘servant’ being the kitchen and bathrooms.

When one reviews Kahn’s early residential designs, the evolution of his prioritization and organization of spaces becomes readily apparent. One begins to see his thought process, beginning with the early schemes that are often unique in form but indigenous to Kahn’s rationalization of spaces. As the development of the structure progresses, the layouts all begin to conform to maxims native to Kahn during the specific period. For instance, two late 1940’s designs typify Kahn’s early approach and organizational reasoning. The unbuilt Harry Ehle house (1947-48) and the Morton Weiss house (1948-50) summarize the distinctive characteristics of his period designs. The rectilinear forms of the structures utilized a clustering of similar functions, resulting in a pair of volumes joined by a transitional circulation space.

Both the Ehle and Weiss houses are L-shaped in plan; the aforementioned clustering of related functions resulted in the separation of ‘living’ and ‘sleeping’ volumes. While both houses are similar in organization and form, the later Weiss house’s form truly begins to show Kahn’s rationalization of ‘served’ and ‘servant’ spaces. Kahn situates the spaces in a linear fashion, aligning the two cubic volumes – living and sleeping – beside one another. The volumes are connected by an additional servant space,

which contains bathrooms and closets. Although the transitional space – predominately entry and passage, with a full bathroom – is a functional connection between both volumes, Kahn still appeared hung up on the idea of a multi-service entry space.

Discussed in greater detail in Chapter Two, it is during this period that Kahn began to employ a bi-nuclear plan to his residential structures – in other words, two distinct volumes separated by their assigned functions, which Kahn termed ‘living’ and ‘sleeping’. From there, Kahn formulated an oriented relationship between the two and connected them by way of a multi-function entryway. In almost every instance, the volume is identical in its placement and use. Where Kahn appears to mature and understand the use of the entry element is at the Norman Fisher house (1960-67), where he treats it as a hallway that is a part of one volume rather than a linkage between the two. Not only is it a more efficient gesture, but it maintains its utility while harmoniously integrating the two juxtaposed cubes.

Nevertheless, the transitional use of the connective ‘hyphen’ continues into Kahn’s design for the Richards Medical Towers (1957-64), where a collection of square elements (in plan) are connected by pseudo-hyphens clustered into a single vertical shaft. It is unclear whether the traditionalism of the hyphen had any semblance of being within Kahn’s use of this connection, or whether it was simply a solution devoid of any historicism. Possibly Kahn’s use of the form was similar to the historic use of the hyphen, simply as a rational solution to the problem of separating served and servant spaces. From a modular standpoint – especially in regards to projects like Richards, which had the prospect of future additions built into its form – the hyphens make a lot of sense based on the simplicity and freedom of their use. It would appear that Kahn began to understand the connectivity between the past and the present, much in line with the theories of Cret.
Brownlee notes, “Kahn insisted that the Weiss house, with its bold use of local stonework and untinted wood, was ‘contemporary but does not break with tradition.’ Citing the example of Pennsylvania barns in support of this position, [Kahn] argued that ‘the continuity between what was valid yesterday and what is valid today is considered by every thinking architect.’”

When looking at Kahn’s residential designs in the context of both his career and the global architectural community, the influence of specific contemporaries become apparent in his works. It was the combination of these influences with his own views on architecture and living that helped formulate his personal architectural identity. Beginning with the Jesse Oser house (1940-42), the use of textured wood and stone with interspersed Modernist motifs warrants comparison to George Howe’s “Square Shadows” (Washerman House) and a number of Corbusian projects (Fig. 1.9). The Ehle, Weiss, and the Samuel Genel house (1948-51) exhibit the strong influence of Anne Tyng and her graduate education at Harvard under two Bauhaus Masters, Walter Gropius and Marcel Breuer. Even as Kahn began to truly formulate his own style in the 1950’s, the influence of Breuer on Tyng and Tyng’s influence on Kahn resonate throughout. Breuer’s implementation of the butterfly roof at the Geller house (1945) to break up the horizontality of the elevation was seemingly mimicked by Kahn and Tyng at both the Ehle and Weiss houses. The bi-nuclear plan, perhaps Breuer’s most common device, not only created a delineation between ‘living’ and ‘sleeping’ spaces, but organized the volumes to integrate indoor and outdoor living spaces.

Following his second trip to Europe, Kahn returned with a plethora of architectural devices that he may have felt compelled to translate into his designs. As previously mentioned, Kahn’s experiences abroad provided him with both a visual and physical understanding of numerous significant sites; his time at the American Academy was the seminal moment in the maturation of his work, as the experiential combined with both precedence and personal rationalization to formulate his unique identity. Upon returning to Philadelphia, Kahn began the exercise of organizing and applying his refined rationalizations to practical commissions. The unbuilt Francis Adler (1954-55) and Weber DeVore houses (1954-55) were designed around the same time as the Trenton Bathhouse and Jewish Community Center (1954-59), shortly after his return to the U.S. Each project was based on a matrix-oriented Tartan grid, producing a program-specific compilation of cubic volumes. Breuer’s influence continued to emit from the designs, as both residential designs utilized a ‘pavilion plan’, incorporating the house with the patio and garden spaces.

Both the Adler house and the DeVore house were composed of a series of integrated masonry living cubes organized within a pinwheel plan (Fig. 1.10, 1.11). The pinwheel plan is quite similar to a device found in an early Frank Lloyd Wright scheme; although the house lacks the trademark Wrightian (centrally-located) fireplace to anchor the plan, a storage volume appears to take its place. It is conceivable that Wright’s 1939 “Suntop Homes” development in Ardmore, Pennsylvania provided this particular precedent for Kahn, as they are not only based on a pinwheel plan but have a built-in allowance for future expansion.

There is an odd duality that exists within each house, as the two are the first residential designs to exhibit Kahn’s use of the column as the essential structural element
Fig. 1.10: Ground Floor Plan for the Unbuilt Francis Adler House. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 57.

Louis I. Kahn

– as the definer of space and the giver of light. Each cube within the DeVore house plan is comprised of six 18” masonry columns, while the Adler House utilizes fewer piers – four masonry corner columns, each 3’-6” in section – that are thicker in section. Where the pinwheel plan organizes the spaces, the structure characterizes them, gives each an identity. As Kahn put it, “Piers gathered to form space for closets, bathrooms, fireplaces, vertical shafts for ducts and a well for a stairway.” Similar to the Trenton Bathhouse, this is another early example of Kahn’s use of structure as a defining element for both served and servant spaces.

The design that appears to have been the transitional project between his post-Rome work and what I will refer to as his ‘late’ work is the Bernard Shapiro house (1959-73). Where Kahn’s previous residential designs were predominately organized by the separation of ‘living’ and ‘sleeping’ volumes, both the initial and final schemes for the Shapiro House introduce a progressive rationalization of habitation spaces. Both schemes were generated via geometric grids – the first scheme based on an 8-foot hexagonal grid, while the second scheme was derived from a typical orthogonal grid – but the transition between each shows a clear movement from one spatial organization to the other.

The first scheme, with its hexagonal grid, exhibits the strong influence of Anne Tyng and Kahn’s movement toward a more aggressive diagonal grid. Nonetheless, it appears to have been the most literal starting point of any of his housing designs to that point. As he stated in 1973, he always began his designs with a square and progressed from there; but in the first Shapiro scheme, Kahn seemed constrained by the hexagonal grid, consolidating programmatic elements to fit the awkward spaces, which induced equally-awkward bi-products. The early design drawings present little evidence of Kahn’s

42 Ronner and Jhaveri. *Louis I. Kahn*, 73.
typical design progression, as though the grid dictated the placement of served and servant spaces and reduced the architect to a continuous compromiser.

At first glance, the second phase scheme looks to be a more orthogonal version of the Trenton Bathhouse plan with various recessions. In its simplest terms, the plan is a single rectilinear volume divided into two main living spaces by a central servant core. A bi-level plan organized in typical Kahnian division, the upper level contains spaces for living while the more privatized lower level contains spaces for sleeping. The Shapiro House exhibits the most simplified version of Kahn’s devices to date, organizing all servant spaces within the central core. Vertical and horizontal circulation is simplified through this placement, enabling a more compact and uniform structure. Virtually symmetrical in form, the plan has a logic and clarity that exists within a fully integrated volume. This logic surly pleased Kahn, as he continued the basic formula in his concurrent design for the Margaret Esherick House.

As will be discussed at length in Chapter Four, whereas the Shapiro house represents a noticeable transition in Kahn’s thinking, it is the Esherick house and the Fisher house that truly mark a progression toward a synthesis between the mind and the built form. Utilizing historic motifs, Kahn was able to retranslate the traditionalism he may have deemed intrinsic to the human soul through detailing. It was this retranslation of native forms, augmented by the innovations of modern technology, that enabled Kahn to characterize each space while aiding his formulation of an entirely unique architecture.
Toward the end of the 1950’s Doctor Norman Fisher and his wife Doris began to explore the idea of building their own house where their two young daughters could grow up. At the time they lived in a modest Colonial style residence outside of Philadelphia, with Dr. Fisher conducting his family health practice out of a dedicated portion of the house. In order to maintain the client base he had established, the family purchased a long, narrow lot along Mill Road in Hatboro, Pennsylvania – three blocks from their then current home. Containing a mixture of post-war, neo-traditional housing, the neighborhood to this day appears disjointed from the Fisher’s house. Despite somewhat unappealing suburban surroundings, the Fishers were intrigued by the creek that meandered through their plot, dividing the land in such a way that a picturesque backyard was quite attainable.

In 1960 the Fishers began interviewing prospective architects, unsure as to exactly what it was that they sought but confident in their ability to sense out the right fit. Among those contacted was the Philadelphia firm GBQC, a group of young designers fresh off a successful commercial project in the city yet somewhat indifferent to the prospect of designing a single-family residence in the suburbs. Their apparent lack of interest in the project led the Fishers to question their motives, which turned out to be a product of their

---


Norman, Doris, and Lou

30

distinguished mentor’s work in residential design. As a result, the Fishers decided who better to meet with than the architects’ mentor himself, Louis Kahn, a man they – like many others outside of the architecture circle at the time – knew little about.

The Fishers picked up Kahn from the train station one afternoon and took him to the site on Mill Road. As Dr. Fisher summarized that first encounter:

“On first contact Mr. Kahn did not make an impressive appearance. He was short in stature and had a badly burned face from a childhood accident. He wore black jackets, frequently shiny from wear. These superficialities short faded, as his intellect, energy, humor and warmth showed through. He worked intensely with his yellow paper and black charcoal and in short time a room or home appeared, peopled and landscaped.”

That first meeting marked the beginning of a seven year relationship between the Fishers and Kahn. During their time at the site, Kahn questioned the Fishers on their desires, architecturally and programmatically. Almost immediately upon hearing the $45,000 budget the Fishers had planned, Kahn eliminated three extraneous rooms from the program. The challenge for Kahn was to incorporate family life with a doctor’s office, a request that was not foreign to Kahn but a challenge nonetheless.

The commission for the Fisher House took place during a time in which monumental projects were on the boards in Kahn’s Walnut Street office. Kahn was said to have treated his housing projects as experiments, opportunities for him to play mad

---

4 Ibid. Kahn eliminated a music room, atrium, and conservatory.
scientist and explore many of the ideas he had running through his head.\(^6\) Not only was this the case with the Fisher house, leading to an extremely prolonged design process, but the concurrent design work being undertaken on large-scale civic projects also came to impact the final form of the residence. Simply by viewing the gap between dates on the Fisher house design drawings, one can get an idea of the priorities and deadlines for larger projects like the Salk Institute and the Capitol Complex in Dacca, Bangladesh (then East Pakistan). Kahn was privileged with having two clients – in Norman and Doris – that were extremely patient and in little hurry to move across town into a new home.

The relationship between the Fishers and Kahn quickly became harmonious. They would meet approximately every two months over the seven years they were involved in the design of the house, including numerous dinner discussions at the residence well after its completion.\(^7\) The Fishers felt as though they were heard throughout the process, confident that their concerns would be dealt with properly by Kahn and his colleagues. As Doris Fisher told Kahn during a 1970 conversation at the house, “We spoke to lesser men who were very adamant in their approach – not aesthetic – but in certain things they thought had to be done with no consideration for the clients’ needs and we didn’t feel you would think that way.”\(^8\) The Fishers developed a deep regard for Kahn’s abilities

---

\(^6\) Rivera, Vincent. Interviewed by Taryn D’Ambrogi, Caitlin Kramer, and William Whitaker at the Univ. of Pennsylvania Architectural Archives. 15 Oct. 2008. Rivera was a young architect in Kahn’s office during the time of the Fisher house commission, credited with designing the adjacent HVAC shed and the bridge.

\(^7\) Norman and Doris Fisher. “Seven Years with Louis I. Kahn.” Kahn Louis I - Houses. By Yutaka Saito, 149.

\(^8\) “A House Within a House.” Transcribed and Edited by Melissa Steeley and William Whitaker © The Architectural Archives, University of Pennsylvania. Editor’s Note: This transcript documents a conversation between Louis I. Kahn and Doris Fisher recorded on the evening of March 8, 1970 at the Fisher’s house in Hatboro, Pennsylvania. The impetus for the recording was an expected tour of the house by a group studying contemporary architecture. Mrs. Fisher was interested in showcasing not only their home, but also Kahn’s philosophy of architecture. As such, the interview touches on a range of subjects including the design of houses, the nature of light, and the making of a room. The conversational quality of the recording shows the warm personal relationship that the Fishers enjoyed with Kahn even after the long design process that resulted in the creation of their home.
as well as the passion and attention to detail he professed whenever he visited or spoke of the project. What frustrated the Fishers most, however, was Kahn’s habit of starting anew. The Fishers recalled, “If we were not satisfied with a set of plans, he would not modify them but insisted on starting over.”9 It is a wonderful insight into Kahn’s process, demonstrating the importance of each element’s relationship to the others; move the fireplace or remove a window and you alter the character of the space.

SCHEME ONE | SUMMER, 1961

What appears to be the first scheme for the Fisher house was a binuclear plan connected by a circulation hyphen similar to the Weiss house.10 The plan was rectilinear in form with a series of projections and alcoves that created the major aperture elements – as if to distinguish their purpose from the rest of the façade. Unlike the majority of Kahn’s residential work of the period, the hyphen did not contain the point of entry; the main entrance was located within a foyer that belonged to the sleeping volume (Fig. 2.1).

Also integrated into the plan was a doctor’s office, located on the ground floor of the sleeping volume. A separate side entrance was created within one of the projections, which really became a multi-functioning volume belonging to both family and doctor. From an organizational standpoint, Kahn kept the office as far away as possible from the living portion of the house, separating daytime life within a home from the predominately daytime function of an office; thus, when evening arrived, the space is unoccupied by Dr.

10 Undated drawings, Fisher Family Collection, Architectural Archives, University of Pennsylvania. Identified by William Whittaker as having been produced during the Summer of 1961.
Fisher’s practice while the family sleeps within the volume. Kahn divided the circulation within the home in an interesting fashion; the living volume was kept to one level while the sleeping volume contained varying floor levels and minimal horizontal movement (Fig. 2.2). This method individualizes each function on its own level, creating separate spaces for the doctor’s office, master bedroom, children’s bedrooms, and the proposed maid’s room.

A stone dining cube breaks the regularity of the rectilinear form as it is situated off of the living volume, becoming the focus of the plan. Kahn employs a monumental stone fireplace built into the wall massing, situated beside a large glazing element meant to light the adjacent dining table. The dining cube is connected to both the living room and the kitchen, allowing free movement between the two spaces. During a 1972 interview Kahn spoke of his affection for Colonial housing and the partitioning of rooms; he felt that the individualization of the living spaces enabled a host to entertain guests in one room while shielding them from the chaos taking place between the kitchen and dining room as dinner was prepared.11 As Kahn noted to one of his graduate design studios tasked with the Fisher house, they must keep in mind how the Thanksgiving turkey would move from oven to table.12

To Kahn, the dining room – as well as a well-designed living room – represented the core of family life; it was thought of as a single moment within the home in which

---


12 David G. De Long, Remarks on Louis I. Kahn’s houses, Louis I. Kahn seminar, University of Pennsylvania, Philadelphia. October 1, 2008. The above quotation was taken from De Long’s graduate sketchbook during his time in Kahn’s studio at the University of Pennsylvania where the class was given the Fisher House as a project in the Spring of 1963.
Fig. 2.1: Scheme One; Ground Floor Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.

Fig. 2.2: Scheme One; Second Floor Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
the family would come together. The dining room was the domestic assembly space, a place in which the family would gather to eat, celebrate, or share stories about their day. Its very nature relied on the congregation of others, for without them the space would become obsolete in function and in character. By constructing the dining volume of stone, Kahn may have sought to memorialize the space through the prospect of creating a ruin; though the remaining wood structure may eventually yield to nature, the masonry would remain, forever rising from the landscape to provide clues to the past. Maybe Kahn’s imagination produced a story in which future generations would investigate the ruins of the site, eventually determining the importance of the dining space to 20th Century domestic culture based on its structural permanence. Thus the dining room would become an eternal symbol, a reminder of the heart of the 20th Century household (Fig. 2.3).

Constructing the volume of masonry was as much about the material qualities and what they added to the character of the space as the nature of the material itself. In early schemes for the Fisher house, Kahn sought to employ a monumental architecture within a small-scale project that would provide a unique character that differed from the remainder of the house. Within the volume would be a quality of light, an aura that would be intrinsic to such a place. To Kahn, “Monumentality in architecture may be defined as a quality, a spiritual quality inherent in a structure which conveys the feeling of its eternity, that it cannot be added to or changed.”\(^\text{13}\)

Kahn was known to have an affinity for castle architecture, more specifically its organization of served and servant spaces, “with great central living halls and auxiliary

spaces nestled into thick outside walls.” This approach was adapted to many works of the period, specifically the Unitarian Church in Rochester and Erdman Hall at Bryn Mawr College, but the use of this thematic device was rooted in historical monumentality, for “Kahn argued in 1964 for the creation of ‘very archaic looking buildings, buildings that will be considered archaic in the future’.” Erdman Hall’s design process stretched from 1960-65, parallel with the Fisher house commission; it is quite conceivable that the inclusion of a thick-walled dining nook was based on this castle preoccupation, as Kahn even traveled to a number of Scottish castles during a 1961 trip to Britain (Fig. 2.4).

An exterior sketch dated 3 Aug 1961 denotes a change in the form of the house, as the rooflines become much more regular and the elevation of the dining cube is tapered near the top. The sketch is shadowed to reveal Kahn’s thoughts regarding the varying depth of the façade and his measured drawings depict the analysis of specific window arrangements (Fig. 2.5). A sort of rectilinear keyhole window typology is used on many of the facades, and it appears that the living and sleeping volumes are predominately glazed along the north while the south façade has much narrower vertical and horizontal openings. As the doctor’s office is still situated along the southeast side of the sleeping volume, the choice to minimize the openings along the façade was likely a response to the division of public and private spaces. A sketch of the west elevation, showing the roofline and openings of the dining cube along with the visible apertures of the living

15 Kahn as quoted in, Brownlee and De Long. Louis I. Kahn, 155. From, Medicine in the Year 2000, 151.
17 Undated drawings, Fisher Family Collection, Architectural Archives, University of Pennsylvania.
Fig. 2.3: Scheme One; Dining Room & Master Bedroom Sketches. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.

Fig. 2.4: British Castle Floor Plan Sketches by Kahn. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 68.
volume, highlights the form of the window design with a note in Kahn’s hand stating “deep set shutters as Esherick.”

The ‘deep set shutters’ are a series of recessed window pockets, slight multifunctional intrusions into the space that give depth to the façade while creating an interior shelf. The most practical aspect of the window recessions is a sense of privacy and humanity they provide, creating variations along the facades that cast shadows and give a texture to the form. Not only do they break the planarity of the façade and bring the exterior inside, but they allow for an open window during a heavy rainstorm, as their form naturally protects against water infiltration.

During this phase Kahn also began to think about the assembly of the wall sections, detailing materials, dimensions, composition, and connections. A note on the drawing states that all columns, beams and decking would be exposed, yet the degree to which their exposure was detailed varied depending on location.18 Kahn showed the user the structure to almost inform them of its presence and role within the creation of space and light, but he did not allow it to become a part of the space itself.

The plan was simplified from the previous iteration; the circulation hyphen was replaced by a pass-through entry corridor integrated into the main volume while maintaining the bi-nuclear organization of interior spaces. The main entry was set back from the plane of the south façade, creating a sort of entry alcove. Similar in approach to the first scheme of the Shapiro house, the entry alcove reduced the visual scale to act as

---

18 Undated drawings, Fisher Family Collection, Architectural Archives, University of Pennsylvania. The document is an undated assembly page detailing two wall sections and three separate plans detailing the interaction between framing members and the wall assembly. Based on the drawing’s placement within a roll along with other (dated and undated) identified Scheme One drawings, this document has been attributed to this particular design phase.
sort of transitional space between inside and outside. The corridor created a broad formal entry that allowed for tripartite movement between both interior volumes and the exterior. Furthermore, the creation of two main axes with a centrally-located origin emphasized the harmony of both interior and exterior life (Fig. 2.6).

The greatest change in the plan was the reorganization of the proposed doctor’s office. Comparing the first iteration of this scheme with the second, it appeared that Kahn struggled with the integration of the doctor’s office into the plan. Entry posed a problem to Kahn, as it would likely have been impractical and against his wishes to post a sign specifying the entrance to the doctor’s office. Furthermore, Kahn was faced with the problem of integrating interior circulation between the office and the main house for Dr. Fisher while preserving the privacy of the home. Where the first scheme created a combination of home and office spaces along the southeast portion of the sleeping volume, the second scheme clarified the organization through the simplification of the house’s entry and the creation of a compartmentalized office volume extending off of the sleeping volume. The office is connected to the main house by a connecting corridor and an independent set of stairs leading from the entry hall to continue the linear axis between living and sleeping volumes. A later overdrawing shows a change to the circulation between the house and the office, dissolving the hallway into an amorphous space in favor of a vestibule between the office and bedroom to maximize privacy.
Fig. 2.5: Scheme One; 3 Aug 1961; Northeast Elevation. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.

Fig. 2.6: Scheme One; 3 Aug 1961; Ground Floor Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
SCHEME TWO | MARCH, 1962

The second scheme, beginning with drawings dated March 9, 1962, marked an abandonment of the bi-nuclear plan that Kahn had utilized in previous residential designs. The plan of the house became much more compact, pulled together into a rectilinear volume with an attached masonry cube. The layout remained somewhat consistent with Scheme One despite the transition away from two distinct volumes, as the living and sleeping units were still situated on opposite halves of the house (Fig. 2.7). The entry hall that appeared in the second iteration of the first scheme was integrated into a center hall that connected each half of the house. Kahn differentiated between the main entrance and the office entrance – which was located along the south side of the building – by creating an entry alcove for the family while situating the office door flush with the exterior surface. The residential entry alcove created a moment of mystery along the façade, drawing the person into the building, whereas the office door reflects the austerity and sterility of a medical space through its unadorned planarity.

As discussed earlier in regards to the first scheme, the projected elements that formed alcoves acted as a facilitator between the exterior and interior, creating a conversation between the two that helped characterize the spaces. This concept was furthered in Kahn’s evolution of the dining cube, evolving from a simple cube into a complex form shifted forward toward the formal façade and containing a cylindrical void, a series of corner ‘nooks’ within the massing, and an open roof terrace. Each nook

---

19 Floor Plan, Undated drawings, Fisher Family Collection, Architectural Archives, University of Pennsylvania.
had thin apertures at eye level with larger windows above – an evolution of the keyhole motif – controlling the lighting within the nooks so as not to overpower the inhabitant while permitting greater light penetration above for the central space (Fig. 2.8).\textsuperscript{21} The use of the circle within a square was hardly new to Kahn; recalling symmetrical Palladian plans utilizing an order of ‘served’ and ‘servant’ spaces, his use of the form is evident in early sketches for the Adler house and the Trenton Bathhouse (Fig. 2.9,2.10).\textsuperscript{22} The transference of the kitchen into the dining cube shows Kahn’s evolving opinion regarding the vitality of the contemporary residence, with the kitchen becoming either supplemental or essential to the dining room’s value.

Both iterations displayed Kahn’s persistence in finding monumentality within the design, as the second scheme utilized three-foot-thick walls tapered inward as they rose, as if they were enveloping the inhabitant. The windows, crafted with thin slits to allow slivers of light to reveal the texture of the stone and larger apertures above to suggest a sort of ethereal, medievalized space to congregate, further this aura. What is striking at first – and eventually led to the cube’s exclusion from the final form – is the required thickness of the masonry walls in order to house the dining cylinder and corner nooks. Despite the form’s medieval character, the spaces appear insular and different from the character of the rest of the house. Regardless of the structural and visual dominance of the cube, its unique form falls in line with a comment made by Kahn to his graduate

\textsuperscript{21} 19 April 1962, Fisher Family Collection, Architectural Archives, University of Pennsylvania. And sent to the Fishers for approval, the set also shows a second design of the volume with an extruded breakfast nook that breaks the orthogonal plan of the residence, a 400 square foot decrease in livable space, the removal of the basement stair, and the relocation of the maid’s room to the former playroom space. The drawings are a part of the set found in the basement of the Fisher House by William Whittaker during the Fall of 2008.

\textsuperscript{22} Brownlee and De Long. \textit{Louis I. Kahn}, 69. The circles were abandoned during the design process of the Adler house and subtly represented in the paving of the center court of the Trenton Bathhouse.
Fig. 2.7: Scheme Two; 03/09/1962; Ground Floor Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.

Fig. 2.8: Scheme Two; 03/09/1962; Southeast Elevation. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
Fig. 2.9: Early Sketch of the Adler House. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 78.

studio, in which he stated, “A house wants to have an anonymous character.”

The living room retained a high level of glazing, with a single pane that ran the width of the space and the full height of the second story (Fig. 2.11). While the material of the exterior remained three-inch-thick cypress siding, the organization of elements and geometries lacked refinement. According to the elevation drawings, the shutters were rendered as unadorned wood elements. The traditional motifs found in similar pieces at the Esherick House are not represented, illustrating yet another departure that may have been an exploration of a new treatment of exterior ‘servant’ elements – specifically, doors and shutters, which serve the interior by permitting or obstructing light. Kahn accentuated the hidden structure by translating it onto the façade composition; lintels are represented by horizontal boards above openings, while columns separating windows are similarly expressed in a vertical fashion. The horizontal water tables that hide the joint between the vertical siding lack a consistent language. No longer directly representing floor heights – as they did in the first scheme – the elements are organized in an attempt to carry horizontal lines across the façade for visual cohesion, resulting in a varied composition along each façade. Furthermore, the aforementioned lintel contrivance is used above the water tables situated on the southwest façade, muddling the usage by employing it for unrelated reasons.

A third iteration of the second scheme showed a further consolidation and reorganization of spaces. Any semblance of a bi-nuclear plan was removed in favor of a

---

23 De Long, Remarks on Louis I. Kahn’s houses, Louis I. Kahn seminar, October 1, 2008. The above quotation was taken from De Long’s graduate sketchbook during his time in Kahn’s studio at the University of Pennsylvania where the class was given the Fisher House as a project in the Spring of 1963.

24 Undated Drawings, Fisher Family Collection, Architectural Archives, University of Pennsylvania. Based on the content of the undated drawings, William Whittaker attributes the date of production to the late Spring or early Summer of 1962.
homogenized set of spaces that have little correspondence with Kahn’s other residential designs (Fig. 2.12). The lone stair was relocated to the west of the entry hall to provide added space to the office, resulting in an ambiguously large second story hall. The office door was moved to the formal façade, mere feet from the family’s entrance, despite remaining unadorned and flush with the exterior surface. The majority of the iterative process was comprised of a constant shifting and re-scaling of servant spaces, based partly on client desires and an inability to settle on specific arrangements. In essence, the ongoing movement toward a more compact plan displayed Kahn’s struggle with the design, searching for an organization that harmoniously integrated each value of ‘house’.

The largest change to the design was the enlargement of the dining volume, swapping the collection of dining nooks for a single volume that housed both kitchen and dining room. Possibly a result of client demands, the extensive masonry was pared back in favor of a larger interior volume and an increase in aperture dimensions. By combining the kitchen and dining room into one unit and thus strengthening the degree of familial interaction within, Kahn further signified the space as essential to the heart of the house, responding to the changing dynamic of the American home.25

Fig. 2.11: Scheme Two; 03/09/1962; Northwest Elevation. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.

Fig. 2.12: Scheme Two; Third Iteration; Ground Floor Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
SCHEME THREE | SUMMER (AUG-SEPT), 1963

Upon returning from a site visit to Dacca, Kahn completely re-examined the scheme for the Fisher House. Based on his realization regarding the orientation of the mosque at the Capitol Complex, it is as though Kahn treated the Fisher House as a small-scale test subject to explore the implementation of a dynamic juxtaposition of cubic volumes. The inclusion of the mosque within the Capitol Complex was uniquely Kahn’s, for it was he who felt the power of joining the assembly of religion with the assembly of government. Kahn romanticizes his epiphany, stating:

“On the night of the third day, I fell out of bed with the idea which is still the prevailing idea of the plan. This came simply from the realization that assembly is of a transcendent nature. Men came to assemble to touch the spirit of commonness, and I thought that this must be expressible. Observing the way of religion in the living of the Pakistani, I thought that a mosque woven into the space fabric of the assembly would have such effect.”

The connection between the mosque and the assembly became the focal point of the design, resulting in an active juxtaposition between the two volumes as a result of orienting the religious space toward Mecca (Fig. 2.13).²⁷

Kahn returned to his bi-nuclear plan, separating the two main functions of ‘house’ into their own cubes, differing each in orientation and material.²⁸ The two cubes

---


²⁸ Floor Plans, 20 September 1963, Fisher Family Collection, Architectural Archives, University of Pennsylvania. Two sets of floor plans are stamped on the bottom right portion of the sheets, “SEP 20, 1963” but appear to be the second iteration of the juxtaposed plan. Based on this, William Whittaker attributes the first set to early September or possibly August of 1963.
were joined at a corner, with the entry hall acting as a transitional element between volumes; while housed within the sleeping cube, the axial quality of the hall – visually unobstructed on each end, creating a connection between interior and exterior – facilitated circulation in four directions. Though joined in a similar fashion to Erdman Hall (Fig. 2.14), the juxtaposition of the two cubes at a 45-degree angle results in a unique delineation between ‘living’ and ‘sleeping’ volumes. Kahn noted, “It is always the hope on the part of the designer that the building in a way makes itself rather than be composed with devices that tend to please the eye. It is a happy moment when a geometry is found which tends to make spaces naturally, so that the composition of geometry in the plan serves to construct, to give light, and to make spaces.”

The juxtaposition freed the individual volumes to receive light on four sides, prospectively altering the interior character. In addition, the change in form led Kahn to rethink the program once again; gone are the doctor’s office and the playroom.

The implementation of juxtaposition was not altogether foreign in architectural history. Hadrian’s Villa, Piranesi’s Campus Marcius, and Ledoux’s Saltworks at Chaux (Fig. 2.15) – a project certainly analyzed by Anne Tyng – were all notable precedents, but rarely had such an active, symmetrical juxtaposition been implemented. The quality of the juxtaposition was the separation of two distinct volumes that were integrated without the need for an active physical connection. Where at Dacca the mosque acted as

29 Kahn as quoted in, Brownlee and De Long, Louis I. Kahn, 154. From, Architect and Building, 5.
30 It is unknown whether the Fishers changed their requirements, or it was a budgetary casualty.
31 De Long, Remarks on Louis I. Kahn’s houses, Louis I. Kahn seminar, October 1, 2008. In addition to the mention of Ledoux’s Saltworks, De Long noted other possible precedents uncovered in his research, ranging from the Rajarani Temple, Isvahar – a cubic mosque oriented off of an orthogonal volume at a 45-degree angle toward Mecca – the Philadelphia College of Art, and the Fort Wayne Fine Arts Center plan.
32 Brownlee and De Long, Louis I. Kahn, 111-112.

an entrance to Parliament to remind politicians of their duty to people and their faith,\textsuperscript{33} the use of a connective entry hall situated within the sleeping cube reminds entrants of all values of ‘house’. Many of Kahn’s later masterplans – specifically the Fort Wayne Fine Arts Center, Saint Andrews Priory, the Dominican Motherhouse (Fig. 2.16), and the Philadelphia College of Art (Fig. 2.17) – utilized a diagonal matrix to breed ‘spontaneity’. “This is clear in mid-1963: actively juxtaposed shapes engage to define variously bounded courts, and conventional orthogonal relationships seem avoided with purpose, almost as if the unresolved geometries symbolize the activity of ideas within.”\textsuperscript{34} David De Long surmises that while Kahn’s admiration for Le Corbusier is well known, this particular planning approach more closely resembles that of Frank Lloyd Wright, specifically his campus plan for Florida Southern College (Fig. 2.18) and the Crystal Heights complex in Washington, D.C.\textsuperscript{35} De Long goes on to note, “Yet until Kahn, Wright’s achievement of monumental unity had not been surpassed, and however much Kahn may have favored Le Corbusier, it was Wright who more fully prepared the way.”\textsuperscript{36}

Kahn continued his implementation of castlesque form, designing the living cube as a masonry volume in an early pair of charcoal drawings in Kahn’s hand, one detailing the ground floor plan and the other a rendering of the northeast elevation (Fig. 2.19).\textsuperscript{37} According to the sketch, the contrasting wood sleeping volume generally evolved into its

\textsuperscript{33} De Long, Remarks on Louis I. Kahn’s houses, Louis I. Kahn seminar, October 1, 2008.
\textsuperscript{34} Brownlee and De Long. Louis I. Kahn, 181.
\textsuperscript{35} Brownlee and De Long. Louis I. Kahn, 184.
\textsuperscript{36} Brownlee and De Long. Louis I. Kahn, 186.
\textsuperscript{37} The date of the two drawings is unknown, as is a certain attribution to their place within the development of the scheme. Certain aspects of the design correspond with the built version, specifically the stair placement and design, spatial organization of the sleeping cube, faceted design of the fireplace, and the lack of an entry antechamber. But for all of the similarities, there are a number of aspects of the first iteration of the fourth scheme that do not relate with these two sketches, but instead with a set noted as an early iteration. Thus, at this time a definitive place within the scheme’s timeline cannot be formulated, but an informed decision can be made.
Fig. 2.15: Site Plan of Ledoux’s Chaux Saltworks. *Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 81.*


final form, with Kahn abandoning the entry antechamber seen in previous schemes and settling on a stair placement adjacent to the entry. The façade also appeared to have been roughed out to resemble its final form without the wainscoting motif, as the openings were more consistent with the built version, as is the vertical cypress siding in between.

In contrast to the relative finality of the sleeping cube was the continued alteration of the living cube. Not only did the masonry openings become ‘pylon’ windows that tapered as they rose, a startling departure from previous schemes, but the conversation between kitchen and dining room continued to be studied (Fig. 2.20). This version of the interaction between the two elements fell in line with Kahn’s seminar comments regarding the importance of designing with the Thanksgiving turkey in mind;\(^8\) Kahn added a linear masonry partition to isolate the kitchen from the living area while placing the two spaces along a single axis.

A second design of the residence toned down the variety of aperture forms, instead utilizing beveled openings and a combination of broad and slit apertures to vary the quality of light. Kahn integrated numerous elements into the massing, recessing the basement stair and kitchen counters in order to create a form reflective of the house’s functions (Fig. 2.21). The fireplace was incorporated into the masonry, extending into the interior as an anchor within the plan. In an early iteration of the masonry openings, Kahn maintained the integrity of stone construction, expressing individual structural elements in a practical manner. The broad opening designed to light the living room was supported by a large stone jack arch, while other openings were carried by stone lintels. Though the sizing of the arch and lintels may have been somewhat embellished to signify

---

Fig. 2.19: Scheme Three; Early Charcoal Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.

Fig. 2.20: Scheme Three; Early Charcoal Northeast Elevation. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
Fig. 2.21: Scheme Three; 09/20/1963; Ground Floor Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.

Fig. 2.22: Scheme Three; Sketch of Northeast Elevation with Inverse Living Cube Window Arrangement. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
their presence, Kahn expresses the typically hidden structural elements that created the openings and permitted light on the exterior and interior.

For Kahn, light was not treated as a necessary additive to an interior or the byproduct of an aesthetically pleasing window configuration. Light was an aspect of nature crafted by the architecture to characterize spaces and materials. Kahn wrote, “A great American poet once asked the architect, ‘What slice of the sun does your building have. What light enters your room,’ as if to say the sun won’t know how great it is until it struck the side of a building.”

To Kahn, the stone walls were devoid of character without light, for it was light that revealed the texture and contours of the stone, the interaction between units, and the method of its construction. Throughout the iterative process of organizing and reorganizing the interior arrangement of rooms, an equal number of studies were carried out on the location and form of each opening. Yet the openings were not merely facilitators for light to enter the interior, nor were they voids punched out of the preconceived volumetric massing. Rather, the forms of the openings were considered in terms of the structure, as a frame for allowing light. In a discussion with the Fishers, Kahn stated:

“We are born out of light and every space we live in is thought of in the choreography, you might say, in the making of a plan which is in search of light and that the structure is the maker of light. You think of structures where the light is going to be given, not just what’s going to encase a room. So, my consciousness of light comes from that source – that without light you don’t have space, or, you might say, a room.”


40 Kahn as quoted in, “A House Within a House.”
In many ways, regardless of the organization of interior volumes, without light the space becomes characterless. As Kenneth Frampton noted, “the quality of light made manifest through its interaction with a specific structural volume was the essential determinant of its character.”

The organization of spaces continued to evolve, primarily with the definition of the dining room’s role within the context of the house. Whereas the first two schemes focused on the dining room as the heart of the house, Kahn’s third iteration integrated the dining room and kitchen with the entirety of the ‘living’ functions, but it was the dynamic juxtaposition of the two squares that ultimately generated the scheme. The product was an open, full-height living area, based around the extruded fireplace and divided only by the lightly-partitioned kitchen. The kitchen was bounded by two eight-foot partitions, visually separating it from the rest of the space while connecting to both the dining and living areas. Although the kitchen became somewhat compartmentalized, its accessibility from all directions continued to signify it as the center of the modern home. Kahn believed, “you should never invade the space between columns with partition walls. It is like sleeping with your head in one room and feet in another…that will never do.”

The partitioning of the kitchen marked a return to the earlier scheme that separated the kitchen and dining rooms, an aspect of the later design schemes that exhibited the most frustration, for Kahn became almost bound by the juxtaposition and the limitations it placed on the arrangement of spaces. But the kitchen’s placement within a relatively open plan – along with its axial relationship with the dining table – maintained its role

Norman, Doris, and Lou

within the house, supplemented by the later ‘breakfast table’ that the kitchen opens up to. Where earlier plans isolated the eating spaces from the living space, the juxtaposed plan consolidated the three main ‘living’ functions into one volume. Kahn’s decision not to create a floor-to-ceiling partition within the design of the entirely masonry ‘living’ volume could connote a rationalization on Kahn’s part that all three elements were interrelated as essential spaces within a house.

Despite the removal of the doctor’s office, the sleeping volume remained relatively unchanged in this third scheme. Throughout iterations, the only change that took place within the sleeping volume was the stair placement, which continually changed in location and form until the final design, where it was situated in its present location. The master bedroom and the two children’s rooms remained on the more private east side of the plan, allowing for the morning sunlight that Kahn felt truly characterized the spaces. The bedrooms, which saw little change in dimension or placement throughout the design process, continued to be situated along the east half of the volume, exhibiting the importance placed on the relationship between the bedrooms and the morning light. As was the case with the living cube, there was a continuous process of shifting the bedroom window locations back and forth along the façade, an attempt on Kahn’s part to craft the influx of sunlight (Fig. 2.22). Though the bedrooms were situated along the same façade as the primary apertures for the living room, the approach taken by Kahn sought unique treatments of the sunlight in an attempt to rationally characterize each space. Kahn revealed to the Fishers:
“The windows are much freer [in the living room]; they look out onto the landscape. Especially yours, where you can bring the trees from outside inside and you consider that there is no need for intimacy and privacy in much of the space in the living room. And in the bedroom, you tend to reduce the fenestration but never reduce it to the point where walls cannot receive the mood of the time of the day and the seasons of the year. And still when you get up you want to feel that you are hugged by the room. And that’s not what you have to feel in the living room.”

As opposed to the common typological attribution of implied characteristics to rooms – for instance, the room is a bedroom because it has a walk-in closet, is intimate in scale, and is grouped with other bedrooms – through light Kahn was able to impart an inherent nature to each room.

Following the alteration of the overall floor plan, Kahn continued to return to many native rationalizations of specific treatments. In addition to the return of the bi-nuclear plan, Kahn instilled a similar handling of the demarcation of openings along the façade. The final iteration of the previous scheme had little detailing of the shutters and doors, treating them as unadorned planks rather than unique stylized elements. It made little sense, considering past projects even as recent as the Esherick house had sought to visually identify variations within the elevations through distinct detailing. Both the initial concept for the sleeping cube and the second iteration of the masonry openings utilized a similar fenestration language as the Esherick, combining thin sidelights with a larger center window. If anything, the aperture composition resembled that of the studies found at the Salk Institute in La Jolla, California, bounding the glazing with thin vertical wood stripping.

43 Kahn as quoted in, “A House Within a House.”
Although there are still many lingering questions to be answered by the final iteration, a large degree of the final form was present in this third scheme. In addition to the previously noted resolution of the sleeping cube, the placement of living functions were close to final, as were the majority of the apertures—despite their ever-changing shape. According to numerous notations on drawings, the continued inclusion of a masonry cube proved problematic despite attempts by Kahn’s office to minimize the overall cost. Ultimately budget limitations led to the exclusion of this form, as the initial bid for the masonry cube was around $250,000, five times the initial budget laid out by the Fishers for the entirety of the project. The loss of the stone cube seemingly liberated Kahn from the limitations of the scheme; as was the case with many commissions, his grand ideas, all of which were required to follow his rationale, led him to become preoccupied or even dominated by specific problems. The design process of the first three schemes display the struggle Kahn had with the inclusion of a stone volume, continually changing in an almost drastic manner while the other volume became methodically organized.

44 Undated Drawing, Fisher Family Collection, Architectural Archives, University of Pennsylvania. One such notation is on the back of an early sketch identified as being a part of the fourth scheme. In the note, Kahn writes, “Mrs. And Dr. Fisher, I hope this is the last...we did all we could to meet the limit of $50,000. I reduced even more that I gave Lorenzon as I believe its good now.”

45 Whittaker, William. Discussion on the design development of the Fisher house. Louis I. Kahn seminar, University of Pennsylvania, Philadelphia. November 12, 2008. During a lecture on the design development of the house, based on the chronology set discovered two weeks earlier in the Fishers’ basement, Whittaker noted the abandonment of the masonry cube was rooted in the high quote given by a local masonry contractor. The Fishers, who stated their desire to adhere to their initial budget aside from small but ‘necessary’ changes, balked at the cost and requested a change be made to the design.
Beginning with a number of sketches in Kahn’s hand in December of 1963, the final form of the Fisher House began to reveal itself (Fig. 2.23, 2.24). The entirety of the house was proposed as wood, maintaining the previous layout for the sleeping cube while returning to an earlier design for a lightly-partitioned kitchen. Kahn described the design by saying the “house in theory is a wood house on a stone plinth.” Interestingly the loss of the masonry cube to the budget did not alter Kahn’s perception of the design, as he told the Fishers, “All I had to be [was] more frugal in making what I had to make… not less in quality of the central idea.” Rather than juxtapose two contrasting volumes to suggest their differing values within the house, Kahn unified the entirety of the structure – though with volumes independently expressive – so that neither cube dominates. It is possible Kahn realized that while the dining room and kitchen may be the heart of the contemporary house, the spirit of ‘house’ would fail to exist without the entirety of its ‘essential spaces’. In essence, the Fisher house was an attempt at a re-definition of the inherent nature of the domestic house, backed by Kahn’s 1961 statement that his work sought the “existence will” of architectural spaces rather than something entirely new.

The stone foundation, set into the site, would become the ruin that translated the delineation between living and sleeping functions through its juxtaposed squares. Set atop the stone, the entirely wood house was effectively treated as a cabinet, a container.

46 Undated Drawing, Fisher Family Collection, Architectural Archives, University of Pennsylvania. At the end of the inscription noted above on the back of a fourth scheme plan drawing, Kahn goes on to sign the note, “Lou K. Regards to all and Merry Xmas and Happy New Year.”
47 Kahn as quoted in, Scheme Four First Floor Plan, Undated Drawing, Fisher Family Collection, Architectural Archives, University of Pennsylvania.
48 Kahn as quoted in, “A House Within a House.”
49 Brownlee and De Long. Louis I. Kahn, 198.
Fig. 2.23: Scheme Four; Ground Floor Plan Sketch. *Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.*

Fig. 2.24: Scheme Four; Second Floor Plan Sketch. *Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.*
of family life. This symbiotic relationship between house and site is in contrast to some of Kahn’s contemporaries; Mies Van der Rohe’s Farnsworth House responds to the site by being raised above the floodplain to theoretically escape the water, while Phillip Johnson’s “Glass House” is simply placed atop the site. Neither expressed the sense of permanence that the Fisher house with its massive foundation has (Fig. 2.25).

Kahn increased the size of the kitchen, bounding the space on three sides by a pair of opposing counters and a cabinet-wall that ran from ceiling to the floor. The U-shaped kitchen opened to a curvilinear ‘breakfast’ table that was cantilevered off the wall and lit by a small projecting window box above.\(^5\) The fireplace, a stalwart of previous schemes, was disengaged from the wall and rotated to face the living room; though not freestanding, as it abutted the exterior wall, the fireplace was rendered thus. Kenneth Frampton attributes such a distinction to Kahn’s “intense awareness of the ontological distinction between column and wall, his Albertian preference for the primordial separation of the two, by virtue of light penetrating into the opaque impassivity of wall and thereby liberating the freestanding column from within its mass.”\(^5\) The fireplace acts in a different manner from the other spaces within the living volume, for they are the essential spaces and the fireplace is the anchor within the plan. As Kahn noted, “the fireplace is what makes the house divide itself into various rooms.”\(^5\)

Bordering the fireplace and running across the living space to the south wall was a window seat and shelf set against a backdrop of nature. The recessed window alcoves, which had been somewhat restrained in the third scheme, were reintroduced in the

---

\(^5\) Scheme Four First Floor Plan, Undated Drawing, Fisher Family Collection, Architectural Archives, University of Pennsylvania. A leader running from the curvilinear table notes, “Table for breakfast.”

\(^5\) Frampton, Studies in Tectonic Culture, 222.

\(^5\) Kahn as quoted in, “A House Within a House.”
bedrooms to follow the closet depth and pulled inward to the party wall. Kahn began to work out the bedroom window seats that he proposed to overlook the creek, but he also made a note that a “built in desk is possible.” As mentioned previously, the distinction between bedroom and living room lighting conditions was extremely important in that the two spaces had inherently different values. Kahn said, “Well I would say that designing a living room is different from a bedroom because in a bedroom you have a feeling of privacy…of, you might say, ‘a house within a house.’ A bedroom is really a little house within a house. And the living room is a place where everyone gathers.”

As evidenced by the sustained flux of interior layouts, members of Kahn’s office continued to explore how vertical and horizontal circulation shaped the spatial organization. The lack of organizational complacency in a project’s development was quite common within the office, once exemplified by the staff’s decision to cut up existing plan drawings and rearrange the rooms in an impermanent collage-like manner. This notion later prompted Kahn to say, “I think architects should be composers and not designers. They should be composers of elements. The elements are things that are entities in themselves.” The basement stair – situated along the west wall adjacent to the kitchen – reappeared and was joined by a stair that led to the previously proposed balcony above the kitchen. Conversely, the second floor stair in the sleeping cube re-emerged perpendicular to the entry hall, producing a pair of redundant circulation corridors and an un-programmed space alongside the entry alcove. The excessive circulation spaces led to difficulty laying out the maid’s room above, constraining the second floor layout to the

---

54 As inscribed on Scheme Four Second Floor Plan, Undated Drawing, Fisher Family Collection, Architectural Archives, University of Pennsylvania.
55 Kahn as quoted in, “A House Within a House.”
56 Brownlee and De Long. Louis I. Kahn, 177.
Fig. 2.25: Scheme Four; Ground Floor Plan Sketch. *Courtesy of the Fisher Family.*

Fig. 2.26: Scheme Five; Ground Floor Plan. *Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.*
point where Kahn needed to explore the legal dimensioning of a bedroom.\textsuperscript{58}

In elevation, the building began to reflect its final form, rendered for the first time as an entirely wood house on a stone base. The northeast elevation showed the detailing of the apertures and the cypress siding. The basement openings were drawn as rectilinear openings with a keystone void centered above rather than a complete lintel. A more concise design of the horizontal water table was employed, placed in plane with the second floor height. The window detailing was the closest to the built form, as the window division and wainscoting motifs were rendered in a simplistic manner.

\textbf{SCHEME FIVE | MAY 11, 1964; REVISED: JUNE 4, 1964}

The fourth scheme proposed by Kahn struck a chord with the Fishers and construction documents began during the first half of 1964.\textsuperscript{59} The plan was slightly altered, as the sleeping cube was pulled back to connect the corner of the living cube with the north face of the sleeping cube. Previously drawn as terminating as both a window and a door, the entry hall became a pass-through corridor that accessed a small porch and stair that led down to the patio (Fig. 2.26, 2.27). The notion of being able to see through the house, from one end to the other, was an admired quality of Colonial houses by Kahn and a motif seen in many of his residential designs.\textsuperscript{60} Though the porch was eventually

\textsuperscript{58} Scheme Four Second Floor Plan, Undated Drawing, Fisher Family Collection, Architectural Archives, University of Pennsylvania. A leader running from the Maid’s Room notes, “smallest legal size room is 7 x 10...this room is good.”

\textsuperscript{59} Construction Documents, Dated 11 May 1964 and Revised 4 June 1964, Fisher Family Collection, Architectural Archives, University of Pennsylvania.

\textsuperscript{60} Louis I. Kahn as quoted in “How’m I doing, Corbusier?” Reprinted in Latour, Louis I. Kahn: Writings, Lectures, Interviews, 18–26.
discarded before the final form, the window wall opposite the front door framed nature in a way that immediately informed the entrant of their place within nature. The second floor stair was returned to a previous location adjacent to the entry alcove, designed as a winding stair to free up space within the floor plan. The reorganization of the stair led to a wholesale simplification of the sleeping cube, producing added closet space; for instance, the ambiguous first floor hall connecting the master bedroom and powder room to the entry hall was removed in favor of a more concise space.

The living cube had an equal number of relatively minimal alterations made between schemes. The curvilinear breakfast table was changed into a simplified rectilinear table with a small adjacent window alcove\(^{61}\). The faceted fireplace remained, but the space behind the form was altered to simplify the window conditions. The drawing of the exterior was fully rendered, highlighting the proposed millwork detail of the exterior shutters and doors. There was also a lack of basement definition, an issue that was regularly talked about between Kahn and the Fishers right up until construction (Fig. 2.28). Kahn had originally specified the space underneath the sleeping cube as a crawl space, and when asked by the Fishers to redesign the area as useable space Kahn informed them that he could not because it was be impossible to find an “aesthetically pleasing way of bringing in natural light.”\(^{62}\) Nonetheless, Kahn was able to work a nondescript space into the construction documents the day before construction was to commence, despite being unable to design windows to service the space – he must have been eternally frustrated with the decision for the room lacked natural light. In

---

61 The window alcove spoken of is the only element within the scheme that was not built. Some elements, such as the fireplace or living room seat, were revised during the course of the construction process.

Fig. 2.27: Scheme Five; Second Floor Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.

Fig. 2.28: Scheme Five; Basement Plan. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
the end, the basement window wall condition was integrated into the design, as was the
dimensioning of the ‘open porch’ between the masonry and window walls.

As previously mentioned, the fifth scheme ultimately underwent a number of
small changes during construction. The final product was a beautiful composition of
juxtaposed wood cubes set within a picturesque setting. The Montgomeryville stone
foundation, integrated within the site, acted as a plinth for the delicate, cabinet-like cubic
volumes above. The exterior and interior of the house were treated almost as a piece of
furniture, delicately detailed to show its process of making while reflecting motifs of
traditional American building methods. Similarly, the Fishers sought a rustic finished
surface for the plaster walls, inspired by textural qualities an old farm house.63 Shortly
after moving into the house in 1968 the Fishers made a request to Kahn for an alteration
to the dining room, in which they asked for a single window to enable them to look out
at their pictorial backyard. According to Norman Fisher, Kahn felt that the openness of
the rest of the house rendered the dining room as a sort of pleasant escape. Kahn relented
and, in conjunction with project engineers, crafted a striking window that opened the
space up to nature (Fig. 2.29).64 In the Spring of 1969 work began on a small bridge to
span the creek at the rear of the house, a design undertaken by Vincent Rivera, a young
architect in Kahn’s office at the time (Fig. 2.30).65

The cubes became memory containers for the Fisher family and every other
person who experienced the house. Interestingly Kahn did not design the house seeking

---

64 Norman and Doris Fisher, “Seven Years with Louis I. Kahn.” Louis I Kahn - Houses. By Yutaka Saito, 153. The redesign was carried out in conjunction with the help of Vinokur and Pace, Engineers.
grandeur or timelessness, but a commonness that would touch everyone. He noted, “a house must always be as good…must be so good that those who will live in it after the person who ordered it would feel comfortable in it.”66 While Kahn admitted he did not create the house specifically for them, the Fishers accepted his belief but treated the space as their own.67

---

66 Kahn as quoted in, “A House Within a House.”
Fig. 2.29: Dining Room Picture Window. *Courtesy of the Fisher Family.*
Fig. 2.30: Kahn [Left] and Vincent Rivera [Center] Inspecting the Fishers’ Bridge. 
Courtesy of the Fisher Family.
The final form of the Norman Fisher house was a distinct departure from most residential designs of the period (Fig. 3.1). The juxtaposed cubic volumes broke free from the orthogonal plans of both Kahn’s and his contemporaries’ architecture. Mid-Century Modernist houses were often seen as cold and rigid, minimal in their interior arrangements and devoid of ornamentation. The technological spoils of modern materials allowed for a minimization of structure to free up floor plans and increase the quantity and dimensions of apertures. Mies Van der Rohe’s Farnsworth house and Philip Johnson’s Glass House embraced technological innovation, using steel to create an open interior with large expanses of glass to provide a connection to the outside. The box-like structures integrated the openings within the facades, utilizing known devices such as steps to gesture towards the indistinct entrances. Rather than rely on applied devices to convey a function, Kahn attempted to design a logic into his work in order to define the purpose of each architectural element.

Similar to the earlier Margaret Esherick house in nearby Chestnut Hill, the Fisher house’s exterior is interrupted by a series of entry and window alcoves, creating a textural quality along an otherwise planar façade (Fig. 3.2). Unlike the Farnsworth and Glass houses, the façade of the Fisher house does not serve the dual purpose of both partition and window. Instead Kahn instilled his own idea of ‘house’ upon the design, creating a sense of privacy by enclosing the structure in cypress while carefully controlling the influx of light. The conscious use of materials helped Kahn produce a warm aura within the Fisher house, hardly traditional in its exterior form but native in its spirit. Kahn was
Fig. 3.1: View of the Norman Fisher House. *Courtesy of A+U Magazine.*

Fig. 3.2: View of the Norman Fisher House from Mill Road. *Source: Pierson Booher.*
responding to the Fishers fear of the cold disconnect often created between the user and contemporary designs.\textsuperscript{1} The seamless detailing of woodwork appears as a combination of clean-lined modern principles and Anglo-American undertones, which Richard Saul Wurman referred to as a “refined primitivism.”\textsuperscript{2} In essence, one could say Kahn designed the house as a cabinet. The beautiful interior woodwork detail and the composition of the exterior cypress are treated by the Fishers “almost like a piece of furniture.”\textsuperscript{3} Yet to Kahn, ‘house’ seemingly represented more than just a roof to live under; he viewed a house as a container for living, a place that would collect memories over time of the way people lived within. During a 1966 lecture at the University of California at Berkeley, Kahn stated, “Architecture, per se, does not exist…Architecture is a spirit.”\textsuperscript{4} Thus, the house was no longer architecture to the inhabitants but rather an essence, a place in the mind in which they would recall their memories within and think of the house in its simplest form. In theory, when the children thought back to a special time in the house, they would think of the event and the people present rather than the texture of the wall or the window composition.

The Fishers were unique clients in that they had an appreciation for both Modernism and traditional design. Doris Fisher took drawing classes at the Philadelphia Industrial Art School, which had a strong influence on her appreciation for art and

\begin{itemize}
  \item \textsuperscript{1} Fisher, Doris. Oral interview, 12 October 2008, led by William Whittaker with the students of the Kahn Seminar at the Fisher House. Department of Historic Preservation, University of Pennsylvania.
  \item \textsuperscript{2} Interview of Richard Saul Wurman, Louis I. Kahn: An Offering to Architecture. Dir. Peter Kirby. VHS. Media Art Services, 1992. Wurman graduated from the University of Pennsylvania in 1959 with a Masters of Architecture degree and worked in Kahn’s office as a Senior Architect during the time of the Fisher house commission.
\end{itemize}
design. Both she and Dr. Fisher were interested in modern design trends, evidenced by their collection of literature and furniture pieces by renowned designers such as Isamu Noguchi and George Nakashima. Their previous house had a number of Modern furniture pieces and they slowly continued to collect even before the completion of the Mill Road residence. Kahn’s approach to design paired well with the eclectic taste of the Fishers, allowing for a strong architect-client relationship throughout. From the beginning, with Kahn’s inclusion of the monumental stone dining cube, there was a strong undertone of historicism within the design process of the house. The final form combined both contemporary design motifs with traditional undertones, resulting in a subdued exterior and a rustic interior.

In many ways, Kahn’s embrace of traditionalism in the Fisher house is evidenced by his 1966 statement that, “Architecture knows no style,” a reflection of his mentor Paul Cret’s belief that architecture was a constantly evolving practice. David Brownlee noted, “To Cret architecture was not a matter of historical styles but a problem-solving art in which the creative architect translated the demands of the client’s program into substance.” Rather than reject the past in order to create a new architecture, a treatise of Modernism, Kahn’s movement away from the International Style and toward his own architectural expression embraced all designs that preceded his work. As he noted in 1973:

“I honor beginnings. Of all things, I honor beginnings. I believe that what was has always been, and what is has always been, and what will be has always been. I don’t think the circumstantial play from year-to-year and era-to-era means anything, but what has become available to you from time to time as expressive instinct does. The man of old had the same brilliance of mind as we assume we have only now. And that which made a thing become manifest for the first time is our great, great moment of creative happening.”

The combination of contemporary design and historicizing motifs was not a new design approach, but during this particular period in Kahn’s career something within his mind rationalized the combination of the two.

FOUNDATION |

The millwork detail of the Fisher house is similar to other built projects of the period, notably the Margaret Esherick House (1959-61), the Salk Institute for Biological Studies (1959-65), the Philips Exeter Academy Library (1965-72), the Kimbell Art Museum (1966-72), the Yale Center for British Art (1969-74) and the Steven Korman house (1971-73). While each project exhibits a refinement of Kahn’s millwork detail over time – specifically the exterior and interior wall paneling and door compositions – their design reflects the character of each specific project. The most discernable difference between detail work occurs in the Esherick, Fisher, and Korman houses. Discussed at length in the following chapter, the millwork progresses from a visibly rustic composition at the Esherick house – where the wood appears deteriorated and almost recycled – to a

highly refined, planar design at the Korman house.

Though the scales of the residential and institutional projects differ greatly, the similar application of millwork detail in such disparate buildings speaks to the commonality of the motifs. The greatest progression of the millwork occurred in the three aforementioned residential designs, furthering the prospect that Kahn treated his houses as test subjects for his larger institutional works.9 Following an early design within the Esherick house, a second iteration of the detailing was developed for the Fisher house and the Salk Institute (Fig. 3.3, 3.4). From there, Kahn’s office continued to refine the Fisher house millwork model for the following ten years until Kahn’s death in 1974.

What is unclear is the inspiration for these traditional schemes and the reasoning behind their extensive inclusion in many of his late works. The influence of Anglo-American motifs is apparent in Kahn’s detail work, but the justification for its implementation is unknown. According to William Whittaker, it is possible that some degree of inspiration for the millwork detail may have originated from three projects in East Falls, Pennsylvania by Galen Schlosser.10 Schlosser, who worked in Kahn’s office on numerous projects including the Salk Institute and the Kimbell Art Gallery, designed three houses in 1957 that appear much in line with the woodwork detail seen in Kahn’s later designs. It is conceivable that the detail work in Schlosser’s Gypsy Lane houses were a precursor to the designs seen in the Fisher house.

Assuming that Kahn did treat his residential commissions as small-scale test

---

9 Rivera, Vincent. “Vincent Rivera Interview.” Interview with William Whittaker and Taryn D’Ambrogi. 15 Oct. 2008. During the interview, Rivera mentioned that Kahn treated his residential designs as small-scale test subjects for his larger institutional buildings. The Fisher house exhibits this trait, in the application of the juxtaposed cubes that mirror the similar treatment of the mosque at the Capitol Complex at Dacca.

10 During a discussion with William Whittaker in January of 2009, Whittaker mentioned that Schlosser may have had a hand in the detail work.
Fig. 3.3: Fisher House Bedroom Door. *Source: Pierson Booher.*
Fig. 3.4: Office Cabinets at the Salk Institute. Source: Pierson Booher.
subjects, the evolution of the millwork can be analyzed in terms of Kahn’s notion of ‘house’. It would appear that to Kahn, man has preconceived feelings regarding the aura of a house that are native to all. Rooted in the past, it is this subconscious that creates a sense of comfort and humanism within a space. It is why, despite continual technological advancements that enable new ways to build and live, the majority of the population clings to traditional architecture. In other words, it is possible that Kahn’s use of similar millwork detail in both residential and institutional designs is a commentary on the impact of traditionalism on the human soul. Recalling a visit with Mexican architect Luis Barragan, Kahn noted:

“His house is not merely a house but House itself. Anyone could feel at home. Its material is traditional; its character eternal. We talked about traditions as though they were mounds of the golden dust of man’s nature and from which circumstances were distilled out. As man takes his path through experience he learns about man. The learning falls as golden dust, which if touched gives the power of anticipation. The artist has this power and knows the world even before it began. He expresses himself in terms of validities physiological.”

Rather than attempt to create a sense of timelessness about his designs, Kahn exploited the commonality of traditionalism by instilling it as a means of appealing to the psyche. The psyche, according to Kahn, is an ‘unmeasurable’ aspect of being expressed through thought and feeling. Kahn stipulated in his 1960 essay “Form and Design” that, “a

---

The Architectural Woodwork Detail of the Norman Fisher house, Hatboro, Pennsylvania

building has to start in the unmeasurable aura and go through the measurable to be accomplished,” and, “when the building becomes part of living it evokes unmeasurable qualities.”

Despite the differences in scale, each project had a similar application of millwork treatment seemingly inspired by Anglo-American construction methods and designs. In the large-scale institutional projects, Kahn likely sought an intimacy within each space to minimize the scale of the building while reducing the unfamiliar character of the masonry. The same theory applied to the residential designs, in that he admittedly designed each house not for the client but the subsequent inhabitant. In a 1970 conversation with the Fishers, Kahn explains, “A house is only good if the tenant who lives in it after the original owner is comfortable…it’s a confirmation…a house that has a sense of agreement about it. An agreement means a sense of commonness. A sense of prevalence which is a prevalence of harmony – a kind of rapport with the next person.”

Ten years earlier Kahn made a similar statement in “Form and Design”, in which he wrote, “It may also be said that this house created for the particular family must have the character of being good for another. The design in this way reflects its trueness to Form.” While the house should respond to the needs of the client, it should always be a quality collection of spaces – which Kahn refers to as the “treasury of spaces” – able to

13 Ibid.
Editor’s Note: This transcript documents a conversation between Louis I. Kahn and Doris Fisher recorded on the evening of March 8, 1970 at the Fisher’s house in Hatboro, Pennsylvania. The impetus for the recording was an expected tour of the house by a group studying contemporary architecture. Mrs. Fisher was interested in showcasing not only their home, but also Kahn’s philosophy of architecture. As such, the interview touches on a range of subjects including the design of houses, the nature of light, and the making of a room. The conversational quality of the recording shows the warm personal relationship that the Fishers enjoyed with Kahn even after the long design process that resulted in the creation of their home.
be made into a ‘home’ by whomever. In reference to the client, Kahn goes on to say, “It’s as though the house was ordered for your purpose, but it’s all there, to be used by other people in their own way.”

Though highly unlikely, there exists the possibility that Kahn simply generated the scheme based on his subconscious; in other words, the millwork design could have been a natural solution based on known forms. Beginning with the Esherick house, the wall paneling, and door and window compositions mimicked traditional designs. The paneling within both the Esherick and Fisher houses vary in depth – creating a textural quality reminiscent of Anglo-American elements – and are arranged in a planar form. Having grown up in Philadelphia, it is plausible that to Kahn this traditional form was intrinsic to the composition of a door. Kahn may have viewed his design as the rationalization of how a door should be executed, for without the paneling, rails and stiles, the door would lack identity and not reflect its trueness to Form.

Nevertheless, Kahn’s designs achieved a functional millwork composition similar to historic precedents. The doors were composed of an upper, lower, and lock rail, two outer stiles and two inner stiles visually dividing the door in half. In addition, Kahn employed floating panels that act similar to their historic function by responding to changing moisture levels; the panels sit within the lock and rail composition, able to expand and contract freely without damaging the integrity of the surrounding wood members. It was this retranslation or simplification of traditional building methods that became a part of Kahn’s own style. During a 1961 interview for the Yale architectural

journal *Perspecta* Kahn noted:

“So a building really aspires to something, and it answers very much a way of life. But, this aspiration has to be constantly renewed and reborn and what is presented by the art of building or the art of painting or sculpture is in light of new techniques. The new techniques will help you…it brings before you new measurable means of doing that which your aspiration calls for and that’s how you view technique: as a measurable means of expressing closer and closer the desire and the existence will of aspirations.”

This idea of rebirth manifests itself in Kahn’s response to traditionalism; rather than rebuke the past and fall in line with many of his contemporaries – exploiting the spoils of modern materials – Kahn embraced past practices and retranslated them to fit within the context of his work.

The detail work is rooted in historical precedent, retranslated through modern design and the precision of current technology, but never wholesale rejecting the aesthetics and construction methods of the past. According to David Stewart, Le Corbusier’s skilled re-appropriation of vernacular motifs and his combination of “rhetorical innovation” with new elements likely had a profound impact on Kahn. Moreover there is no playfulness or exploitation of the device that is seen in Robert Venturi’s nearby “Vanna Venturi house” (Fig. 3.5). Thus, Kahn’s redefinition of traditional detail assemblies is solely his, free of being placed within a context of specific contemporaries. Kahn did not see himself as a visionary, for he noted, “the continuity

---


between what was valid yesterday and what is valid today is considered by every thinking architect.”

At first glance, the millwork has an obvious foundation in past practices and would immediately register with the typical inhabitant. Yet the qualities of Kahn’s designs are that they are not simply an aesthetic consideration; as mentioned earlier, the assemblies function in a manner identical to their historical precedents. The design is responsive to the inherent qualities of the material, accounting for the expansion and contraction of wood with the changing seasons. Virtually all of the millwork joinery within the house, ranging from the wood doors to the cypress siding and exterior water tables, is fashioned to allow the wood to perform naturally. The same aesthetic could have been generated through the application of individual pieces to a backing, but it would have fundamentally opposed Kahn’s view of applied ornament, which he believed grew out of the architecture and the materials. In order to maintain the millwork’s ‘trueness to Form,’ the wood elements needed to be assembled with their inherent performance in mind. Tongue-and-groove joinery supplanted fixed connections, allowing the wood to move freely while ridding the visible surface of screw and nail heads (Fig. 3.6).

In effect, the entirety of the house – both interior and exterior – appears as a compilation of visually unadulterated details. The millwork of the Fisher house achieves its humanity through a restrained refinement of traditional motifs, embracing the natural imperfections of the wood while creating clean-lined compositions. Though markedly more sophisticated than the Esherick house, the Fisher house’s millwork reflects the

---

19 Kahn as quoted in, Barbara Barnes, “Architects’ Prize-winning Houses Combine Best Features of Old and New,” Evening Bulletin, May 20, 1950. From, Brownlee and De Long. Louis I. Kahn, 40. This particular quotation was in reference to Kahn’s 1947-50 design of the Morton Weiss house, in which Kahn previously stated that the house and its materiality was, “contemporary but does not break with tradition.”
Fig. 3.5: Robert Venturi’s “Vanna Venturi House.” *Source: Architectural Archives, University of Pennsylvania.*

Fig. 3.6: Detail of a Watertable and the Joinery of a Window Frame. *Source: Pierson Booher.*
compromise between the modern and the traditional that Kahn desired. The level of refinement sought in later projects such as the Korman house, the Exeter Library, or the Yale Center for British Art is not found at the Fisher house, partly due to this compromise but also as a reflection of the rusticity the Fishers sought.

One of Kahn’s strongest design senses was his understanding of the strengths and weaknesses of certain building materials. Beginning with his narrative in which he asks brick what it wants, Kahn expresses his rationalization of each material’s innate purpose within architecture. When asked by the Fishers why he chose wood for their house, Kahn responded that he enjoyed the pliability of wood and its ability to be worked, as opposed to stone which “you feel as though you have to hack away at.” The intrinsic flexibility of wood to be manipulated or to manipulate other objects – specifically its use as formwork to mold concrete – facilitated Kahn’s realization of his own architecture. The wood was not only used for individual detail work, but its application as concrete formwork successfully shaped an additional building material.

From a material properties standpoint, wood and concrete are antithetical; yet in many of his later projects, Kahn similarly used both materials to visually define the function of specific elements. The exterior of the Fisher house – along with many of the aforementioned projects of the period – has a series of wainscoting elements situated below each window (Fig. 3.7). In contrast to the vertical cypress siding found throughout the exterior, the wainscoting mimics the traditional motif in a planar fashion while maintaining a similar scale and module as the door and shutter compositions. Because the

21 Kahn as quoted in, A House Within a House.”
wainscoting is localized to the areas directly below large apertures, it appears that Kahn is visually differentiating between ‘served’ and ‘servant’ spaces through the detailing of the exterior cladding. The vertical siding, which encloses the volume, seems to indicate a ‘served’ or ‘typical’ space within (Fig. 3.8). Conversely, the wainscoting motif indicates the ‘servant’ quality of the aperture, allowing light to enter the interior.

The use of the wainscoting at the Fisher house is similarly executed at the Salk Institute in both wood and concrete. The concrete formwork for the majority of the building – specifically the offices and laboratories, which are the designated ‘served’ spaces – is oriented vertically, while the mechanical (service) floors have a horizontally-oriented composition of formwork (Fig. 3.9). In addition, the interior millwork continues this distinction, as the white oak panels – similarly designed as to mimic wainscoting – are oriented horizontally directly beneath each aperture (Fig. 3.10). Though similar usage of horizontal formwork is seen at Le Corbusier’s monastery at la Tourette (1957-60) and in numerous Japanese designs, the schemes appear related only in aesthetics (Fig. 3.11).

The identification of the windows as a functional element states their importance to the characterization of the interior. As mentioned in the previous chapter, the concentrated introduction of light helped create a spirit for each space, reflecting their function through the extent and orientation of glazing. Whereas the bedrooms benefitted from a smaller influx of light so as not to disrupt sleep, the power of the living space – the ‘heart of the house’ – was generated by the quality of light that pour in from all sides (Fig. 3.12). In effect, it would seem Kahn states that light is the most important servant

---

22 Stewart, *The Making of a Modern Japanese Architecture*, 219. Kahn, along with Paul Rudolph and Balkrishna Vithaldas Doshi, visited Japan in 1960 for the World Design Conference. During his trip, it is likely that the meticulous, conscious design of the concrete formwork in the modern Japanese structures appealed to him and influenced his formwork detailing from thereon out.
Fig. 3.7: Wainscoting Detail Below Two Bedroom Windows. *Source: Pierson Booher.*

Fig. 3.8: ‘Living Cube’ Exterior. *Source: Pierson Booher.*
Fig. 3.9: Exterior of the Salk Institute, Showing the Rotation of Concrete Formwork Along ‘Served’ and ‘Servant’ Spaces. Source: Pierson Booher.

Fig. 3.10: Salk Institute Conference Room Paneling Detail. Source: Pierson Booher.
The Architectural Woodwork Detail of the Norman Fisher house, Hatboro, Pennsylvania

Fig. 3.11: Exterior of Le Corbusier’s Monastery at La Tourette. Source: Pierson Booher.

Fig. 3.12: Interior of the ‘Living Cube’. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
element within a building, proclaiming its function on the exterior by creating a visual
duality between ‘served’ and ‘servant’. More often than not the majority of the ‘servant’
elements are hidden within walls or behind doors; but the necessity of light and its role in
creating a brilliant space is illustrated by Kahn through the wainscoting.

Visually, the aesthetic of the wainscoting, along with the paneling detail found
within the recessed window alcoves, is transferred to the interior. On the interior, the rails
and stiles are extruded to create a variation in depth. This duality between planar and
extruded is seen on virtually all two-sided wood elements within the house, notably the
doors, shutters, and window alcoves (Fig. 3.13). It appears that Kahn generated a rule
about how to orient the paneling, using the aperture wainscoting as the primary regulator.
Essentially, the millwork within any room with a recessed window alcove would be
extruded, and the opposite sides of any doors or paneling would likely be entirely flush.
For example, the second floor bedrooms contain extruded millwork, causing the hallway
side of the bedroom doors to become planar. The variation in depth between the inner
and outer surfaces of the elements recalls the traditional manner of finishing millwork.
Historically, the more public rooms within a house were given the highest level of
refinement in order to reflect the tastes and status of the host. The millwork within these
spaces was finished in a more sophisticated manner, as the joints between the paneling
and the structural elements were planed to create some type of molding. Conversely,
the more private areas of the building were usually less refined, similar to the interior
surfaces of the Fisher house millwork.

Kahn’s version of formalism would be the planar panel, utilizing the joint as the
ornament rather than an applied molding. Whereas the 19th century craftsman would
apply ornament directly to the material, Kahn once stated, “I couldn’t apply anything to it.”\(^{23}\) The simplicity and rigidity highlights the craftsmanship as well as the natural shape and texture of the wood, drawing the eye to the subtle shadow created by the joint. Thus, the true ornament – in Kahn’s eyes – is displayed in its true form, devoid of the deliberate, distracting additives that were aimed at improving the banality of natural materials.

As evidenced in numerous projects of the period, Kahn’s treatment of the joint between differing materials utilizes the shadow as a transitional element. Most clearly represented by the connection between drywall and millwork framing, Kahn would separate the two with a thin recessed piece of wood to create a visible delineation (Fig. 3.14). Curiously, Kahn did not implement this scheme within the Fisher house, choosing to allow the plaster to abut the millwork. Given the Fishers’ desire to replicate a primitive, rough-textured plaster they had seen in a farm house, a separation of the plaster and woodwork would have been in opposition to the utilitarian quality of the client’s vision.\(^{24}\)

Quite possibly the strongest device within the house is the elegant wood bench Kahn placed beneath the large living room window (Fig. 3.15). The bench acts as a throne set against a backdrop of nature, seemingly levitating above the flooring as though it were being thrust into the space by the outside world. Both the backing of the bench and the paneling below it are comprised of horizontal paneling, more similar to the white oak seen at the Salk than the wainscoting of the Fisher house. In addition to the


\(^{24}\) Norman and Doris Fisher. “Seven Years with Louis I. Kahn.” Kahn Louis I - Houses. By Yutaka Saito, 159.
Fig. 3.13: Image of the Dining Room Shutters. Source: Pierson Booher.
Fig. 3.14: Recessed Joint Separating the Drywall from the Door Frame. Source: Pierson Booher.
inclusion of only one quarter-round arm rest, there is an imprecision about the paneling, asymmetrical in composition and form (Fig. 3.16). Yet it is this lack of exactness that lends to the charm of the bench, standing out from the calculated geometries and compositions of the rest of the house. According to the first construction drawings, Kahn designed the bench to run all the way to the exterior wall, along with two additional benches specified for the second floor bedrooms. At some point during the construction process, Kahn revised the bench to sit only within the width of the large window, solidifying its relationship with the window while creating an intimate nook between the bench and the adjacent window alcove.

The intricacies of Kahn’s detail work are evident in his occasional decision to construct visible structural framing elements out of multiple pieces. Rather than use a solid section of lumber for posts and lintels, Kahn tended to replicate the dimensions through the combination of thinner sections. Seen in the cross-section of the second story balcony post at the Esherick house, Kahn implements a similar arrangement in the framing members for the living cube apertures (Fig. 3.17, 3.18). Localized to the larger windows – and not found in the recessed alcoves – the members are typically comprised of a large central element and a one-inch-thick board on each side. The typically tripartite composition appears to create a frame for each window, utilizing the thinner pieces to visually detach the glazing from the structure. Kahn employs a set module throughout the house for all horizontal framing sections. The aforementioned framing members adhere to a set dimension of 4-1/2”, in addition to all baseboards, skirtboards, and door frame headers (Fig. 3.19). In essence, Kahn creates a pair of bookends that visually contain the

25 The bedroom benches were eventually revised as built-in desks, which are extent in the Fisher house.
Fig. 3.15: The Built-In Bench Within the Fisher House. *Courtesy of Grant Mudford.*
Fig. 3.16: The Built-In Bench Within the Fisher House. *Source: Pierson Booher.*

Fig. 3.17: Second Story Balcony Post Within the Margaret Esherick House. *Source: Pierson Booher.*
Fig. 3.18: Exterior Framing Member Composition at the Fisher House. Source: Pierson Booher.
framed elements.

IDENTITY |

The woodwork in the Norman Fisher house represents the most comprehensive implementation of Kahn’s late millwork detail. Still somewhat muddled in its use of Modernist motifs and those that were becoming uniquely his, Kahn’s detailing at the Esherick house lacks the completeness found in the Fisher house. Every aspect of the Fisher house seems to have been worked out, whereas the unadorned sliding bedroom and bathroom doors of the Esherick house display a lack of cohesion, visually at odds with the rusticity present in the rest of the house. The use of detailing in the Fisher house was calculated, retranslated by Kahn in a restrained fashion so as not to overwhelm the architecture. During his later projects, Kahn’s detail work continues to utilize this Anglo-American cabinet architecture, responding to the character of each project in a unique manner while maintaining the basic relationship of parts worked out during the Fisher house design process. Regardless of the building’s dominate program, the woodwork’s presence characterizes each space by creating a sense of humanity. At the Salk Institute, what Kahn sought was a refuge from the hyper-sanitized environment of the laboratories, a place where a scientist could escape from their experiments to eat lunch or write a report. Thus Kahn evoked the typical characteristics of home within the individual studies, treating the rooms as an antithetical space for scientists to conduct their work.

Most importantly with the Fisher house design, Kahn broke free from the coldness and rigidity intrinsic to many contemporary residential designs. The inclusion
of traditional motifs helped Kahn continue to realize an architecture that was uniquely his (Fig. 3.20). As mentioned in previous chapters, Kahn’s use of historicism did not begin with the Fisher house, but the extent of the past’s influence on its design cannot be ignored. David De Long noted, “Like Wright before him, Kahn projected an influence so pervasive as to defy concise summary. By reconnecting architecture with the fundamentals of history, he revitalized its primary forms and principles, and he awakened an entire generation of architects who followed.”

Fig. 3.19: Sketch of the Framing Member Composition at the Fisher House. Source: Pierson Booher.

Fig. 3.20: Kahn at the Fisher House During Construction ca. 1966. Source: Louis I. Kahn Collection, Architectural Archives, University of Pennsylvania.
CHAPTER FOUR | THE ESHERICK HOUSE, THE FISHER HOUSE, AND THE
KORMAN HOUSE: A COMPARATIVE ANALYSIS OF THE USE OF
ARCHITECTURAL WOODWORK DETAIL IN THREE LATE LOUIS KAHN
HOUSES

As is the case with many young architects, the early part of Louis Kahn’s
professional career was typified by a constant process of discovery through numerous,
relatively non-descript projects. After working for Philadelphia City Architect John
Molitor on the Sesquicentennial Exhibition of 1926, Kahn collaborated on a number of
Depression-era and wartime mass housing projects throughout the greater Philadelphia
area. Vincent Rivera, a former colleague of Kahn’s, felt that Kahn treated all of his
commissions as experiments; yet houses were Kahn’s opportunity to search for answers
to the greater architectural questions at a smaller, more human scale. It was during this
latter portion of his career when Kahn’s search for continuous discovery was at an all-
time high; his international acclaim had garnered numerous large-scale commissions
that challenged his ability to rationalize the programmatic demands before him. A
comparative analysis of his three late residential structures – the Margaret Esherick
house, the Norman Fisher house, and the Steven Korman house – provides an opportunity
to gain insight into Kahn’s personal process of discovery and the ways in which specific
motifs and elements were interconnected and developed on multiple scales.

1 Rivera, Vincent. Interviewed by Taryn D'Ambrogi, Caitlin Kramer, and William Whittaker at the Univ. of
THREE HOUSES |

Each of the three houses was built for a different type of client. The Esherick house was designed for a single woman related to renowned Expressionist sculptor Wharton Esherick, for whom Kahn had designed a studio for in 1955. The Fisher house was designed for a doctor’s family that sought a union between contemporary and traditional design. The Korman house was designed for a wealthy family that sought a more refined and elegant home to entertain guests while being suitable to raise their young children. A common thread is the use of architectural woodwork detail and its relationship to structure, as all three were timber frame, but none conform to traditional framing methods.

From an aesthetic standpoint, the three houses have differing qualities. The Esherick house (1959-61) is an orthogonal stucco building with woodwork that is not only warmer, but is rusticated and seemingly less-finished on the exterior (Fig. 4.1). The rectilinear plan is a derivative of the Shapiro house, bi-nuclear in its division of functions with a central circulation core reminiscent of Colonial houses (Fig. 4.2). The design of the house paralleled early work on the First Unitarian Church and School in Rochester, New York; each design exhibits a similar process of window studies, as Kahn continued to search for glazing shapes that effectively moderated light. Learning from his experience at the Richards Medical Research Laboratories – in which the daylighting proved too powerful for the scientists and led them to install shading devices – Kahn studied aperture configurations to create a harmonious exterior aesthetic while

---

3 Ibid.
Fig. 4.1: The Front Façade of the Margaret Esherick House. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 155.
The Esherick House, the Fisher House, and the Korman House

The Esherick House, the Fisher House, and the Korman House

augmenting the envisioned interior character. The result was a combination of large planar windows and recessed window alcoves; the large windows that punctuate the rear façade are tripartite compositions, with a central picture window bounded on each side by slender recessed windows.

There are obvious deformations and imperfections within both the interior and exterior wood. Localized to only two locations, the built-in window seats exhibit a primitive version of the wainscoting motif found at the Fisher house (Fig. 4.3). The large timber beam that spans the entirety of the living space, while supporting the second story balcony, appears somewhat out of place; its unfinished surface and somewhat aggressive bowed form has a pastoral and honest aesthetic that corresponds with the rusticated detail work. Kahn had difficulty finding an oak beam of that size; ideally the beam would have been planed, and in many ways he had to settle for the one used within the Esherick House. Nonetheless, the crudeness of how the beam meets the wall and the plaster is applied around it is unique, evoking the utilitarianism of Early American practices (Fig. 4.4). Between the window niches and the built-in elements, the woodwork has a degree of depth to it, contrasting with the smoothness of the plaster wall surfaces. As Kahn noted, “The building will not look flat. The deep reveal of windows, entrance alcoves and 2nd floor lower porches will give it an alive look at all times.”

As mentioned in the previous chapter, the design of the Esherick house shortly followed Galen Schlosser’s first Gypsy Lane house, which includes wood detail quite similar to that found in the Fisher house. Though noticeably more primitive, the Esherick house’s detail work mark’s the starting point in the evolution of this Anglo-American

---

The Esherick House, the Fisher House, and the Korman House

Fig. 4.3: Exterior Wainscoting Composition at the Esherick House. Source: Pierson Booher.

Fig. 4.4: Detail of the Plaster Surrounding the Timber Beam at the Esherick House. Source: Pierson Booher
motif within Kahn’s late work. Possibly inspired by Schlosser’s own designs, the traditionalism of the woodwork scheme seems to appeal to Kahn’s search for humanism within both his residential and institutional projects. The shortfall of the Esherick detail work is the lack of cohesion, muddled by the combination of traditional motifs and unadorned, seemingly contemporary components (Fig. 4.5, 4.6). The antique quality of the woodwork at the Esherick house underwent a process of refinement during the development of the Fisher house scheme, manifesting itself as a more holistic composition throughout the entirety of the residence.

The Fisher house has a more sophisticated appearance than the Esherick house, utilizing a duality between the interior and exterior. As is the case throughout the house, the repose surfaces face outside while the extruded woodwork always face inward; it would seem that this expresses the division between public and private, or possibly that which is free and that which is contained (Fig. 4.7, 4.8). This is a motif often found in historic buildings, as the more public, formal spaces for entertaining guests were the most highly ornate, as a means of reflecting the social status or taste of the host; in contrast, the private spaces occupied primarily by the homeowner were much more subdued and informal. In addition, the Anglo-American joinery and construction methods discussed in the previous chapter are retranslated by Kahn in a contemporary fashion to create a unique ornamentation. The joinery begun in the Esherick house design becomes much less reliant on fasteners, meticulously detailed to utilize traditional assembly methods. As a result, the wood is able to expand and contract with changing moisture levels, prolonging the service life of the material while ridding the surfaces of aesthetically-detracting nail heads.
Fig. 4.5: Closet Door with Traditional Undertones at the Esherick House. *Source: Pierson Booher.*
Fig. 4.6: Unadorned Master Bathroom Door at the Esherick House. *Source: Pierson Booher*
Fig. 4.7: Exterior Wainscoting Motif at the Fisher House. *Source: Pierson Booher*

Fig. 4.8: Extruded Interior Woodwork Within the Fisher House Master Bedroom. *Source: Pierson Booher*
The Korman House (1971-73), as previously mentioned, appears to be a more refined and stylized version of the Fisher House millwork. Gone are many of the delineations between interior and exterior, where shadows and extrusions give texture and depth to the surfaces. Instead, the walls have a stylized planarity, decorated in a repose manner through the variation of woodwork orientation. There is elegance and formalism to the surfaces, an almost subtle interpretation of traditional motifs in a modern manner. Not only are many of the horizontal lines within the space continued throughout, Kahn seems to be reinventing the traditionalism of the chair rail through the aforementioned suppression of the woodwork; gone is the functional projection of the piece, but rather the gesture is reflected in a tonal change and a simple rotation of the wood from vertical to horizontal (Fig. 4.9). This same motif is used in the conference rooms of the Kimbell Art Gallery (1966-72), though larger in width and integrated into a cork wall paneling (Fig. 4.10). The interplay of planar and extruded paneling found in the Fisher house is not evident in the Korman house. The reasoning behind this shift is unclear; although the level of refinement exhibited throughout the residence speaks to Kahn’s conscious attempt to restrain the detail similar to the Yale Center for British Art (1969-74), the entirely-flush paneling may be a product of the iterative progression of the scheme. Following the completion of the Fisher house and the Salk Institute (1959-65), the extruded millwork disappears in favor of a predominately planar design.
Fig. 4.9: Partition Within the Korman House Illustrating the Integrated Chair Rail. 
Source: Pierson Booher

Fig. 4.10: Conference Room at the Kimbell Art Museum. Source: Pierson Booher
IN SEARCH OF A SPIRIT |

During his conversation with the Fishers, Kahn mentioned his belief that the mind is programmed with “reflections that the individual can feel which dates back to something pre-primordial as though it were the first feeling. The first feelings, just like the impressions of early childhood, are in us.” Kahn’s interest in history and the origins of architectural form are well documented; along with the acknowledged adoration of Nantucket Saltbox houses, his travels abroad to Greece and Rome provided a lifetime of inspiration to his work along with the notion of the building ‘as a ruin’ (Fig. 4.11). While in regards to his affinity for ruins, Robert Twombly’s analysis of Kahn’s thoughts can be applied to his personal approach to design, as he states that they are, “reminders (for those caring to look) of the origins of those Platonic-like ‘forms’ – traces of ‘basic principles’ – that had characterized architecture from its inception.”

During a 1966 talk at Berkley, while speaking about the Indian Institute, Kahn lectures in an almost ethereal way:

“I was thinking a bit Indian, in this strange case, which is always a mistake, you know, because you just should think of its nature and it’ll...

Kahn, as quoted in “A House Within a House.” Transcribed and Edited by Melissa Steeley and William Whitaker. © The Architectural Archives, University of Pennsylvania.

Editor’s Note: This transcript documents a conversation between Louis I. Kahn and Doris Fisher recorded on the evening of March 8, 1970 at the Fisher’s house in Hatboro, Pennsylvania. The impetus for the recording was an expected tour of the house by a group studying contemporary architecture. Mrs. Fisher was interested in showcasing not only their home, but also Kahn’s philosophy of architecture. As such, the interview touches on a range of subjects including the design of houses, the nature of light, and the making of a room. The conversational quality of the recording shows the warm personal relationship that the Fishers enjoyed with Kahn even after the long design process that resulted in the creation of their home.

Ibid.

be Indian, all right, because you think of the architecture of light, and the architecture of water. I think to build an Indian town without the water towers being the most dominant buildings there, would be a great mistake. They should be the buildings you really see, because that, in India, is a tremendous sense of hope and validity. Not [just] because you have the [known] beginnings, which never brought it out. But that comes from the spirit, the understanding that this is a wonderful thing – man feels it, and that a man who knows how to express it - he becomes the leader of this expression. And then you see it, and you know what to do. After it’s made you can put it in the machine, but only after you make it.”

Regarding the wood detail, it’s as though he is referring to memory; his reference to the “spirit” and the “understanding that this is a wonderful thing” – along with the later prose – resembles the intimacy felt through the subconscious. In other words, man sees it, but it is the recognizance of the object that makes him feel it, to feel that it is natural or intrinsic to the place; it is the psyche, the need for connectivity between man and architecture.

David De Long noted, “Kahn believed it was imperative to identify human beliefs in order to discover ideal form, and to this end he rejected conventional typologies, which he suspected of subverting such investigation by supporting a routine response.” During a talk at Cranbrook Academy, Kahn explained that, “It is finding the devices which obey the laws of nature and bringing them into consciousness. The architect must think of his responsibility – his responsibility to create something which is always true to the nature in man and to the Laws of nature.”

Aldo van Eyck’s presentation at the 1959 Otterlo Congress may have had a profound impact on Kahn. Kahn, who closed the conference with a presentation of his

---

9 Brownlee and De Long. Louis I. Kahn, 102.
Richards Medical Center and an eloquent speech regarding his design ideas, was sure to have been present for van Eyck’s talk entitled, “Is Architecture Going to Reconcile Basic Values?” Van Eyck, who later attended the University of Pennsylvania as a visiting critic following a recommendation by Kahn, spoke of his Children’s Home – which paralleled Kahn’s design for the unbuilt Jewish Community Center – and the obligation to retain known scales while “sheltering the Dutch orphans within their own intimate perceptual world.” His ultimate goal was to be able “to gather the old into the new; to rediscover the archaic principles of human nature.” Van Eyck went on to note, “In each culture, there are things universally valid which…are emphasized while others are subdued.” It is van Eyck’s linkage between man and the mind that resonate in Kahn’s late work through the conjuring of past principles and their combination with contemporary practices.

In his article “Louis Kahn: Sorted Reflections and Lapses in Familiarities”, William Huff notes, “Lou’s detailing of doors and wood wall panels was strictly out of the Elizabethan age; but he had his own profiles. It allows the breathing of the wood so that the wood doesn’t crack or check. Lou’s panel doors were uniquely his ‘look’, but they acknowledged and incorporated the basic principles.” There appears to be a progression within Kahn’s woodwork, manifested within the three houses. “Neutral finishes – most typically vertical wood siding – clarified volumetric definition,” enabling

\begin{thebibliography}{99}
\bibitem{12} Stewart, David B. \textit{The Making of a Modern Japanese Architecture From the Founders to Shinohara and Isozaki}. New York: Kodansha International (JPN), 2003, 229.
\end{thebibliography}
the woodwork to supplement the qualities instilled by the incoming light and the well-conceived spaces.\textsuperscript{15} In some ways, it seems as though the simplest response to the differences could be attributed to client desires and budgetary limitations; while this likely played a role, there is certainly an exercise of rethinking and refinement within his work. Wall panels similar to those found in the Korman house are also within the Yale Center for British Art and the Philips Exeter Academy Library (1965-72). It is possible this is where Kahn’s ‘solution’ had progressed to by this period, and we’ll never know how he would have progressed from there.

When faced with a design problem, Kahn seemed to arrive at an answer through a rational analysis of the program and its context. It would seem natural for him to approach detail work in a similar manner, building off of past practices in order to fit the design. During a 1961 discussion in his office, Kahn stated:

“So a building really aspires to something, and it answers very much a way of life. But, this aspiration has to be constantly renewed and reborn and what is presented by the art of building or the art of painting or sculpture is in light of new techniques. The new techniques will help you…it brings before you new measurable means of doing that which your aspiration calls for and that’s how you view technique: as a measurable means of expressing closer and closer the desire and the existence will of aspirations.”\textsuperscript{16}

It is as if Kahn accepted the eternal progression of society and technology, and rather than seek an entirely new solution, he embraced the evolution and continuously attempted to rethink and reinvent past practices.

\textsuperscript{15} Brownlee and De Long. \textit{Louis I. Kahn}, 198.
STRUCTURE.LIGHT.ORNAMENT

In all three residences, the openings are framed with wood elements, many of which are composed of the aforementioned detail work. To Kahn, the structure was the giver of light, the true mechanism. In his essay “Form and Design”, Kahn details:

“Each space must be defined by its structure and the character of its natural light. [...] An architectural space must reveal the evidence of its making by the space itself. It cannot be a space when carved out of a greater structure meant for a greater space because of the choice of a structure is synonymous with the light and which gives image to that space. Artificial light is a single tiny static moment in light and is the light of night and never can equal the nuances of mood created by the time of day and the wonder of the seasons.”17

Coincidentally, the window elements were all framed and erected first at the Fisher house site, likely as a result of the contractor’s desire to accurately layout the exterior framing (Fig. 4.12). While highly improbable, the importance of these elements – both theoretically and functionally – could have influenced the decision to use the structural quality of them as the catalysts for construction. There exists a conversation between the detail and the light, working with one another to impart a specific spirit within the space. Kenneth Frampton explains that “For [Kahn], the quality of light made manifest through its interaction with a specific structural volume was the essential determinant of its character.”18 Beginning with the Esherick house, the design of the windows became just as much about the graphical quality of the exterior as the quality of light that entered. Kahn determined that the character of spaces could be greatly enhanced depending on the

18 Frampton, Studies in Tectonic Culture, 226.
Fig. 4.12: Construction Photograph of the Erection of the Window Framing Members at the Fisher House. Courtesy of the Fisher Family.
scale and relationship of each window. Evidenced by the early Fisher house schemes that were typified by the monolithic stone dining volume, Kahn’s fascination with the spirit of medieval castles inspired his aperture studies. Kahn wrote in 1973, “The Scottish Castle. Thick, thick walls. Little openings to the enemy. Splayed inwardly to the occupant. A place to read, a place to sew…Places for the bed, for the stair…Sunlight. Fairy tale.”¹⁹ The medieval inspiration is apparent in the thick walls and thin alcoves of the Esherick house, as well as the splayed masonry of an early iteration for the Fisher house dining cube.

Yet for as many aspects of the designs that can seemingly be attributed to some type of precedence within Kahn’s life, there are a number of enigmatic design decisions that seem uniquely subjective to each project. Using the same principle of the form being shaped by the structure, there is a difference between posts in the Esherick house and the Korman house. Looking at the post along the second story balustrade, rather than a single solid piece of timber as we see in the Fisher and Korman houses, the Esherick post is a composition of different sized and shaped timber boards (Fig. 4.13, 4.14). It would seem more consistent with Kahn’s ideology to relate the composition to the ornamentation, where the locations that receive panels would be a shorter, single piece of wood rather than a pair that are each cut in the desired shape. Nonetheless, the ornamentation of the post mimics the almost keystone-like form that is found in various places within the house (Fig. 4.15). The horizontal framing members discussed in the previous chapter parallel this form, utilizing a combination of varyingly-dimensioned millwork to frame the neighboring windows. Whereas the composite members found within the Fisher

The Esherick House, the Fisher House, and the Korman House

Fig. 4.13: Staircase Post at the Esherick House. Source: Pierson Booher.
Fig. 4.14: Staircase Post at the Korman House. Source: Pierson Booher.
Fig. 4.15: Keystone-Like Element Joining Two Wood Panels Along the Esherick House Stair. Source: Pierson Booher.
house utilize their differing widths to create a seamless joint, the Esherick post’s joinery appears almost arbitrary in its integration within the adjacent paneling.

In a foreword written for a book on his colleague Carlo Scarpa, Kahn tied his admiration for Scarpa to their mutual appreciation of the ‘organic’ form by stating:

“Design consults Nature
   To give presence to the elements.
   A work of art makes manifest the wholeness of ‘Form’,
   The symphony of the selected shapes of the elements.
   In the elements the joint inspires ornament, its celebration.
   The detail is the adoration of nature.”

Similar to Frank Lloyd Wright and even to the ancient Greeks, Kahn believed that the ornament grew out of the architecture and the materials, rather than something applied to it. In much of his late work, including the Fisher house, Kahn used the joint as a delineation or demarcation of a transition between inside and outside. The repetition of vertical cladding is interrupted at these instances, resulting in the ‘wainscoting’ motif and the broad horizontal boards that appear as bookends, containing the windows within their locations (Fig. 4.16). In the Greek sense, the duality between inside and outside, free and contained, acts as a ‘celebration’ or ‘expression’ of this transition. It is unclear as to how much of a hand Kahn played in the overall detailing of his buildings; it is conceivable that Schlosser’s precedent was not only used by Kahn’s office as a catalyst, but developed throughout the period by Schlosser, himself. What is clear is a conscious direction and progression of traditionalism through a rethinking of the past using modern techniques.

Fig. 4.16: Exterior Wainscoting Motif at the Korman House. *Source: Pierson Booher.*
CHAPTER FIVE | A COMPARATIVE ANALYSIS OF THE ARCHITECTURAL WOODWORK DETAIL IN THREE PERIOD INSTITUTIONAL PROJECTS

Concurrent with his residential designs in suburban Philadelphia, Louis Kahn implemented a millwork scheme, similar to his residential works of the period, within specific institutional buildings that exhibited a house-like character. Despite their differences in scale and materials, these display similar detailing that sustain the nature of the residences through their ‘Form’. This ‘Form’, which Kahn refers to as an ‘unmeasurable’ act, contains the characterizing force within a space, an innate ability to instill emotion upon the inhabitant.1 The built form – in this case, the millwork detail – is referred to as ‘Design’, a physical realization of ‘Form’. In regard to the Salk Institute for Biological Studies, the Philips Exeter Academy Library, and the Yale Center for British Art, Kahn continuously instilled a similar ‘Form’ in each while manifesting it in ‘Designs’ responsive to specific programs and sites.

The three institutional works discussed in this chapter represent the bookends of what has been referred to as Kahn’s late period. Coincidentally, in a more literal fashion, Kahn’s final domestic-spirited work – the Yale Center for British Art, completed shortly after Kahn’s death in 1974 by colleague Marshall Meyers2 - stood directly across the street from his first great project, the Yale University Art Gallery (1951-53). Kahn’s work on the following institutional commissions, as well as the Kimbell Art Museum

---
(1966-72) in Fort Worth, Texas and the previously discussed residential works, benefitted from remarkably visionary clients that worked with him throughout the process. The resulting discourse often resulted in Kahn outlining his philosophical beliefs regarding each program; he believed that in order to create a great building, it “must begin with the unmeasurable, must go through the measurable means when it is being designed and in the end must be unmeasurable.” As a result, the conventional perceptions of specific building types were often reformulated by Kahn to reflect the relationship between the built form and the psyche. Though typically the secondary or even tertiary form within his designs, it is the woodwork detail that augments each building’s character-defining element.

THE SALK INSTITUTE FOR BIOLOGICAL STUDIES (1959-65)

The Salk Institute has a mystique about it, as a monument set atop the bluffs of La Jolla, California, surrounded by nothing but underbrush and the ocean below (Fig. 5.1). Despite the surrounding development since the realization of Jonas Salk and Louis Kahn’s vision roughly forty-five years ago, the neighboring buildings hardly encroach upon the character of Kahn’s design. Salk and Kahn were first introduced in December of 1959, a time in which Kahn’s global fame had begun to bring him an incredible amount of commissions. In Salk, Kahn found his “most trusted critic,” a client that not only pushed Kahn intellectually but engaged him in architectural discourse in order to convey his own visions. David Brownlee noted, “Their thinking converged on the challenge

---

of repairing the modern schizophrenia that had divorced human intellect from spirit, and they became friends and collaborators.” Salk sought a facility that supported both scientific research and intellectual discourse, for, “Medical Research does not belong entirely to medicine or the physical sciences. It belongs to Population.” Kahn goes on to write, “[Salk] meant that anyone with a mind in the humanities, in science, or in art could contribute to the mental environment of research leading to discoveries in science.” Ultimately, what Salk impressed upon Kahn was his dream of a place he could bring Pablo Picasso.

Salk’s trust in Kahn was apparent in his lack of directive, allowing Kahn to generate a scheme for Salk to evaluate. Kahn returned with a three-part parti, separating the program into three distinct forms as laboratories, residences, and a meeting house. Kahn’s original sketch of the parti entailed laboratory-spaces arranged in towers, similar to the Richards Medical Building; Salk immediately dismissed this plan, insisting they mirror the open-plans typical for laboratory spaces. Kahn, who had implemented a similar open-plan in his design for the Yale Art Gallery, argued that the scheme was “an old-fashioned modernist cliché,” but relented to Salk nonetheless.

The design of the laboratory spaces ultimately ended up being quite flexible, which is somewhat surprising considering Kahn’s distaste for the Yale Art Gallery curator’s vitiation of his ‘pogo wall’ partition system. As was later the case at the Richards Building, functional alterations by clients infuriated Kahn and led him to study every aspect of the schemes in order to minimize future interventions that undermined

5 Ibid.
8 Brownlee and De Long. Louis I. Kahn, 139.
his vision. The spatial flexibility of the laboratory spaces resembled Kahn’s later design for the moveable partitions at the Kimbell Art Gallery, which had a system of integrated fasteners within the ceilings to regulate the degree to which the curators could modify the spaces. The Salk’s system relied on a well-conceived electrical and HVAC matrix located on interwoven full-height mechanical floors, enabling the facility to continuously adapt the laboratory spaces depending on their necessary functions – an important capability that has extended the service life of the building to meet the ongoing needs and technologies of the trade as they continuously change.

The openness of the laboratories was supplemented by the individual studies designed by Kahn along the central courtyard. Resembling the medical towers at the Richards facility on a more intimate scale, the studies provided a refuge from the cold sterility of the laboratories (Fig. 5.2). At first the researchers had little interest in the studies and professed their desire to remain at their lab stations throughout the day. “But Kahn seduced them and Salk with the image of ‘an architecture of the oak table and the rug,’ separated from the hard, ‘clean architecture’ of the laboratory. This divided organization permitted him to create the functional individuation of space that had become a central theme in his work of the fifties, and the type of environment created by the studies – solitary retreats overlooking the gardens – was very like the monastic setting that had interested Salk and him from the start.”

A fragment of Kahn’s initial scheme, the existing collection of laboratory and study spaces exhibit Kahn’s unique ability to combine two opposing materials in a cohesive manner. As discussed in Chapter Three, Kahn implemented a consistent
Fig. 5.1: View of the Salk Institute for Biological Studies from the Bluffs Along the Pacific Ocean. Source: Pierson Booher.
Fig. 5.2: One of the Individual Study Towers at the Salk Institute. Source: Pierson Booher.
dialogue between the concrete structure and the wood detailing. The attention to detail within the Salk design was incredible, as a large percentage of the final construction documents pertained entirely to the concrete formwork. Kahn even set up a remote office in San Diego, stationing architect John MacAllister on-site to monitor the concrete work and the construction process.¹⁰ In 1966 Kahn professed his affection for thoughtful detailing; as he noted, “A sculptor’s work is that kind of thing. Every imprint of the thumb, you see, must be there. I don’t believe in assembled junk piles, glued together. I believe that everything should have the imprint of the artist, in the structure.”¹¹ David Brownlee later wrote:

“It is perhaps the greatest tribute to Kahn’s comprehensive design sense that concrete and wood, often conceived as materials of opposite character, complemented each other at the Salk Institute. Both were provocatively detailed in a way that moved back and forth between abstraction and structural description; neither was allowed to stand in the background.”¹²

Brownlee is partially correct when he attributes the woodwork detail at the Salk Institute to what he identifies as a unique vocabulary developed for the project; the detailing of the Salk Institute is distinctive in its amalgamation of motifs in both concrete and wood, but the detailing itself appears to predate the Salk at both the Esherick house and Galen Schlosser’s Gypsy Lane residences.

Kahn used two species of wood at the Salk Institute, employing white oak for the interior millwork and teak for the exterior detailing. The teak, while light in tone,

---

¹⁰ MacAllister, who became intimately involved with the project during his time as the on-site architect, was hired in 1992 by the Salk Institute to design a free-standing addition that deferred to Kahn’s structure.
¹² Brownlee and De Long. Louis I. Kahn, 144.
creates a beautiful contrast against the whiteness of the concrete (Fig. 5.3). The roughly one-inch wide teak strips that enclose the individual studies are aligned vertically, and the horizontal joints between rectilinear panels are hidden by projected stripping similar to the watertable elements seen at the Fisher house. Unlike the Fisher, the horizontal teak pieces appear to be face-nailed rather than integrated into the panel joinery – which had been customary for Kahn during the period. Aesthetically, the teak paneling does not resemble any of Kahn’s millwork detail of the period, abandoning the Anglo-American motifs for a design more closely reflecting beachfront architecture. Yet despite the lack of cohesion with later woodwork, the teak detailing is an interpretation of west coast architecture, a region with a different cultural heritage and climate than that of the east. Thus, the exterior use of colonial wood detailing would have fundamentally opposed the aesthetic of regional building types, perhaps leading Kahn to respond to the site through a reinterpretation of the vernacular.

Despite the inherent cultural differences of the region, the interiors of the individual studies, the offices, and the conference rooms are finished with white oak millwork similar to Kahn’s other works of the period. As evidenced in other institutional buildings, the interior detailing is entirely flush, utilizing the joint between individual elements to convey the sense of underlying historicism by differentiating between panel, stile, and rail (Fig. 5.4). Within the office spaces, Kahn integrated the cabinetry into the concrete structure, creating a continuously flush ‘wall’ (Fig. 5.5). Interestingly, the inside faces of each cabinet door have extruded woodwork similar to the duality of the Fisher house doors. The conference rooms utilize a contemporary wall paneling recalling Georgian designs (Fig. 5.6). As mentioned in previous chapters, the panels function in their traditional manner by allowing for shrinkage and expansion yet maintaining their
Three Institutional Projects

Fig. 5.3: Teak Exterior of an Individual Study Unit at the Salk Institute. Source: Pierson Booher.

Fig. 5.4: Detail of the Recessed Joinery Within a Salk Institute Office. Source: Pierson Booher.
Fig. 5.5: Wood Office Cabinetry Integrated Within the Concrete Structural System.  
Source: Pierson Booher.
Fig. 5.6: Wood Paneling Within a Salk Institute Conference Room. *Source: Pierson Booher.*

Fig. 5.7: Detail of the Differentiation Between Typical Wall Paneling and Rotated Paneling Situated Below Windows Within the Salk Institute. *Source: Pierson Booher.*
Fig. 5.8: South Elevation of the Salk Institute, Showing the Use of Horizontally and Vertically-Oriented Concrete Formwork. Source: Pierson Booher.
Throughout the Salk Institute, there is a subtle duality between horizontal and vertical elements. Millwork is predominately vertical in its orientation – both interior panels and exterior teak slats – which can be attributed to its role as an indicator of the space’s function as a ‘served’ or ‘typical’ enclosure. Conversely, the horizontal paneling found mainly under windows as a wainscoting motif can be recognized as a ‘servant’ element; the window’s function as a giver of light serves the interior spaces (Fig. 5.7). These definitions are further strengthened by their similar application to the concrete formwork. The formwork is predominately vertical except for the mechanical floors, which all have horizontal formwork – a strong visual differentiation from the majority of the façade (Fig. 5.8).

Kahn’s use of two wood species resembles the designs for both the Fisher and Korman houses outside of Philadelphia, as both have white oak interiors and cypress exteriors. Much like the teak at the Salk, the cypress of both houses is vertically aligned with horizontal members integrated into the façade construction to hide any joints. But unlike the two residential designs, the Salk does not translate the typical period millwork detail to the exterior, instead relying on the transfer of historical metaphor to the concrete.

When analyzing the woodwork at the Salk, one needs to keep in mind the role it plays within the context of the structure. The predominant function of the Salk is as a laboratory, a space that relies on its austerity. What Kahn sought was a refuge from the hyper-sanitized environment, a place where a scientist could escape from their experiments to eat lunch or write a report. Thus Kahn evoked the typical characteristics of home within the studies, treating the rooms as an antithetical space for scientists to
conduct their work. The use of millwork created a sense of humanity within the rooms while differentiating its function from the glass-enclosed lab spaces along the exterior.

THE PHILIPS EXETER ACADEMY LIBRARY (1966-68)

Kahn’s design for the Philips Exeter Academy Library and Dining Hall (1966-68) reinforced his Beaux Arts education. The roughly cubic form of the library is masked by a load-bearing brick façade, tapered and thinned in section as it rises, while the perimeter arcades and the corner circulation towers recall the monastic cloisters of medieval Europe. The organization of perimeter circulation around a grand central space mirrors Kahn’s scheme for the First Unitarian Church in Rochester, New York (1959-69) and the embellished ambulatory that envelops the sanctuary. Kahn wrapped the stacks around the circulation corridors and the sanctuary-like core, opening up the skin of the building to allow light to pour in from all sides. Thus, the library was reliant on light, for Kahn felt that, “A man with a book goes to the light. A library begins that way.” Kahn was known to be a lover of books, but it was the images that really caught his attention, for he admittedly rarely read more than the first few pages. As he noted in 1972, “A book is tremendously important. Nobody ever paid for the price of a book, they pay only for the printing. But a book is actually an offering and must be regarded as such. If you give honor to the man who writes it, there is something in that which further induces the expressive powers of writing.”

a repository, re-characterizing it; as David Brownlee illustrated, “Functionally a library, it was spiritually a sanctuary.”¹⁵

Kahn did not seek a monumental architecture with the Exeter library, but rather seemed to promote the domesticity of learning and study. He achieved this through a calculated combination of brick, concrete, and wood, each detailed in a manner that maintained their ‘trueness to Form’ while complementing the others (Fig. 5.9). The brick comprised the bulk of the exterior façade, giving the library the appearance of a brick building despite its minimal use inside. Instead, the interior reveals its primary structure to be concrete, professing its structural abilities through its seemingly impossible geometries. In the central atrium space, circular voids are punched out of the concrete, exposing the library stacks as if to signify the purpose of the building. Spanning the atrium space are two massive concrete diagonal trusses members that hover above, as though they are in defiance to their own weight (Fig. 5.10). Both the trusses and the circles enabled light to pour down into the space, providing the student with the light needed to browse through the book they had just plucked from the adjacent stacks. Kahn stated in 1971:

“The room is the beginning of architecture. It is the place of the mind. You in the room with its dimensions, its structure, its light respond to its character, its spiritual aura, recognizing that whatever the human proposes and makes becomes a life. The structure of the room must be evident in the room itself. Structure, I believe, is the giver of light.”¹⁶

¹⁵ Brownlee and De Long. Louis I. Kahn, 206.
Fig. 5.9: Integration of the Period Millwork Detail Within the Brick Partitions. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 263.
Fig. 5.10: View Upwards From the Lobby of the Exeter Library. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 265.
Kahn’s maxim regarding the interplay between structure and light is evident through the parting of the interior concrete and the exterior masonry, where wood is used as the altar on which a book would be placed for observation.

The use of woodwork at the Exeter Library is possibly the clearest definition of its role within Kahn’s architecture. Used as a supplemental element, the majority of the millwork signifies a location in which a book can be examined. As mentioned previously, the tables along the perimeter of the atrium allow readers to examine the books they had located in the dimly-lit stacks. The tables appear more as elongated podiums, as though the student were about to read the contents of their book to the people below. The faces oriented toward the atrium are finished in Anglo-American paneled detailing, flush in its composition and thus reflecting the smoothness of the adjacent concrete (Fig. 5.11).

The carrels of the Exeter Library are similarly expressed on the exterior, utilizing the panel detail and the tonal differentiation of the wood against the entirely brick façade to gesture toward their presence within. The carrels act in conjunction with the atrium tables, serving the students as a more personal space to read and study. As was the case with his residential works of the period, Kahn’s use of woodwork paneling to enclose the carrels gestures toward his wish to create a sense of humanity within such an ascetic environment. The carrels act as a refuge for the students, enabling them to maintain a personal space to study that is spiritually comforting, based on Kahn’s implementation of ‘known’ forms. As discussed in previous chapters, Kahn’s retranslation of traditional motifs provided him with an architecture that responded to the psyche through its sympathy toward comforting forms.

The carrels act as a personal window seat, quite similar to the one found at the
Fig. 5.11: View of the Exeter Library Center Core From the Perimeter Podiums. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 260.
Fisher house. During a 1961 discussion with the editor of Perspecta, Kahn illustrated the role of the window seat by noting, “It adds a friendliness, a hate of comfort and a kind of getting away from someone and being alone even in a room where many are present.”17 This notion of introversion is furthered by the operable shutters Kahn designed into the exterior paneling, giving the student full control over the influx of light (Fig. 5.12). Kahn said, “The windows should be made particular to suit a student who wants to be alone even when he is with others.”18 It is as though the carrels afforded each student with their own ‘home for learning’, a place that was psychologically comforting. Similar to the humanity of the Salk Institute’s individual studies, the increased autonomy of the carrels provided an alternative to the shared character of the typical communal library table.

According to Kahn, the character of an institution is identified by its quality spaces, the spaces that the building – in principle – could not survive without.19 In essence, the carrels and atrium tables are one of, if not the very space a library cannot do without. Kahn treated the stacks as the repository, but the carrels were the moment within the library where the reader would examine the book; more importantly, the point at which the influx of light met the book, itself, the true spirit of a library.

Interestingly, Kahn’s integration of the woodwork and concrete is quite different from the Salk Institute, in that the concrete is much more dynamic in its angular forms

and joinery. Whereas the Salk’s concrete and millwork are entirely orthogonal in their Design, the wood paneling at the Exeter Library is occasionally angled to act in accordance with the geometry of the concrete, blurring the line between traditional and contemporary design. In effect, the active geometries are a forceful statement by Kahn that modern technology can increase the architectural possibilities of historic motifs while retaining the spirit of the aesthetic. Kahn wrote, “Today we talk about technology as though our minds will be surrendered to the machine. Surely the machine is merely a brain which we get as potluck from nature. But a mind capable of realization can inspire a technology, and humiliate the current one.”

THE YALE CENTER FOR BRITISH ART (1969-74)

When Kahn was hired in 1969 to design an art gallery for Paul Mellon’s British collection across the street from his earlier Yale Art Gallery, he was challenged with creating an architecture that blended in with the existing Neo-Gothic campus buildings and the developing urbanism of New Haven. Director Jules Prown envisioned a house-like setting for the private collection, though the desired aura was complicated by the educational mission of the institution and the city of New Haven’s regulation that the ground floor be used for retail. Kahn’s first scheme was rooted in historic precedent, inspired by the “great town houses of the Italian Renaissance, courtyard-centered palaces whose ground floors were rented out to shopkeepers. Kahn acknowledged this allusion by

---

21 Brownlee and De Long, Louis I. Kahn 228.
labeling an early façade study “Palazzo Melloni.” The design was quite powerful, with two long, sweeping arches that bisected the building and opposed the orthogonal norm of Chapel Street. Prown became worried that the architecture was too dominant, threatening to overwhelm the art collection and eventually led Prown to say no. Kahn’s final scheme mirrored the British art of the collection, as Kahn noted, “I think of the Mellon Gallery as an English Hall. When you walk into the hall, you’re introduced to the whole house. You can see how the interior is laid out, how the spaces are used. It’s as though you can walk into the house and meet the whole house and say, ‘Gee whiz, I think you’re great’.”

The power of this English Hall plan stemmed from Kahn’s grand entrance and library courts, and their expansive wood paneling. The horizontal paneling – quite similar to the paneling underneath the windows of the Salk Institute – is integrated flush with the structural concrete matrix that divides the interior and exterior walls (Fig. 5.13, 5.14). Robert McCarter refers to the concrete walls, the cylindrical stair tower and the pyramidal roof domes as giving an “urban character and scale.” He continues, “As a result, we experience the library court as at once intimate and grand, domestic and monumental, room and courtyard, ancient and modern.” In accordance with the horizontal paneling at the Salk, the orientation of the court paneling at the Yale Center for British Art appears to denote its ‘servant’ role as a backdrop to the art. The gallery spaces lack the freedom of the Yale Art Gallery but maintain the definition of the Kimbell Museum, compartmentalized within a clearly-defined concrete structure and served by independent

---

22 Ibid.
Three Institutional Projects

Fig. 5.13: View Upwards from the Yale Center Entrance Court. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 293.
Fig. 5.14: The Wood Wall Paneling and Concrete Matrix of the Yale Center Library Court. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 294.
skylights (Fig. 5.15). Kahn explained, “Of course there are some spaces which should be flexible, but there are also some which should be completely inflexible.”

The research library is composed of wood tables, cabinets, and gallery-like partitions – wood walls with hung white paneling to mute the backdrop of the artwork. On the whole, the millwork within the research library is much in line with period designs, maintaining the traditional construction patterns and controlled offset joinery aimed at creating the much-desired shadow. There are built-in carrels and tables similar to those found at the Exeter Library, yet opened up to minimize the amount of privacy (Fig. 5.16). Whereas the Exeter Library’s interior form sought a collection of private spaces, the Center’s research library was designed to be open in order to promote scholarly discourse. It was important to Kahn that the formal library space reflect the character of the galleries, for Prown remarked, “The British Art Center, despite its considerable amount of gallery and teaching space, was for Kahn first and foremost a library, a place where art objects would be ‘read’ and studied as well as enjoyed.”

The early approach to create a house for the artwork could have proven impossible given the scale of the program. Yet Kahn, as he had shown throughout this career, was able to create a series of intimate spaces characterized by the quality of light and the inherent nature of its materials. The power of Kahn’s architecture lay in his ability to restrain the implied character of each space; though the architecture itself was powerful, he elevated the symbolism of each project to highlight the collection rather than the architecture. Prown noted, “This restrained environment provides an ideal setting

---

27 Prown, The Architecture of the Yale Center for British Art, 17.
Three Institutional Projects

Fig. 5.15: The Upper Gallery of the Yale Center for British Art. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 299.

Fig. 5.16: The Research Library at the Yale Center for British Art. Source: Brownlee, David B., and David G. De Long. Louis I. Kahn: In the Realm of Architecture. Los Angeles: Museum of Contemporary Art, Rizzoli, 1991, 300.
for the exhibition of works of art. Each object becomes a significant event in the calm neutrality of the setting. The impact of individual works of art is especially enhanced on the fourth floor where pellucid daylight admitted through the louvers and diffusing cassettes defines each object with stunning effect.\textsuperscript{28}

The function of the wood wall panels appears strictly tertiary, deferring to both the concrete geometries and the artwork. Compared to the woodwork of the Salk Institute and the Exeter Library, the wall paneling at the Center for British Art is extremely suppressed. Though the panels are Anglo-American in composition, the module is expanded in order to maintain the scale of the large artwork that hang from it. Thus the paneling’s role within the building is as a backdrop aimed at furthering the character of the gallery as a house, an attribute immediately thrust upon the patron as they arrive within the entrance court. Despite the austerity of the concrete, the presence of the wood paneling enables such un-traditional materials and forms to strengthen the architecture rather than muddle the intended aura. Nonetheless, it appears that Kahn continued to develop the form of the detail work despite their inherent historicism. For instance, the paneling of the sales desk within the library court is a progression of the traditional Kahnian wainscoting detail. The lower portion of the desk reflects the larger paneling of the court’s oak walls, but above the desk’s panels are two horizontal boards that have little correlation with historic precedence.

Prown’s January 1969 presentation to Yale President Kingman Brewster detailed his early thoughts on the architectural requirements for such a building. He noted, “In a word, the building must be humanistic, especially in order that the understanding and

\textsuperscript{28} Prown, \textit{The Architecture of the Yale Center for British Art}, 66.
response of the museum visitor to British art be enhanced by his own life experience while viewing it.” It is difficult to argue against the fact that Kahn successfully translated Prown’s vision into a built form, harnessing the spirit of the artwork to create a house for its study. Through the selective introduction of light and the implementation of wood detail that appealed to the psyche, Kahn was able to instill a sense of comfort without overpowering the art.

ENDINGS |

During one of his last public speeches, Kahn noted, “The tall room, the low room, the one with the fireplace, and the one without, become a great event in your mind and you begin to think, not of the requirements but of the nature of the architectural elements that you can employ to make the environment a place where it is good to learn or good to live or good to work.” In many ways, the woodwork detail found throughout Kahn’s period works represent his ‘nature of architectural elements’ and their ‘unmeasurable’ character. The use of woodwork detail discussed throughout this study pertains to buildings in which Kahn consciously employed a sense of humanity within. Regardless of whether the detailing was derived from Schlosser or Kahn, himself, the decision to utilize such forms stemmed from Kahn’s realization that their ‘Design’ should reflect their trueness to ‘Form’.

Three Institutional Projects

This sense of humanity – the ‘Form’ – enabled Kahn to retranslate traditional millwork through the precision of modern technology while maintaining the historical character of their ‘Design’. In the end, what Kahn sought was an architecture linked to history that instilled a spirit that identified with virtually everyone. It was an architecture that the subconscious responded to in a comforting manner, a Form that was warm, inviting and intrinsic to ‘home’. John Lobell wrote:

“Kahn’s concepts of the eternal and of Form are similar to what Carl Jung called the collective unconscious and the archetypes. For Jung, the collective unconscious is a realm of being that transcends the individual unconscious and is made up of archetypes, which are patterns or forms embodying the eternal themes of human experience. The manifestation of these themes varies according to the idiom and the circumstances of a particular culture. Thus, the dying and the resurrecting god is an archetype that achieves expression in Osiris, Dionysius, Christ, etc. Similarly, for Kahn, the school is an eternal Form that achieves expression in a particular school building, which responds to its place and time, but also in an offering to learning.”

The application of the specific millwork detailing differed among projects yet responded to the character sought by Kahn and the client. While the Esherick house embraces a rusticity and rough workman’s quality, the Korman house reflects the precision the family desired.

Nonetheless, Kahn abstained from simply recycling forms and integrating them within his projects. Evidenced by the teak detailing at the Salk Institute, Kahn responded to each site and the culture of the building’s environment, instilling a unique character in each that maintained the humanistic ‘Form’ while adapting the ‘Design’ to suit. As Lobell

later noted, “The architect is directly engaged in the circumstantial in building with materials and in making history. A great architect recognizes the circumstantial changes in a culture and embodies that change in buildings. By this measure, Kahn was a great architect.”\textsuperscript{33} A product of learning under Paul Cret, Kahn’s development of the millwork detail over time reflected his understanding of both the past and the present.

Kahn’s use of traditional forms throughout his late work represents his multifaceted approach to design, as he attempted to appeal to both the psyche and the materials, themselves, in order to maintain their ‘trueness to Form’. Kahn was not merely recycling traditionalism, but rather retranslating ‘known’ forms – in both assembly and aesthetics – in order to convey a certain aura. This was an aspect of Kahn’s architecture that set him apart from others of the period, a time in which architecture lacked a clear direction following the Modern Movement. Kahn’s embrace of historical forms differed from the playfulness seen in the later work of Postmodernists Robert Venturi and Michael Graves, who exploited historic motifs as a rejection against the ‘pure’ tectonic objectivism of Modernism. Despite the usage of similar detail work within residential and institutional buildings, the character of Kahn’s woodwork was always native to the home.

The woodwork detail within the Norman Fisher house mirrors the development of the house design itself, for they both represent a profound moment in Kahn’s career. As mentioned in previous chapters, the juxtaposition of two cubic volumes reflects the offset geometry of the mosque at the Capitol Complex in Dacca, while the millwork detail represents a maturation of his preceding design for the Margaret Esherick house. Though not the first project to be composed of angled geometries, the Fisher house was

\textsuperscript{33}  Lobell, \textit{Between Silence and Light: Spirit in the Architecture of Louis I. Kahn}, 69.
the first built work of Kahn’s to exhibit his late interest in juxtaposed and angled forms.\textsuperscript{34} Similarly, the refinement of the woodwork detail was a strong progression from the complicated compositions of the Esherick house, as Kahn created a single architectural language for the millwork at the Fisher house. Progressing from the seemingly intentional rusticity of the Esherick house, Kahn utilized the precision of modern technology within his retranslation of traditional joinery; as a result, clean architectural lines combined with historical assembly methods to generate a unique typology. The millwork not only performed similar to past assemblies, but its aesthetic conveyed the aforementioned humanism Kahn sought to instill.

As mentioned previously, Kahn’s distinctive style was a product of his exploration and later reinterpretation of Modernism through the utilization of historical sources. David De Long noted, “Kahn’s pursuit of an idealized geometric order, informed by his sense of historic architecture, seemed to draw him toward the differentiation of space, and the modernist ideal of spatial continuity was soon challenged.”\textsuperscript{35} An early example of this differentiation of spaces is seen in Kahn’s plans for the Fruchter house (1951-54), but a clearer realization is evident in plans for his Trenton Bathhouse (1954-59), as well as the unbuilt Francis Adler house (1954-55) and the Weber DeVore house (1954-55).\textsuperscript{36} Yet whereas the Trenton Bathhouse’s Palladian division of ‘served’ and ‘servant’ spaces resonates in his subsequent residential designs, the Fisher house plan’s bi-nuclear nature exhibits a clear volumetric delineation between living and sleeping spaces.

Throughout the iterative design process, Kahn played with the scale and mass

\textsuperscript{34} Brownlee and De Long. \textit{Louis I. Kahn}, 161. Two angled designs that preceded the final form of the Fisher house were the Eleanor Donnelly Erdman Hall dormitory at Bryn Mawr College (1960-65) and an early plan for the Indian Institute of Management (1962-74) in late 1962/early 1963.
\textsuperscript{35} Brownlee and De Long. \textit{Louis I. Kahn}, 61.
of each volume, more often focusing on the living cube in order to illustrate its role as
the center of the household. Beginning with the masonry dining volume and its eventual
progression into an entirely stone living cube, Kahn appeared transfixed by the notion
of visually elevating the importance of these living spaces. Yet in the end, partly as a
result of budgetary limitations, Kahn realized that by placing greater value upon one
specific aspect of the house he in turn diminished the overall value of ‘house’, as a
whole. In essence, while the living spaces may be the center of the modern household,
the household would fail to exist without the inclusion of every ‘essential space’. Kahn
unified the two volumes so neither dominates while the active juxtaposition delineates
the differing functions. The function of each interior space is additionally distinguished
through the influx of natural light, evidenced by Kahn’s distinction between the
bedroom as a “little house within a house” and the living room as a place where people
congregate.37 In order to achieve this, Kahn employed specifically sized apertures to
regulate daylight penetration, creating a conversation between the inhabitant and nature.

Doctor Fisher recalled a conversation between two neighborhood residents in
which one asked the other what he thought of the recently completed house. The man
responded that “he might like it when the packing crates come off.”38 Though tongue-
in-cheek, the comment reflects Kahn’s treatment of the house as a cabinet, in both a

37 Kahn, as quoted in “A House Within a House.” Transcribed and Edited by Melissa Steeley and William
Whitaker
© The Architectural Archives, University of Pennsylvania.
Editor’s Note: This transcript documents a conversation between Louis I. Kahn and Doris Fisher recorded
on the evening of March 8, 1970 at the Fisher’s house in Hatboro, Pennsylvania. The impetus for the
recording was an expected tour of the house by a group studying contemporary architecture. Mrs. Fisher
was interested in showcasing not only their home, but also Kahn’s philosophy of architecture. As such, the
interview touches on a range of subjects including the design of houses, the nature of light, and the mak-
ing of a room. The conversational quality of the recording shows the warm personal relationship that the
Fishers enjoyed with Kahn even after the long design process that resulted in the creation of their home.
38 Fisher, Norman, and Doris Fisher. “Seven Years with Louis I. Kahn.” Kahn Louis I - Houses. By Yutaka
tectonic—exhibited by the extensive woodwork detailing throughout—and an ethereal sense. The Fisher house is quite possibly the clearest example of Kahn’s perspective on family life, for in addition to its distinction between the two major functions of ‘house’, the form illustrates its role as a container for living. While the wood detailing and the influx of light characterize each space in an intended manner, the Fisher house’s purpose as a container for living is the point at which ‘a house’, ‘house’, and ‘home’ come together in one form.
BIBLIOGRAPHY


Fisher Family Collection, Architectural Archives, University of Pennsylvania.


Kahn Collection, Architectural Archives, University of Pennsylvania.


APPENDIX A | 

FISHER HOUSE AS-BUILT DRAWINGS | 

The following drawings were generated during the Summer and Fall of 2008 with the assistance of William Whittaker. A digitized set of the original construction documents from Kahn’s office was drawn in CAD and used as baseline drawings for field measurements. The field measurements were then used to generate the following set of as-built drawings and compared against the Kahn construction documents to assess the difference between the specified design and the built form.

A1.01 | NORTHEAST ELEVATION  
A1.02 | SOUTHEAST ELEVATION  
A1.03 | WEST ELEVATION  
A1.04 | NORTH ELEVATION  
A1.05 | EAST ELEVATION  
A1.06 | SOUTH ELEVATION  
A1.07 | NORTHWEST ELEVATION  
A1.08 | SOUTHWEST ELEVATION

B1.01 | SITE PLAN  
B1.02 | BASEMENT PLAN  
B1.03 | GROUND PLAN  
B1.04 | SECOND PLAN

D1.01 | SEAT DETAIL  
D1.02 | PICTURE WINDOW DETAIL
INDEX | 

SYMBOLS | 
1893 Columbian Exposition 9

A | 
Academy of Fine Arts 2, 3
Adler
House v, 25, 26, 27, 42, 44, 160
American Academy
Rome 13, 25
Anshutz
Thomas P. 2

B | 
Barragan
Luis 82
Beauvais Cathedral 18
Beaux Arts 2, 3, 6, 13, 14, 142
Breuer
Marcel 23, 25
Brewster
Kingman 156

C | 
Campus Marcius 49
Carcassonne 4, 5
Central High School 2
Century of Progress Exhibition 10
Children’s Home 119
Choisy
Auguste 14
CIAM Otterlo Congress 4
City Beautiful 5, 9, 14
City Hall
Philadelphia 5, 164
City Planning Commission
Philadelphia 12
Corbusier vi, 10, 13, 33, 51, 67, 85, 89, 92
Cret 3, 6, 7, 10, 12, 14, 17, 22, 77, 159, 163
Crystal Heights 51

D | 
Dacca
Capitol Complex v, 31, 48, 49, 50, 79, 159
DeVore
House v, 25, 26, 27, 160
Dominican Motherhouse v, 51, 52
Drake 9

E | 
Eakins
Thomas 2, 3, 164
École des Beaux Arts 2, 3, 6
Ehle
House 21, 23
Erdman Hall
Bryn Mawr College v, 36, 49, 50, 160
Esherick house 28, 60, 74, 78, 79, 84, 86, 97, 101,
104, 105, 108, 110, 121, 123, 135, 158, 159,
160
Exeter
Philips Exeter Academy Library vii, 78, 88, 120,
129, 142, 143, 145, 146, 147, 149, 150, 154,
156

F | 
Farnsworth House 64
Fisher house iii, 22, 28, 29, 31, 32, 33, 35, 36, 61,
62, 64, 74, 76, 77, 78, 79, 86, 88, 89, 93, 94,
23, 102, 104, 105, 108, 110, 114, 121, 123,
Fleischer Memorial Art School 2
Florida Southern College v, 51, 53
Folger Library 10
“Form and Design” 82, 83, 121
Fort Wayne Fine Arts Center 49, 51

181
**G**  
- Gaudet  
  - Julien 6  
- GBQC 29  
- Geller  
  - House 23  
- Genel  
  - House 23  
- General Exhibits Building 10  
- Gérôme  
  - Jean-Leon 2, 3  
- Girard Trust 9  
- Glass House 64, 74  
- Graphic Sketch Club 2  
- Graves  
  - Michael 159  
- Gray  
  - William 2, 3, 5, 6, 14, 17, 164  
  - Great Depression 12  
- Gropius  
  - Walter 23  
- Gypsy Lane houses 79. *See also Schlosser*  

**H**  
- Hadrian's Villa 49  
- Howe  
  - George 9, 12, 23  

**I**  
- Inigo Jones 5  
- International Style 9, 77  

**J**  
- Jewish Community Center 25, 119  
- Johnson  
  - Phillip 64, 74  

**K**  
- Kendrick  
  - W. Freeland 7  
- Kimbell  
- Korman  
  - House iii, vi, vii, 78, 79, 88, 104, 105, 114, 115, 120, 123, 125, 128, 141, 158  

**L**  
- la Tourette 89  
- Lee  
  - William H. 10  
- Lescace  
  - William 9  

**M**  
- MacAllister  
  - John 135  
- Mellon  
  - Paul 150, 151  
  - Meyers  
    - Marshall 129  
- Mies  
  - Van der Rohe 64, 74  
- Molitor  
  - John 7, 10, 104  
  - Montgomeryville stone 70  

**N**  
- Nakashima  
  - George 77  
- Noguchi  
  - Isamu 77  

**O**  
- Oser  
  - House v, 23, 24  
- Otterlo 4, 118, 119  

**P**  
- Pascal  
  - Jean-Louis 6  
- Pennsylvania Academy of Fine Arts 2, 3  
- Philadelphia College of Art v, 49, 51, 53  
- Philadelphia Savings Fund Society Building 9  
- Prown  
  - Jules 150, 151, 154, 156, 157, 165  
  - Public Industrial Art School 1, 2  

182
R |
Richards v, 6, 8, 22, 105, 119, 131, 132
Rittenhouse Plaza 9
Rivera
   Vincent vi, 31, 70, 73, 79, 104, 165

S |
Saaremaa, Estonia 1
Saint Andrews Priory 51
Salk
   Institute ii, vii, 31, 60, 78, 79, 81, 89, 91, 94,
   101, 114, 129, 130, 131, 132, 133, 134, 135,
   137, 139, 140, 141, 148, 150, 151, 156, 158
Saltworks at Chaux 49
San Gimignano 5
Scarpa
   Carlo 127
Schlosser
Sesquicentennial
   Exposition v, 7, 8, 9, 10, 104
Shapiro
   House 27, 28, 38, 105
   “Square Shadows” 23
Stewart
   David 85, 89, 119, 165
Stonorov
   Oscar 12
Suntop Homes 25

T |
Tadd
   J. Liberty 2, 3, 4, 5, 14, 165
Thomas
   Walter 2, 3, 12, 164
Trenton Bathhouse v, 14, 15, 25, 27, 28, 42, 44, 160
   “Truth and Tradition” 7
T-Square Club 6, 7
Tyng
   Anne 5, 23, 27, 49

U |
Unitarian Church
   Rochester 36, 105, 142

V |
van Eyck
   Aldo 118, 119
Vanna Venturi house 85
Venturi
   Robert vi, 85, 87, 159
Villa Savoy 10, 13
Viollet-le-Duc
   Eugene-Emmanuel 14

W |
Weiss
   House 21, 23, 32, 86
Wright
   Frank Lloyd v, 25, 51, 53, 102, 127
Wurman
   Richard Saul 76, 165

Y |
Yale Art Gallery v, 14, 16, 18, 19, 131, 150, 151
Yale Center for British Art vii, 78, 88, 114, 120, 129,
   151, 154, 155, 156, 157, 165
Yale University 12, 85, 129, 148, 151, 165

Z |
Zantzinger, Borie and Medary 12