ARCHITECTURE AS SCULPTURED SPACE

Thesis for the Degree of M. A.

MICHIGAN STATE UNIVERSITY
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1967

ABSTRACT

ARCHITECTURE AS SCULPTURED SPACE

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As American architecture has evolved it has at last developed an architecture equal to its beliefs and fundamentals of democracy. Every man, according to the American Declaration, has a right to a life of beauty, privacy and noble spaciousness. As a result of the genius of Frank Lloyd Wright we now have an architecture that is adequate to these convictions.

This new architecture has done away with false styles, fake facades, all impositions on the freedom and honest expression of the individual and his home. This also means the abolishment of the boxes, the small cubicles, the cell-like spaces that have come about with the imitation of possibly once-valid styles and the matching of the inner spaciousness of man with a sense of spaciousness in his home.

It is this sense of space as a living, almost sculpturally organic thing in Wright's work, that this paper will concentrate upon. Wright's realization of a flexible treatment of the inner space of a building is probably his greatest service to architecture. It brought life, movement and freedom into the whole rigid and benumbed body of modern architecture.

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Art

1967

ACKNOWLEDGMENT

My sincere thanks to Dr. Paul V. Love for his encouragement and assistance throughout the course of my studies.

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CHAPTER I

ARCHITECTURE AS SPACE

Architecture through the ages has evolved and been molded and adapted to meet the changing needs of nations in their religious, political and domestic development. It is a lithic history of social conditions, progress and religion, and of events which are landmarks in the history of mankind. The genius of a nation is stamped on its architectural monuments, whether they are Egyptian, Greek, Roman, Medieval or Renaissance. "Architecture is that great living creative spirit which, from generation to generation, from age to age, proceeds, persists, creates, according to the nature of man and his circumstances as they change."[1]

Architecture is a social art and therefore requires three things: first, a building must serve the social needs for which it is built, secondly, the materials and the structure must be firm and suitably durable, and lastly, there is the artistic or aesthetic quality of a building. The understanding and examination of architecture requires

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[1]Frank Lloyd Wright, An American Architecture, (New York: Horizon Press, 1955), p. 18.

the study of how buildings have or have not worked for the society that built them, how they measured as art, how they employed materials and structural principles.

Society determines the purposes of its buildings; it defines the uses of them; it prescribes the materials and techniques that are available. Aside from their quality as formal design, buildings are also documents that divulge what the men in power were like who built them. Since buildings are commissioned primarily by those in power, architecture is more limited in its revoluntionary capacity than painting or poetry. The revoluntionary architect is more likely to be revoluntionary with his forms than with his ideas about a reconstructed society.

This social influence was evident in the skyline of a medieval town which was dominated by a cathedral and most other buildings were lower and less well built; this relationship revealed what medieval society valued. These values are also reflected in the exotic lamaseries of Tibet, in the minarets of a Moslem city, in Britain's Houses of Parliament and in New York's Broadway. These are all signs of the inexorable necessity that every society will cast an architectural image of itself.

Architecture has often served as a catalyst. Before a building appeals to the intellect it will have appealed to the senses. The ears are important--a bell or fountain may affect our impression of space. In some of

these spaces the sounds are clear, in some the silence is supreme and privacy secure, some are dominated by resonance. Touch also accentuates architectural sensation. We increase our sense of space by walking; by touching we learn the texture of materials. A pool or shaded court may produce more than relief from heat humidity; we feel temperature, sun and shadow and the movement of air; these all modify our sensations of space.

More than any of these sensations, the eye must be satisfied. It seeks fine space, appropriate furnishings, appealing changes of level and convincing ways of entering and leaving. Colors and patterns of light are important. The architect must decide what light will do: stimulate movement, or arrest activity.

> Great architecture offers not only external visual satisfactions of mass, form, or detail which can be sensed much as monumental sculpture can be sensed. Almost always it also insists that you must meet a great building in two fundamentally different space situations, one where you are outside it and one where it is outside you.[2]

If you do not give the interior of a building an opportunity for the embrace, you do not really know the building.

Architecture, however, does not just consist of four walls and a roof which create a box-like shelter. It is not only made up of the width, length and height of the structural elements which enclose space, but it the void itself, the enclosed space in which man lives and moves.

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[2]John Burchard and Albert Bush-Brown, The Architecture of America, (Boston and Toronto: Little, Brown and Company, 1961), p. 13.

Although we are still not accustomed to thinking of architecture in terms of interior space, this is the specific property of architecture--the feature distinguishing it from all other forms of art. This consists of a three dimensional vocabulary in which man is a very necessary part. Painting functions only in two dimensions, even if it can suggest three or four. Sculpture works in three dimensions, but man remains apart, looking on from the outside. Architecture then, is like a great hollowed-out sculpture which man enters and apprehends by moving about within it. It deals with a concrete phenomenon which is entirely different than the other dimensions of architecture: here, man moving about within the building, studying it from successive points of views, himself creates, so to speak, the fourth dimension, giving the space an integrated reality.[3]

Internal space, that space which cannot be completely represented in any form but which can be grasped and felt only through direct experience, is the protagonist of architecture. To grasp space, to know how to "see" it, is the key to the understanding of a building. Until we have learned not only to understand space theoretically, but also to apply this understanding as a central factor in the criticism of architecture, our enjoyment of architecture

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[3]Bruno Zevi, Architecture As Space, (New York: Horizon Press, 1957), p. 23.

will remain haphazard. The use of terms such as rhythm, scale, balance and mass will continue to be vague until they are given meaning specific to the reality which defines architecture, and that is space.[4]

The facade and walls of a house, church or palace, no matter how beautiful they may be, are only the container, the box formed by the walls; the content is the internal space. In many cases, container and contained are mutually interdependent, as in a French Gothic cathedral or in the majority of genuinely modern buildings. This is not true of a vast number of buildings, notably those of the Baroque period in which the interior and the exterior are completely unrelated.

Frequently in the history of architecture we find buildings which show a clear discrepancy between container and contained, and then an analysis will reveal that the box formed by the walls has been the object of more thought and labor than the architectural space itself. The space itself--the essence of architecture--transcends the limits of the four dimensions. The phenomenon of space becomes concrete reality only in architecture, therefore constitutes its specific character.

"The most exact definition of architecture that can be given today is that which takes into account interior

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[4] Ibid., p. 28.

space."[5] Architecture is primarily a history of spatial conceptions. It is interior space, the space which surrounds and includes us, which is the basis for our judgement of a building, which also determines the yes or no of esthetic pronouncement on architecture. This creates an environment, the stage on which our lives unfold.

Visual pleasures of architecture depend on two quite different experiences: composition and expression. More important--the experience of composition, or design, results from the arrangement of the elements that make up a building--spaces, masses and planes. This design affords the first and fundamental experience of architecture. Secondary pleasures are the observer's interpretation of the mood and meaning of the building. This is expression. A building involves both design and expression. Architecture has been richest when excellent design and meaningful expression have been joined.

The major impact of architecture is made through its space and mass. The varied combinations of masses mold complicated spaces, modify them, pinch them, make them seem to flow plastically until space itself is the material that seems to have been carved and modeled. This space is the medium of architecture. The masses of a great building are the negative or positive imprints of space,

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[5] Ibid., p. 36.

which billow inside them, pressing St. Peter's dome outward, cascading down the stairs in Michelangelo's Laurentian Library at Florence.

The methods of representing buildings in histories of architecture consist of (1) plans, (2) facades and elevations, (3) photographs. Neither singly nor together can these means ever provide a complete representation of architectural space.

A plan is an abstraction entirely removed from any real experience of a building. Nevertheless, a plan is still the sole means we have of evaluating the architectural organism as a whole. This is still among the basic tools in the representation of architecture.

The walls on a plan separate the exterior or urbanistic space from the interior or properly architectural space. Until the revolutionary work of Frank Lloyd Wright, every building broke the continuity of space, sharply dividing it in such a way that a man on the inside of the box formed by the walls could not see what was on the outside. Then every building limited the freedom of the observer's view of space. The essence of architecture and thus the element which should be underlined in presenting the plan of a building does not lie in the material limitation placed on spatial freedom, but in the way space is organized into meaningful form through this process of limitation.

Representation of a facade of a building can be done only in two dimensions since it is representing a wall surface. This rendering deals mainly with the voids and textures of materials used in a building. This method represents only one aspect of an architectural work and involves just what the eye alone can see in a certain dimension.

Photographs reproduce the two- and three-dimensional elements in architecture but are poor substitutes for the experience of feeling internal space for an individual. No number of photographs can constitute a complete pictorial rendition of a building nor any number of drawings either. Actually, a photograph or drawing records a building statically, as seen from a single viewpoint, and excludes the many points of view experienced by the observer as he moves around and through a building.

Plans, facades, cross-sections, models, photographs and films--these are means of representing space. If the Cubists had been correct in believing that architecture could be defined in terms of dimensions, our means would be sufficient for a fairly complete representation of space. However, architecture has more than just four dimensions. A film can represent one, two or three paths the observer may take through the space of a building, but space in actuality is grasped through an infinite number of paths.

It is one experience to be seated in a comfortable seat at the theatre watching the actors performing; it is quite another to act for oneself on the stage of life. There is a physical and dynamic element in grasping and evoking the fourth dimension through one's own movement through space. Whenever a complete experience of space is to be realized, we must be included and must feel ourselves part and measure of the architectural organism, be it an Early Christian basilica, Brunelleschi's Santo Spirito, a colonnade by Bernini or the storied stones of a medieval street.[6]

We ourselves must experience the sensation of standing among the pilotis of a Le Corbusier house, of following one of the polyforms of Piazza del Quirinale, or of responding to a thousand visual echoes in a Borromini church. The 'moment' of architecture is that moment in which we, with everything in us that is physical and spiritual and, above all, human, enter and experience the spaces we have been studying.

Architectural space has been interpreted in many ways through the centuries. The Greek temple is characterized on one hand by a great lack and on the other by a supremacy which has never been rivaled. The lack consists in the ignoring of internal space; the supremacy, in the

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[6] Ibid., p. 141.

masterly application of human scale. Two of the most noted contemporary architects had opposed judgements of it--Le Corbusier admired its human scale--Wright deplored its negation of space.

While the Greeks ignored internal space, the Romans developed it on a grand scale. Even if they were frequently unable to extend their spatial and volumetric themes plastically, these themes themselves were the product of a grand and daring architectural inspiration. The fundamental characteristic of Roman space is that it was conceived statically. In both circular and rectangular spaces the rule is static symmetry, an absolute autonomy with respect to neighboring spaces.

The Christians then came along and selected from the two preceding styles those elements of which they could make vital use, marrying in their churches the human scale of the Greeks and the consciousness of interior space of the Romans. They turned to the Roman basilica since it represented the social and congregational theme of a building. The Christians' was a quantitative or dimensional revolution consisting of ordering all elements in terms of man's path inside the church.

In a Christian church one is able to grasp the whole of the space, which is disposed longitudinally. As you walk you are accompanied by a rhythm of columns and arches which soar toward the sky giving a vast feeling of height. The

sensation is one that everything has been designed for the itinerary which you are following. You feel that you are an organic part of a space which has been created for you and has been given meaning only by your presence.

The theme of Early Christian basilicas was further exalted and carried to the extreme of its potentialities in the Byzantine period. Byzantine space was not so much expanded space as it was space in the process of expansion.

Space in Baroque architecture became filled with movement and interpenetration. It was the liberation of space. A Gothic line directs the eye along a surface and thus keeps a wall from appearing solid, but in the Baroque the whole wall undulates and bends to create a new spatial conception. Baroque movement is not a space achieved, but a process of achieving space; it represents space, volumetrics and decorative elements in action.

With all these spacial solutions of previous ages and societies in the past, modern space is based on the open plan in which rooms and internal spaces are no longer separated into cubicles; instead they become a continuous space from which the "box" has exploded. Societies no longer set gradiose and monumental themes for architecture, but rather the problem of a home for the individual man, office buildings, civic centers and public buildings of all sorts. These needs plus the new techniques of construction

in steel and reinforced concrete have provided the practical conditions for realizing the theory of the free or open plan.

Modern architecture has attained the spatial dream of the Christian Gothic by making good use of new techniques, by executing its artistic insights with greater precision and audacity. Using vast windows (by now they are entire walls of glass) it has established complete continuity between interior and exterior space.

Internal wall partitions, which no longer serve static bearing functions, may now be thin, curved and freely movable. This creates the possibility of linking interior spaces, of joining together the numerous cubicles of the 19th century, of passing from the static plan of the traditional house to the free, open and elastic plan of modern building.

CHAPTER II

SPACE IN MODERN ARCHITECTURE

Modern architecture with its new concepts of space began to take shape during the 18th century. This coincided with the democratic and industrial revolutions that formed the modern age. Like all architecture of previous times and societies it has attempted to create an environment for human life and to image human thoughts and actions.

Since the middle ages the main concern of architecture had been to manifest the cultural aspirations of a small class of people. Churches and monasteries, great country houses, the seats of the aristocracy, had been style-setters for all types of buildings. Individual houses of ordinary citizens and whole townscapes were subordinated to these representational buildings.

The development of more recent architecture shows a decisive change. Through the French Revolution the privileges of a small ruling class had been in principle eliminated and each individual endowed with equal rights. This social leveling is reflected in architecture since that time. The architects' work is no longer subservient to the power of the ruling classes, but rather to the needs of the general public.

These social changes as well as a new economic structure which served the indeterminate market and the concentration of population in large towns originated new types of architectural tasks. Typical forms which arose on the scene were railway stations, museums, department stores, the exhibition buildings, hospitals, schools, housing developments and community centers.

The tasks imposed on the architects have been altered with the political and social changes. Technical discoveries in materials and methods and industrial advances have created fundamentally new conditions. "The main criteria of architecture, however, has remained the same throughout all the phases of historic development, namely the realization of creative imagination from space and volume, light and shadow, rhythmic tension and balance."[7]

Decisive changes have resulted in the discovery of new materials. The use of iron in the structure of a building, at first in a hidden position and later freely exposed, offered possibilities of construction which opened new fields of exploration in design. Of the new materials iron was the first to find extensive application in trusses over assembly halls and concourses of unprecedented width and bridges of wide spans. Cast into columns, iron permitted a new slenderness of interior supports.

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[7]Udo Kultermann, Architecture of Today, (New York: Universe Books, 1959), p. 8.

Steel succeeded wrought and cast iron in construction. Since it was found that steel would twist and bend in fire with disastrous results, it proved necessary to encase it in fireproof materials such as brick or terra cotta which had already been fired in its making. Terra cotta in white and varied colors, when pressed in molds, also permitted a multiplication of ornament. The steel frame permitted the elimination of load bearing walls and walls of glass resulted in the "curtain wall" construction. The international expositions, beginning with the Crystal Palace designed by Joseph Paxton in London in 1851, had given great stimulus to the use of large areas of glass. The development of plate glass arose to satisfy this.

Latest of the new materials to receive wide use was concrete. A system of reinforcing concrete with iron or steel developed a composite structure that was strong against both compression and tension, with the steel protected against rust and fire.

All of these events and developments helped set the stage for the birth of modern architecture.

The one feature which is undeniably new about modern architecture is the conscious manipulation of space. For an architect to think of himself as using or working in space is purely 20th century. This space in which the modern architect consciously works is unlike the space, conscious or otherwise, of any previous architecture.

For the greater part of history space has existed only inside structures--outside was only nature and the unmeasurable. Nothing demonstrates this better than the dull exteriors and splendid interiors of the Roman baths or the way the Gothic masons drove stone structure to its logical and also unreasonable conclusions in order to create interiors of tremendous height and grace. All the fretwork on the outside was merely scaffolding! Renaissance men reversed the process and could see the outsides of their buildings--as the Greeks did--as isolated works of art. Unlike the Greeks they contrived boxy, perspective-centered spaces around them. These spaces were interiors closed in by the facades that flanked the piazza, spaces furnished by the buildings they contained.

Baroque space admitted of infinity but this infinity was more usually symbolized than admitted: symbolized by the obelisk that focused the vista or by the light falling on the altar at the end of a dark nave.

Space in modern architecture does not flow from the center of a simple square room--there one experiences a still, 'Renaissance' space. It flows around corners, over the edges of balconies, along corridors, up some staircases and around and behind obstacles and free-standing objects of all kinds.

One of the greatest contributions to the development of contemporary architecture was made where nobody

expected it--in the United States. It was in the work of Frank Lloyd Wright.

American architecture was naturally influenced and dependent upon the architecture of Europe. Evidence of this was seen in the heavy cornices and gloomy pseudo-historic styles which hung over American homes and building. They seemed to almost close in or stifle the American dream of spaciousness and freedom.

Near the end of the 19th century American architects began to free themselves from this dependency and began experimenting with their own forms of expression.

Nobody believed America could be creative in architecture and assume a position of leadership. Not until Europe discovered and appreciated the architectural achievements of the new world were Americans themselves willing to accept and appreciate the accomplishments of their own new architects. This discovery came about when Frank Lloyd Wright's work was shown at an exhibition in Berlin in 1912. Two publications followed this. The one dealt with the exhibition material and Wright's drawings; the other with his already executed buildings.

During this time in Europe there had been a return to classicism, symbolized in the German Embassy Building in St. Petersburg by Peter Behrens. Architects appeared to be convinced that classicism was the only solution for the architectural problems of the day. Any attempts to escape

traditionalism seemed futile. Frank Lloyd Wright's work proved how illusory this belief was. It opened new and unexpected possibilities and showed how imagination can find undreamed of solutions and grasp new possibilities for architectural problems.

When the exhibition of Wright's work came to Berlin Mies Van Der Rohe wrote these comments:

> This comprehensive display and the exhaustive publication of his works enabled us to become really acquainted with the achievements of this architect. The encounter was destined to prove of great significance to the European development. The work of this great master presented an architectural world of unexpected force, clarity of language and disconcerting richness of form. Here, finally, was a master-builder drawing upon the veritable fountainhead of architecture; who with true originality lifted his creations into the light. Here again, at long last, genuine organic architecture flowered. . . . The dynamic impulse emanating from his work invigorated a whole generation. His influence was strongly felt even when it was not actually visible.[8]

> The significance of Wright's work lies in its complete break with historical architecture. His innovative spirit and his great artistic ability made this break both possible and permanently successful. Wright laid the foundation for the new architectural development. He was its initiator.[9]

American architecture achieved its first peak in Chicago which had to be rebuilt in the shortest possible time after the great fire of 1871. From the demands of

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[8]Philip C. Johnson, Mies Van Der Rohe, (New York: Simon and Schuster, 1947), p. 196.

[9]Ludwig Hilberseimer, Contemporary Architecture--Its Roots and Trends, (Chicago: Paul Theobald and Company, 1964), p. 95.

this economic necessity came some important consequences. The new form of skyscraper was not only conceived from aesthetic considerations but from a new principle of construction, the structural steel frame. This opened up unlimited possibilities in the height of a building and permitted spatial freedom in the interior through the absence of load bearing walls. Buildings of this era also took on a clean surfaced look and became more functional.

Wright was a pupil and collaborator of the Chicago architect Louis Sullivan (1856-1924), who has been called the first modern architect. He began by taking the results of the Chicago School as a basis. His work partly continued that of some of the Chicago School architects but he achieved a new conception of unity of the outside and the landscape. In this he was greatly influenced by Japanese architecture. This new unity transformed the modern house fundamentally. His greatest achievements were his houses. During his brilliant early style, between 1900 and 1910, Wright's main accomplishment was the design of suburban houses in the Chicago area which are now known as Prairie houses, for reasons which are quite apparent: for all have the dominant, earth-hugging horizontal plans which, in Illinois, means the plane of the prairie. Horizontality was Wright's response not only to the earth and to the things that grew out of it, but also to the great spaces of America.

The Prairie houses were all space and motion, all dynamism, all American. For this was the chief characteristic of the new world: space, freedom to move about, an ever expanding frontier. He no longer built "boxes" containing so much usable cubage; he built spaces sheltered under great, sweeping, intersecting, low-slung roof planes--spaces that were open to one another within, and open to the prairie landscape without. Each great horizontal plane would extend from the center of the house out, beyond the line of windows, into deeply cantilevered overhangs that lead the eye toward some distant horizon, some expanding frontier.

This early style has also been referred to as being Cubistic because of its clean-cut rectangular elements. The most accomplished example of this is the Robie House of 1909 in Chicago. It is comprised of horizontal, overlapping "space blocks" grouped around a central core, the chimney. Some of these blocks are closed and others open, creating architecturally shaped space which includes terraces, gardens, and balconies as well as the house itself. Wright did not simply design just a house but created a complete environment.

"These houses were the first dramatization, in three dimensions, of what Whitman meant when he said: 'I inhale great draughts of space, the east and west are mine, and the north and south are mine . . . . The earth expanding

right hand and left hand . . . . O highway . . . . You express me better than I can express myself . . . .'"[10] Everything somehow evolved out of this central theme: if the road was to be open, then the space within had to be open, and the outside walls had to be open too.

Wright's houses were developed in harmony with their particular purposes and their special locations. He no longer relied on the usual architectural means but found for himself means adequate to his conceptions. He was the first to aim towards an autonomous architecture and showed once more the importance of proportions. A line was no longer drawn between the exterior and the interior house. Architecturally and in the materials used, both the inside and outside became parts of the whole.

The interiors (except in areas where privacy was required) consisted of interlocking spaces separated not by doors, but by carefully developed angles of vision. As one moves through these interior spaces, they unfold in dramatic and ever-changing vistas: everywhere there is an element of surprise; a sudden, unexpected source of light around a corner, a glimpse of the landscape, a low ceiling after a high ceiling, a succession of experiences so varied and yet so continuously related that the interior becomes a symphony of space and light. Even his plans were a

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[10]Peter Blake, The Master Builders, (New York: Alfred A. Knopf, 1960), p. 294.

revelation; their open expansion expressed a fascinating new space concept. It created a new feeling for space destined to be of great importance in later development of architecture.

This spatial feeling was achieved by reducing the supporting elements of the house. Unlike the traditional house with its boxy, self-contained spaces and load bearing walls, Wright's house has no attic and no basement. It is placed on a platform. The room is carried by isolated supports--piers--which make up a kind of semi-skeleton. In this manner he gained large uninterrupted spaces and vast openings wherever he wanted them. These openings he called light screens, which take the place of walls and are very often of considerable size, with the windows arranged in series. These bring the outside into the house and let the inside extend to the outside.

Closed interior corners were abolished and were dissolved in glass, or resolved by free-standing walls at right angles to one another which never actually meet, but seem to slide past each other in space. The entire interior of the house, except the kitchen and bedrooms became one continuous space. The space could be subdivided for domestic use by using screens or large fireplaces. This division does not impair the spatial unity but accentuates its continuity. The various spaces contrast with each other in size and also in height occasionally, for Wright gave the

space parts height which best harmonized with their size. Lower parts are related to higher ones and the house acquires a sculptural character. The open plan enhances this effect since it makes possible free development of the exterior.

This internal space, that space which cannot be completely represented in any form, which can be grasped and felt only through direct experience, is one of the strongest and most characteristic features of Wright's buildings. To grasp this space, to know how to "see" it, is the key to the understanding of his works.

If "space" is thought of as a sort of invisible, but ever present vapor that fills the entire architectural volume, then Wright's notion of space-in-motion becomes more clearly understandable. His contained space is allowed to move about, from room to room, from indoors to outdoors, rather than to remain stagnant, boxed up in a series of interior cubicles. To Wright, the potential greatness of architecture was the quality of the space within and without.

Since man is part of nature, Wright believed in building houses that restore man to life-giving, life-enhancing elements of nature. This means an architecture that begins with the nature of the site, and since the New World produced new machines and new materials he used them for new form and new space concepts. He used steel to

span larger living spaces, and to create continuity and plasticity in his structures. Glass he used to explode the architectural box, to liberate vision and extend and remove corners from rooms as previously mentioned. He understood the nature of all materials and treated them as themselves. He let brick be brick, wood, wood and stone, stone. "We shall be creating an architecture and a culture with integrity, wholeness, and beauty, for, as we admire a house that suits its site, so shall we instinctively recognize as beautiful the fitness of a material to its purpose."[11]

Wright discovered the vital difference between sculpture and architecture, between volumes on the landscape and architectural space. The reality of a house was not in the exterior forms, as it is in sculpture, but in the space within, in the space inclosed, within which man walks and lives. It is this space which is architecture. Out of this concept Wright created the enormous variety of his achievements and in all its variety, it is his particular sense of living space that gives unity.

Without yielding to previous styles (except for some influence from Japanese and Mayan architecture) Wright developed a style of his own that could be applied to various types of buildings. In the early years of his career he also

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[11]House Beautiful, "Frank Lloyd Wright: His Contribution to the Beauty of American Life," November, 1955, p. 247.

designed buildings other than houses. In the Administration Building for the Larkin Soap Factory in Buffalo, New York, built in 1904, he created a commercial building utterly different in spirit and plan from any previous structure. Entirely different in form and function were his designs for the Midway Gardens, a huge recreation center in Chicago, and for the Imperial Hotel, Tokyo, Japan. The Imperial Hotel was a triumph of modern construction methods, as it was supported by great expanding piles of reinforced concrete resting on the soft mud which lies below the city. These were designed to give the building a flexible or elastic foundation. This was proven successful when the hotel survived the earthquake of 1923 and practically all other buildings in the city were destroyed.

In the early Prairie Houses the pronounced character of Wright's designs in already evident, and each of his subsequent buildings adds a new variant to this extremely subjective form of expression. Although he did little actual building in the years after the First World War, what he did do reveals the same creative imagination that was characteristic of the earlier work.

The Millard House in Pasadena, California, built in 1921, is a design vastly different from his earlier houses, since it meets other requirements for climate and environment. Still there is the same effective relationship between house and site and the same forthright treatment

of structural materials, concrete in this case. It is used in precast blocks with surface patterns created by the molds. This resulted in an ornamental effect which created a fine sense of texture.

The caliber of Wright's imagination and creative genius is clearly evident in the great variety of types of buildings he designed from 1934 on. Houses and apartments, factories, offices, churches and schools were all designed with a great understanding of their nature and purpose. His most important works such as the Robie House, "Falling Water," the Administration Building of the Johnson Wax Company, Taliesin West, as well as later structures based on circular or spiral forms, such as the Morris Store in San Francisco or the Guggenheim Museum in New York, show the unlimited scope and imagination of his creative design and handling of space.

One of Wright's best examples of flexible functioning of continuous space is in the "Falling Water" house at Bear Run, Pennsylvania, built in 1936. Situated in a mountain glen and cantilevered out over a waterfall of a mountain stream, it is difficult to tell where nature stops and the building begins. Here is a building that takes its form horizontally into space. There is a tranquil relationship of the sheltered rooms with the stream below, of balconies reaching into the surrounding woods. It is

almost impossible to imagine that the house and the peaceful glade were not always together.

Although the house is deceptively simple in appearance, like an organic structure, it is extremely complex in its integration of one part to another--all elements being conceived as working together in a three-dimensional sense. This is a fascinating expression of organic architecture where native stone and pale, apricot-hued concrete at once shelter from and expose occupants to nature. The great chimney was built upon a huge, natural boulder which became the living room hearth, giving the house the quality of having grown up around it. Floors throughout are bare flagging, waxed for cleanliness and insulated for comfort. Interior walls are also of stone from the surrounding countryside.

The main bay of the living room is extended directly above the stream. Here the interior space reaches out through walls which are curtains of glass of which even the corners have been dissolved, and also from balconies which extend the room or space out into the natural surroundings. The living room is connected to the waterfall below by means of a suspended stairway enclosed with glass much like a ship's hatch. Even the sound of the stream below is carried up into the house, thus making this spatial unity more complete.

Everywhere, nature seems to reach into the house and the interior seems to reach out to nature and pull it in, in an interplay of spatial relationships. The entire house appears to live and breathe as the living forms which surround it.

Wright was an innovator of spatial design the like of which has never been known in the history of Western civilization. His numerous structural innovations and his new methods of enclosing space were so fresh and different that men of little ability could not be expected to grasp the totality of what he pioneered.

The starting point in all his designing was to create a pleasing interior atmosphere out of structural systems and chosen materials but he did not neglect the exterior. Again and again he proved that by developing a delightful interior space with its mood, scale, sources of light and textures. Thus its structural enclosure became likewise a pleasing and interesting exterior. The elements appeared to evolve naturally out of the chosen structural system. This kind of designing Wright termed as "organic," meaning to grow out of the nature of the thing. "Natural architecture" is one that is integral to the nature of the materials and their assemblage, to the site and environment, to the climate, and to the life of the inhabitants.

To those fortunate enough to have known the experience of living, working or worshiping in a building designed by Frank Lloyd Wright, their lives have gained an added measure of depth and significance. He provided them with an environment that heightened the quality of their lives, qualities though intangible yet strongly felt. His buildings contain a vital sense of serenity and repose, a strong sense of integrity and a vigorous sense of the freedom and individual dignity of man. These qualities are communicated to those who occupy his buildings in much the same way great music or poetry speak to the heart and soul of man.

Wright left a legacy, the magnitude of which is still unknown and its limits still unexplored. In his work his aspiration toward spatial continuity had an expansive vitality which created a whole new concept of architecture in America, that of flexible, organic space.

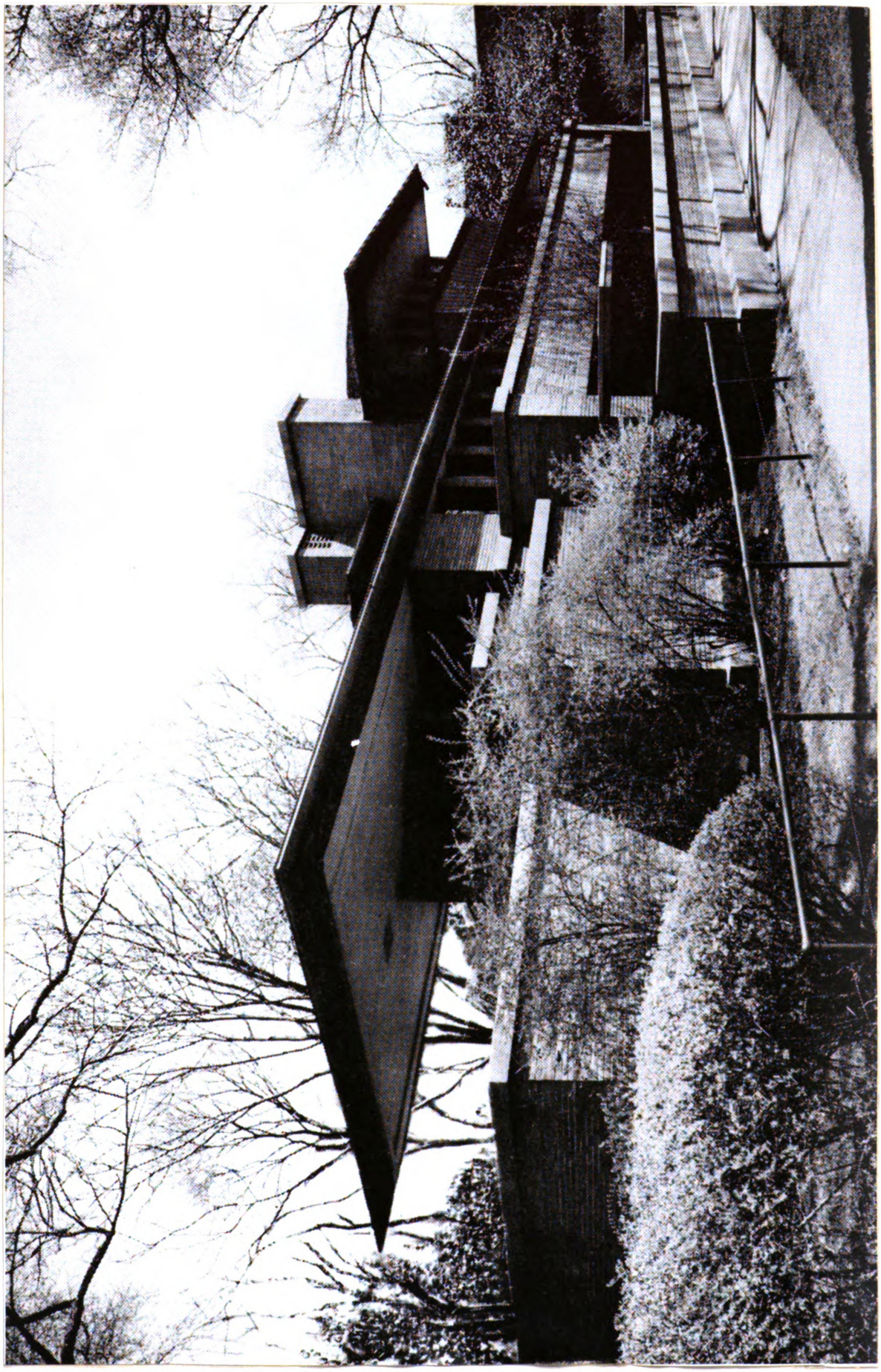

Plate I

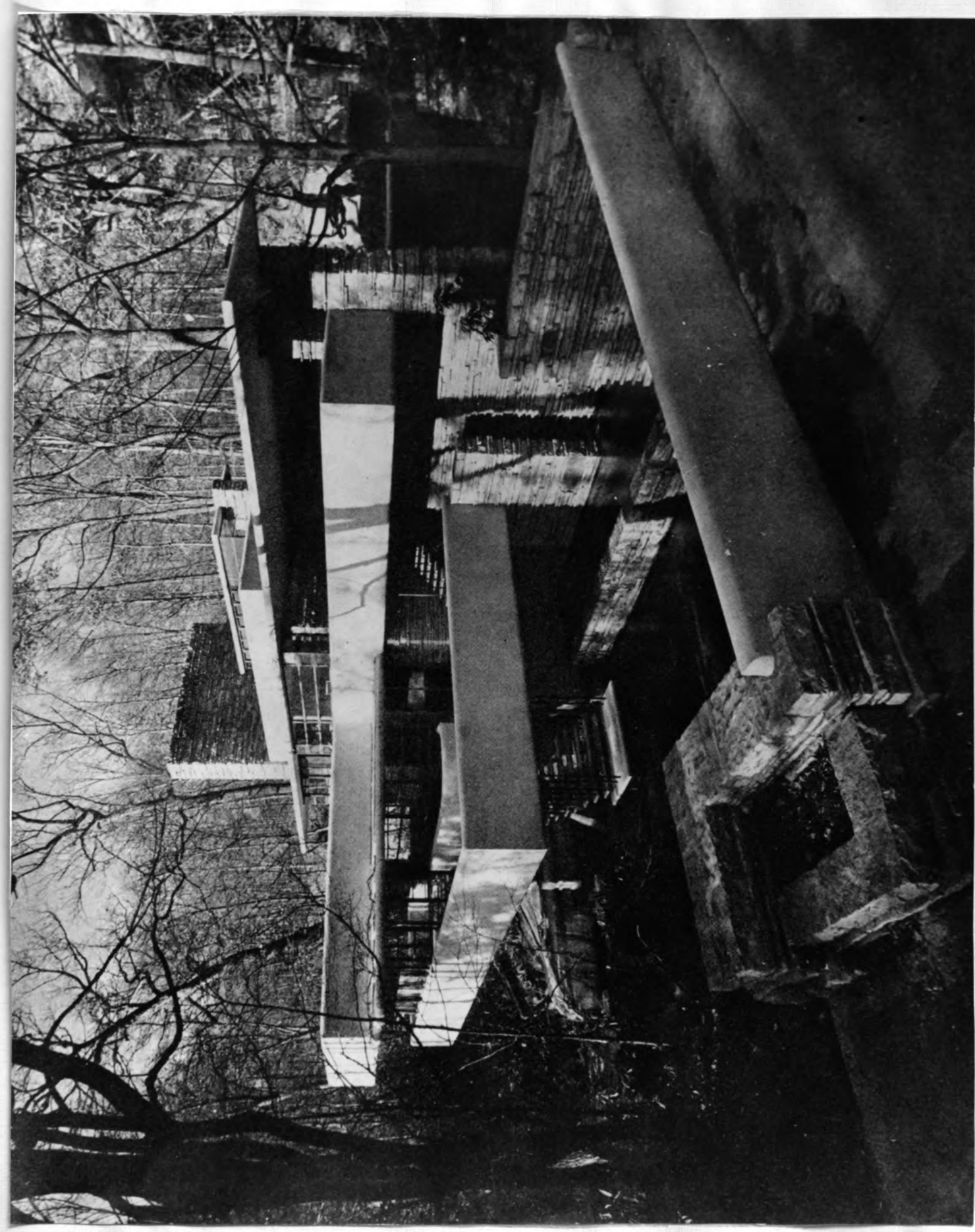

Plate II

Plate III

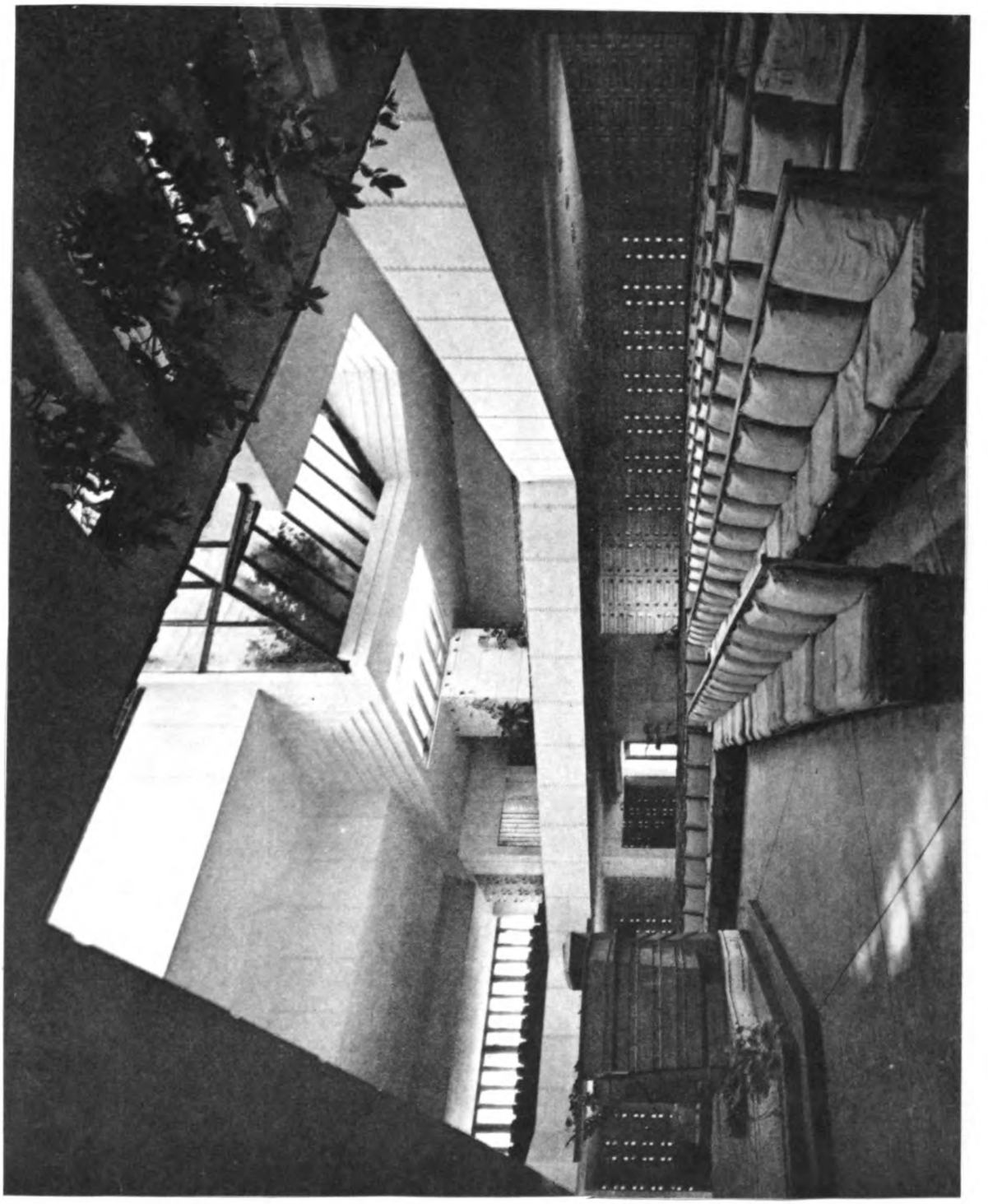

Plate IV

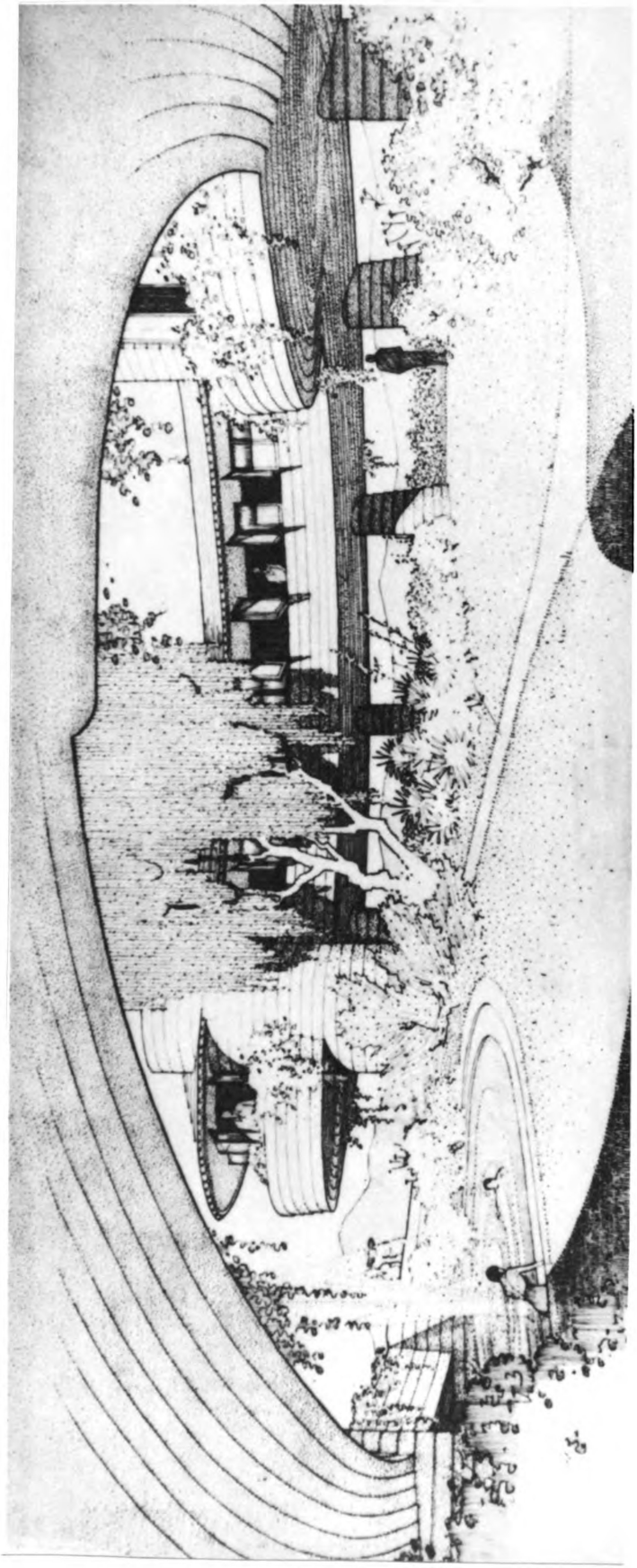

Plate V

Plate VII

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