THEORY AND PRACTICE IN ARCHITECTURE,

A STUDY OF FRANK LLOYD WRIGHT

by

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Theory and Practice in Architecture A Study of Frank Lloyd Wright

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ABSTRACT

An architect has a view of the world, preferred images and sources in mind, and must deal with designing buildings for real clients. The architect tries to transform abstract ideas about the world into principles that will guide his or her actions in practice. This study tries to clarfy this difficult problem that architects face. Frank Lloyd Wright is the subject of this study and there are three main areas of his theory and practice that will be investigated. First, how did he describe his own theory and how did he translate that into his own work? Second, what were his sources for design, and how did he select and modify them for use? Third, how did he work with clients, assistants and craftsmen in order to build his ideas? Six houses were chosen as cases to represent three stages in Wright's career; the Winslow house, the Robie house, the Hollyhock house, La Miniatura, the Pope house and the second Jacobs house.

Wright described his theory by making statements of his general principles and specific statements describing how the different elements of the house should relate to his general theory. The inclusiveness of his theory helped him to resolve complex conflicts between the various disciplines involved in building. Wright was very explicit about his theory and wrote much which helped to attract sympathetic clients and assistants. He was confident in stating his theory but skeptical enough to respond to clients suggestions and changing circumstances in his practice. The value of Wright's theory lies primarily in its influence on other architects and consumers of single family houses. Wright used other buildings as sources (or models) for his designs freely but consistently. Later in his career he relied completely on his own houses as his sources. Wright's collaboration with clients, assistants and craftsmen increased later in his career with the creation of the Taliesin Fellowship and the Usonian houses.

Thesis Supervisor: Edward Robbins
Title: Assistant Professor of Anthropology in Architecture

Thanks to my advisor Ed Robbins and my readers Julian Beinart and Donald Schön. Thanks also to Tyrel Holston and all my friends who helped with this thesis.

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Chapter 1

Introduction

WHY STUDY THEORY AND PRACTICE?

An architect has a view of the world, preferred images and sources in mind, and must deal with designing buildings for real clients. The architect must try to transform these absract ideas about the world world into principles that will guide his or her actions in practice. This study will try to clarify this difficult problem architects face. Often, theories of architecture are only about forms or process or values and almost never inclusive of all three. There is a split in the profession between theorists and practitioners. Historians or critics without any practice in architecture elaborate their own ideas without implementing them. Practicing architects often won't discuss their own theory and say that their building "speaks for itself." A more inclusive and complex view of architecture is necessary to knit all of these issues back together. Robert Gutman discusses the current dilemma architects face by saying,

> At the same time the profession itself has lost its conviction that principles of form and style could be derived by synthesizing the aesthetic element in professional work with the functional requirements of buildings. Architects themselves now don't know what general ideas should regulate their approach to their task. 1

Architects also face the problem of making their practices effective at meeting the goals they set and responsive to changes in the circumstances that they encounter. In their book, Theory in Practice: Increasing Professional Effectiveness, Chris Argyris and Donald Schön describe the most fundamental problem in making a theory effective in practice while keeping it open to change. They wrote that;

> In a situation of action (particularly in a stressful situation), we are required to display a stance of action - that is, confidence, commitment, dicisiveness. But in order to test a theory, one must be tentative, experimental, skeptical. How can we, in the same situations, manifest the stance of action and the experimental stance?[2]

Theories can turn into self-fulfilling prophecies if they are not open to change. In that situation the theory is modified to explain or justify what has happened in practice rather than being used to shape the practice itself. As the architect develops and sets out his or her theoretical ideas, it can become increasingly difficult to confront the inconsistancies in the theory, and others may be less willing to criticize the theory.

Architects are sometimes happy to point out what sources influenced their designs while at other times

they would deny that they have been influenced by anything. Today sources are often used as a sort of pedigree to show that the new design is more valuable because it is based on highly regarded sources. A recent article in the New York Times entitled, "Architectural Imitation: It Is Plagiarism?" discussed the issue of sources for design. The article pointed out that recent legal cases have shown that architects can copyright their drawings, but not their ideas. Several architects, including Robert Venturi and Robert Stern, described their attitudes on the subject. Venturi said that,

> There is nothing wrong with being influenced, or even with copying. Imitating is how children learn. You have to acknowledge sources.....There is a tendency of people to be generous in acknowledging insignificant influences. 3

Though much is discussed today about the use of sources as inspiration for design, the issue is not much clearer from all of the discussion. The use of sources is more complicated than most architects acknowledge, and sources are used in many different way depending on the circumstances.

There is often a contradiction in the way that an architect's work is presented and the way that it actually gets done. The architect is usually portrayed as the individual artist struggling with the design, while in

reality it is the collaborative work of many people. The architect is given credit, or blame, alone for the building, though many people actually participated in the decisions for the design. Besides being expected to take credit for their designs as artists do, architects are usually untrained at managing their assistants, and negotiating with clients and builders. There is much information about this in the business management field that architects rarely take notice of. Phillip Selznick, in Leadership In Administration: A Sociological Interpretation, describes some of the traits of good management:

> There is a strong tendency in administrative life to divorce means and ends by overemphasis on one or the other. The cult of efficiency in administrative practice is a modern way of overstressing means in two ways....by fixing attention on maintaining the smooth-running machine or by stressing the techniques of organization..... Efficiency as an operating ideal presumes goals are settled and resources available. In many situations, including most of the important ones, goals may not have been defined (or) when they and defined, the means necessary may still have to be created. Creation of means is not a narrow technical matter, it involves molding the social character of the institution. Leadership goes beyond efficiency (1) when it sets basic mission and (2) when it creates a social organization capable of fulfilling that mission.4

The way that the architect organizes his collaboration with others has profound implications on the buildings that result, or as the management writer Douglas Mc Gregor said, "the theorical assumptions management holds about controlling its human resources determine the whole

character of the enterprise"[5]

This leads to many questions about theory and practice in architecture. How is theory related to practice and how do they effect each other over long periods of time? How does the architect's theory define the problems he chooses to solve and in what ways does the theory set the limits for practice? Specifically, what sources does the architect draw upon and how does the architect relate to the client? Also, how does the architect organize those who collabroate with him or her to produce the design and to construct the building. Studying these questions will help to understand how theory is related to practice.

FRANK LLOYD WRIGHT

Frank Lloyd Wright was chosen as the subject of this study because he is generally acknowledged to be an important architect who has had a widespread influence. To understand Wright we need to have a picture of his theory and practice, rather than just the individual pieces that are usually written. There are three main areas that this thesis will try to cover in order to accomplish this. First, how did he describe his own theory and how did he translate that into his own work. Second, what were his own sources for design, and how did he select and modify them for use. Third, how did he work with clients, assistants and craftsmen in order to build his ideas.

Wright had a very long career with a large number of buildings built all over the United States. This study will not be a biography of Wright, but it will examine how he used his theory throughout his life. He did a lot of writing about his ideas and his buildings and much has been written about him. In these respects, Wright is not a typical architect, but his attitudes about architecture have spread throughout the profession and the general public. Many myths and stories have been told about him that tend to cloud the picture of what he actually did.

Frank Lloyd Wright

Frank Lloyd Wright

To examine how theory and practice are related in Wright's work, six houses were chosen as cases to be studied. The six houses were done at different stages in Wright's career for different clients and in different places so they give a broader view of his work. In this way it will be possible to see the results of Wright's growth and the response to criticism and personal reflection in his work. It will also be possible to see how his theory responded to different times and places. The six houses are: the Winslow house of 1893, the Robie house of 1908, the Hollyhock house of 1920, La Miniatura of 1923, the Pope house of 1940 and the second Jacobs house of 1948.

These six houses are divided into three pairs that serve to illustrate different aspects of Wright's theory and practice. The first pair consists of the Winslow and Robie houses completed in Chicago during the early part of Wright's career. The Winslow house was designed just as Wright was developing ideas for a prairie house and the Robie house is probably the house that most completely develops these ideas. The second pair consists of the Hollyhock house and La Miniatura, both built in Los Angeles in the early 1920's. The Hollyhock house was Wright's first project in this new place and La Miniatura was the second project where he developed a

new system of construction in response to the place. The third pair consists of the Pope house and the second Jacobs house both completed in the 1940's in different parts of the country. They are two different versions of what Wright called the Usonian House. These were houses to be built simply and on a very low budget.

Wright designed over 600 buildings during his long career so these six houses can't explain all aspects of his career. These houses examined in detail will give a picture of how Wright developed his theories and put them into practice over the course of his career. There is much material available about these six houses including descriptions of their clients. In the case of the Jacobs house, the clients even wrote a book describing the experience of having a house designed for them by Frank Lloyd Wright. Wright also wrote about these houses himself, describing his intentions in the designs.

DEFINING THEORY AND PRACTICE

A theory is a speculation put forward that describes the general principles that guide an architect's actions. Theories are used by architects to control their own actions, while critics and others use them to understand and explain the actions of architects. Practice is the performance or execution of actions by the architect. Practice is guided by theory as well as the circumstances involved in the problem at hand.

METHOD OF ANALYSIS

This study is divided into three sections; the Prairie House, the Desert House and the Usonian House. Each of these sections examines a particular stage in Wright's career, first by looking at two houses identified with that stage and then by looking at three aspects of Wright's theory and practice. These three aspects are: theory, models and collaboration. Theory, as defined for this study, is the explicit statements an architect makes describing the general principles that guide his or her actions. Besides looking at the part of an architects theory that is explicitly stated, it is also necessary to look at the implicit theory. Though the implicit theory is not clearly stated, it can be observed by studying the practice of an architect. This is more speculative than describing explicit theory, but it is useful because important parts of the theory may be

unstated. Two aspects of Wright's practice will be studied, his use of models as sources for design and his collaboration with other people involved in the design and building process. This will give a more complete picture of Wright's ideas. Theory, models and collaboration are all interrelated in a way that makes them difficult to separate. Over a period of time they influence each other and change to meet different circumstances that the architect faces.

To understand and evaluate the theory of an architect there are several issues that must be dealt with. The first is to look at how the architect defines the problems to be approached and how explicitly it is described. A theory will probably be hierarchical with parts on different levels, including general statements about the architect's view of architecture and more specific goals that are oriented towards the circumstances that the architects expects to encounter. Explicitness is the first of four issues studied to evaluate the theory. Another issue is that of the inclusiveness of a theory. What aspects does it cover, forms or process or values? Does it reach across all the disciplines invloved in architecture? The issue of value is important too, because the assumptions that the architect bases his theory on may not be of value to

his or her clients or the society the architect lives in. Is it possible for the theory to meet its goals? Finally what is the theory's relationship with practice and are they congruent? Is the theory responsive to changes in circumstances encountered in practice?

Models are indispensable sources for the design process which is under pressure to be completed in a limited time period. Models (or precedents) are previously designed buildings or projects that serve as an example for a sub-sequently designed building or project and not 3-dimensional representations of buildings, for this study. Models give the architect and others a physical idea about how the building should be made. The theories should tell the architect which models to select and how to modify them to solve the problem at hand. New models can be developed, but since it takes time to test and improve them architects will usually use those that they or other architects have already developed.

There are several criteria that will be examined in order to study how Wright used models. First, what kinds of models he used and when will be examined. Then the way that Wright used the models will be studied. Did he use only the forms or did he try to extract principles form them to apply to the design? Next why were the

models used, for convenience and continuity or to identify the building with a particular place? Finally, how does the use of models change with time and place? All of these are important aspects of the use of models.

The way that an architect organizes the collaborative process of design and construction is linked to his or her view of the world by the theory. It is necessary to enlist the contribution of others both to get things built as well as to enhance and elaborate a design. The client, the architect's assistants or consultants, and the builders or craftsmen are all collaborating with the architect to build an idea. Understanding how this process works is an important part of examining his or her theory.

Studying how these three groups, clients, assistants, and builders or craftsmen, worked with Wright will show how he was able to control the process and how the three groups influenced the design and construction of the houses. There is less information available about these three groups, but understanding their role will be an important contribution to understanding Wright's work.

In the end, it will be possible to see how theory, models and collaboration relate to each other. Do these three have a strong relationship and how can they

effect each other? Is the relationship between theory and practice congruent? The relationship between theory and practice demonstrates how the architect's view of the world is brought into use in designs that become physical representations of the architects ideas.

Chapter 2

The Prairie House

Houses, senseless. Most looked equally comfortless. No more so in Oak Park than anywhere else; rather better, because here in Oak Park there were more trees and vines and wider lots to cloak their ugliness. Those who lived in this ambitious Eastlake mimicry - called Queen Anne - were blissfully unaware of any serious losses or self-inflicted insults. And yet the monotonous iteration of this suburban-house parade like the sign-parade on Chicago streets compelled my attention willing or not.1

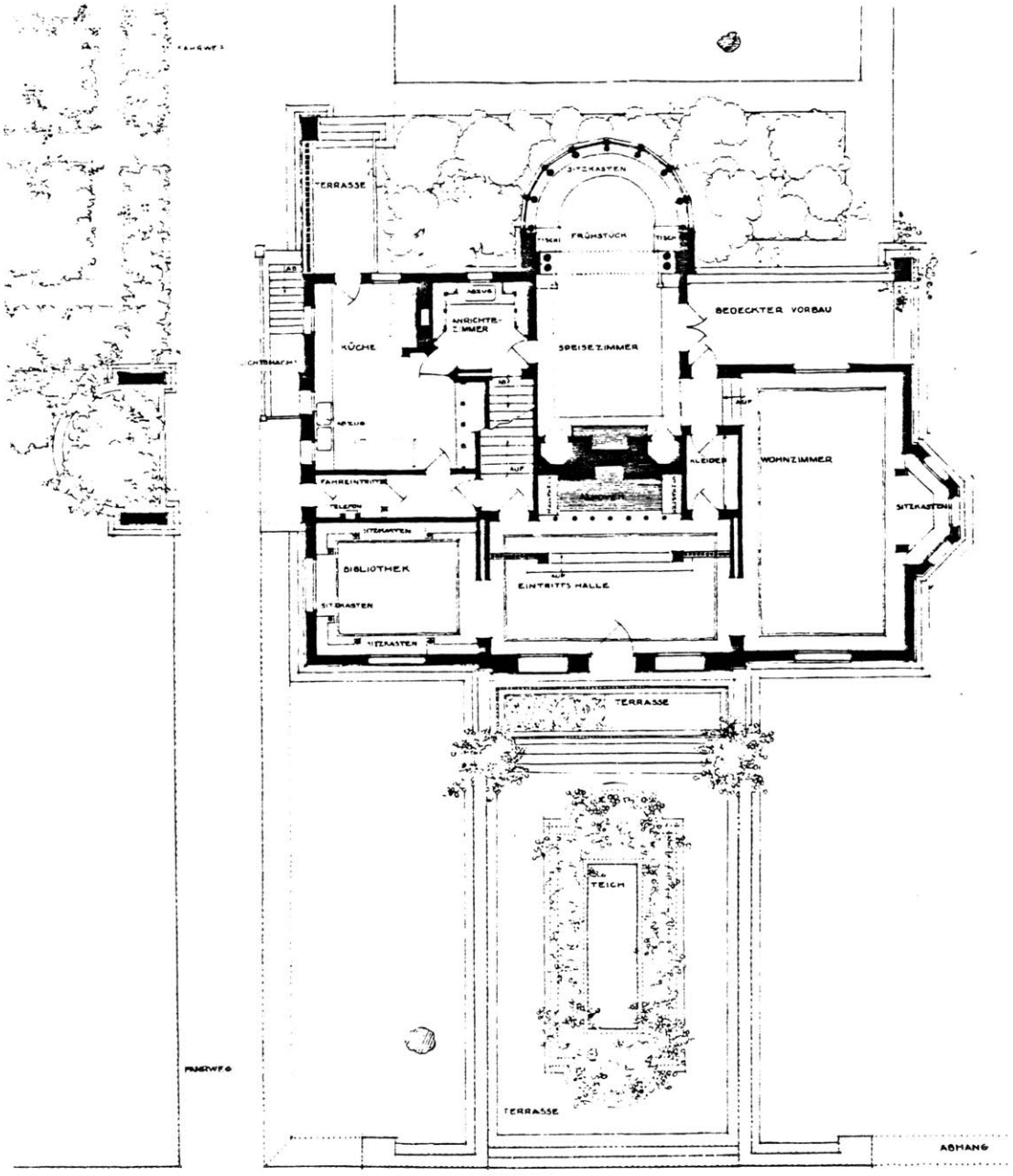
Frank Lloyd Wright

Frank Lloyd Wright was disappointed with the way that most architects at the turn of the century were expressing the modern society in their buildings. When he began his practice, he searched to find a means of representing modernism in his work. He also tried to find a form of expression that was more appropriate for the prairies of the Midwest than the eclectic versions of European architecture that were usually built. The Winslow house and the Robie house represent the beginning and the end of this search, and they show the changes that took place ~~in~~ Wright's development early in his career.

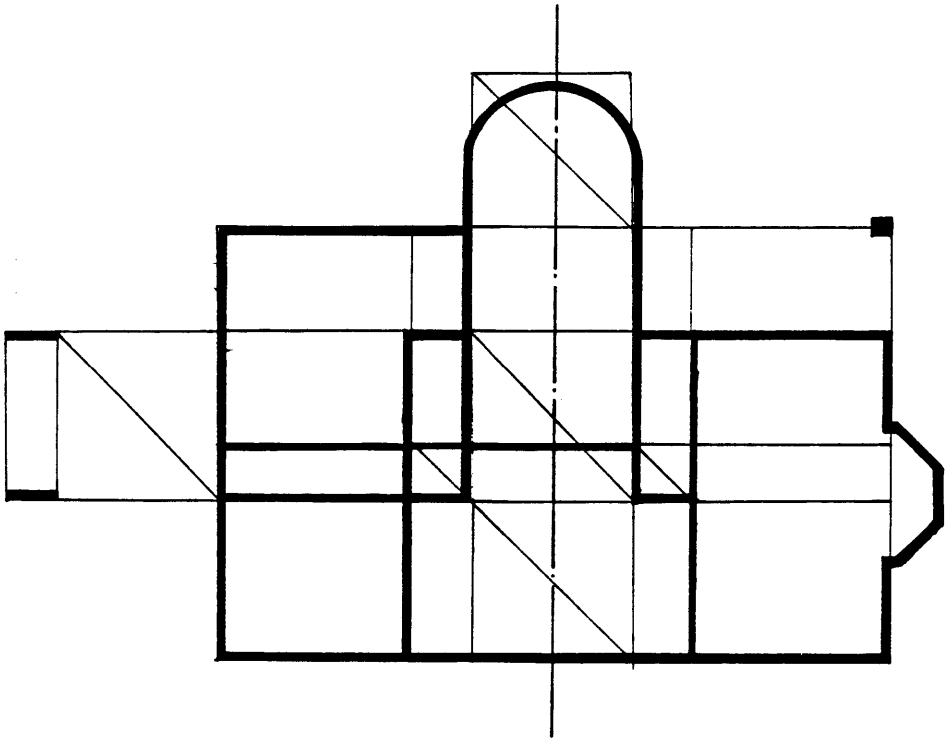
Winslow House, Front View

Winslow House, Rear View

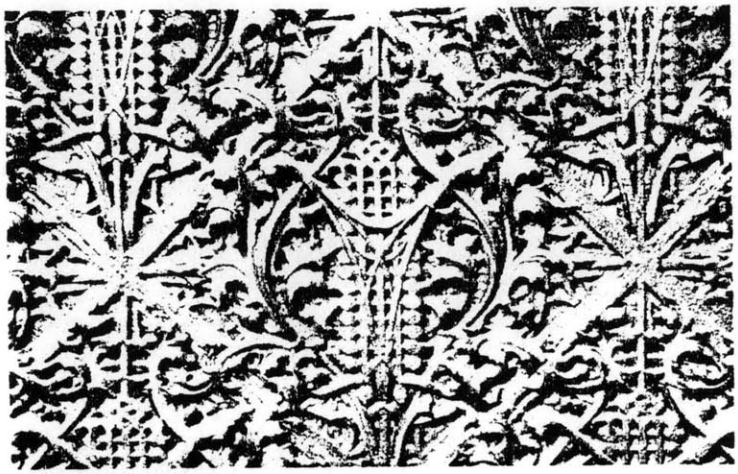
Winslow House, Plan

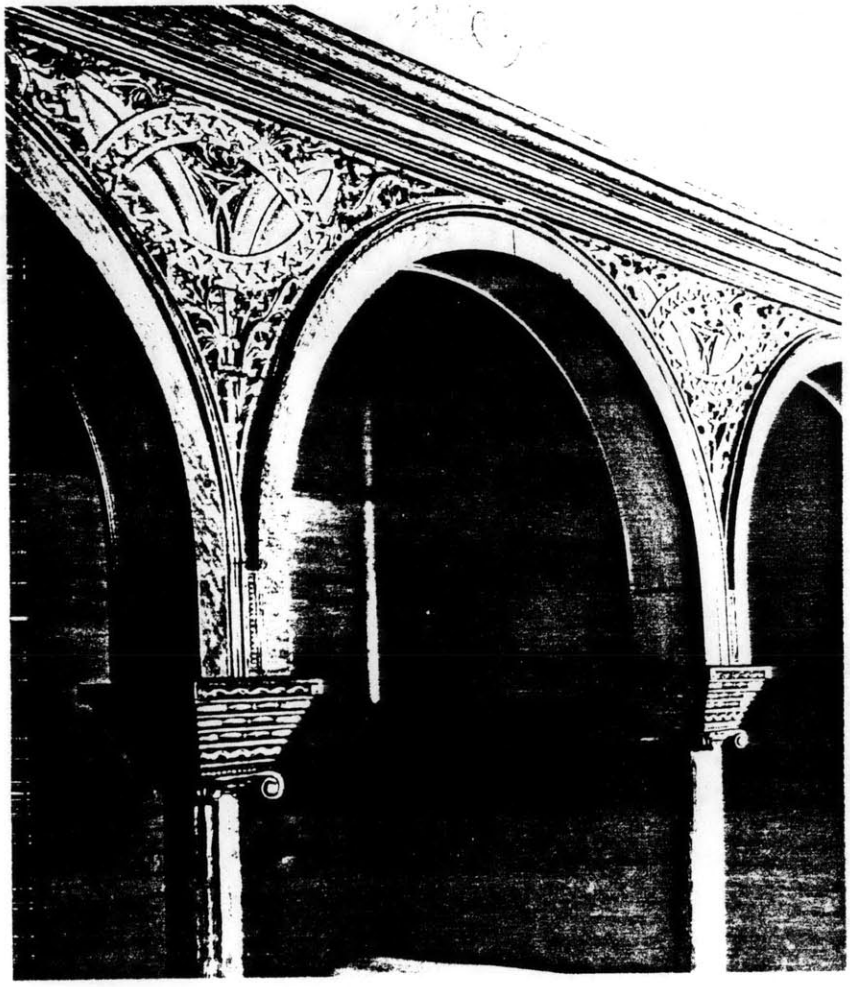


Winslow House, Plan Diagram



Winslow House, Detail of Decoration





WINSLOW HOUSE

William Winslow was Frank Lloyd Wright's first major client after Wright left Louis Sullivan's office. Winslow began his career in a New York law office, but went to work later for Hecla Iron Works. In 1885 he formed Harris and Winslow in Chicago with E. T. Harris to manufacture ornamental iron and bronze. A few years later Harris retired, so Winslow became a partner with his brother Francis. Their business prospered and they opened up Winslow Brothers offices all over the country. Winslow achieved his wealth and social position on his own rather than inheriting it, like many of Wright's earlier clients.

Wright and Winslow met when Wright was still in Sullivan's office, Winslow's firm built the famous corner entry for the Carson, Pirie, Scott Store, and they also invented the Winslow window, a new type of movable window sash. Winslow's hobbies included cabinetmaking, photography, and printing. He published W. C. Gannett's The House Beautiful that included page decorations by Wright.

The most extraordinary aspect about this commission was that Winslow had selected an architect who was only 26 years old and was just starting his own practice.

He must have been sympathetic towards Wright's ideas about materials and craftsmanship. Winslow was also an inventor, which explains his willingness to accept Wright's unusual design. Grant Carpenter Manson describes the criticism Winslow endured after the house was built; "For a few months he avoided the popular morning and evening express on the railway to escape the banter of the scores of communters who knew him well enough to speak their minds."[2]

The Winslow House shows the influences of the other architects' ideas as well as the beginning of some of his own ideas. The plan and front elevation are symmetrically organized in the same way that most Beaux-Arts architects organized their designs. The plan is composed of self-contained rooms rather than the interlocking spaces he later used. The openings for the windows are holes punched through a solid wall instead of being arranged in horizontal bands. The formality of the plan and front elevation are much stronger in the Winslow house than in his later houses. Wright might have used a grid to organize the plan, but it would have been in much larger increments than he used later.

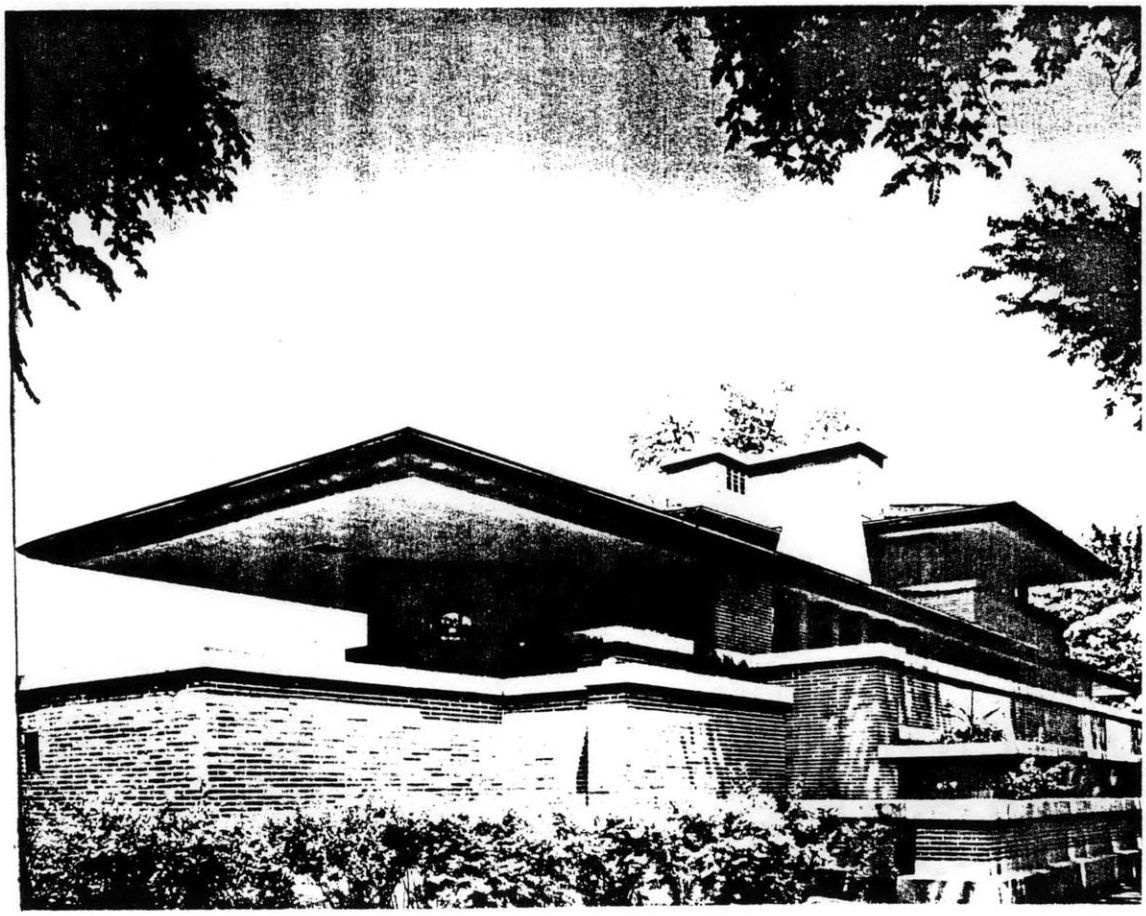
The most striking feature of the house for people at

that time was its horizontality. The low overhanging hip roof and the horizontal emphasis of the rows of roman brick were unusual features for that time. They made the house appear to reach out to the landscape in comparison to other houses built at that time that appeared to be boxes set on the land. Wright did not make use of terraces as he did later to further connect the houses to the landscape.

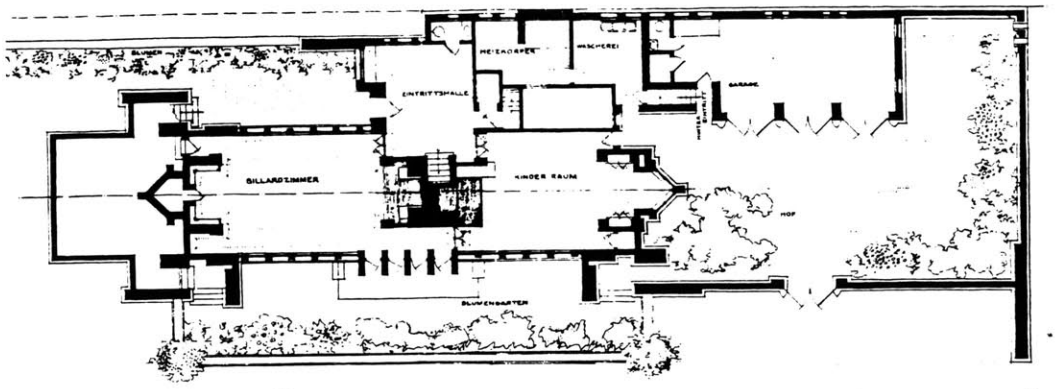
The influence of Louis Sullivan is shown mostly in the decoration of the screens and other elements in the house. Screens are used only in the entry and in the rear, and they are not used to define rooms within larger spaces.

The house does not respond to its climate in the same degree that his later houses did. The long overhanging roof helps to shade the house, but otherwise the house is very conventional. There are no bands of doors opening to the outside and the radiators are not integrated into the design.

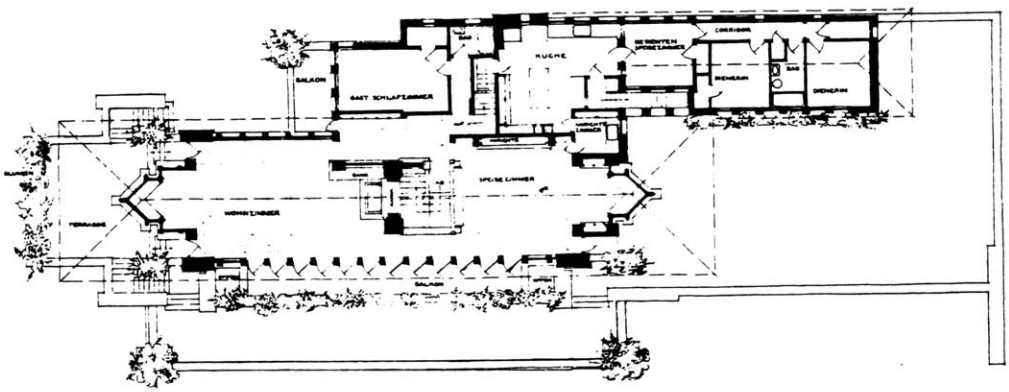
Robie House, Front View



Robie House, Plans

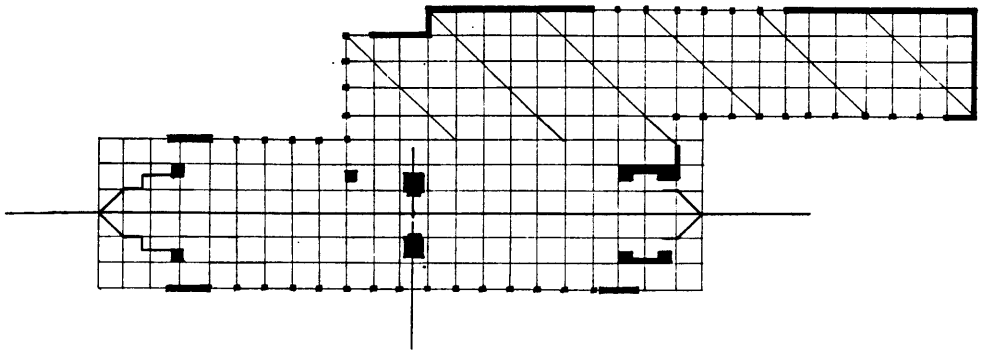


First Floor

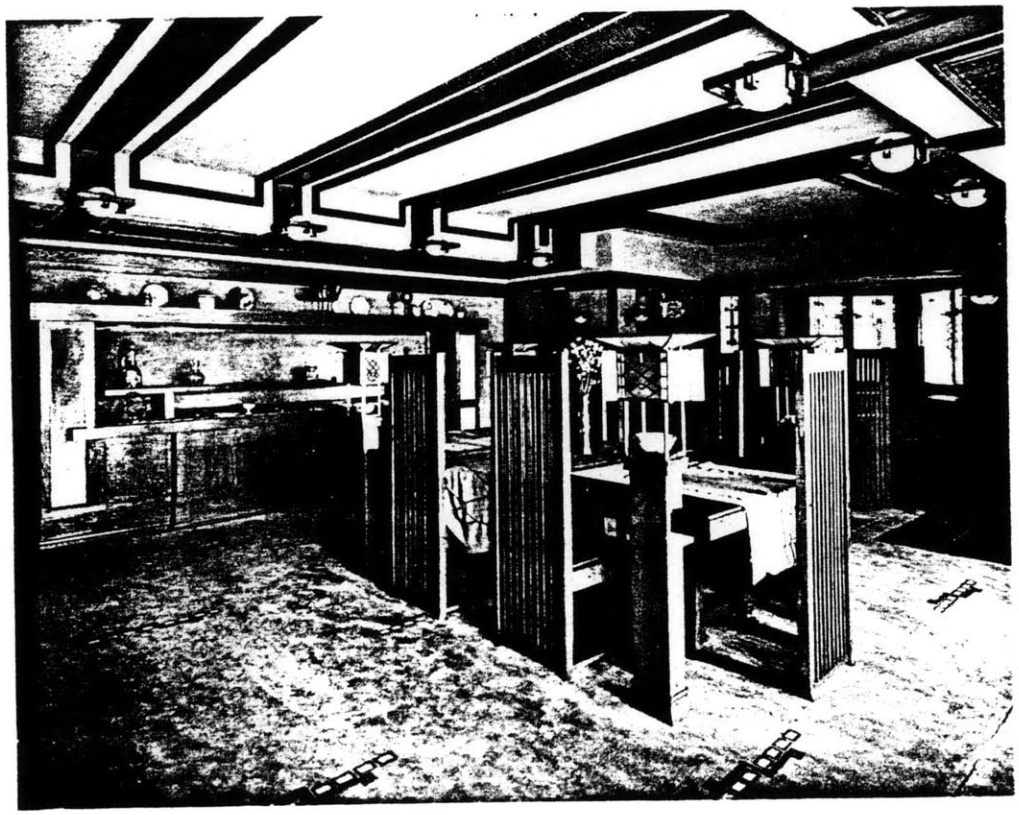


Second Floor

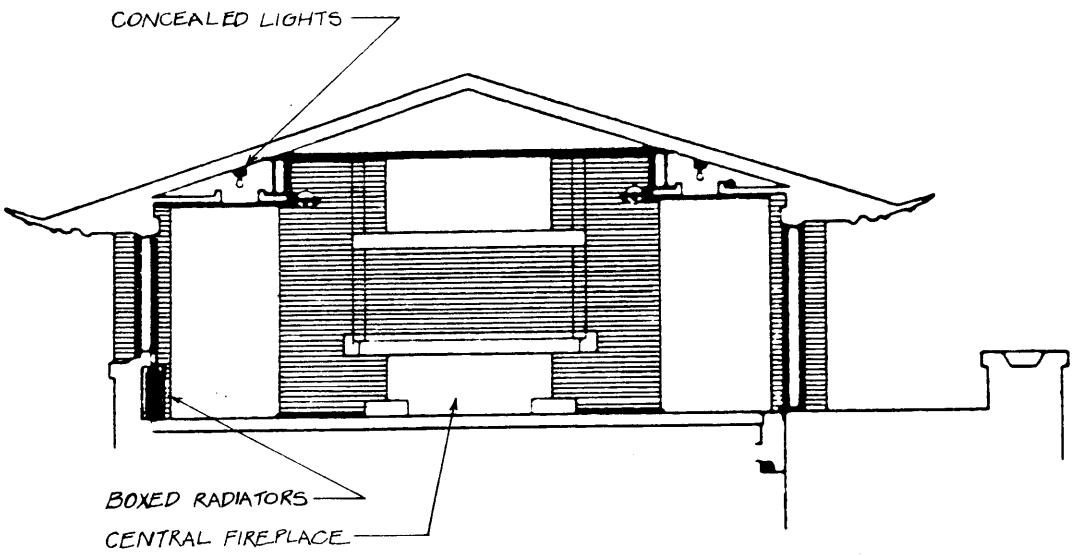
Robie House, Plan Diagram



Robie House, Dining Room



Robie House, Section



ROBIE HOUSE

Frederick Robie had a house built by Wright in 1908-1909 that was one of Wright's most successful designs. Robie was a manager for the Excelsior Supply Company. Robie graduated from Purdue University with an engineering degree in 1896. He was also president of the Excelsior Manufacturing Company, which made bicycles. Robie describes his search for an architect by saying:

> I had a multiplicty of men (architects) who had been accustomed to spending large sums of money, and they had expensive ideas. I wanted a house of reasonable cost as well. I probably contacted indirecIty or directly a half a dozen of these men. I did a little traveling around, and ran across a constant fillip: "I know what you want, one of those damn Wright houses." It was a good advertisement for Mr. Wright. I contacted him, and from the first we had a definite community of thought. When I talked in mechanical terms, he talked and thought in architectural terms. I thought, well, he was in my world.[3]

The Robie house was built about 15 years after the Winslow house. The main differences between the two houses are the ways in which the traditional box form of the house has been penetrated. Though the house was built on a much smaller lot than the Winslow house, it seems to extend out into its surroundings to a much greater degree. It also has an even stronger horizontal emphasis.

In the Shingle Style house, as it had developed, the

specialization of the individual rooms had exceeded reasonable limits since each family function required a separate room. The openings between rooms had grown larger but houses remained compartmentalized. Wright worked to solve these problems and the Robie house shows his solution to these problems. The first way that Wright accomplished this was by making the openings between the rooms at their corners rather than through the center of the wall. The spaces of adjoining rooms also overlap. He also opened the rooms up to the exterior with glazed doors directly to the outside, often at the corner of a room, that gives them a great degree of spaciousness. The height of the ceilings in the rooms were also manipulated to give a greater variety to the spaces within a single room. Wright used different elements as screens to separate rooms within a single space. The fireplace has two flues on each side and the ceiling continues through the center from one room into the next giving the space an expansive feeling. Interior vistas are used frequently by Wright to give his houses a bigger feeling. The spaces in his houses are contingent on the perception of the viewer rather than being an independent abstraction that can't be

sensed by the viewer.

The placement of the elements that define the spaces in Wright's houses was controlled by his use of a grid or "unit system" as he called it. Wright used the grid to locate walls, slabs, piers, ceilings, fireplaces, etc. In the earliest houses the grid is used primarily in the plan, but later he used it to locate vertical elements as well. The grid was used to guide the location of elements, but was not used in a way that excessively restricted their location. In some cases it isn't obvious that a grid was used while it is possible to sense there is an underlying order.

The Robie house shows that Wright's theory extended deeper than the space defining elements of the house to include the design of heating, ventilating, and lighting elements. When we study these aspects as we can understand what Wright meant by "organic" architecture. The arrangement of the plan, heating system, windows and form of the section all work together as Reyner Banham pointed out in his article about the Robie house. The shade provided by the overhanging roof in the summer works together with a system of opening doors and windows. The hot water radiators are integrated with the

window seats. Wright describes how the houses were to work with the environment in the Wasmuth portfolio of 1910:

> Another modern opportunity is afforded by your effective system of hot water heating. By this means the forms of building maybe more completely articulated, with light and air on several sides. By keeping the ceilings low, the walls may be opened with a series of windows to the outer air, the flowers and trees, the prostects, and one may live as comfortably as before, less shut in...
> The gently sloping roofs grateful to the prairie do not leave large air spaces above rooms and so the chimney has grown in dimensions and importance and in hot weather ventilates the circulating air spaces beneath the roofs, fresh air entering beneath the eaves through openings easily closed in winter.[4]

PRAIRIE HOUSE THEORY

Frank Lloyd Wright's disappointment with the architecture of the turn of the century and his search for a new expression grew slowly out of his work with other architects and in his own practice in Chicago. Wright practiced as most other architects did at first, but eventually defined and elaborated his own ideas. His expression of modern society and culture was primarily through the institution of the family. He tried to find the best form for the changes taking place in family life, the changing roles of husband and wife and the introduction of modern technology in the home. Wright searched for a form of expression for the "machine" through decorative elements that would humanize its relationship with man. Finally, Wright sought to express these ideas throughout the house, from its exterior forms to its interior furnishings.

There were two levels to Wright's theory statements, general and specific. The general statements set out his ideas by criticizing current practices he disagreeded with and describing what direction his own architecture would take. These statements appeared sooner than the specific ones, and Wright tended to hold on to them all through his career. His specific statements described in detail the

elements of his houses and how they responded to his general ideas. However, these specific statements usually did not appear until after the houses were completed. They show the development of his ideas through the design of a number of houses and then reflecting on the results.

Frank Lloyd Wright read a wide variety of the literature of his day in order to try to formulate a philosophical basis for his work. Wright was outraged at the way other Chicago architects submitted to Eastern taste in architecture as a cultural expedient. He said, "really, are we too, in Chicago, plundering the old world of all its finery and dressing ourselves up in it regardless as a kind of masquerade? I can see it as great fun (very expensive fun), but how can it be seen as culture when the essence of all true culture is a development of self expression."[5]

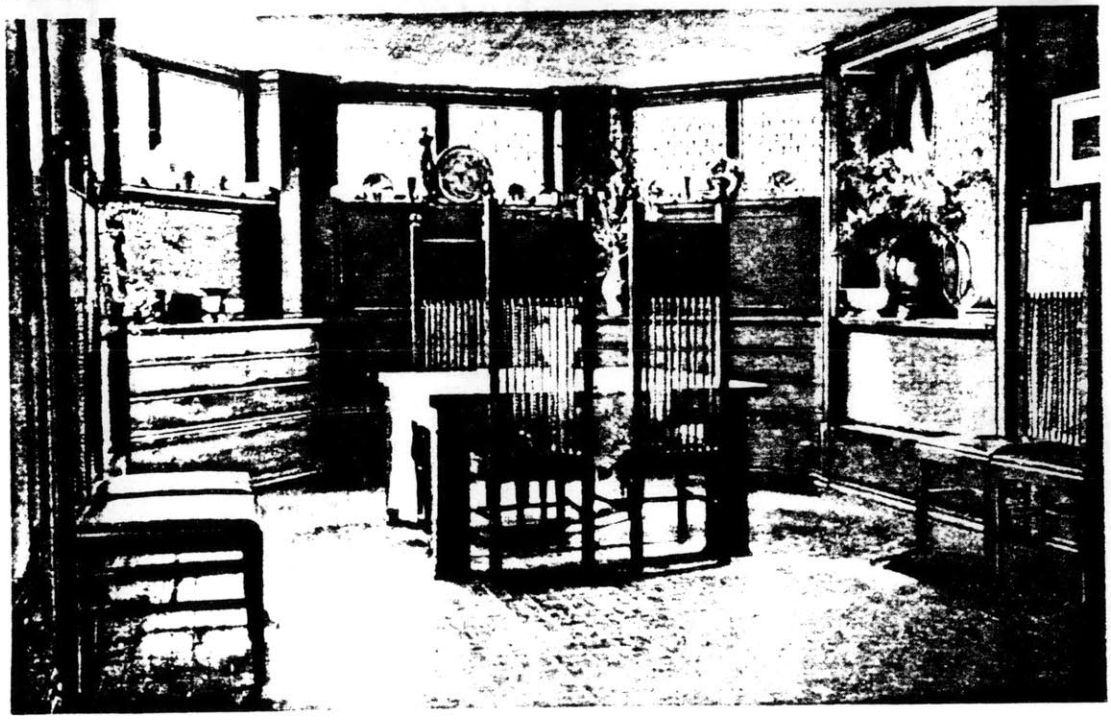
In 1901 Wright wrote a speech that he presented to Chicago Arts and Crafts Society that was entitled "The Art and Craft of the Machine". In this speech he described some of his early objectives and his attitudes about the modern age. He describes the "machine" as a symbol of the modern age and describes how an architect might use a machine to shape building materials into a form that was more suitable for displaying their natural

qualities. For example, he says that: "The machine has emancipated these beauties of nature in wood; made it possible to wipe out the mass of meaningless torture to which wood has been subjected since the world began, for it has been universally abused and maltreated by all people but the Japanese."[6] For Wright this idea took on moral dimensions and he criticized other contemporary architects for their abuse of wood and other materials. He believed that older forms could not satisfy modern conditions and that the use of the machine demanded a more plastic treatment of building materials. He believed that it was immoral to build skyscrapers in the style of Greek or Roman buildings around a modern steel structural frame. Wright saw that the other arts had not clung to ancient forms for their expression and believed that architecture should not do so either.

He described in the speech that any one could buy reproductions of ancient sculptures and artifacts that took centuries to perfect, but that now they were worth nothing because they were trivialized into commercial products. This falsified our sense of history and beauty that man had been accustomed to. Machines had even been invented for no other reason than to imitate earlier wood carving techniques that had been done by hand.

Typical Dining Room of 1900

Wright House, 1895, Dining Room



Wright said in 1901 that:

> the average of art is reduced to the grasping poverty of imitation realism; until the whole letter of Tradition, the vast fabric of precedent, in the flesh, which has increasingly confused the art ideal while the machine has been growing to power, is a beautiful corpse from which the spirit has flown. The spirit that has flown is the spirit of the new art, but has failed the modern artist, for he has lost it for hundreds of years in his lust for the letter, the beautiful body of art made too available by the machine.[7]

As part of his theory statements Wright usually described in some detail the way that the houses should be designed. This description acts as an intermediate step between the general statements and the designs themselves. Through them it is possible to see what aspects of the house are included, and we can see how Wright's ideas about modern society would take on their physical form. In 1931, Wright described what his goals for the Prairie house had been:

> First -
> To reduce the number of necessary parts of the house and the separate rooms to a minimum, and make all come together as enclosed space - so divided that light, air and vista permeated the whole with a sense of unity.
>
> Second -
> To associate the building as a whole with its site by extension and emphasis of the planes parallel to the ground, but keeping the floors off the best part of the site, thus leaving that better part for use in connection with the life of the house. Extended level plans were found useful in this connection.

Third -
To eliminate the room as a box and the house as another by making all walls enclosing screens to flow into each other as one large enclosure of space, with minor subdivisions only. Make all house proportions more liberally human, with less wasted space in structure, and structure more appropriate to material, and so the whole more livable. Liberal is the best word. Extended straight lines or streamlines were useful in this.

Fourth -
To get the unwholesome basement up out of the ground, entirely above it, as a low pedestal for the living portion of the home, making the foundation itself visible as a low masonry platform on which the building should stand.

Fifth -
To harmonize all necessary openings to "outside" or to "inside" with good human proportion and make them occur naturally - single or as a series in the scheme of the whole building. Usually they appeared as "light screens" instead of walls, because all the "architecture" of the house was chiefly the way these openings came in such walls as were grouped about the rooms as enclosing screens. The room as such was now the essential architectural expression and there were to be no holes cut in walls as holes are cut in a box, because this was not in keeping with the ideal of "plastic". Cutting holes was violent.

Sixth -
To eliminate combinations of different materials in favor of mono-material so far as possible; to use no ornament that did not come out of the nature of materials to make the whole building clearer and more expressive as a place to live in, and give the conception of the building appropriate revealing emphasis. Geometrical or straight lines were natural to the machinery at work in the building trades then, so the interiors took on this character naturally.

Seventh -
To incorporate all heating, lighting, plumbing so

> that these systems became constituent parts of the building itself. These service features became architectural and in this attempt the ideal of an organic architecture was at work.
>
> Eight -
> To incorporate as organic architecture - so far as possible - furnishings, making them all one with the building and designing them in simple terms for machine work. Again straight lines and rectilinear forms.
>
> Ninth -
> Eliminate the decorator. He was all curves and all efflorescence, if not all "period". [8]

By the time of the First World War, Wright had found difficulty getting general acceptance of his ideas by other architects. He had spent much effort trying to articulate and publicize his ideas and designs, but with little success. He described the situation by saying:

> The needed interpretation had arrived in my own mind as organic and, being true to nature would naturally, so I thought, be visible to my fellow architects. In spite of myself, because becoming more and more articulate, I became a kind of troublesome reminder - a reproach to my fellows. Naturally enough I would not join the profession to help make a harbor of refuge for the incompetent? So, deemed arrogant even by those who might have been expected to go a little deeper and to work themselves, I had to go it pretty much alone - Lieber Meister gone.[9]

To evaluate Wright's theory at this stage in his career, the issues of inclusiveness, explicitness, responsiveness and value need to be studied. Wright's theory gradually became more inclusive of more

aspects of architecture as it developed. At the time of the Winslow house his approach was conventional, but by the time he designed the Robie house he as designing all of the furnishings for many of his houses as well as integrating the various heating and electrical systems into his overall concept. Though Wright did some writing in this period, many of his statements about the Prairie houses did not come until later. His theory was not as explicit as it could have been. The increasing complexity and integration that took place in Wright's designs showed that he was being responsive to the problems he was encountering. The value of Wright's theory was restricted to the clients he was serving and to the limited influence he had in Chicago. However, with the publication of his designs at the end of this period his influence became much more widespread.

PRAIRIE HOUSE MODELS

The main source for models that Wright used in his earliest houses were those houses being built by other architects of his day. He was influenced by the architects he worked for, Silsbee and Sullivan, as well as the other architects practicing at that time. Wright absorbed the influences of others, taking what he liked from their work. His earliest houses show that he absorbed many influences trying to discover which ideas fit with his own theory. The process of defining a Prarie house was a gradual one, with each house moving slowly towards that ideal. Wright did not make the jump directly from the Winslow house to the Robie house, because this process took many years and many designs to reach full development.

Frank Lloyd Wright went to work for Joseph Silsbee in 1887. Silsbee had a successful, but traditional practice in residential architecture. After two years Wright left Silsbee's office to work for Adler and Sullivan. He also began work on his own house in 1889. His house was very much in the shingle style tradition with a dominant gable and a cruciform plan. By 1893 Wright left Sullivan's office to open his own. Wright worked with the forms of the shingle style and colonial style more skillfully than most of the other architects of his day. In fact, after seeing the Winslow house, Chicago's most prominent architect, Daniel Burnham, approached Wright and tried to persuade him to go to the Beaux Arts at Burnham's expense and return to be Burnham's design partner.[10] The offer was rejected by Wright, probably because he believed that it was necessary to be in control of the entire process from design to construction rather than playing the role of designer that working in Burnham's office would require.

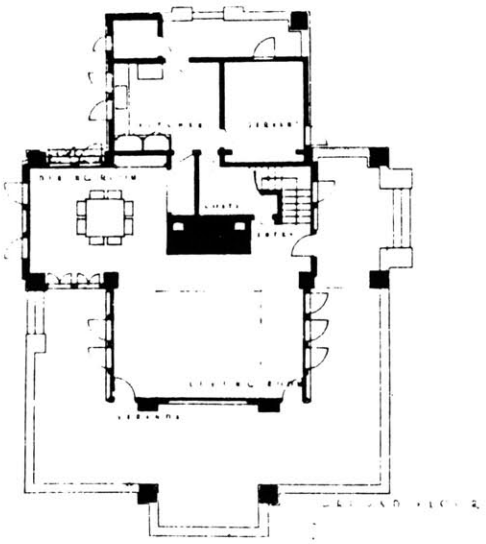
The source for Wright's earliest houses including his own house in Oak Park was the Shingle Style house that was common practice of that time. By the time Wright designed the Winslow house, he had begun to experiment with the design principles of the Beaux-Arts as well as those that he had learned from Sullivan. Henry-Russell Hitchcock speculated that one of the reasons why Wright turned down Burnham's offer to go to the Beaux-Arts school in Paris was that he had already absorbed most of its lessons. Hitchcock said that, "the academic ideal, accepted by Wright in its fashionable surface forms for only a year or two, creatively modified what he had drawn indirectly from the Richardsonian tradition and confirmed and strengthened elements of order he had already learned from Sullivan's Wainwright Building when he designed the Charnley house."[11] The principles Wright learned from the Beaux-Arts gave his architecture discipline since Wright was not interested in reviving a dead past through eclecticism. Wright absorbed what was useful for him from the Beaux-Arts principles and moved on to develop his own.

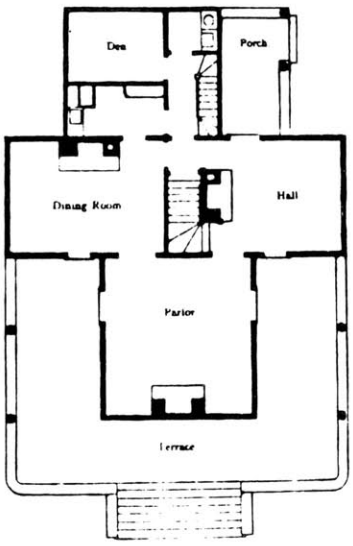
Wright House, Front View

Kent House, Bruce Price architect, Front View

Ross House, F. L. Wright, Plan

Kent House, Bruce Price, Plan





COLLABORATION

Much has been written and said about Frank Lloyd Wright, most of which has contributed to building the myth of a genius architect. One of Wright's most important talents was the way in which he was able to have others contribute to his work in a way that enhanced it significantly. He was able to create an ideology that others could understand and respond to. His ideology was an alternative to the academic eclecticism that was the prevailing ideology promoted by the most prominent architects of the time such as Daniel Burnham and McKim, Mead and White. He created something powerful enough for those opposing the elite architecture of the day to believe in. He tried to make an architecture that was an American architecture rather than a repetition of historic European styles. Wright relied on three groups of people to help him create this new architecture: client, assistants, and craftsmen. Understanding how he collaborated with these three groups will help give a much clearer picture of how he was able to achieve what he did.

Frank Lloyd Wright believed strongly in the architect as an individual artist, and collaboration with others was less important than having overall control. He believed

that to achieve the individual expression found in such architecture would mean that architects would have to have relatively small outputs compared with that of the large offices that had begun to dominate American architecture during that time. In 1908 he said:

> Nevertheless, I believe that only when one individual forms the concept of the various projects and also determines the character of every detail in the sum total, even to the size and shape of the pieces of glass in the windows, the arrangement and profile of the most insignificant of the architectural members, will that unity be secure which is the soul of the individual work of art.[12]

The clients who commissioned Wright to design these houses played a strong part in the development of the prarie house and were supportive of his attitudes. Most were strong individuals who had made their money in their own business venture. They respected Wright as a skilled architect but did not regard him as a genius whose instructions were to be obeyed and never questioned. Leonard Eaton, in his book Two Chicago Architects and Their Clients describes Wright's prototypical early client as,

> a businessman who owns at least part of his own middle-sized manufacturing concern. He will probably not be a college graduate, and if he does have a higher education it will have been obtained at a state university. Though most of his time is devoted to the management of his company, he is likely to be well acquainted with

> the technological side of the business. He may be an inventor himself; in any event his interest in technology is a factor in opening up his mind to architectural innovation. If he is not familiar with the industrial process, an interest in technology is apt to be displayed in some hobby such as photography. Interest in arts other than architecture is usually shown in fondness for music. He, or someone in his family, will sing or play an instrument. Probably he has no knowledge of sculpture or painting, and he is not likely to be a member of a circle which actively supports the Institute. His standard forms of recreation are golf and tennis. In religion he will most certainly be Protestant, and he may either be lukewarm or devout. He will support his church financially and will be a member in good standing, though he may not often attend. In politics he is, of course, Republican and is likely to be a follower of Theodore Roosevelt. While admiring Roosevelt, however, he will probably not follow him into the Bull Moose movement of 1912. Though not himself devoted to several causes, he will display an easy tolerance if his wife becomes a suffragette. He will not be particularly tolerant of eccentric social behavior. He will be shocked by Wright's affair with Mrs. Cheney, though he may retain the architect's friendship in later years. In his own family he is commanding figure but not the heavy father of Victorian tradition. It would be inaccurate to say that family decisions are reach democratically. He usually takes the lead and is apt to be the instigator of the house building project. This makes him sound quite conventional, and it is intended to do so. The final paradox of the Wrightian revolution is this: like the American upheaval of 1776 - 1783, it was sponsored by people who were basically conservative.[13]

Frank Lloyd Wright's clients were different from those who sought the services of the other prominent Chicago architects of that time. Howard Shaw and other contemporary

architects of Wright's time usually had an "Ivy League" education and were members of many social clubs. Shaw had been educated at Yale and MIT and was a member of many social clubs.

The clients of Howard Shaw and most of the other prominent residential architects were often well-educated and very wealthy. They were usually socially well-connected and active members of elite social and recreational clubs in Chicago. They were not introspective as Wright's clients usually were. The husband typically had the direct relationship with the architext as far as the construction of the house, and the wife played the role of interior decorator with the advice of the architect. It was the architect's objective to please his clients and so he accepted the traditional roles of architect and client.

Wright's clients also were in strong contrast to those of Le Corbusier when he was developing his own personal style in France. Corbu's clients were usually art collectors, sculptors, printers, art dealers and others who were enthusiastic about the more avant-garde kinds of modern art. They probably saw their houses as another work of modern art rather than a pragmatic but still beatiful place to live that Wright's clients saw

in their houses. Only in his later years did Wright's work appeal to this sort of client, once its artistic value had been established.

Wright began to see that his work had little appeal to the social elite of Chicago and the Midwest. He was discouraged by their lack of enthusiasm for the new architecture. He described the typical client that came to him:

> There are exceptions, and I found them chiefly among American men of business with unspoiled instincts and untainted ideals. A man of this type usually has the faculty of judging for himself. He has rather liked the "idea" and much of the encouragement this work receives comes straight from him because the "common sense" of the thing appeals to him. While the "Cultured" are still content with their small chateaux, Colonial wedding cakes, Engligh affections or French millinery, he prefers a poor thing but his own.[14]

In the end, Wright was unable to convince many of these "cultured" individuals of the viability of his approach to architecture. Though much of the simplicity and technical advancements seen in Wright's early houses can be found in later American houses, the eclectic exteriors and details persisted.

Wright would not compromise his architectural principles just to please a client in order to get a particular commission. This does not mean that he was unwilling to

work with a client to achieve a satisfactory solution, but on questions of style or taste there was little room for negotiation. Wright worked closely with the client to arrange the spaces in plan so that both would be satisfied. There were conditions when the client's limits of compromise would be crossed, and the client would find another architect.

> Clients would come ready to accept any innovation but "those swinging windows," and when told that they were in the nature of the proposition and that they must take time or leave the rest, they frequently employed "the other fellow" to give them something "near" with the "practical" windows dear to their hearts.[15]

It seems trivial to lose a client because they prefer double hung windows to the casements Wright proposed, but Wright's refusal to compromise on this or other aspects probably helped to give his architecture greater consistency. Clients probably had no trouble finding another architect to do their work so they were not hurt by Wright's refusal.

Frank Lloyd Wright left Sullivan's office in 1893 and by 1895 he had set up his own studio and house at Oak Park. In 1908 he listed those who were his assistants at that time. These 12 do not include the artists and craftsmen he collaborated with or others who are known to have worked for short periods of time before or after 1908. The

principal person on the list was Marion Mahony who began working for Wright in 1895. She was one of the first women to be a licensed architect in Illinois. She was Wright's chief assistant and many of the fine drawings including those for the Wasmuth monograph and the design of some of the decorative murals of the houses are attributed to her. Walter Burley Griffin came to work for Wright in 1901 and his interests were primarily in landscape architecture and planning. He married Marion Mahony and both of them were responsible for finishing Wright's projects in progress when he closed his office in the fall of 1909. In 1914 Griffin won the worldwide competition for Canberra, the Australian capital, and he and his wife moved to Australia. There were others as well that went on to form their own offices including William Drummond and Barry Byrne. By the fall of 1909 at the age of 40, Wright's relationship with his family had deteriorated and he began to believe that he would not be able to get the bigger commissions that he desired. Finally, he left for Europe with the wife of one of his clients, Mrs. Mamah Cheney, and stayed there for almost two years.

Wright believed it was necessary to train his own assistants himself. In his 1908 article for Architectural Record he said:

> The few draughtsmen so far associated with this work have been taken into the draughting room, in every case almost wholly unformed, many of them with no particular previous training, and patiently nursed for years in the atmosphere of the work itself, until, saturated by intimate association, at an impressionable age, with its motifs and phases, they have become helpful. To develop the sympathetic grasp of detail that is necessary before this point is reached has proved usually a matter of years, with little advantage on the side of the college-trained understudy.[16]

He described some of his assistants as staying only long enough to get a superficial grasp on the form, and others who grasped the ideas more quickly but were still eager to take off to start their own practices. Wright said that these impatient assistants urged the more loyal assistants to leave as well because they would be sacrificing their individuality. He believed that it took a long time to acquire a good proficiency, but was certainly eager to have his assistants stay for as long as possible.

Frank Lloyd Wright's own apprenticeship with Adler and Sullivan was the most important part of his early career for the formation of his ideas. Sullivan's office had little time to devote to residential work since they work mostly on large office projects. There were some residences the office felt obligated to do and those were given to Wright to work on outside of office hours. He

had to carry the ideas of the firm into the residential work, and these ideas form the basis for his own practice several years later. Wright said that, "Many elements of Mr. Sullivan's personality in his art - what might be called his mannerisms - naturally enough clung to my work in the early years, and may be readily traced by the casual observer."[17] Wright's own ideas grew out of what he had learned from Sullivan, and he expected that it would be the same for his own assistants.

Wright expected his assistants to get a well-rounded education under his direction. The assistants were to follow the project through all phases of its development from meeting with the client and the early stages of design to supervising or participating in the construction. Wright thought that this method could prove disastrous to his practice if his assistant was ambitious or self-confident, but most of the time it was very successful probably because of Wright's strict control over the process. Wright must have had to leave many important duties in the hands of his assistants, but ultimately he must have thought that he could never give up control. He said:

> With no more propriety can an architect leave the details touching the form of his concept to assistants, no matter how sympathetic and capable

> they may be, than can a painter entrust the painting in of the details of his picture to a pupil; for an architect who would do individual work must have a technique well developed and peculiar to himself, which, if he is fertile, is still growing with his growth.[18]

For Frank Lloyd Wright the role of furnishings and the quality of construction were essential to carrying out his ideas. He relied on the builders and craftsmen to carry out his designs and without their sympathetic work his architecture would have lost much of its impact. Unfortunately, the craftsmen were not given much recognition and little information is available about them. Wright returned to particular craftsmen that understood his work again and again, rather than putting his jobs out to bid. The craftsmen helped Wright with the technical problems in the construction of furnishings as well as the execution of the furnishing themselves.

Wright's ideas were new to these people and were difficult to communicate at first. Wright described this problem by saying:

> To become the recognized enemy of the established industrial order was no light matter, for soon whenever a set of my drawings was presented to a Chicago mill-man for figures he would willingly enough unroll it, read the architect's name, shake his head and return it with the remark that he was "not hunting for trouble"' sagacious owners and general contractors tried cutting out the

> name, but in vain, his perspecacity was rat-like, he had come to know "the look of the thing."[19]

Special drawings were required for all of Wright's work and schedules of the millwork had to be furnished to the contractors. Building in an unconventional way was very difficult. Wright designed the furniture for his houses whenever he could, and for the Coonley house also, he designed the table service, linens, and even some of Mrs. Coonley's dresses.

The typical Victorian furniture of the time was over elaborate and unsuitable to Wright's simple interiors. The first custom-made furniture that Wright designed for his houses was built by John W. Ayers. Ayers had a small shop and probably respected Wright's ideas. Ayers was willing to carry out the construction of the furniture in Wright's new vocabulary without imposing the conventional ideas of the time. Wright benefited from Ayers positive attitude as well as his suggestions about how the pieces should be constructed.

Wright also collaborated with an interior design firm, Niedecken-Walbridge, on some of the larger houses. Designing and building the elaborate interiors of the Coonley and Robie houses required extra help. Niedecken-Walbridge was responsible for the presentation and working

drawings of the furnishings and overseeing the construction. However, they were not responsible for the design of the furnishings themselves or for their manufacture. F.H. Bresler Co. of Milwaukee was the manufacturer of the furniture and the rugs, fabrics, and draperies came from a variety of other sources. Wright would probably have submitted a rough sketch to Niedecken-Walbridge and reviewed their work on the presentation and working drawings. George Niedecken worked for Wright in 1904 and painted the frieze in the Dana House dining room. Niedecken's independent designs were different from Wright's and he believed that the interior designer should design in any style desired by the client or architect.

Chapter 3

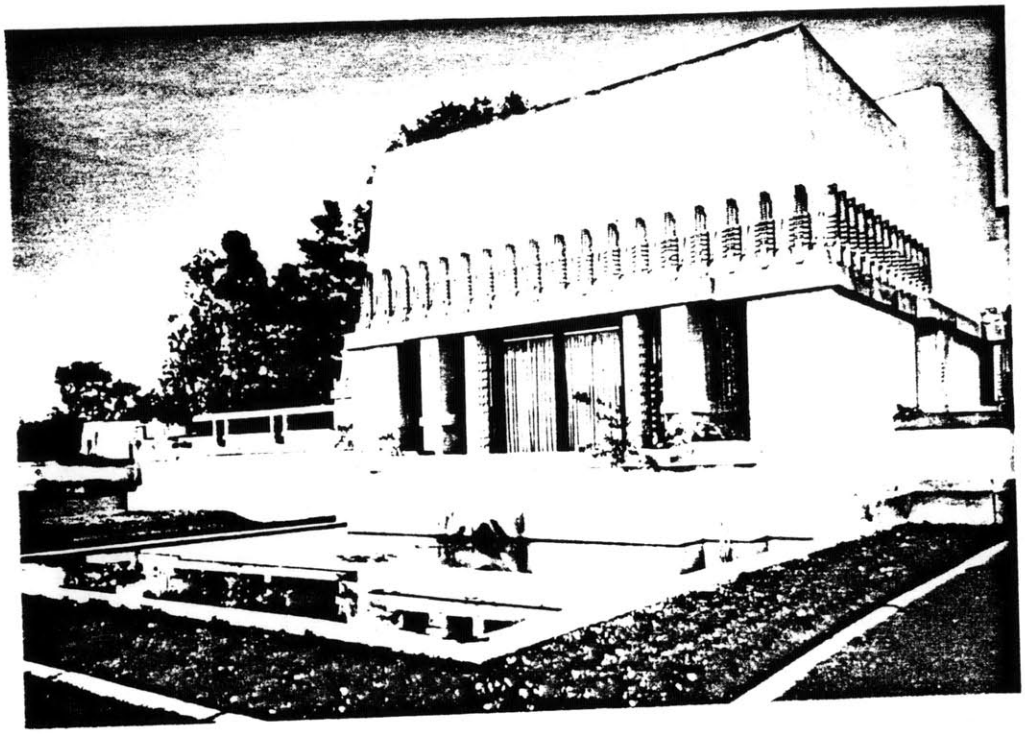
The Desert House

Well, no master of the orchestra, I have to conquer a hard-boiled industrial world stewed in terms of money, and persuade or please idiosyncratic, sometimes artistocratic client, in order to render romanza or achieve even a modicum of integrity in building. My lot was cast with a hod of mortar, some brick or a concrete-mixer and steel - a gang of workmen called the union and the modern Machine. Last, but not least comes the client. These are my "medium of expression."[1]

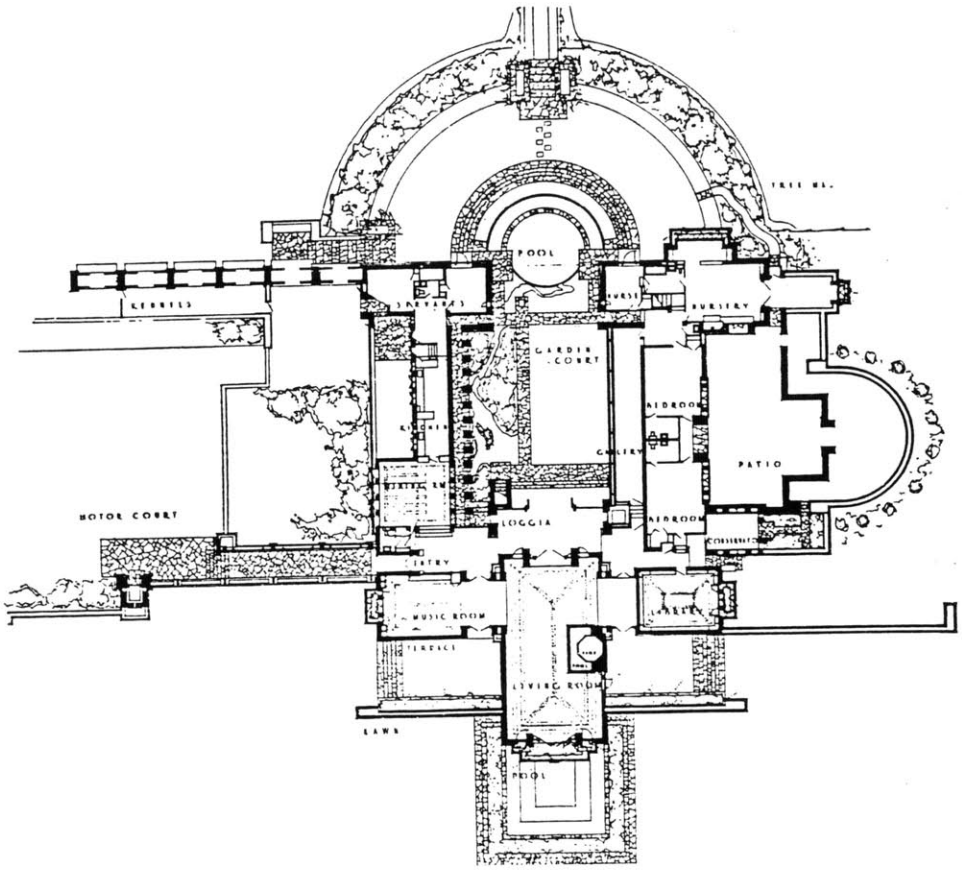
Frank Lloyd Wright

Frank Lloyd Wright was challenged to find a new type of architecture appropriate to a new place when he designed the houses in Los Angeles in the early 1920's. Wright searched for other sources to draw on than the Spanish Colonial architecture that others had adopted. In order to integrate the forms with the building process he devised a new construction method suited to the place. The Hollyhock house and La Miniatura were the first two houses he built in Los Angeles and show how he adjusted to this new place.

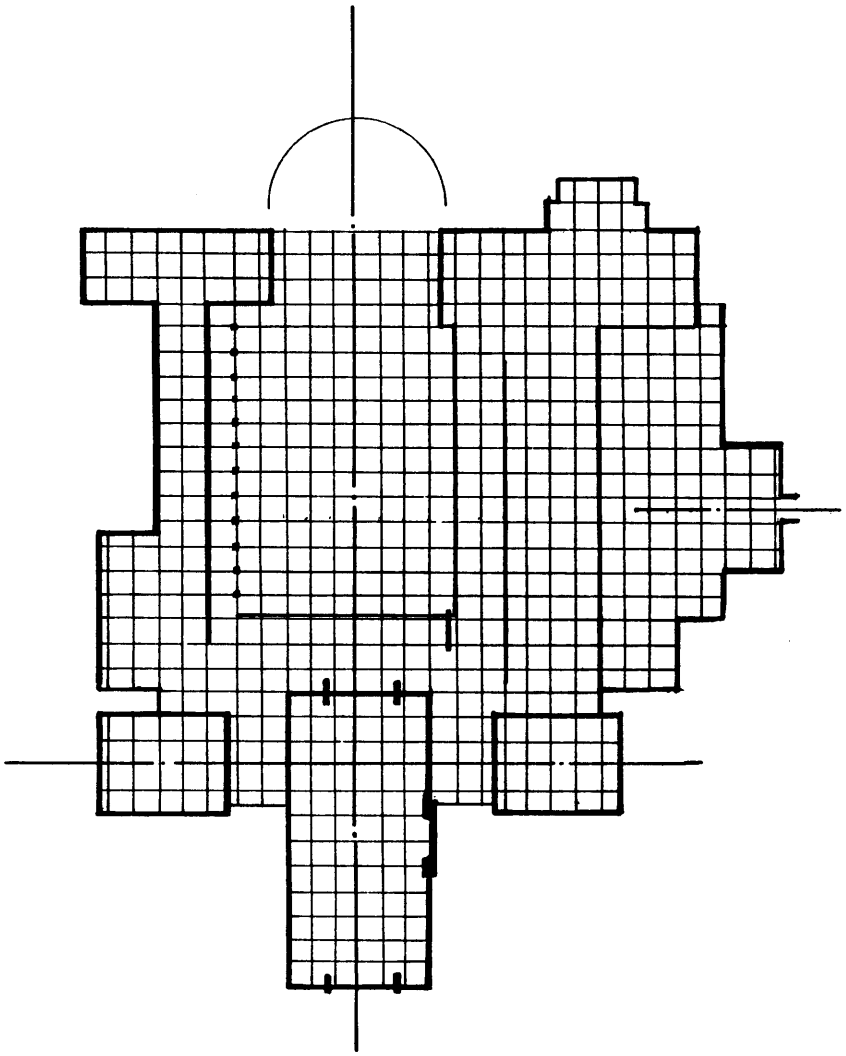
Hollyhock House, Front View



Hollyhock House, Plan



Hollyhock House, Plan Diagram



Hollyhock House, Detail of Decoration

THE HOLLYHOCK HOUSE

Aline Barnsdall was Frank Lloyd Wright's first client in California. Her grandfather, William Barnsdall, was a pioneer in the oil industry and started the first refinery in the U.S. Barnsdall was educated in Europe and developed an interest in theater. Their association started when Barnsdall asked Wright to design a theater, but he was too busy then with the Imperial Hotel in Tokyo. Later, she acquired Olive Hill in the center of Hollywood and expanded her plans to include building a complete art community. When her daughter was born she shifted to the idea of building a kindergarten. Finally, though, she converted a nearby house to a kindergarten directed by Leah Press Lovell.

Aline Barnsdall's interests included supporting political movements and a lecture series on Feminism. Barnsdall's plans shifted many times during the course of her association with Wright as she tried to define her dreams more clearly.

The Hollyhock house was named by Aline Barnsdall and she asked that the hollyhock flower be used as a motif in decorating the house. Wright said that the house, "was to be a natural house in the changed circumstances and naturally built; native to the region of

California as the house in the Middle West had been native Middle West."[2] The forms of the house show a strong influence from Mayan architecture and from Indian pueblos. Wright had studied and appreciated Mayan architecture when he was younger and his assistant, R.M. Schindler studied the pueblos on a trip to the southwest before he began to work for Wright. The plan, however, is very formal and symmetrical as in some of his earlier work before 1910.

The construction of the house is less coherent than in his prairie houses or in later block houses that he built. The exterior walls are made of poured in place concrete only from the foundations to the top of the windows. Painted stucco over wood framing is used for the sloping walls above the top of the windows. Wright was so interested in exploiting the use of concrete that he insisted on a two inch concrete front door. In the end the house appears very massive and enclosed, in sharp contrast to the prairie houses.

Since he was working on the Imperial Hotel in Japan, Wright sent R.M. Schindler to supervise the construction on the Barnsdall house. Schindler was caught between Wright and Barnsdall and under the watchful eye of Barnsdall's business manager, Clarence Thomas. Thomas

ran the project and often upset Wright. Thomas would choose sub-contractors solely on the basis of a low bid rather than on the quality of work they did, as Wright advised. Barnsdall also pressed Wright to control the budget very carefully. There were many heated exchanges between those involved about how the house should turn out. Wright's son Lloyd had recommended the contractor, Robertson. Robertson complained that the plans were too hastily prepared and Barnsdall suggested that she finish the house herself once troubles came up. Wright, however, would not give up on the commission. By the end of 1921, three houses were built, but no theater or school.

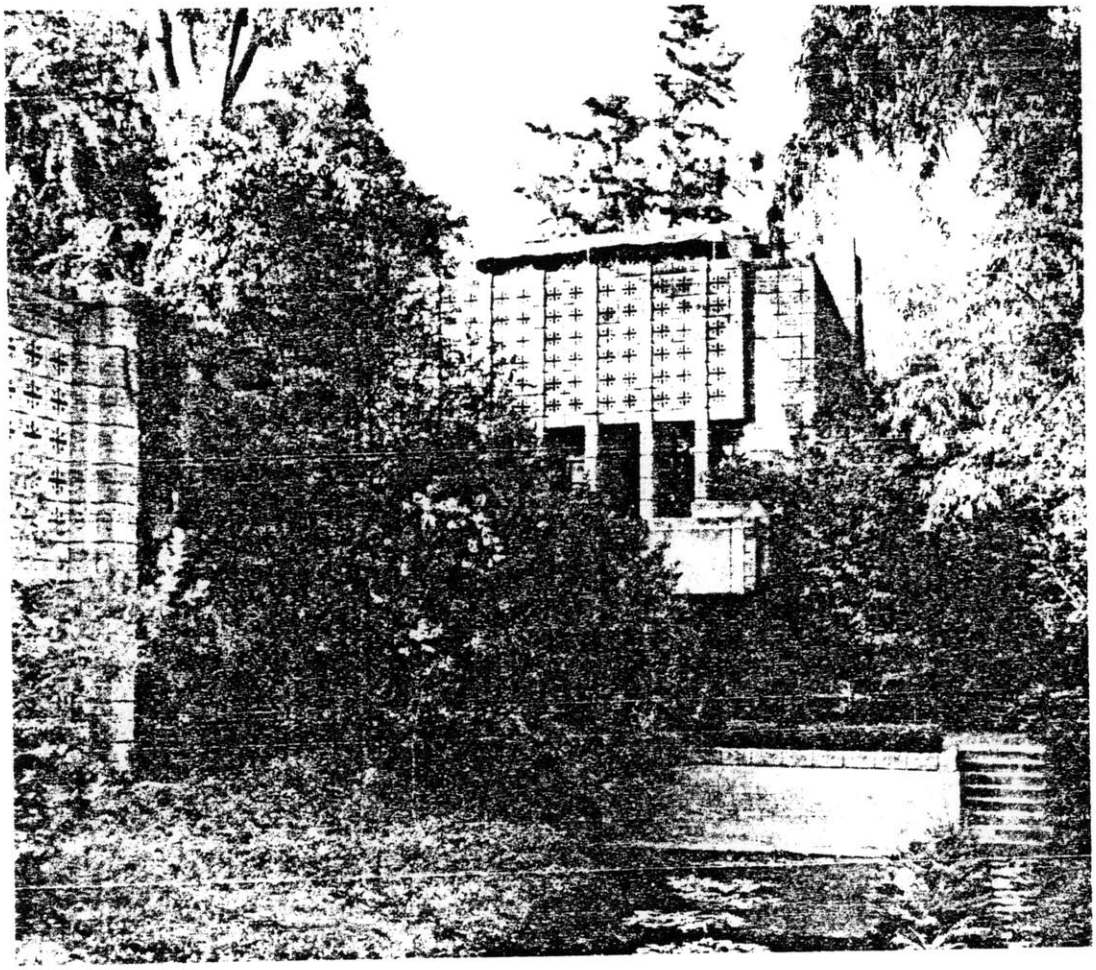
In 1923, Wright began work on the Little Dipper Kindergarten and Playhouse for Barnsdall's Olive Hill site. It was sited on a steep hillside and was entered from a diagonal path down a narrow ledge. Wright used the concrete block system he developed for the kindergarten and the plan is much more informally laid out than the Hollyhock house. The kindergarten was partially built, but Aline Barnsdall had the construction stopped and demolished what had been completed.

As Wright later explained in his autobiography, the house was "built by telegraph" as far as the architect

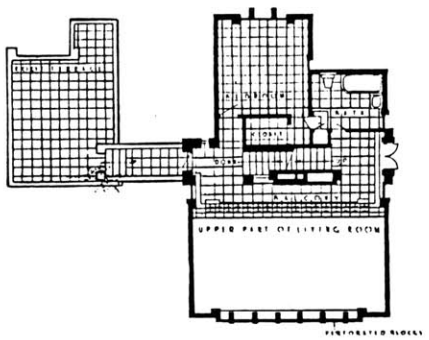
and client were concerned. This indirect relationship with the project and the strong willed personalities of Wright and Barnsdall caused many difficulties during the design and construction and they surely felt very unsure of themselves as well. Wright described Barnsdall by saying,

> My client, as I soon found, had ideas and wanted yours but never worked much nor for long at a time, being possessed by incorrigible wanderlust that made me wonder, sometimes, what she wanted a beautiful home for - anywhere. Later I came to see that that was just why she wanted one...
>
> As you have read between the lines, I was chiefly to blame, myself. Because I flouted my client- unable to understand her as I now see I did not. After all it was her house.[3]

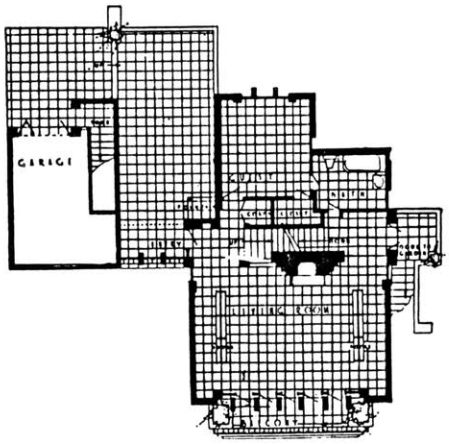
La Miniatura, Front View



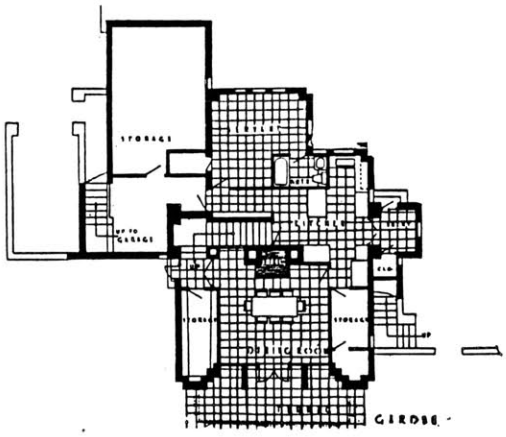
La Miniatura, Plan



Third Floor

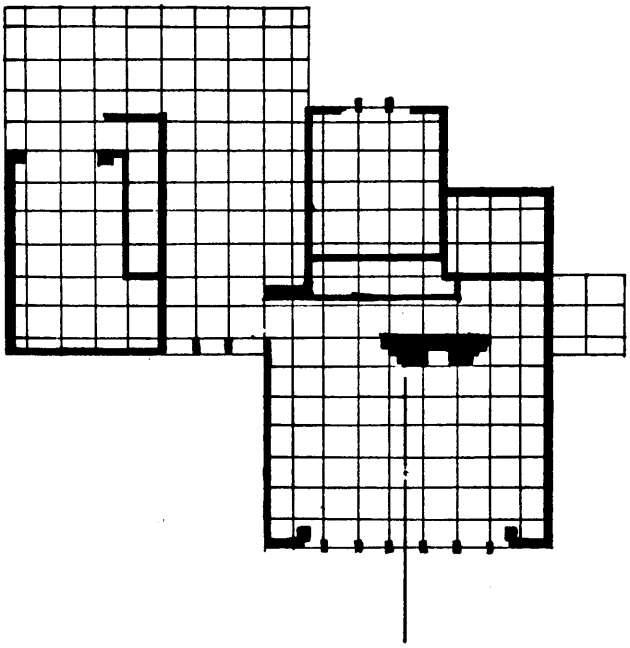


Second Floor

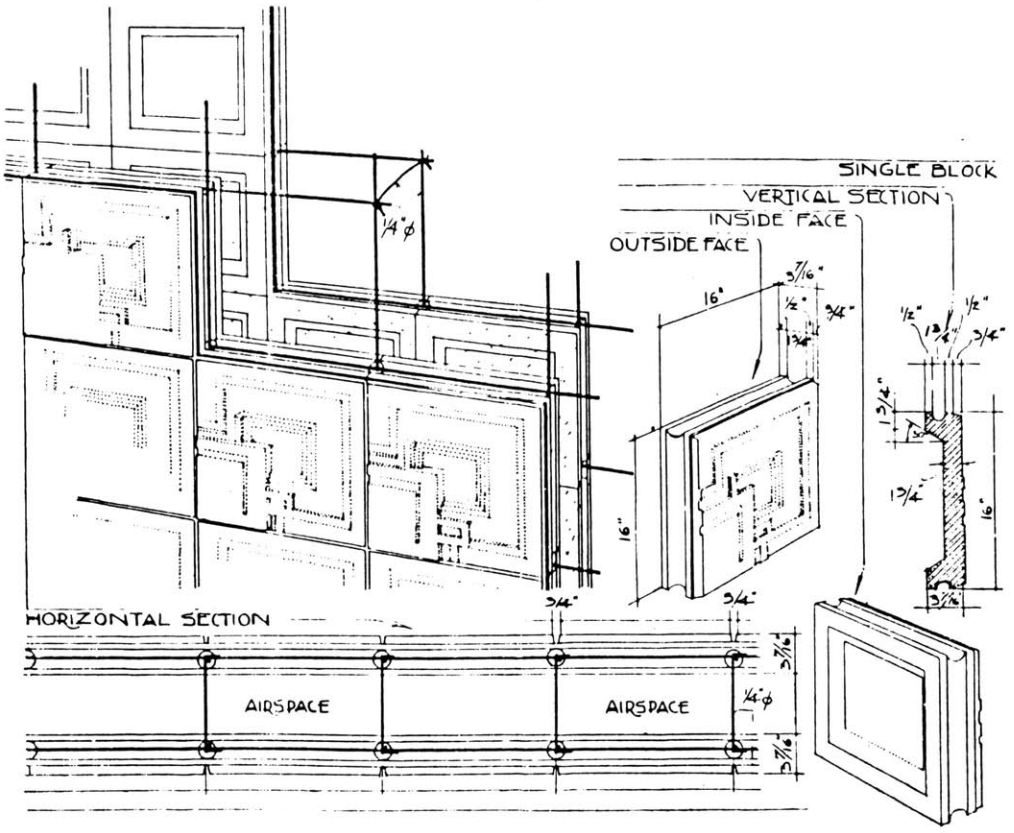


First Floor

La Miniatura, Plan Diagram



La Miniatura, Detail of Concrete Block System



LA MINIATURA

When Frank Lloyd Wright began work on the house called La Minaitura, he wondered if he could go deeper into his theory and find a system of construction as a basis for its architecture. La Miniatura was a home and bookshop in Pasadena for Alice Millard. She and her husband were former clients from Illinois, and Wright had built a house for them in Highland Park 15 years earlier. Though Millard only had $10,000 to spend, Wright had respect for his client. Wright decided to use the concrete block for his system of construction and wanted to refine it and make it possible to be used by unskilled labor.

Wright's idea was to recombine precast concrete blocks with steel reinforcement by running the steel rods in the hollowed joints between the blocks. The joints would be filled with cement. The new type of wall was not like the masonry construction normally used for concrete blocks, but it was a hollow concrete shell. The blocks were used on the inside and the outside with air space left for insulation in between. The air space worked to keep the house cooler in hot weather. The blocks were either plain or cast with a pattern on their surface. With his new system of construction, Wright was able to

go deeper than the surface qualities he achieved in the Hollyhock house. In this way, the block house was more organic than the Hollyhock house.

The new system of construction proved to be more complicated than Wright had intended. More than 30 different molds were necessary for different types of blocks. For the system to work there had to be blocks for corners, jambs, caps and bases as well as plain and textured surfaces. The blocks did not comfortably accomodate utilities and were adversely affected by the weather and some have begun to crumble.

When Alice Millard was ready to begin construction on the house she found a contractor recommended by her friends. She liked this contractor very much and he was willing to engage in this experiment. Wright, however, was apprehensive about the contractor, but decided to go ahead. Wright described the construction process by saying:

> Our builder picked up some relations of his in Los Angeles to make them [the concrete blocks]. We needed no skilled labor yet and so more of the builder's relatives came to set the blocks, carrying them up ladders on their shoulders to their scheduled places in the walls. [4]

Once the house was underway, Millard left for Europe and paid the contractor herself, instead of doing it

through Wright. Soon afterwards the builder stopped working on her house. When Millard returned she was determined to continue so she found another builder to finish the work. The house was finally finished, due mostly to a very strong and determined client. Wright was pleased with the textile block construction system he developed, and he was satisfied that he had gone deeper into his theory.

DESERT HOUSE THEORY

Wright came into contact with new places that changed his outlook on the world and challenged him. In the years before 1910, Frank Lloyd Wright was primarily known as a Middle Western architect, but when he left for Europe in 1909 and published the Wasmuth portfolio in Germany, his practice started to receive international recognition. His work was widely appreciated throughout Europe and in 1914 he received the commission for the Imperial Hotel in Tokyo. He was finishing the Imperial Hotel at the same time that he began these houses in Los Angeles.

When he started work on these houses, Wright knew he had to find an appropriate kind of architecture that would suit Los Angeles. Wright was disappointed with what he found there because the Midwesterners and Easterners who moved there had adopted the Spanish Colonial style of architecture. In his autobiography, first published in 1932, he asked himself, rhetorically, "what was missing? Nothing less than a distinctly genuine expression of California life in terms of modern industry and American opportunity." [5]

Frank Lloyd Wright's changes in theory in the case of the desert houses were more responsive to a new place

rather than to a new client or culture. Reyner Banham describes the effect that the desert probably had on Wright,

> And the desert also shook him, as it must shake anybody. Not only is it ravishingly and humanly beautiful, but it marks the situation where the accessibility of the wilderness becomes frankly disturbing; driving out of the great cities of the southwest you come upon it too soon, before you can adjust yourself to its psychological impact.[6]

Wright felt that his first responce to this new place was somewhat superficial so he tried to go deeper with his next responce. He did this primarily by devising a new construction system rather than just responding with exclusively the forms of the building. Wright did less work in the desert and wrote less about it than with the Prairie houses. He did devote a lot of space in his autobiography to the Hollyhock house and La Miniatura. However, most of that was to tell the story of the design and construction of the two houses rather than to develop any sort of theory. His textile block construction system was later modified and incorporated into an alternative construction method for Usonian houses. However when Wright designed the Sturges house in Los Angeles in 1939, he did not use the textile block system. The house is a wood frame Usonian house on a concrete pedestal.

Though Wright used the modified block system later in other places, he never used it again after the 1920's for houses on the hillsides of Los Angeles.

Wright's theory during this period is difficult to evaluate because not much was written, and what was written didn't appear until the 1930's. Though Wright described these two houses in some detail in his auto-biography, his theory must be understood primarily by looking at the houses. Wright's theory was not explicit during this period, though he appears to have relied on the same principles he had established during the earlier part of his career. His responsiveness was immediate to the new place he encountered, and he responded again after the Hollyhock house design, when he sensed that it had not lived up to his expectations. Wright tried to go deeper into his theory to find a more appropriate solution to the construction methods in concrete, and he was challenged to develop a method that was not ex-pensive. This sort of problem was unprecedented in Wright's work to that time, though he had a similar pro-blem to solve in designing the Unity Temple. Wright was expanding the scope of the problems he was trying to solve with La Miniatura and was inclusive with his theory.

The potential value of his theory improved with this step, but the use of the textile block system never went further than for his clients and did not influence others to any great degree.

DESERT HOUSE MODELS

When Frank Lloyd Wright was faced with responding to the California desert, he knew that he would have to find different models to use than those he used for the prairie house. By the time Wright designed the Robie house he had begun to rely mostly on his own previous projects as models for his work rather than looking at the work of other architects. Wright observed in California that other architects were using the Spanish Colonial style as a model for their own work. Wright thought that the Spanish buildings were an inappropriate model so he looked elsewhere. He selected Mayan architecture as a model for his work as well as the Indian pueblos of the southwest. Wright believed these were more suitable to the climate and landscape of the American desert than the Spanish style buildings. He was trying to find a model that was American that fit his preferences for form.

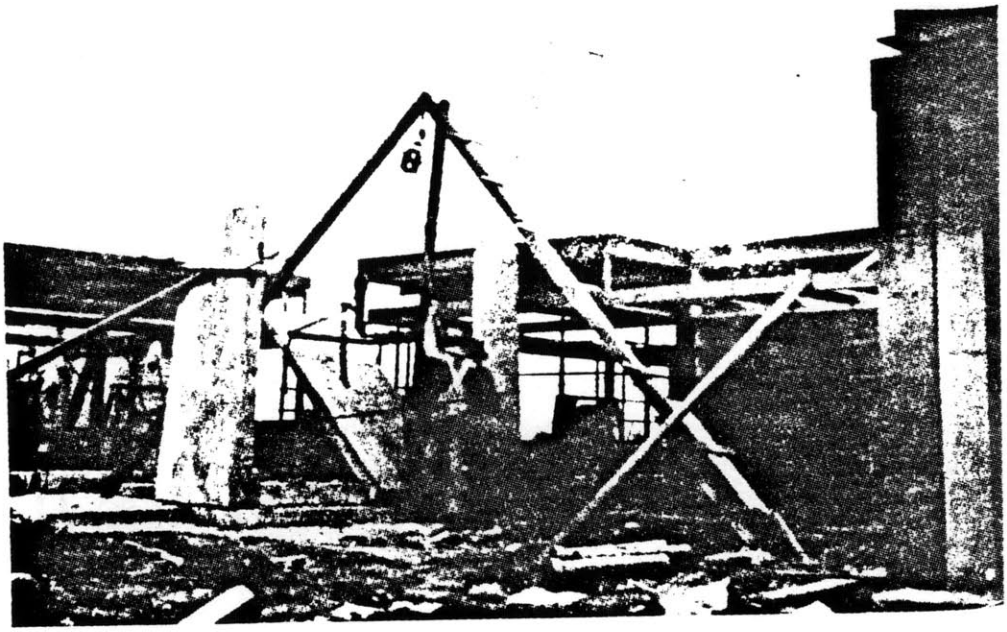
Wright was also trying to find a suitable construction technique to build these houses. He was interested in exploring concrete since it seemed to be the most appropriate for the place. Earlier he had proposed designs for Concrete Monolith Homes and he built the Unity Temple out of concrete. For his architecture to be "organic" he

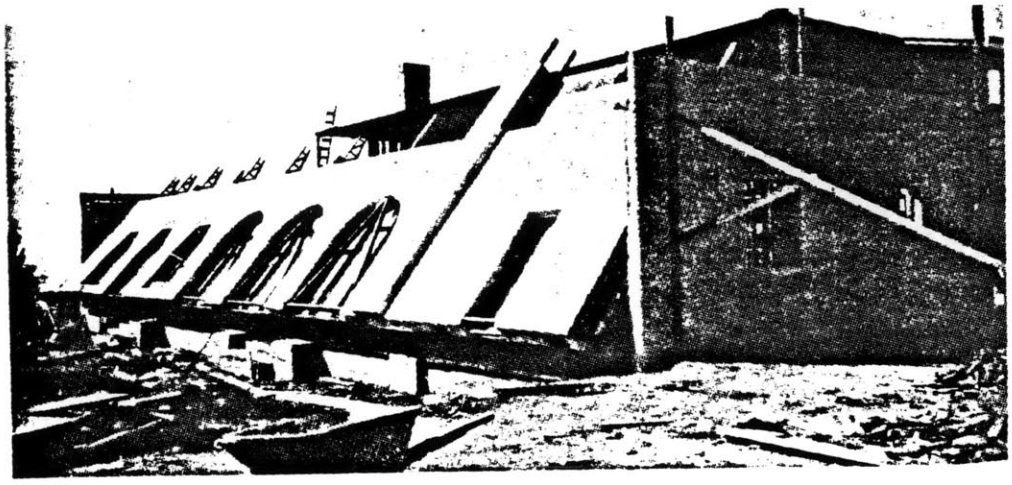
believed the construction technique would have to be integrated with the forms he chose. The Hollyhock house was his first house of this type, but did not exhibit integration of the construction technique. Yet, with La Miniature, Wright was finally able to develop a technique of building with concrete blocks that would combine the construction with the form.

Correspondingly, there was local precedent in Southern California for experimentation with construction in concrete. Irving Gill, who worked with Wright in Sullivan's office, had built many concrete buildings in San Diego and Los Angeles including some using tilt-up concrete panels. Also, R.M. Schindler stopped working on the Hollyhock house, and he opened his own office and began construction on his own house. Schindler's house, built in 1921, used smaller tilt-up panels than those with which Gill had experimented.

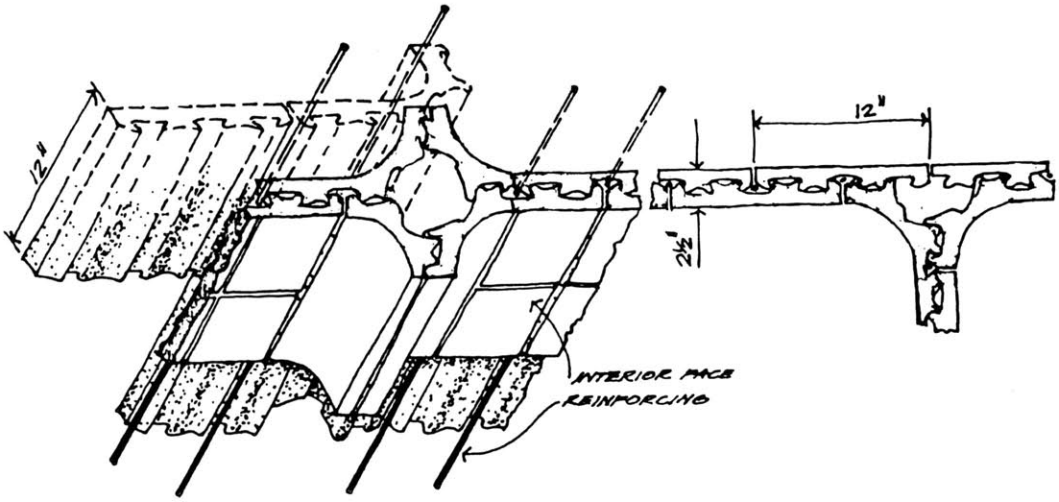
In Australia, the "knitlock" system for concrete block construction designed by Wright's former apprentice, Walter Burley Griffin, was also a possible model for Wright's textile block system. Griffin designed the knitlock system in 1916 for low-cost housing, and in 1917 patented the idea and formed a company to produce it. Griffin used in from 1919 to 1935 starting with his own

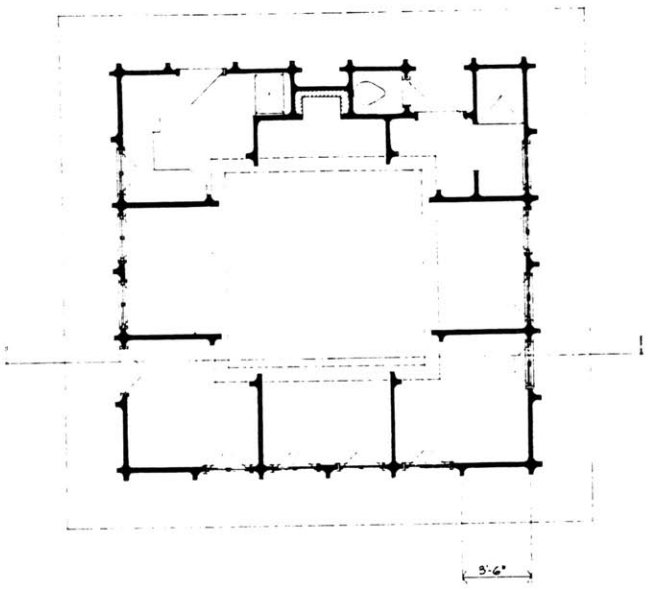
Schindler House, Under Construction
La Jolla Womens' Club, Irving Gill, Under Construction

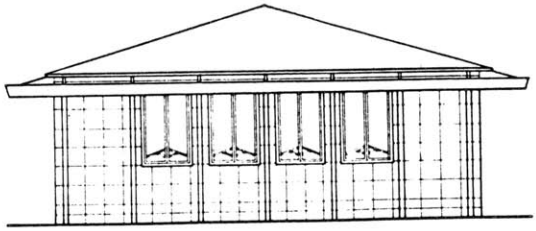




Knitlock Block System
Griffin House, Plan







house. The knitlock system consists of a double wall of interlocking blocks with steel reinforcement in the vertical joints. Marion Mahoney Griffin suggested that Wright's textile block system was based on the knitlock.[7] The editor, or his representative, of Sydney's Building magazine is believe to have visited Wright and told him about the system. Wright describes his own system as "knitting" the blocks together. Though the two systems are different in detail, they are both simple systems of concrete block construction for low cost housing.

DESERT HOUSE COLLABORATION

The clients that Wright had for his desert houses were different than those he typically had for his Prairie houses. Aline Barnsdall was richer and much more liberal in her ideas than Wright's earlier clients. Millard was one of the first of many of Wright's clients who came back to him for a second house. By the 1920's Wright's reputation was well established and many clients, probably including Barnsdall chose him because they wanted to own a house designed by Wright for the presitige involved. At this stage his clients made suggestions about how the house should be designed, but did not become involved in the actual construction as they would later with the Usonian houses.

Wright experienced some of the greatest difficulties of his entire career in building the desert houses. He was not familiar with good builders and craftsmen in Los Angeles and had a difficult time finding satisfactory ones. He also spent most of this period in Wisconsin or Tokyo so he was not on the scene to direct the construction. His assistants and his brother Lloyd Wright had to play an important part to ensure that the houses were constructed as envisioned and that the new ideas he was experimenting with could be employed.

The story of R.M. Schindler helps to describe the role of his assistants in the years after Wright returned from Europe. Schindler was born in Vienna in 1887 and studied there under Otto Wagner. He went to work for an architectural firm in Vienna in 1911 and moved to Chicago in 1914 to work for Ottenheimer, Stern, and Reichel. He applied to work for Wright several times without success. With the declaration of war in 1917, Schindler went to Wright again and offered his services without salary and was accepted. In February of 1918, Wright moved his office to Taliesin in Wisconsin. Schindler worked on the Imperial Hotel project for Japan and in December of 1920 moved to Los Angeles to supervise the construction of the Barnsdall House. In 1921 Schindler decided to set up his own practice in Los Angeles. Schindler later described his work done for Wright in a letter to him, "The structural features which hold the Imperial Hotel together were incorporated only after overcoming your strenuous resistance... You were informed of all this work by letters and blueprints I sent to Japan. You accepted it and paid for it (as little as you could). You offically identified yourself with it by including my scheme and drawing of Mr. Hardy's workingman's colony unretouched in your personal exhibit as your own."[8]

Schindler, as with most other architects who worked for Wright, was strongly affected by Wright's designs. Many of the other architects were unable to add anything of their own to Wright's style, but Schindler was able to develop his own style. While he was working for Wright in Chicago he wrote to a friend in Vienna and said, "Not one of Wright's men has yet found a word to say for himself"[9] Part of the reason for Schindler's ability to break away from his master probably lies in his strong background in engineering and construction as well as not returning to Chicago. Schindler went on to have a small but successful practice in Los Angeles.

Chapter 4

The Usonian House

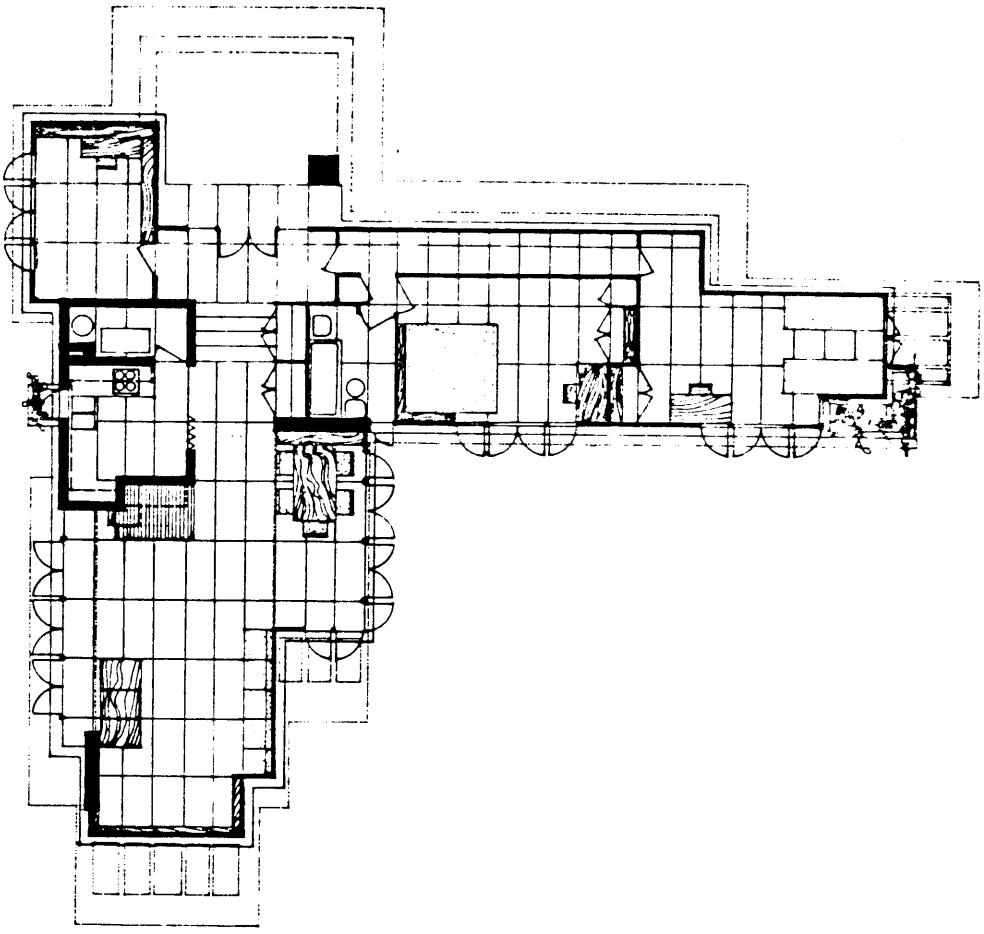
The house of moderate cost is not only America's major architectural problem but the problem most difficult, if not improbably of solution, for her major architects.[1]

Frank Lloyd Wright

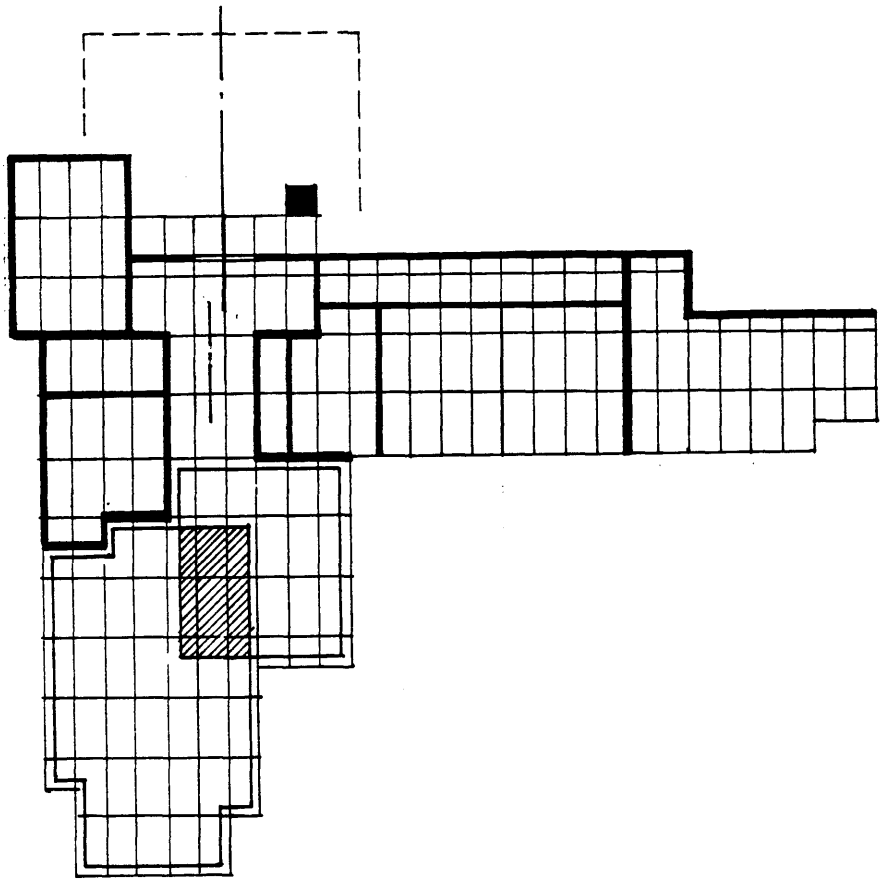
Frank Lloyd Wright tried to develop a low-cost house in the 1930's that would help to solve the nation's housing problem. This was a problem that Wright worked on throughout his career. The Usonian house was a simplified version of some of his previous houses that included some innovations in construction methods. These houses involved the client and Wright's assistants much more than any of his previous houses. The Pope house and the second Jacobs house represent two types of Usonian houses with their rectilinear and circular plans. The stories of the design and construction of these houses are well documented so they give a better insight into how Wright collaborated with others.

Pope House, Front View

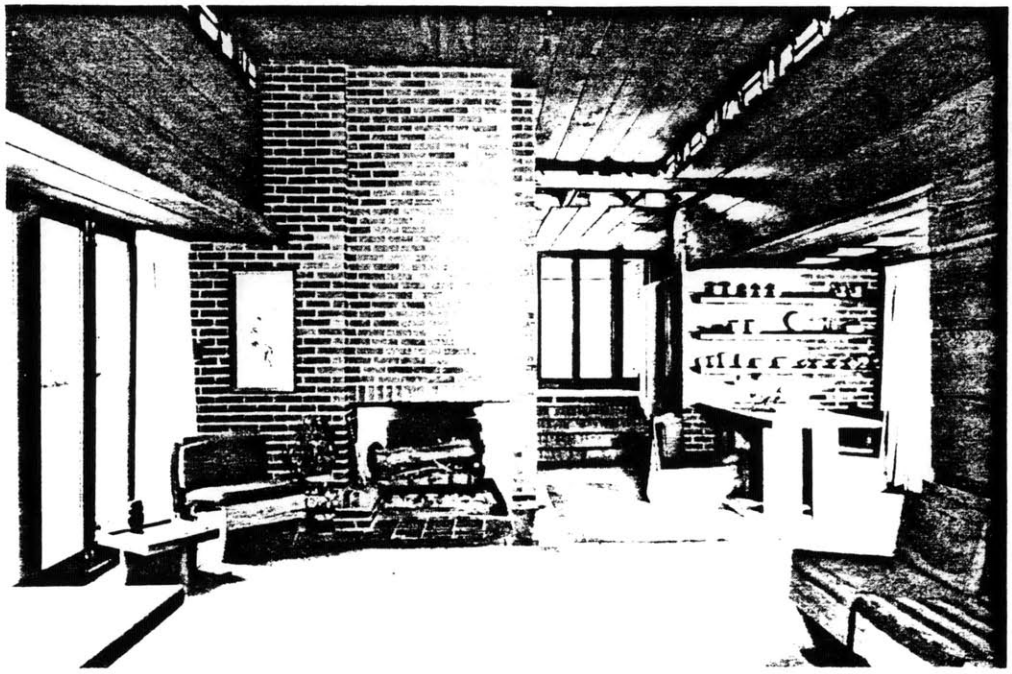
Pope House, Plan



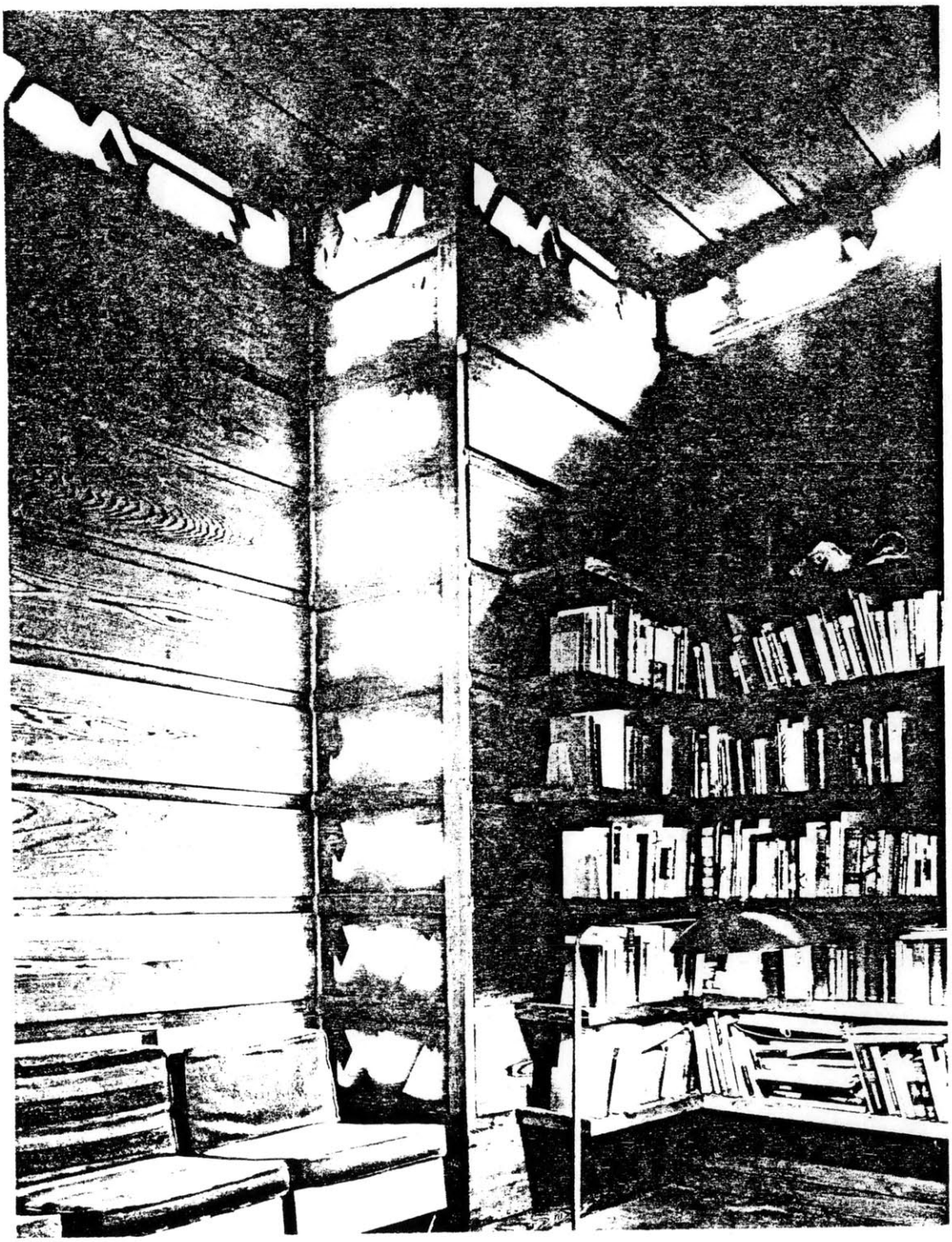
Pope House, Plan Diagram



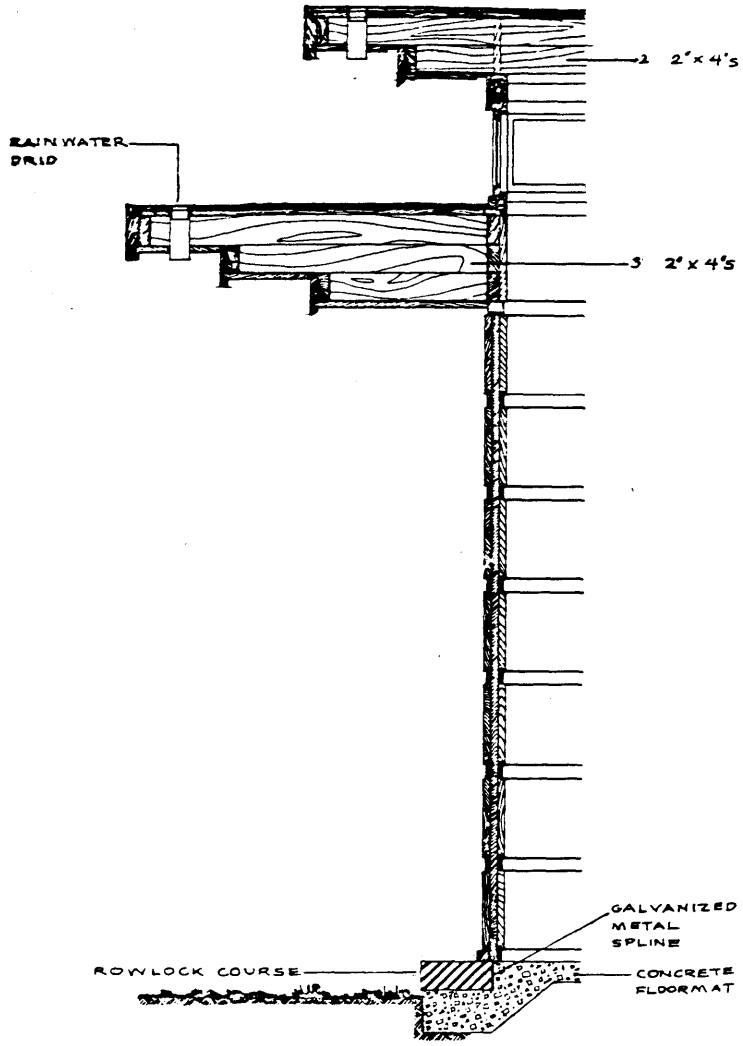
Pope House, Interior View



Pope House, Perforated Board Pattern



Pope House, Detail of Sandwich Wall Construction



POPE HOUSE

Loren Pope was one of Wright's earliest clients for a Usonian house. The house for the Popes in Fall Church, Virginia was designed in 1939, two years after the first Usonian house for the Jacobses. Loren Pope was a newspaper reporter for the Washington Evening Star. Pope first became familiar with Wright by reading his book An Autobiography in the later 1930's. Pope wrote that:

> From An Autobiography on, my bride and I stopped buying Colonial reproductions or thinking about the picket-fenced Cape Cod we were planning to build. Instead, my friends began telling me I was a little giddy to think about approaching the great, expensive and imperious Frank Lloyd Wright... I decided that no matter how busy or important, the master would listen to someone who wanted one of his works so much.[2]

Pope sent a letter to Wright and followed up with a list of needs for their house. Wright designed the house, but it had to be reduced in size because the bids from the contractors were too high. Pope turned to his employer for the financing of the house since it was difficult to find financing for such an unusual house through a bank. The Pope house was based on a structural system common to most Usonian houses. There was a standard detail sheet used for the Usonian houses since the variations for individual houses were in the arrange-

ment of the plan and in the pattern for the perforated boards used over the clerestory windows.

Gordon Chadwick was the Taliesin supervisor who acted as general contractor for the house. His job was to supervise the construction and to find the sub-contractors. Pope paid Chadwick a small salary and his expenses. Chadwick joined Taliesin in 1938 and worked on the construction of Wright's camp in Arizona, so he was chosen to supervise construction of the house. Though other apprentices were more experienced, they were not willing to leave Taliesin to work on the house. Chadwick was not involved in the design and only worked on the construction. One of his first jobs on the site was to adjust the placement of the house because the survey of the lot was inaccurate. Chadwick later wrote that:

> Wright plans required interpretation. The Usonian plans were laid out in a two-by-four foot module but without detailed dimensions. Every time you got to a doorway, a corner or interesction where special conditions prevailed, the dimensions had to be modified one way or another. Builders always wanted to know why they couldn't have been just like any other plans, i.e. worked out dimensionally. I think Mr. Wright wanted to emphasize the system concept; and the plans certainly looked prettier without dimensions![3]

Pope and Chadwick picked Howard Rickert to sub-contract all the woodwork. Until they found Rickert

they had been unable to find a carpenter who wanted to do the job. The masonry work had already been completed by a mason who recommended Rickert to them. Rickert had built many houses and some furniture but had never seen any of Wright's work. Rickert was taken with the design and thought it would be a challenge to built Pope's house.

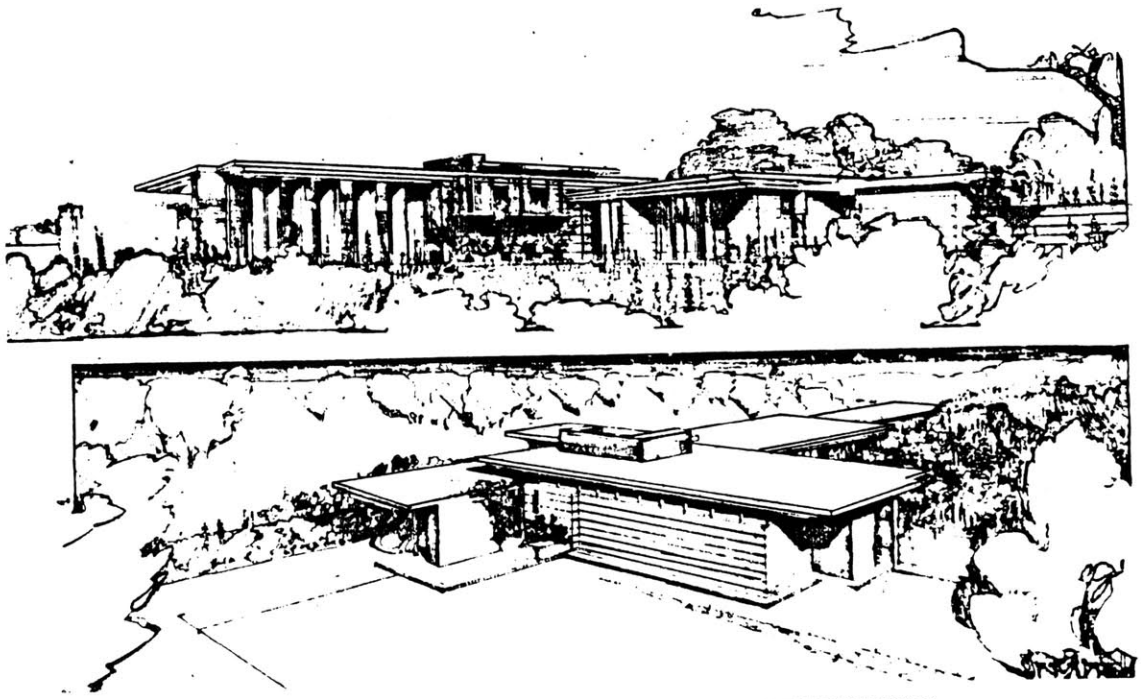
Howard Rickert worked closely with Chadwick during the construction to interpret the plans. They built a portion of the sandwich wall construction to test its strength for this house and another Usonian house being built nearby. The milling of the wood was done in Rickert's workshop and the rest of the work was done on the site. Rickert later wrote that he felt work on this house gave him a greater opportunity to use his skills as a craftsman. He wrote that:

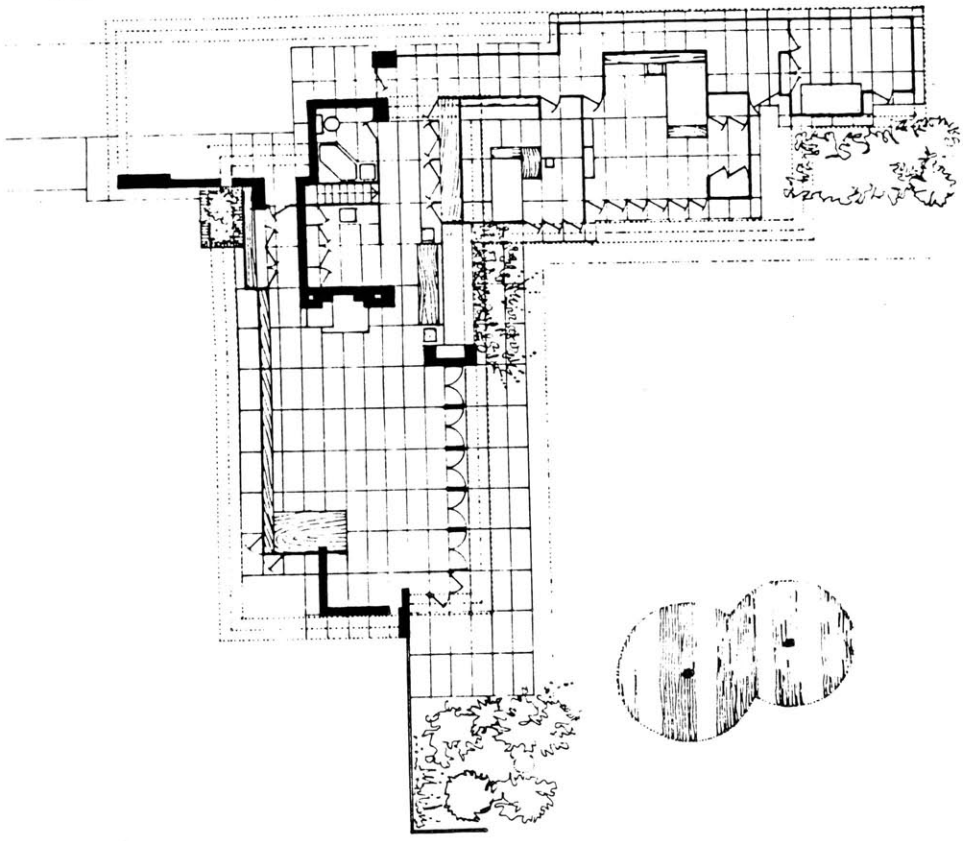
> In that house I had pride in making something fit; the baords had to lap over each other and be made to fit perfectly. Everything had to line up, the screws and slots had to line straight across. You had to be a skilled mechanic to grasp it. I had some of the best workmen I've every had working with me.[4]

The furniture designs for the house were standard for other Usonian houses and were built by Rickert. Mrs. Pope and her mother chose the fabrics for the seat cushions and the draperies in consultation with Gordon

Chadwick. Chadwick devised a corner detail for the brick course along the top of the foundation and a grate for the fireplace. Rickert devised a different detail for the door jambs so they would be stronger. Though Wright visited the site a few times during construction and kept in contact with Chadwick throught the construction, both Chadwick and Rickert played an important part in the successful construction of the house.

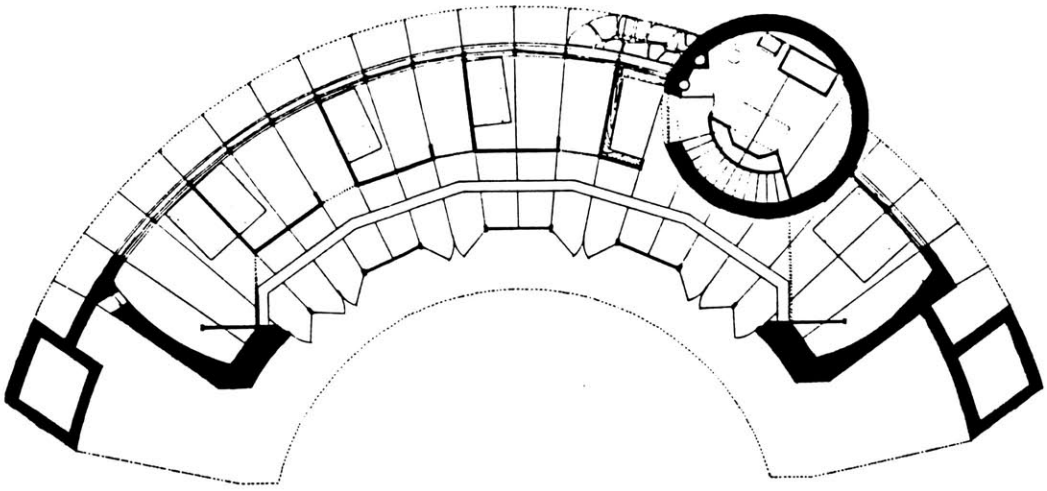
First Jacobs House, Perspectives, Plan



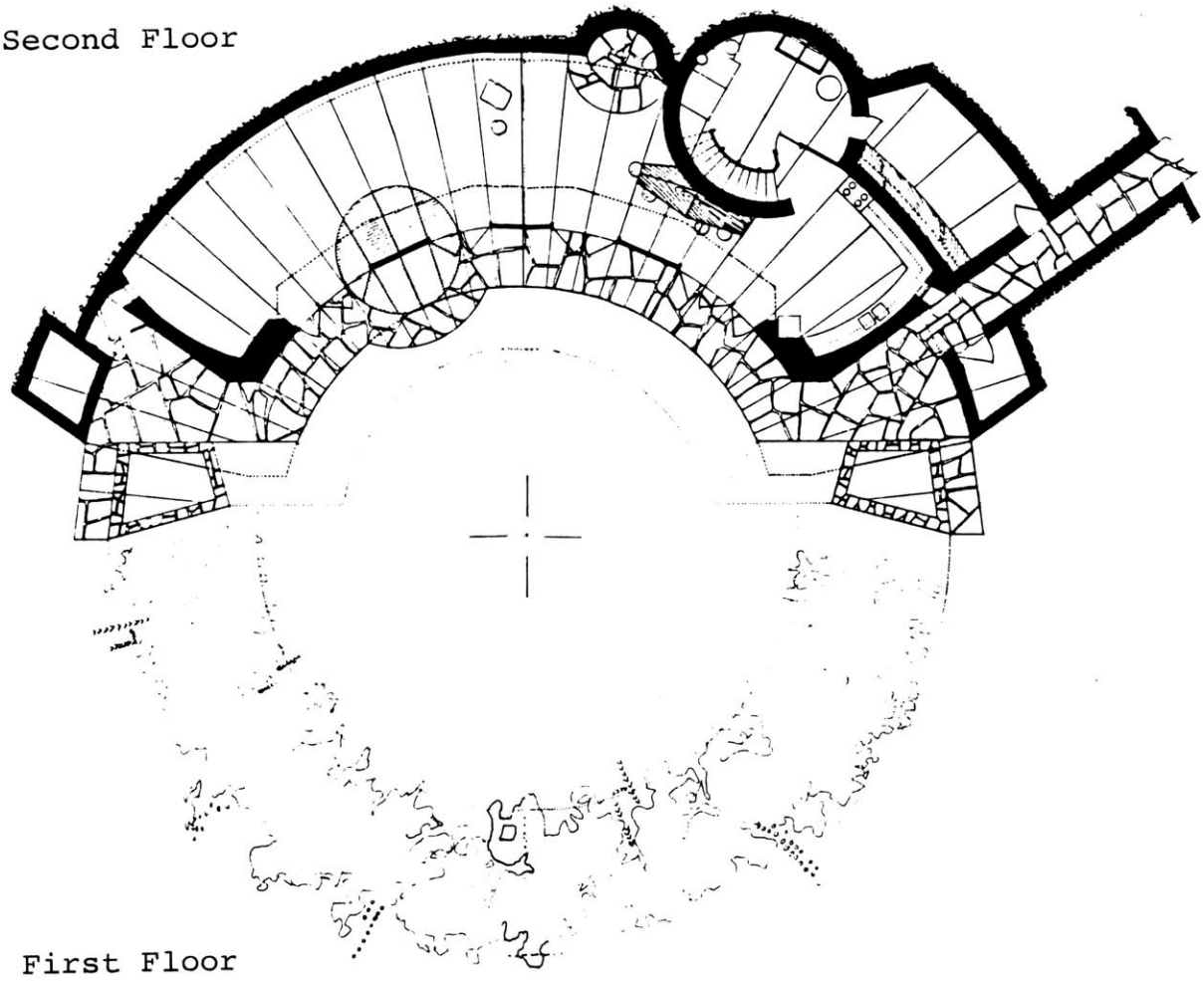


Second Jacobs House, Front View

Second Jacobs House, Plans

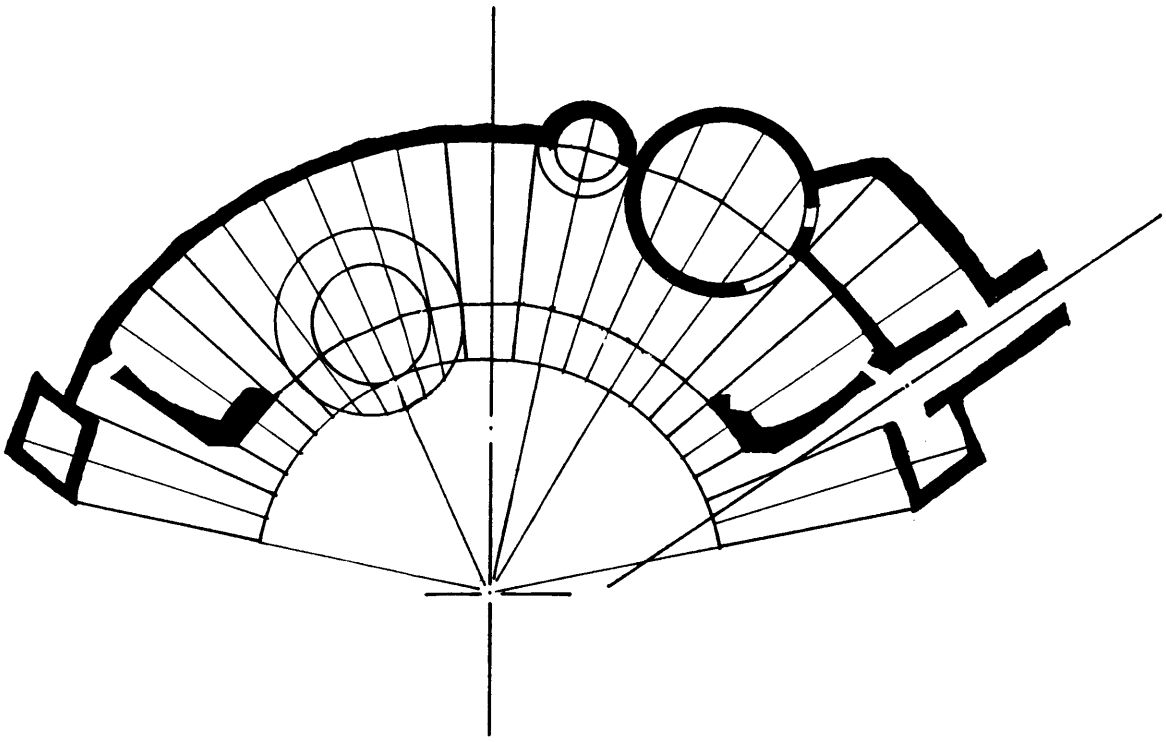


Second Floor



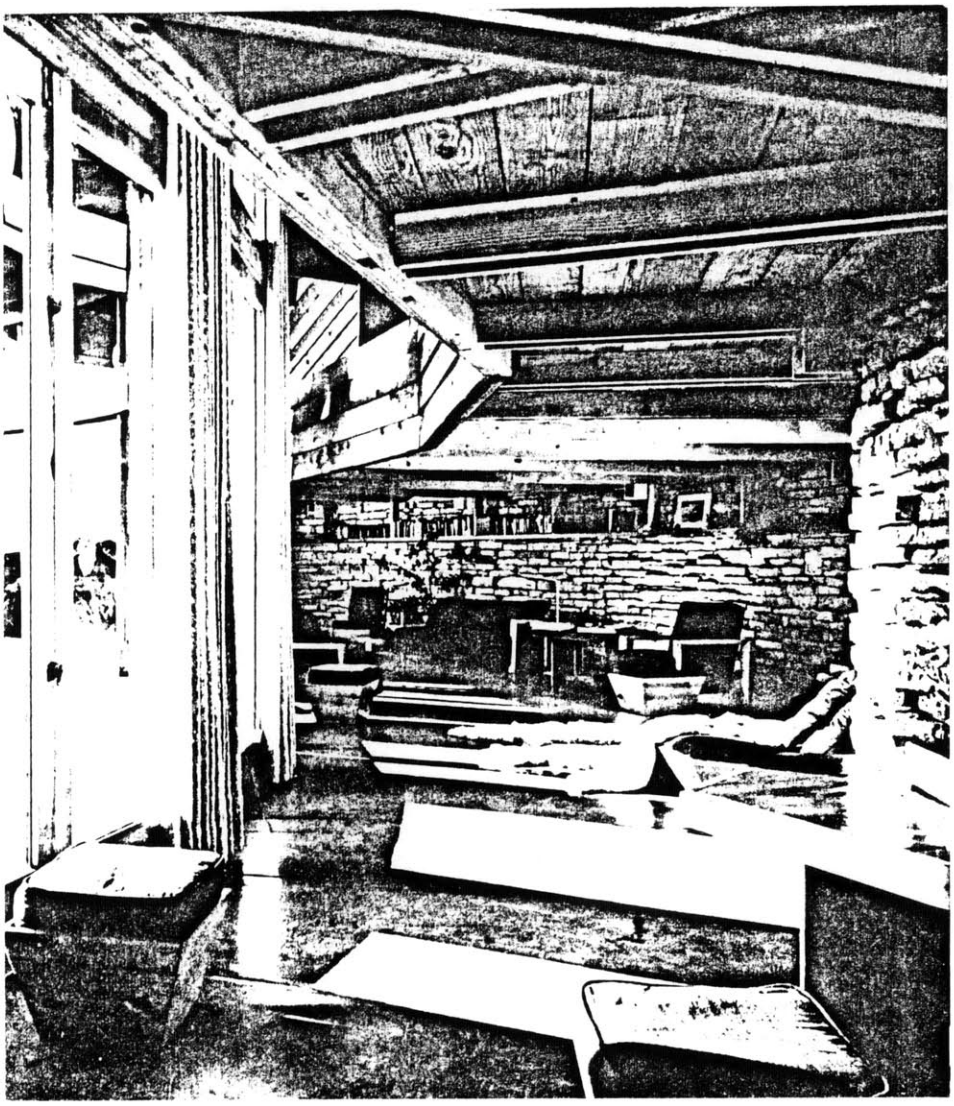
First Floor

Second Jacobs House, Plan Diagram



Second Jacobs House, Under Construction

Second Jacobs House, Interior View



JACOBS HOUSE

Herbert and Katherine Jacobs were Frank Lloyd Wright's first clients to build a Usonian house. Herbert Jacobs was a newspaper reporter for the Milwaukee Capital Times. He first came into contact with Wright when he reported on Wright in 1934. He came to Wright in 1936 and asked him to build a $5,000 house. The house was built in the suburbs of Madison in the following year and was similar in design to the one built later for Loren Pope. In 1942 the Jacobses decided to move out into the country and buy a farm. Herbert Jacobs wrote about the experience of living on a farm in his book We Chose the Country. They bought the farm expecting to have Wright design a house on it for them. In 1943 they wrote Wright requesting him to design a house for them. Wright picked a site for the house on their farm and stressed the idea of do-it-yourself ocnstruction. At this time clients and apprentices were both scarce for Wright because of the Second World War. In December of 1943 Wright showed them a plan for their house. The Jacobses were not happy with the plan, though, since it seemed too large and expensive even if they could do much of the work themselves. The design also did not support their informal way of life in the same manner their first house did.

The Jacobses were also worried that the house would lose too much heat from the large glass areas and that it was not protected from the cold winter winds. They asked Wright to try again and work on a simpler scheme.

Wright was working on the design for the Guggenheim Museum at the same time as the Jacobs house and was exploring possibilities with circular plans. With the Jacobs' first house, Wright had experimented with the floor heating system that he wanted to use on the Johnson administraton building and in Johnson's own house. The Jacobses were willing to take part in these experiments hoping they would get a better house in the process. In February of 1944 Wright wrote to them saying, "We are about ready to make you 'the goat' for a fresh enterprise in architecture. If you don't get what is on the boards some other fellow will. So 'watch out.' It's good."[5]

The design that Wright showed them was a two story house with a semi-circular plan. Along the inside of the semi-circle was a solid band of glass doors and windows facing a garden to the south. Along the outside of the semi-circle was an embankment of earth and a narrow band of windows on the upper floor for the bedrooms. The earth berm would protect the house from cold winter

winds and a generous overhang protected the band of glass from the summer sun. The module of the house was a 6° sector of a circle measured from the center of the garden making it possible to lay out the house simply with a surveyor's transit and a steel tape. The upper floor was to be supported by rods suspended from the roof rafters. Wright told them that the house could be built for $5,000.

The Jacobses pleaded with Wright to finish the plans for the next two years and finally received them in October of 1946. They got a permit to build and began the site work with a bulldozer and an apprentice from Taliesin. Herbert Jacobs tried to find a contractor, but he was not able to find one and decided to be the general contractor himself. Jacobs found a local farmer who did masonry, Johnny Luginbuhl, to begin the stone wall. Herbert Jacobs was finishing a book at that time and Jacobs' publisher sent a copy of the manuscript to Wright. Wright was upset by a sentence in it implying that Jacobs had helped Wright with his autobiography. Wright cut off relations with Jacobs and refused to help with the construction of the house. In the spring of 1948 the Jacobses sold the old farm house and the land around it planning to move into the new house by the end of the summer. It

took the three masons three months to put up the stone wall. Herbert Jacobs continued to work at the newspaper and Katherine Jacobs assisted the masons. Herbert Jacobs found a cabinetmaker and building contractor, Wilfred Way,who would build the doors, windows and the roof.

The Jacobses went to visit Wright at Taliesin, and Wright was upset that the plans were not being carried out properly. The Jacobses were also upset that Wright had not come out to see the house, and their relationship continued to be difficult. The stone wall was soon finished and the wood framing went quickly into place. Jacobs called Wright to resolve a framing problem and by the end of the summer the doors and windows were in place. Wright finally came out to look at the house after 8 months of hostility. Wright seemed pleased with the work done without Taliesin supervision and later sent an apprentice out with a bulldozer to push the earth up against the house to form the embankment. Herbert Jacobs built the bedroom partitions during the winter. The house was visited by many curious people, and the one dollar fee for visitors eventually paid for Wright's architectural fee.

The Jacobses appreciated the way that their house

was designed and, "the framing of attractive views by architecture, and the sense of garden and all outdoors forming part of the house."[6] Herbert Jacobs also wrote that:

> When we came later to hear of Wright's occasional drastic reactions to changes clients made in their houses, we appreciated his tolerance and kindness toward our own delays and minor alterations. He was obviously please with our home, to the extent of making it a test for some clients.[7]

Though the Jacobses were "the goat" of a few of Wright's experiments, they seemed to enjoy taking part in it. They were looking for an architecture that would suit their lifestyle and Wright was able to give this to them. Jacobs wrote that:

> While I will concede that a certain ruggedness of disposition helped in building with Wright, when we look back on it all we can well echo this view of Elizabeth's (their dauthter): "The close participation in all parts of the building process was a wonderful enabling experience. My early lessons that 'all things are possible' taught me that the process of making them possible is not mysterious, though it is often difficult or even tedious, and it is always rewarding."
>
> We "stayed the course", as Wright thought we might. And if we could break more architectural barriers with Frank Lloyd Wright, we would do it all again.[8]

USONIAN HOUSE THEORY

For Frank Lloyd Wright the 1930's were times of major changes in his life and work. Like other architects he struggled to find commissions during the depression. He began the Taliesin fellowship to train younger architects. One of the most important problems he tried to solve was to find a house for clients of moderate means. As early as 1901 he began to experiment with proposals for this type of house with the magazine Ladies' Home Journal. In 1936 he did his first Usonian house design that was never built, for H.C, Hoult in Wichita. He adopted the name Usonia from Samuel Butler's utopian novel to help describe the new type of house he wanted to build. Then in 1937 he began the Herbert Jacobs house in Madison which was built for $5500. This was the first of many commissions Wright received for a moderately priced house.

Wright believed that the Usonian house should be a simplified version of what was currently accepted as a standard house. He listed the ways that he thought a standard house could be simplified in his 1943 autobiography edition,

Now what can be eliminated? These:

1. Visible roofs are expensive and unnecessary, though desirable

2. A garage no longer necessary as cars are made. A carport will do, with liberal overhead shelter, walls on two sides. Detriot still had the livery-stable mind. It believed the car must be stabled so - no longer.
3. The old-fachioned basement, except for a fuel and heater space, always a plague spot. A steam-warmed concrete mat four inches thick laid directly on the gravel or broken stone filling, the walls set upon the same, is better
4. Interior "trim" no longer necessary
5. No radiators, no light fixtures. We will heat the house the "hypocast" way, gravity heat, make the wiring system itself the lighting fixtures, light upon and down the rooms. Light will thus be indirect, except for a few outlets for floor lamps.
6. Furniture, pictures and bric-a-brac unnecessary because walls can be made to include them or be them.
7. No painting at all. Wood best preserves itself. A coating of clear resinous oil would be enough. Only the floor mat of concrete squares needs waxing
8. No plastering in the building
9. No gutters, no downspouts[9]

The Usonian houses were simple houses built with the minimum of materials used for maximum architectural effect. These small houses depended on vistas out into their surroundings to give them a feeling of greater size. The plans were laid out usually with a grid and the walls were also laid out in systematic units. Wright described in his autobiography what the interior of the house should be like by saying:

1. As big a living room, as much vista and garden coming in as we can afford, with a big fireplace in it, open bookshelves, dining in the alcove, benches and living-room tables built in. Quiet rug on the floor, in color if possible.

2. Convenient cooking and dining space adjacent to if not a part of the living room. This space may be set away from the outside walls with the living area to make work easy. This is the new thought concerning a kitchen - to take it away from outside walls and let it turn up into overhead space within the chimney, this connection to dining space is made immediate without unpleasant features and so no outside wall space lost to the principal rooms. A natural current of air is thus set-up toward the kitchen as toward a chimney, no cooking odors escaping back into the house. There are steps leading down from this space to a small cellar below for heater, fuel and laundry, although no basement at all is necessary if the plan should be so made. The bathroom is usually next so that plumbing features of heating kitchen and bath may be economically combined.

3. In this case (two bedrooms and a workshop which may become a future bedroom) the single bathroom for the sake of privacy is not immediately connected to any single bedroom. Bathrooms opening directly into a bedroom occupied by more than one person or two bedrooms opening into a single bathroom have been badly overdone, sure of unpleasant consequences. We will have as much garden and space in all these space appropriations as our money allows after we have simplified construction by way of the techniques we have tried out in so many cases.[10]

Wright's ideas of a Usonian house was tied strongly to what he thought people in a democracy should build. The idea of freedom of the individual to build as he pleases, as long as it is sympathetic to the natural environment, was one that Wright has tried to show through all of his buildings. He described the Usonian house in his book

The Natural House of 1954 saying that,

> Here then, within moderate means for the free man of our democracy, with some intelligence and by his own energy, comes to a natural house designed in accordance with the principles of organic architecture ... As a consequence conformation does not mean stultification but with it imagination may devise and build freely for residential purposes an immensly flexible varied building in groups never lacking in grace or desirable distinction."

The sense of space in Wright's Usonian houses is primarily formulated based on the relationship to the surrounding landscape, in order to bring about a synthesis between nature and architecture. Wright was able to bring this about by providing vistas from the house out into the surrounding landscape and by using the ground planes of the house as a series of platforms or terraces connected to the ground. The vistas were never just a compositional device for Wright, but gave his architecture a rootedness to the ground. Wright's use of distant vistas made the sense of depth of space understandable in contrast to the "intellectual" constructions of layers of planes perpendicular to the line of sight that other modern architects have used. John Lloyd Wright said that, "When Dad builds, he sees things out of the corner of his eye. He never looks straight at them."[12]

Wright used two sorts of axes in designing his

buildings, compositional and experiential.[13] As his work developed these two types of axes were no longer one in the same. He began to work with multiple axes overlapping each other in space. The vistas are independant from the geometry of structure itself and give the feeling of independence of movement that separate Wright's architecture from that concieved by more traditional principles. In Wright's earlier houses, oblique view from room to room broke up the appearent symmetry and enclosure of the spaces. Later Wright used an angular projection at the end of major rooms to give the effect of extending the perspective. The ends of the Robie house are good examples of this. In the work beginning with the 1920's, Wright began to separate the compositional axes from the experiential axes. The principle of diagonal experiential axes was carried all through his later houses dispite the wide variety of forms used (circular, rectanguler, hexagonal, etc.). Wright did not adopt this principle for purely formal purposes as a compositional device like the Dutch architects in the De Stijl group did. He used it as a responce to the topographic conditions of the site. Evaluating Wright's theory at this stage in his career is easier than the previous stages because he had written so explicitly about his ideas and built many Usonian houses.

Wright seriously approached the problem of a low-cost house and responded to clients who wanted these houses built. Previously he had only made unbuilt proposals for low-cost houses. This change may have been prompted by the depression as well as the boom in single family housing after the war. Wright's clients and assistants participated in the design and construction process much more effectively than they had previously. Wright's theory was much more inclusive than it had been before by responding to nearly the entire range of issues he faced in the design and construction of these houses. The value of his theory was much greater than before because he could serve many more clients and he was more influential because his work was known to many more people.

Wright did design one development of Usonian Houses on 97 acres just outside of New York City. The development known as, Usonia Homes, in Westchester County was a co-operative project of 33 families who found their site in 1947. Wright laid out the site plan and design five of the houses. Nine other architects designed houses for the development subject to Wright's approval. The development included community facilities and common green space. Each house was different, suited to its owners

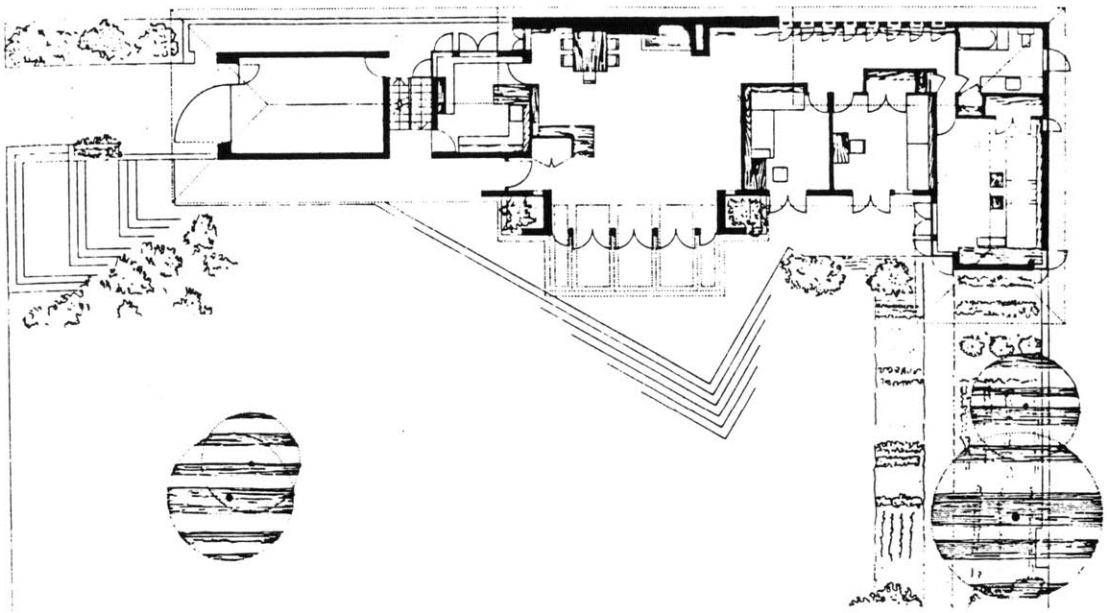
and its site, and construction costs were reduced by buying materials as a group. No bank would finance the project, so the families had to scrape together their own money. Finally after several of the houses were completed, a savings and loan agreed to a group mortgage. Even though these families readily accepted the idea of Usonian houses, it proved difficult to carry out the project because banks were not willing to finance new and experimental projects.

USONIAN HOUSE MODELS

The source for models that Wright used in the Usonian houses was his previous work. In most respects the Usonian Houses were simplified versions of his Prairie Houses. The main changes Wright made were to develop the sandwich wall construction and underslab heating. The Usonian houses used a grid (rectangular, diagonal or hexagonal) in plan and vertical datum lines to locate elements of the houses as he had previously, but with the Usonian houses he expressed these lines in the house as it was built. These lines of his "unit systems" were part of the construction of the house rather than intellectual devices used only in formulating the design. The Wiley house of 1934 comes after the Prairie houses but before the Usonian houses and shows how some of these ideas began to emerge in Wright's work.

The Wiley house was a model for Wright's Usonian houses. It shows for the first time some of the features he put to use in his Usonian houses. The house's plan is a prototype for the Usonian houses with the bedrooms in a separate "tail," and the bricks and cypresses battens are used in a simple way like the later houses. The house has elements remaining from the Prairie house, such

Willey House, Plan



as the hipped roof, symmetrical planting boxes and the radiators for heating. In general, the house is much simpler than the Prairie houses and serves as a transition between the Prairie house and the Usonian house.

In 1934, Wright designed the Wiley house. This house was one of the first in which Wright separated the compositional axes from the experiential axes. Neil Levine describes the experience of walking through the house:

> From the street, a series of steps, decreasing in width at an angle of 30°, rises up to a level brick walk to form a monumental processional entrance. Just before the door, to the right of the planter, the brick mat angles out 30° into a triangular terrace carrying the eye out to the end of a brick wall at the eastern edge of the property. Upon entering the living room, a diagonal axis is immediately defined by the corner fireplace. The view through the passage to the bedrooms is at an angle of 30°, literally mirroring the view along the edge of the outside terrace. The opposing diagonal cutting across the fireplace parallels the 30/60° angle of the terrace, thus skewing the whole space of the room toward the southwest. As you turn around in that direction, the terrace appears to swing out from under your feet as if hinged to the edge of the brick walk, and the diagonal vista it opens up extends the view out far beyond the confines of both house and garden. The edge of the terrace parallels the course of the river below and thus locks the house into the site, causing the one to pass through the other and, as it were, making the space of the house an aspect of a much larger whole.[14]

USONIAN HOUSE COLLABORATION

The clients that Wright had for his Usonian houses were usually journalists, college professors, and others who were willing to experiment but needed a low-cost house. These clients were different from his previous clients in that they were better educated and not a businessman or someone who had inherited wealth. They probably chose Wright because they sympathized with his ideas, and many of them became familiar with Wright through reading his autobiography. Often these clients played a much greater role in building the house than any of his previous clients, by acting as the general contractor or even building some of the furniture.

Wright made changes in the way that the Usonian houses' construction was supervised. This change effected both his assistants and the builders of the houses. Wright's assistants or two of the builders he most trusted, Harold Turner and Ben Witscheck, acted as general contractors, finding the subcontractors and supervising the construction. After World War II though, Wright was able to find other builders, and his assistants administered the construction in the usual way most architects did. The reason Wright had his assistants act as general contractors, was to get more control over the construction of

the houses. This way he could ensure that his ideas would be carried out as he envisioned them.

In the 1930's, Wright started the Taliesin Fellowship, that created a different form of organization for his office and attracted many more assistants.

In 1932 at the height of the depression, Frank Lloyd Wright began the Taliesin Fellowship at the suggeston of his wife, Olgivanna. The fellowship was for training young architects located at their home in Taliesin and including the converted Hillside Home School that Wright built for his two aunts. The school also included in a 200 acre farm where the students worked in addition to the architectural work. The philosophy of the school was that the students should "learn by doing." This meant working on the buildings of Taliesin as well as designing and constructing furniture. Besides the 70 apprentices and their leaders there was also a structural engineer, a sculptor, a painter and a musician on the school's staff.

In a brochure from 1932, Wright described the objectives of the fellowship.

> The study of architecture, the first year, will be taken, informally into special studies of building and building construction, typography, ceramics, woodwork and textiles. And this informal study will go hand in hand with characteristic model-

> making. Eventually it will go on with practical experiments in the machine-crafts as these experiments may be made by the apprentices in the workshop with modern-machinery and technical processes.... The first experimental units to be put to work are those of architectural construction and design, research in technical industrial engineering, the philosophy of architecture, typographical design, and the printing of the publication that will be the organ of the Fellowship; molding and casting adopted to modern systems of construction in glass, concrete and metal; woodworking by modern machinery. A collateral but informal study of the philosophy and practice of sculpture, painting, drama and rhythm is essential for all apprentices. These first units are to be followed, as soon as possible, by the shopwork of actual glass-making, pottery, modern reproducton processes in many form,s as we may find the help to establish these units. Men of Industry in the United States will find it worth their while to co-operate with us in design research, each in their particular branch of manufacture.[15]

It is usually the custom of students that they try to work for architects of outstanding skill after their graduation in order to prove their knowledge and continue their education. Many of those who joined the fellowship had already received their architectural degrees, but for others this was their first training in architecture. In the first year tuition was $650.oo but the following year it was raised to $1,100 where it stayed for 12 years when it was raised again to $1,500. Life at Taliesin was strictly regimented and all of the apprentices lived their along with their wives or husbands. They were encouraged to participate in the music and dance activities in the

evenings and weekends. A typical day would have begun with work in the workshops or on the farm from 8 until 3:45 followed by work in the studio until 6, sometimes on into the evenings. On Saturday nights there would be films or music and on Sunday's there might be a picnic. Looking at a list of rules written in 1934 by Wright will give a picture of the life; "Members of the Fellowship are requested not seek the town for relaxation. If relaxation of this sort is necessary some quality that should be present in work and fellowship is missing."[16] Taliesin West near Phoenix, Arizona served as the winter residence for the fellowship beginning in 1938. The apprentices did much of the construction work there.

When commissions were scarce, the apprentices did construction work on Taliesin's buildings and furniture. Wright referred to them as "the fingers on my hand". They often laid out the perspectives that Wright later colored and shaded, and they made other presentation drawings. In their spare moments the apprentices came back into the drafting room to study and trace from the wealth of Wright' s drawings available to them. In 1937 when Wright began work on his low-cost Usonian houses the fellowship did the construction drawings and an apprentice acted as a general contractor to interpret plans, hire trades, and

supervise the construction. Wright was in constant contact with the apprentice on site by letter and telephone. Since the Usonian house was constantly being refined this constant and close contanct with the construction in the field was necessary.

John Lautner came to Taliesin in 1933 and worked for 6 years. He supervised several projects in Michigan and California. He later set up his own successful practice in California. This sort of story was typical of many of the apprentices. In 1951 Wright proposed his "Usonian Automatic" housemade with the concrete block technique refined from his California houses of the 1920's. This type of house was intended to let the client assist with the construction as much as possible. Charles Montooth and a former apprentice, Arthur Pieper, started a business to build this type of house. The first project was built in Scottsdale, Arizona for Pieper's father.

Wright's apprentices often left once they became more experienced because Wright was not willing to share his responsibilities or credit with them. Edgar Tafel, a former apprentice, describes his experiences with Wright in Apprentice to Genius. Once Tafel began to bring in commissions on his own he was allowed to take charge of the project but Wright had the sole responsibility for the

design. The apprentice would split the fee with Wright, but Wright later gave them only one third of the fee. Since the apprentices were not paid, only given room and board, their only extra money to support a family would come from outside work. Tafel and others left Taliesin to work on their own because of the difficulties this relationship caused.

Experimentation was an important part of Wright's development all through his career and these experiments in form and materials were often carried out by Wright's apprentices. When he first began to work in Chicago, he used an 8 X 10 camera to record experimental furniture arrangements in his own house. He would spend Sunday afternoons rearranging the living room and recording the results. For the Taliesin fellows, arranging furniture and flowers were part of their training and new arrangements made each week would be criticized by Wright. Wright's wife, Olgivana, wrote about her observations of his experimentation:

> We have changed the furniture at Taliesin East and Taliesin West so many times that no one can remember how it was from year to year. And whenever Mr. Wright and I traveled and stopped at a hotel the first thing we did was to change the furniture around in our rooms. Even if we stayed just two or three days we changed everything. Then we would go and buy flowers, branches or fruit to make the short stay as beautiful as it could be made in an impersonal hotel room.[17]

Chapter 5

Conclusion

THEORY

From looking at Frank Lloyd Wright's statements of theory and the buildings he designed, it is possible to see how he defined the problems he wished to approach in architecture and what were the general principles that guided his work. These general principles were:

1 - Integration of the building with its site and climate

2 - The use of construction methods that enhance the natural character of building materials

3 - Freely shaped plans controled by strong geometrical ideas

4 - An integration of the heating, ventilating and lighting systems with the structural and enclosure systems

5 - Decoration derived from natural objects and simplified geometrically

Integration is the most important concept because it describes what Wright meant by "organic" architecture. His later houses represent these ideas more clearly, but these ideas can be seen in his earliest houses.

Wright changed the problems he tried to approach at different times in his career, but these principles guided his approach to these new problems. When he designed the houses in Los Angeles in the 1920's, he tried to find appropriate forms for this new place, and in the 1930's and 40's he tried to develop low-cost houses.

Though these were new problems brought to him by his clients, he relied on these principles for his design decisions. Wright held onto his theory very tightly rather than discarding all or most of it when he faced completely different problems.

There were two levels to Wright's theoretical statements. He made general statements that gave direction to the specifics of his theory and that connected with ideas of others, like his statement against eclecticism. These statements were less likely to change in the course of his career. Certainly some of the statements he made about the treatment of materials in the speech on the Art and Craft of the Machine he would support all the way to the end of his career. These general statements described the principles that guided his work and his approach to new and different problems. These general statements also gave direction to the use of models and his collaboration with others. Wright also made more specific statements that explained what the result of these general ideas should be like. Examples of this sort statement are the lists he made describing the qualities of the Prairie and Usonian houses. These statements often also described the means he used to carry out the idea

and were made after the houses were built. He included most of the different situations he would encounter in the design of the parts of the house in these lists.

Four qualities of Wright's theory should be examined in order to evaluate it; inclusiveness, explicitness, responsiveness, and value. These four qualities of a theory point to the conflicts that occur in integrating thought with action, theory with practice.

The inclusiveness of Wright's theory was an important aspect of his ability to solve complex problems. His theory reached across the different disciplines involved in building and with a great deal of depth in each. Wright's theory involved all aspects of architecture, and in that way we can see what he meant by "organic". His theory became more inclusive as it evolved including more complex design ideas and innovations in construction techniques.

By integrating all of the different disciplines involved, he was able to keep conflicts to a minimum and to maintain control of the design. The various disciplines always represent conflicting needs that require resolution. Though Wright's theory did not try to accomodate the ideas of all clients, but he appealed to those he knew would be sympathetic. In his Usonian

houses, Wright developed a construction method that was repeated in many houses, but could adjust to a variety of clients and sites.

Frank Lloyd Wright was constantly writing polemics in order to get a widespread acceptance of his ideas. The explicitness of his theory attracted sympathetic clients and enthusiastic assistants. This is particularly true later in his career. Many clients of his Usonian houses learned about Wright as Loren Pope did, by reading the magazine articles Wright wrote as well as his autobiography. His assistants also learned about him by reading his explicit theory statements. Explicit statement is the first step necessary to receiving criticism and responding to changing circumstances.

The responsiveness of Wright's theory to changing circumstances is another aspect of his theory that helped his practice adapt to new situations. Wright was able to show confidence in his ideas to others while maintaining enough personal skepticism to enable him to change his theory. He was able to respond to criticism and new influences throughout his career. Wright's writings and his attitute as an architect clearly show that he had confidence in his own work. His skepticism is reflected in the evolution of his theory and the changes in his

work throughout his long career, though not through his explicit statements. His statements tend to come after the buildings are completed so they describe rather than predict a result. His ideas were sometimes slow to change and only after a house was built could he see the implications of his ideas. His dissatisfaction with the Hollyhock house and the desire to go "deeper" into his theory is an example of this. To a certain degree it is necessary for a theory to be incongruent with practice since both are in a constant state of change. Incongruity also comes out of a need for self-protection because if he would have revealed all of his current ideas they may be too easily available for others to use or not fully developed to withstand criticism. Contradiction between stated theory and practice is probably less significant as long as there is no self-deception involved.

Value is an important issue to evaluate in Wright's theory. Was it possible for Wright to change the general public's idea about what good housing should be and then to change how it was actually designed and built? Wright helped to develop several innovations in the area of housing dealing with the layout of dwellings and construction technology that he tried to promote to others involved in the field. He did this in two ways, first by

designing houses themselves and by indirectly shaping consumer preferences and construction practices. Though he built a small number of houses compared to the large developers of today, he did help shape consumer preferences by publication in consumer oriented magazines such as House Beautiful, etc. Wright produced several unbuilt designs for large scale developments, but practically none of these were ever built. He was developing ideas ahead of other architects and home builders, and though some of these experiments were not generally accepted, Wright did have a substantial effect on housing in the U.S.

The value of Wright's theory and the work that resulted lies primarily in the influence it had on other architects and the general public. His ideas were compatable with those of the rest of society, in that people were searching for a way to simplify the home, make it easier to care for, and to accommodate the modern appliances and technology being developed. Americans were building smaller, simpler houses in part, to be able to pay for the technological improvements they would include. Evaluators for the FHA were instructed to lower the rating for houses with conspicuous modern design and rejected Wright's Usonian houses for financing.[1] Even though

Wright influenced the design of many American houses, like the "ranch style" tract houses with their horizontal lines and irregular plans, he was not able to build his designs in large numbers as he wished. The construction methods he developed for the textile block houses and the sandwich walls of his Usonian houses were also not adopted by others.

In a lecture about Wright, Lionel March, the English social historian, described how Wright's design influenced others. March said,

> It is a process of this kind that Ogburn (a Chicago Sociologist) calls "diffusion". That diffusion works is shown by a survey on house-building in the prairie town of Oskaloosa in Lowa. Two Frank Lloyd Wright houses were built in the district in 1951. Over 9,000 people trekked out to look at them. According to a House and Home survey "more than a third of the visitors went back for a second look and what they saw started a home building revolution in Oskaloosa." It gave strength to people to be less conventional. It showed them how to set their houses into the rolling hills - as one new house-owner put it, "I don't think we realized until we saw these homes that we were literally shaving off the beauty of our town by grading down the sites." The two houses helped set off a chain reaction of trading-up; of people moving into new houses, of others moving into better old homes. 2

MODELS

Models were indispensable to Frank Lloyd Wright in his design process. Though he used models as sources throughout his career, he also developed and improved new models when it was appropriate. Wright's theory informed his use of models particularly in relation to the variety of changing circumstances he encountered throughout his long career. These changing circumstances caused Wright to explore a variety of models.

Wright began his career by using the work of other architects of his day as models for his work. The Winslow house and some of his other early houses show this clearly. Gradually, though, he began to develop his own ideas and his houses became less dependent on outside sources. He began to use his own houses as models for subsequent houses. By the time Wright began his Usonian houses we can see that his work is essential independent of outside sources.

Two principal reasons why Wright used models were to achieve continuity as well as to help identify the building with a particular place. Early in his career models were used as a tool to learn more about design. For most of his career though, Wright used them to give

his architecture continuity. For example most of his Usonian houses are based on the same model that gives them an identity of their own. The use of Mayan or pueblo architecture as a model for the desert houses identifies them with that particular place, distinct from the Prairie houses and from the Spanish architecture used by other architects as a model.

Wright extracted the principles from his models in most cases rather than merely imitating the forms. The problem Wright encountered with the Hollyhock house was that its connection with the desert was superficial, only skin deep. Once he found a construction system in the use of textile concrete blocks he was able to go deeper into the expression of that particular place. Wright also learned the principles of organizational discipline from Beaux-Arts design rather than imitating its historical imagery.

COLLABORATION

The way that Frank Lloyd Wright organized the collaborative process of design and construction was an important aspect of his work and it was tied to his theory of architecture. It was necessary for Wright to have others contribute to the design and construction of these houses and without their help he could not have accomplished what he did. Though Wright rarely acknowledged the contribution of others to his work, his work can not be adequately understood without looking into their collaboration.

The clients who hired Wright early in his career were mostly limited to a particular type of businessman with sympathetic ideas to those of Wright's. Then as his reputation was established, he began to get clients who came to him primarily because of his stature. Wright had many clients return to him for a second house. When Wright began promoting low-cost Usonian houses in the 1930's, he found another group of clients who had sympathy with his ideas but more moderate incomes than his previous clients. One of the reasons for Wright's strong appeal was his ability to focus his work to a particular type of client rather than trying to appeal to everyone.

The role that Wright's clients played in the process changed in his career. At first his clients played a

fairly limited role in the process. They would make suggestions and approve the plans in the same way most clients did. Gradually though, Wright's clients became increasingly involved in the construction process. The Usonian houses were usually built with the client supervising the construction, though Wright retained control over the design.

Frank Lloyd Wright's assistants played an important, but rarely recognized role in his work. It is not necessary to trace the source of every new idea or design decision in Wright's work to know that the contribution of his assistants was significant. He was fortunate to have attracted so many skilled assistants, though he rarely acknowledged their contribution to others. He might have felt this would diminish his own reputation. Gradually his assistants played a greater role in his work because he could not see every detail of every project through on his own. His assistants supervised the construction of houses he designed and had to make many decisions on their own. His assistants also experimented with new design ideas that must have helped Wright as well.

The builders and craftsmen who worked for Wright made a significant contribution to the houses, though Wright found it difficult to find sympathetic collaborators.

Early in his career he gradually got to know sympathetic builders and craftsmen to build the Prairie houses and their furnishings. He returned to the ones he could trust again and again instead of putting the work out to bid. When Wright built houses in Los Angeles in the 1920's, he had a difficult time finding builders he could trust. By the 1930's and 1940's when he was designing the Usonian houses, modern construction techniques were more commonly practiced, and his clients and assistants helped him find sympathetic builders. Since many of Wright's houses used experimental ideas builders and craftsmen were challenged to find new ways to construct these ideas. Some of them accepted and thrived on this challenge while other preferred their old ways.

THEORY AND PRACTICE

Frank Lloyd Wright's theory, his use of models, and his collaboration with others were all related to each other. His theory guided his choice and use of models whether they were his own buildings or those of other architects. His theory defined the nature of his collaboration with others and the role they would play in the design and construction process. His theory did not hinder his collaboration with others, but his abrasive personality and his desire to take credit for the buildings did cause problems in collaborating with others. Wright's collaboration effected his selection of models from the clients suggestions for a decorative theme with the Hollyhock house or for a new type of low-cost house with the Usonian houses. Wright's collaboration increased with the development of the Usonian houses and became an integral part of his theory.

In understanding Wright's theory and practice, the most important concept is integration. Wright was constantly including more aspects of the process and elements of the buildings in his theory and practice. With the Usonian houses, he was also able to include the clients' participation to a much greater degree. The more general level of his theory set this concept for his work very

early in his practice. Wright's most basic assumptions were explicitly described, giving them clarity for himself and those who collaborated with him. His theory and practice were in a constant state of change, as he acted out his ideas in practice and then reflected on the result. His strong theory did not hinder his ability to change it, which is an issue that is often misunderstood. Wright's theory was responsive to changes and integrated them into what he had already brought into the situation. His theory was responsive to his clients and to the general public. The value of his theory and practice could be found in meeting the needs of his clients and especially in offering a viable alternative to the typical practice of the day. Wright saw that changes were needed in architecture, and he helped to lead the way in making them come about.

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