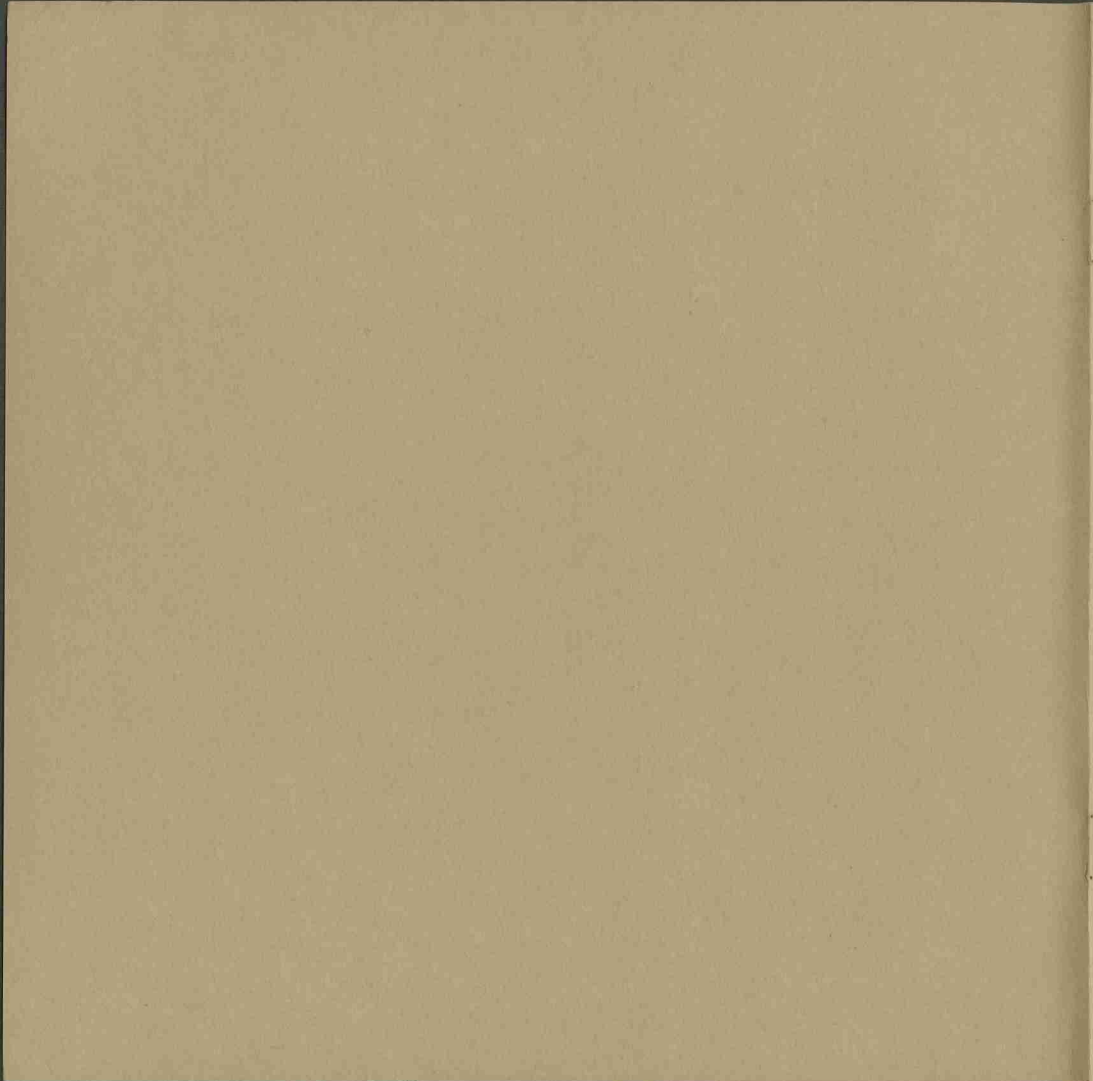


HARWELL HAMILTON HARRIS
a collection of his writings and buildings

Archives



CONTENTS

- 4 My Introduction to Architecture
- 7 A House for a Playwright
- 13 Graduation
- 15 What the Architect Can Contribute to the Knowledge of Tropical Housing
- 20 Frank Lloyd Wright's Theatre Building
- 21 The Changing Practice of Architecture
- 24 The Church Auditorium
- 25 Regionalism and Nationalism
- 34 Selected Buildings with Comments by the Architect

©Copyright 1965 Student Publication of the School of Design North Carolina State of the University of North Carolina at Raleigh Volume 14 Number 5

All rights reserved, absolutely no text or illustrations may be reproduced even for review purposes without written consent of the editors of the Student Publication of the School of Design.



The unique continuity of the following articles and photographs of buildings by Harwell Hamilton Harris is the reason for this publication. The flow of these independent ideas draws from the author's commitment to a clear process for achieving unity. This process the editors call the natural design process.

An architectural experience must be developed from a complex stew of the client's wishes, the functional requirements, the building technique, and the existing environment. The natural design process begins by allowing each fact its way, no matter how demanding. From this meleé, full of contradictions, the unique problems are discovered and the unifying direction is established in response to them. Thus a clear continuity flows out of the process charged by the excitement of discovery.

The editors express their gratitude to Harwell Hamilton Harris for permission to select from his collection the following articles and photographs with his comments; however, there has been no attempt by the editors to fully document Mr. Harris' work.

K. S. & R. T.

MY INTRODUCTION TO ARCHITECTURE

An account of the Author's discovery of a great building, written fourteen years after the event for a never published catalogue of a 1940 exhibition of the work of Frank Lloyd Wright.

A youth trudged slowly up a winding road. The road encircled a low hill. The hilltop was covered with groves of tall pines and eucalyptus, the slopes with gray green olives. Below the hill, on three sides, were busy thoroughfares and beyond these stretched the city. The hill with its groves rose like an island out of the flat gridiron of sun-baked streets.

The youth paused often and looked above him. He had been told that hidden among the trees on the top of the hill was a building that would interest him as a sculptor. He doubted it. What had he ever found to interest him in a building? Is architecture an art? It possesses the same elements of three dimensional form as sculpture,—theoretically the same means of abstract statement. Why then are there no examples of architecture as art? Architecture, he decided, is, for practical reasons, too impure to be an art. Arguing to himself, he reached the top of the hill.

Through a screen of tall trees he glimpsed fragments of a low building with sharp outlines. He forgot his argument and hurried along the road, pausing every few steps to peer. He came at last to a break in the planting and stepped through. Within an open grassy space, strongly silhouetted against the circle of dark trees, lay a long building, its creamy walls golden in the afternoon sunlight. Its low wings were extended and paralleled by high garden walls. In the foreground was a pool, as sharply rectilinear as the building. Joining the building to the pool was a large plant-box. Building, pool and plant-box were one material. Above the plant-box was a broad opening. Within the opening was a pair of square vertical mullions covered with intricate square ornament in low relief. Above the line of the opening the walls broke back, and, on the ledge thus created, the square sharp ornament appeared again, this time in bigger scale and in high relief. Like a wreath, the ornament moved lightly across the broad brow of the building, continuing in quiet unbroken rhythm from one wall to the next and from one wing to the next. The ornament, which he had followed through its developments in relief, now burst into full round,—not singly, but in pairs,

—high up in the interior of the building. He no sooner discovered it once than he discovered it again,—always in pairs, always silhouetted against a background of trees or of sky. Stunned, he watched climax follow climax.

He was alone with his discovery, striding in rhythm to inaudible music. Forms gathering in procession and pouring themselves out in melody; climax following climax. He was in a new world. No halt, no uncertainty, no fumbling, no struggle, only melody, pouring itself out endlessly. With racing pulse he saw life as form, union, plan, and architecture as a kind of crystallized play, regulating life as though it were music. Gradually he returned to earth. Recumbent upon her green carpet and screened by trees from the gaze of all others, the Sleeping Beauty smiled on her youthful discoverer. And so began the metamorphosis of a youthful sculptor into a still more youthful architect.

As in the life of the youthful sculptor, so in the lives of countless others, the work of Frank Lloyd Wright has been the revelation of architecture as art. Not the art of books or of class rooms, but the art that proceeds from the very fibre of things. An art from within; filling the imagination with a swirling stream of living images; arousing an intense desire to body them forth in living buildings; energizing their possessor with a feeling of the reality of the self; making him part of the living stream; sensitive to the aliveness of all things; projecting himself unconsciously into all things; feeling the oneness and continuity of all things; delighting in the rediscovery of his own self in these expressions; delighting in the richness and multiplicity of being of which he finds himself capable.

In Wright, the architect becomes the free spirit, the creator, the uniter of living impulses, evoking a new sense of mystery from the familiar,—his building, like all living things, born rather than contrived. To the young man in architecture he is the yea sayer, giving affirmation to the expansive yearnings of the spirit; his work a presence, not confined to any time or place, but, like a current, sweeping into a single expressive gesture the real of the past and the present.

Stretched at their ease upon the ground, seemingly absorbing energy from the contact of their broad surfaces with the earth and the air, these buildings express in their naturalness, casualness, amplitude and democratic acceptance of sun, wind, rain, and vegetation, a quality singularly American. There is in them a Whitman's "contempt for statutes and ceremonies", a "beauty of independence, departure, actions that rely on themselves". They are laws unto themselves and depend on themselves. There is in them an instinct for order and also an instinct for freedom. In a world absorbed with

devices, these buildings exhibit a singular clarity regarding fundamentals. Their pattern is the pattern of a free man, striding abroad in the open. Their spread is the spread of creation.

To the youth in architecture these buildings are evidence of the existence of the art of architecture and of the nature of creation.

A HOUSE FOR A PLAYWRIGHT

A talk before the Texas Fine Arts Society, Austin, Texas, December 4, 1951. Reprinted by the permission from House Beautiful Magazine, Copyright 1953 by the Hearst Corporation.

I have decided to start our discussion of architecture by reading a program for the design of a house. It is a program I gave to a class of students about two years ago. The house was for a playwright. I made the client a playwright because none of my students were playwrights. A house is a very personal affair and almost anyone who starts to design a house ends up with the design of a house for himself. Furthermore, he can't accept anyone's criticism of it. But this class was to train students to be architects, not clients. The playwright was my insurance against my architects becoming clients. This was the program.

Our client is a bachelor. He is a playwright. He works at home. His work requires periods of solitude and freedom from all distraction. These periods of work must be relieved with periods of relaxation, including ones of a social nature. He has two distinct lives: one solitary and the other social. The house is a tool to keep these two lives separate and to enable each to operate as smoothly and as effectively as possible. Our client's solitary life revolves around his work. Grouped together will be his workroom, his bedroom, his bathroom and an anteroom serving as a buffer between these rooms and the other parts of the house. In the anteroom a meal can be served without interrupting his work. The bedroom is for sleeping only. The workroom is for work only and both must offer as little distraction from work as possible. Furniture in the workroom will include a desk, filing cabinets, typewriter, dictaphone, shelves for books and a couch.

A small room for a typist, with adjoining bath and a small bedroom, is to be located sufficiently apart from the owner's rooms that the sound of typing will not be heard. At times the bedroom will serve as an additional guest room. Two guest bedrooms will be required in addition to the small one adjoining the typist's room. One will have a cabinet-type kitchen for a lingering guest with irregular breakfast hours. In an alcove in the guest wing will be a telephone with time tables and maps. Guest rooms

need not be separated as fully from the living and dining rooms as must the owner's rooms. The living room is for social uses,—largely conversational. The kitchen will at times be serving a capacity dining room, but at other times it will be serving only the owner and the couple serving him.

Let's try to put ourselves in the place of the client, still speaking of him in the third person.

It is morning. Our playwright is still in bed but awake. His mind is fresh and he is reviewing the outlines of the play on which he is working. Rest, and the long interval since he put the work aside, have now enabled him to see yesterday's stint in truer relation to the framework of the play.

His bedroom is small. It is free of books, dressing-furniture, pictures and objects that focus attention on themselves or recall labor done or to be done. The window is low and provides a cheerful glow of light and a suggestion of openness, without, however, letting the outdoors exert a strong attraction upon the room's occupant; he must not be tempted to spend the morning out of doors rather than at his work.

Pencils, paper and a dictaphone are beside the bed. After a period of stillness followed by a period of twisting and pillow pushing, our client reaches for the pencil and pad and begins to make notes. Although the period of note making may be long, the notes themselves are brief,—reminders only of the ideas that have come to him in the quiet of the morning before his mind had become involved in the difficulties of construction.

Note making finished, there follow a few moments of reverie. Then our client rises, presses the kitchen buzzer, bathes and dresses. In the small vestibule, separating his own wing from the rest of the house, is set out his breakfast. Here, as in the bedroom, the attractiveness of the room is in its own shape and detail,—not in what it contains or what can be seen from it. Here he has his breakfast. Then, refreshed and satisfied, his mind rested by a change in thoughts—thoughts not so compelling but that his mind reverts easily to the plans he made while still in bed—he returns to his bedroom and passes on through to his workroom.

Unlike the two rooms we have already seen, the workroom is long, with wall-space for books and maps and floor-space in which to pace. One side of the room opens on an enclosed garden. The floor of the garden is paved. There is a tree for shade and a small pool for water plants. The garden provides the only view from the workroom. Its walls are high so only the sky shows beyond. The pool is still so there is no sound to distract. The floor of the room is carpeted. Our client wears loose fitting clothes

and slippers. He works sometimes at a desk, sometimes on a sofa, sometimes pacing up and down the room. Occasionally he goes into the garden, but only to let the sun fall on him for a moment, to take a breath of fresh air and then return to work. The garden is for pause but not for distraction. It is the other half of the workroom,—seldom the working half.

Shortly before lunch, our client stops work and changes into outdoor clothes. The loose garments in which he has been working were chosen because they do not constrict, annoy, tire. In contrast, the clothes into which he now changes are close fitting and provide a pleasant sensation of support. He walks across the garden and through a gate in the outside wall. On the other side of the wall is a loggia. On the right it runs toward the main block of the house; on the left it runs through a garden much larger than the one opening off the workroom and filled with trees, flowers, grass and water. The naturalism of this garden is in contrast to the formalism of the other. Closing the gate behind him he follows the walk to the left.

So far, his thoughts have been running back over the morning's work. But now, with each step that he takes, he leaves the morning's work further behind him. His consciousness is filled with the smell of plants, the sound of water, the movement of air, the pattern of sunlight on the ground, and the sensations of his new-found muscular action.

The soft and yielding carpet on which he earlier walked, when he walked at all, is replaced by stone paving that resists his weight; the shoes he now wears brace his feet and add spring to his step. The sight, sounds, odors of the garden, and the sensation of his own regular movements, form patterns in his consciousness. He finds his thoughts following the patterns as they form, dissolve and reform. It is like a melody releasing his mind and his energies, a path he travels with ease and pleasure.

Work is momentarily forgotten, muscles are stretched and an appetite for lunch grows. If he has quit work at a moment filled with a sense of pleasurable accomplishment, the walk calms him down; if at a moment of bafflement and discouragement, it pulls him together by providing a new world in which every thing is in harmony.

The walk takes him to a small pavilion at the far end of the garden. The view from the pavilion is a distant one; it completes the transition from work to relaxation. At length our playwright turns back toward the house and the dining room where he will lunch. The garden, with its walk and pavilion, is, in effect, the other half of his workroom in that it clears his mind, exercises his body and so provides the relief necessary for him to work effectively tomorrow.

The dining room is part of that other half of the house which we earlier referred to as the social half. So, if there are guests at the time, our playwright lunches with them. The afternoon may be spent with guests, it may be spent in reading, it may be spent in work in the garden or it may be spent in further writing. However, it is unnecessary for our present purpose to follow our playwright through the entire day or the entire house. The other half of the house is designed with as much attention to its social uses as the solitary half was for its work uses. The rooms differ in character as they differ in size, shape, openness, outlook and the mood necessary to their particular use. Transition from one to another is by means of vestibules, passages, or sections of garden, and with changes in ceiling height, flooring materials, lighting and outlook to emphasize the change.

Now, in trying to make our client real to us we have carried him in our imagination through a succession of changing impulses, interests and actions. We have watched him as the pattern of his house has directed and sustained his attention, conserved his energy, alternated one interest with another, alternated intensity with relaxation,—all with the purpose of making his expenditure of energy as productive as possible.

The day's path, along which he is conducted, is a series of planned wants and succeeding satisfactions: the need of companionship after solitary work, of physical action after physical restraint, of freedom after confinement,—to walk, breathe deeply, see far, think different thoughts.

The figure that emerges is not the figure of the playwright alone; it is the figure of his house as well. The complexity and richness of the architectural figure is in direct proportion to the complexity and richness of the owner's life and his capacity to sense and respond.

For example I have used the design of a house for a playwright, but the design of a building for any other person might illustrate equally well the approach I consider proper to architecture as an expressive art. Fine art is expressive art, and in architecture the materials for that expression are more various than in any other art.

Composition in architecture uses many of the same devices as painting and sculpture,—it may even incorporate painting and sculpture. But it is more than a visual art. It operates through all the senses. Even in its role of fine art it is a mixed art. But like all fine art its purpose is to integrate life. For this reason, the place to start is with the discovery of the nature of the particular life that the building is to support and direct. What follows is the discovery and use of all the various means that may be utilized to create, sustain and promote that life. Actually, the approach of the architect

is not so different from the approach of our client, the playwright. In a very real sense architecture is a dramatic art.

In the design of a building the separation, selection and composition of interests and emotions are followed by the separation, selection and composition of the physical elements of the structure as well. At the risk of misunderstanding, I suggest that you might carry the dramatic approach even into the physical composition of your building if you would but discover the form-characters in the situation and assign them roles in the architectural play.

I suggest you begin by assembling all the characters and known elements of the situation. Then look for the plot. Having discovered the plot, discard whatever is irrelevant to it. Make the plot of paramount importance, and find ways of involving in it every single circumstance that is allowed to exist. Discard every circumstance that cannot be involved. Now, design the plot. Discover the natural character of the plan-shapes, structural shapes and all other necessary shapes, and then look for ways to let them act naturally. In this way, each character in your architectural play becomes real because he is acting according to his individual nature. Continue by making a conscious part of the design out of every element that affects the senses, movements and emotions of the persons who are to use the building, and also of those who merely observe it. Find pattern in everything that can be followed by eye, ear and feet. Make conscious use of these patterns in a design that is governed wholly by the plot.

We have been talking about a playwright's house. For a moment let us consider some of the features of a less specialized house.

In the perfect house the ordinary movements that we go through in the course of the day's living become parts of a figure. Instead of being haphazard, erratic and energy consuming, they are controlled and balanced. One movement follows another in logical and rythmical sequence whether the occupation be housework or dining, lounging or reading, conversing or dancing, bathing or dressing, or a succession of them all. If we decide to move to another part of the house, there is the passage beckoning ahead of us. If we wish to pause, there is the quiet bay with a seat and a view of the garden. If we prefer to read, there is the lounge and a flood of even light. It is as though everything we do now we have done before and the house has grown up from the pattern left by these previous movements. How otherwise could our every wish have been so perfectly anticipated? Yet what we just did seemed new and spontaneous. Tomorrow we will do something equally spontaneous and shall be equally surprised to find the house opening up ahead of us, closing in behind us,

sheltering us, freeing us, always inviting us. Is it anticipating our wants, or is it telling us what to want? We can hardly tell.

The narrowed passage with its straight line and accelerated movement, the widening bay with its slackening movement, the broad room with its receding walls and ceiling and the consequent expansion sideways and upwards,—there are some of the ways in which the pattern of living finds its way into the structure of a house.

GRADUATION

A talk to the members of the graduating class, School of Architecture, University of Texas, June, 1955.

This is my last chance to talk to you as a teacher. For the past five years you have been following the routine of attending classes, obeying instructions, handing in drawings, taking examinations, listening to criticism, amassing a volume of credit hours, learning a multitude of particulars, learning to guess how a jury will react.

I am sure this is going to be of use to you. But it alone will never make you an architect. Sometime you will have to make a great discovery. The discovery may be made as you walk around or thru a great building and suddenly experience its full impact; or as you read a paragraph in a book and suddenly comprehend its full import; or as you draw the lines of a building you construct out of your own head and suddenly something that you do resolves every difficulty, makes everything clear, creates a great unity.

It is on such occasions that your mind makes a leap. You do effortlessly what you could not do with months and years of drudging. For a few moments you are clairvoyant, there is direction and continuity to your thoughts.

I recall the first truly aesthetic thrill of my life. I was a high school student, sitting on the side of a mountain canyon, alone except for the book I was reading. The book was called "Social Environment and Moral Progress" and was by a contemporary of Darwin named Alfred Russell Wallace. Suddenly I saw the concept of Natural Selection in a way I had never seen it before. What I now saw was a revelation, a grand picture in which life from its beginning to its highest development was spread out in front of me in all its variety, unified by a single principle, continuous. The clouds opened, there were the heavens in all their glory. The discovery left me with my heart pounding.

Other discoveries since then have left me with my heart pounding. One was a painting that struck me as a revelation of a new reality. Another was a piece of sculpture that opened up a moving world of tangible form. Still another was a building—the first that was ever alive to me. The meeting with this building was the most profound

experience of my life and one that starts my heart pounding again whenever I recall it.

I believe that for most of you this experience lies still ahead. If you have that experience once, you may have it many times. The possibilities lie within each new commission you undertake. You should expect it and invite it. You don't invite it by looking at other architects' solutions. You invite it by looking at principles, by looking at the elements making up a situation, and by believing that the solution lies within the situation itself, waiting to be discovered. Don't let design become routine. Begin each new design with an air of excitement, with the confidence that out of it will come a wholly new thing, not a made-over one. Architecture is your life. It is a life of discovery,—discovery of your own nature and discovery of the nature of the universe. It is the means by which you grow personally.

I am not talking about architecture as a means of making a living; I am talking about architecture as living. Therefore look upon each new client as a new opportunity to escape from your routine self. As students you have worked with artificial problems. Artificial problems were chosen to make academic instruction possible, and your designs had an artificial air as a consequence. But as architects you will have the opportunity to work with natural problems.

The problems will not be natural problems when first presented to you. You will have to search the situation to find for yourself what factors really belong,— what to keep and what to throw out. After you have gathered what is relevant you will begin to discover what importance each factor has for the others. Soon you will see a plot. At last you have a natural problem. The next step is a natural building. It is so simple that once you have discovered the real problem the problem seems to solve itself. Now, you have only to get the design down in drawings.

In the design of each succeeding building you will follow the same principles, logically and fully, into different situations and each time you will produce a building having a totally different set of appearances. Always you will look for the natural thing to do. By doing the natural thing you will do the most revolutionary looking thing.

What I am trying to say is that the opportunity ahead differs wholly from the one you have just left; that the real problems are much more stimulating than the artificial problems; and that because you are an architect you will not have to divide your time and thought into two parts: one part devoted to making a living and another part devoted to developing your person. In your case there need be no division for it is possible to make life and architecture one.

WHAT THE ARCHITECT CAN CONTRIBUTE TO THE KNOWLEDGE OF TROPICAL HOUSING

Talk before the Mid-Southwest Conference on Tropical Housing and Building, Austin, Texas, 1952. Reprinted from PROCEEDINGS OF THE MID-SOUTHWESTERN CONFERENCE ON TROPICAL HOUSING AND BUILDING, April 8 and 9, 1953, sponsored by the Bureau of Engineering Research, The University of Texas.

What can the architect contribute to the knowledge of Tropical Housing? Unlike the scientist and engineer, the architect has no experimental laboratory. The architect's experiments are in the course of planning a building for a client whose interest is not in experiments but in results. Consequently he has no opportunity to experiment under a continuing set of conditions, varying one condition at a time and accurately measuring each performance until out of the information he has gathered he can draw a conclusion, and ultimately state that conclusion in a mathematical formula.

So changing is the set of conditions with which an architect works that he is apt to consider his only constant to be his client. In fact, the client is the unchanging center to all the architect's thinking. It is the client that makes every set of conditions different from its predecessors. It is the client that drives the architect almost to despair by his insistence upon mutually exclusive factors in the architectural composition. And it is the client that threatens and resists and threatens and resists until the architect is in such a frenzy that he finally does the impossible and reconciles the irreconcilable.

I suppose the client is just a grain of sand at the center of each architectural pearl, and yet the architectural triumph over irritating insistence never seems to form by such sure and gradual steps as does the oyster's triumph. What would the architect be without his client? Just a normal, happy oyster. And not a very good engineer. An architect not only solves problems—he makes problems. If he is a good architect he makes more problems than he can possibly solve. And yet his whole effort is toward making the result appear as though there were no problems at all—as though everything were just for fun. That is why it is art.

The engineer is much more intelligent than the architect—and infinitely more direct. His tropical house would be a nice deep cave in the north slope of a hill. If there were no north slopes because there were no hills, any engineer worth his salt would make a hill.

If his wife refused to live in a cave because only poor people live in caves, the engineer would probably consent to build the house above ground, but he would certainly not put any windows in it because windows let in heat. If his wife insisted upon windows so that she could see the colors of her precious rugs, he might relent and cut in a couple of small openings on the north side.

And now, if his wife decides that she wants to spend the winter there, in order to be near her friends instead of moving to their winter house on the sunny southern slope, the engineer cuts some large windows in the south and east walls and maybe in the roof. But with the coming of summer he starts putting visors over the South windows and planting trees on the east and west. The engineer's wife soon comes to love the big south windows not only for the winter sunshine they let in but also because they allow her to look out. So, when fall comes, and with those gorgeous sunsets, she says "Wouldn't it be wonderful to have a great picture window in that west wall so we could sit indoors and enjoy the sunset without ever having to move outdoors!"

So, after considerable mumbling and head shaking the engineer cuts what he considers a pretty big opening in the middle of the west wall of the living room. His wife, however, doesn't consider it nearly big enough because from her chair near the fireplace at the far end of the room she can't see the full range of western hills and the bend in the river at the far left. The engineer explains that the window can't be any wider and mentions lintels, spans, moments, deflection, horizontal forces and other such matters, not because they offer any insuperable difficulty in his own mind, but because they are arguments his wife doesn't know how to answer, and it is easier to defend his position on the basis of sound construction than with estimates of heat gain. However, his wife wins and the engineer adds a small window on each side of the first one. But he also starts designing a detachable screen of louvers to be put up outside the two smaller windows during the summer months. He knows it is useless to try to persuade his wife to accept a screen over the central opening, so he builds a pergola about 30 feet long in front of that one and covers it with lath.

Meanwhile he has been experimenting out behind the garage with models of windscoops, air-exhausters, and an inexpensive evaporative cooler. At least he is really interested in his difficulties, and, if left to his own devices, will now, unaided, go on imagining difficulties,—difficulties that only he can perceive—just for the fun of defeating them. And it all started with the engineer's wife's dissatisfaction with just being cool. She was unreasonable enough to want the moon and fortunate enough to have an engineer for a husband.

Now the principal difference between the architect and the engineer is that the architect would have anticipated all this. He knows that the client is a bundle of conflicting desires crying for expression and satisfaction. As I mentioned in the beginning, the client is the architect's chief headache when he is designing the building, and the architect's chief cause for surpassing himself in his ultimate design. Without the client the architect would repeat himself ad infinitum; his last building would be his first building all over again and without its freshness.

Just as the architect needs the client to provide problems to be overcome, so the engineer needs the architect to demand the impossible. In a way, the architect is the engineer's wife. The architect wants all the things the wife wants and in addition he wants all sorts of adjustment for effects so subtle they cannot be described before the building is built, furnished, landscaped and occupied. In addition to worrying over the reasonable things he worries over unreasonable things: shapes, proportions, patterns and even more esoteric things such as continuity and homogeneity,—as if keeping cool in summer and warm in winter were not enough to worry about!

Having established the architect's importance to the engineer, let's be reasonable for a change. The sun may attack our house in both direct and indirect ways. To counter its direct attack we may 1. reflect it, 2. filter it, 3. absorb it, 4. intercept it, 5. harness it.

Customary ways of reflecting it are by presenting a light colored face to the sun, painting the walls white, covering the roof with crushed white porcelain and putting a sheet of aluminum foil just behind the outer thickness of wall and roof. In varying degrees each of these treatments bounces back the sun rays. Were they 100% efficient no heat rays would enter the structure,—at least no more than the outer layer of the structure. One is tempted also to consider ways in which such a structure might be made to invite in the rays of the winter sun: a slatted roof-covering that would reverse itself for the winter, presenting a dark, absorptive face to the sun. Or a white paint that could be washed off at the beginning of winter, assuming that the summer is without rains.

Customary ways of filtering the sun's heat are the many porous insulating board, blankets, and light weight slabs forming the outer layer of the building shell or placed immediately behind it.

Customary ways of absorbing the sun's heat are thick walls of clay or stone having sufficient mass to absorb a full day's input of solar heat before becoming uncomfortably warm. Cool nights must follow the warm days in order for the massive walls to lose

yesterday's input. Massive exterior walls absorb heat before it reaches the interior of the building. Massive interior walls absorb it after it reaches the interior. Masses that absorb heat temper the interior by mixing night and day temperatures. A large mass of cool night air trapped within or beneath the building works in a somewhat similar way.

Most devices for combatting the sun depend upon intercepting the rays before they reach the building. One of the oldest and best of these is a large spreading tree. And in addition to the shade it casts, it lets through the breeze and cools the air by the evaporation from its leaves. Another device, half-natural, is the vine-covered pergola; another, the vine-covered trellis. Spaced away from the house wall, the trellis permits some movement of air. Spaced even further away, free-standing and properly turned, it becomes a breeze attractor.

Similarly, shaped fins, solid and without vines, may be made to shade a wall, the degree of shade varying throughout the day as the horizontal angle of the sun varies. By hinging the fin it can be rotated with the sun to provide shade for a longer period of the day.

The roof may be projected to shade the wall when the sun is high in the sky. Lacking the opportunity to project the roof a visor may be added to the wall above the window. If the window is high, additional visors may be added at intermediate points to shade a greater area of glass. By hinging the visor it can be rotated to follow the changing elevation of the sun and provide shade for a longer period of the day.

The gardener's lathhouse is a customary means for tempering sunlight without destroying ventilation, and it deserves wider use. Lathhouse roofs over terraces may be made in narrow sections and roll overhead on simple tracks to provide shade where it is needed. Even the usual roof will be greatly cooled by the addition of a lathhouse roof or a vine-covered pergola over it. A second roof of any material will be a great protection from the sun if well ventilated at the ridge.

There are many more devices for protecting a house by shading it. Most of them are quite ancient. Their dimensions were probably determined by experiments on the site in order to calculate the shadow of a projection at different hours of the day and seasons of the year. An advantage we have over the ancients is that of pre-determination by such aids as heliodons and graphic solarimeters.

The fifth means which I mentioned of combatting the sun is by harnessing it. This means using the heat of the sun to operate a cooling plant.

In designing a building for the tropics, the architect doesn't just ask himself "What kind of wall best excludes the sun?" and then specify it according to a number in Sweet's Catalogue. Each building represents a different set of conditions and different architectural requirements. For some good reason the architect may decide to make the whole west wall of glass. He then does whatever he can to mitigate the glare without destroying the view that called for the glass in the first place. If no satisfactory shading of the opening can be devised, he may decide to provide another room on the opposite side of the house for use in the afternoon. Thus, failing to find a satisfactory engineering solution to the problem he adopts a purely architectural one. He plans different rooms for different occasions, each room suited to a different set of conditions. He makes a virtue of the changing light within the rooms and of the custom of moving from one part of the house to another as conditions change.

Perhaps the architect selects two wall materials of diametrically opposite characteristics for the same house. The reason may be not merely exposure of the wall but perhaps the different use to which the differently walled rooms are to be put. The rooms for daytime use he surrounds with massive walls that require the full day of heat up; the night-time rooms he surrounds with walls and roof of the least possible mass so that they cool quickly once the sun has set and the evening air has replaced that of midday.

Perhaps the architect goes even further and chooses construction adapted to seasonal use: a well-insulated and heated core for winter use and a variety of dining-living-sleeping porches for summer use. Whether he decides to condition the same space for both summer and winter, or to provide separate spaces conditioned for either summer or winter but not for both, depends upon a host of considerations that have nothing to do with climate.

The architect's selection of means is a combination whose total effect must be a satisfactory one,—satisfactory from many angles: heating, cooling, lighting, viewing, air circulation, plan circulation, street approach, privacy, topography, cost, and idiosyncracies of architect as well as client.

The purpose of this discussion has been to illustrate the variety of considerations behind each architectural decision and to call the engineer's attention to some of the ways the architect's work differs from that of the engineer. In doing so I hope that the engineer may realize that behind the architect's apparent inconsistency and contradictory behavior is a belief that he may be able to resolve these contradictions at a higher level and that if he does he will have a more satisfying result than if he never attempts the impossible.

FRANK LLOYD WRIGHT'S THEATER BUILDING

A description for the book THE DALLAS THEATER CENTER, 1959. Reprinted by the permission of the Dallas Theater Center.

In the audience I thought "How wonderful to see a play!" On the stage I thought "How wonderful to be an actor!" Spectator? Actor? I felt no urge to be either when I entered to see the building. Now I have only to move from one half of the room to the other to exchange one urge for the other.

Because Wright's home for the Dallas Theater Center has great presence, it cannot help having a profound influence on all that goes on here. It is a quiet space filled with an air of expectancy. The quietness is owing partly to the gentle angling of the walls, floor and ceiling; partly to the lack of axial movement between auditorium and stage; but principally it is owing to the unity shared by auditorium and stage - - a unity of space, of shapes, of character.

The air of expectancy is a consequence of the open space of the stage on which all else focuses, and which one's imagination fills with innumerable patterns of movement. The shape of this space is so assured that no separation of floor levels is necessary to protect it.

The long nave and the crossed axes of the Gothic building shaped the Church's service; its long reverberation time shaped the Church's music. The form of this interior will shape the work of the Dallas Theater Center, freeing it from some old conventions and suggesting some stimulating new ones. It is an instrument for which new forms of dramatic music will be developed.

As the pattern of Wright's buildings is akin to music, so the enjoyment of them is akin to dance. Movements become part of a figure, following one another in rhythmical sequence. The Theater Center building is a shell cradling space, the space cradling movement, the movement made rhythmical by pattern which utilizes all that affects the senses and can be measured and followed by eye, ear or feet.

Because of the quality of their demands, their judgment in the choice of an architect and their willingness to stake him to an idea, the leaders of the Dallas Theater Center have done more for the cause of architecture, the art of the theater and the city of Dallas than could a less perceptive group with a building fund a hundred times as great.

THE CHANGING PRACTICE OF ARCHITECTURE

A panel talk before the California Council of Architects, Yosemite Valley, 1960.

On this panel I represent the very small office. Perhaps this is why I choose to speak more about my philosophy of practice than about the techniques of practice in this changing world.

I don't know how much my philosophy is a product of my practice and how much my practice is a product of my philosophy. But I am trying to see how each can enable me to get the most out of the other. What kind of a philosophy will my practice allow me to have? And how can my philosophy be made to improve my practice?

How does my office differ from a large office? It differs, to begin with, in having fewer collaborators, consultants, engineers, interior designers, landscapers, business managers, public relations advisors, job-getters, promoters; we are therefore more free from design by office committee. We are also more free from the restrictions of pecuniary self-interest; there is no office accountant calling us to task for spending more time on a job than the fee justifies.

Ours is the opportunity to think in terms of the whole instead of in terms of each specialty. Our design is therefore simpler, has greater unity, relies more on simple architectural solutions and less on complex technical ones. Because we are not so pressed to keep an expensive production line busy, we can afford to begin each new job at the beginning, forgetting past work and past solutions, and find in the new situation what is real and what is unique. We can assume full responsibility for the end result.

These differences are all to the good. There are others that are not so good. The jobs are smaller. Also, we must persuade the prospective client to underwrite an idea, to put a lot of money into something he can't see and that exists, if at all, only in the mind of the architect. We cannot show the client a completed building, almost exactly like the one he thinks he wants, nor can we point to an enormous staff of specialists sure to dazzle the mind of a man whose judgments are based largely on opinions of experts,—on reputations, polls and under-estimations of what the public likes. Nor can we provide, overnight, preliminary plans, an accurate estimate of cost and all but guaranteed beginning and completion dates.

Our clients must therefore be more independent men than those usually found heading great corporations and handling large sums of money. Because independence of mind and independence of action are usually accompanied by less money, the jobs are necessarily smaller. Not only are they smaller there is proportionately less money to spend on features we consider important to the design.

These are serious handicaps. But are they more serious than the handicaps of the large office? —the handicap of a timid client, timid because he is handling other people's money and is himself an organization man? —the handicap of a characterless client, characterless because he is the compromise of many viewpoints; —the handicap of a client without convictions, a person whose only standards are current fashions; —the handicap of an expensive office machine, too expensive to stand idle while one reconsiders a decision.

In contrast, consider the luxury of the small office: the freedom to reject a job, the freedom to design the building yourself; the freedom to spend more time on the work than the fee justifies; the freedom to deal directly with the client; the freedom to tear up a completed set of working drawings and start again if the result will be a better building. The luxuries of the small office, I must admit, are largely its freedoms, —freedoms we often wish to be free from!

Don't feel apologetic because your staff is one tenth or one hundredth the size of some represented in this room. With your greater freedom, you can better afford to be ruled by your convictions than they can. You have at least the opportunity to express something deeper and more significant than mere fashion. You can refuse to be satisfied with the knowledge that the building you have just designed is economical, fashionable and just what the client wants. Having convictions is not a mere luxury, —it is a necessity for a great building. Convictions are needed in both architect and client. The big office cannot afford convictions of the kind I mean. Nor is the corporate client nor the timid client capable of such convictions.

It will do you good to recall some great buildings by small offices for small clients. Some that come immediately to my mind are: the Owatonna bank by Louis Sullivan for Carl Bennett,—a small town banker with imagination, forceful character and great respect for his fellow man; Unity Temple by Frank Lloyd Wright for a small congregation of people whom, I suspect, were men of high principles although I also suspect Wright's real client was not a member of this congregation at all but was his own Uncle Jenkin, who was as full of convictions and determination as his architect-nephew ever was; the Christian Science Church of Berkeley by Bernard

Maybeck, a building and an architect familiar to all you Californians; the Gamble house by Greene and Greene for an intelligent and discriminating man and wife. You know these buildings and you know these architects. About the clients I want only to add, or to emphasize, that they were all individualists with strong moral feeling, high sense of social responsibility, belief in education, belief in progress,—and courage! These buildings are in their image.

These buildings are alive today because they are so much in the image of man, so much in the image of that nature of which Neutra spoke yesterday, a nature to which accidents are only temporary incidents, and fashion is irrelevant.

These buildings were designed by generalists, not specialists. In a changing world the great buildings will continue to be designed by generalists. A small office will not insure great architecture but neither will it prevent it. It does offer you, who are thoughtful and sensitive, an opportunity to look for the constituent facts of the time—not the incidental ones only,—to try to design in terms of reality rather than fashion, to be un-fashionable or un-modern. You must take time to think in generalities, to start each new work at the beginning and not where some previous work left off, to develop concepts rather than variations, to meditate on your decisions.

I am not censoring the large office for behaving the way it does; I am only imploring the small office to tackle the job that the other office is too big to tackle. If I appear to belittle the work of the large office, it is only to call attention to the fact that the truly great building is the product of an independent mind exercising rare perception, great imagination and profound compassion.

I hope you big office architects will forgive me for presenting weaknesses. I am only trying to tell the small office architect that if he does not design buildings as great as those of Sullivan, Wright, Maybeck or Greene and Greene, it is not because he does not have a large office.

THE CHURCH AUDITORIUM

From a description of a proposed building for The First Unitarian Church of Dallas, at the annual meeting of the church, May 18, 1962.

The interior of the auditorium reminds us of a clearing in the forest. It is as though we had been moving along a narrow path, driven forward by the dark wall of trees pressing against us on each side and closing in behind us. Suddenly the walls are gone. We are in a great open space filled with sunlight from above. We experience an overwhelming sense of release. Gone is the urge that kept us moving. This space is for pause, not for passage. The focus of our attention is no longer a line but the space within the circle. It is a quiet space,—to be filled with our imaginations. In it we feel not so much enclosed as that the extraneous is excluded. The boundaries of the clearing are not so much walls as they are limits of our interest.

The interior of our auditorium is like the forest clearing in its broad, non-axial shape, in its relatively unbroken boundaries and in its illumination from above. By stationing a small, man-made cloud directly overhead and letting the light stream down around it, like rain off an umbrella, we mark the edge of our clearing with a curtain of light. Like rain, it tends to dissolve the image of the stone and plaster wall beyond—the real visual and auditory limit of our man-made clearing.

REGIONALISM AND NATIONALISM

*A talk before the Northwest Regional Council, American Institute of Architects, Eugene, Oregon, 1954.
Copyright 1958 by the University of Texas Press.*

REGIONALISM

I am going to talk about the architecture of a region. The region is California. It is the region I know best. I was born in this region and so it is natural for me to think there is something special about it.

In spite of its distance from the Atlantic Coast, California was never a poor nor isolated region. It was on the sea when the sea was the highway of the world. It was never merely the end of the trail. It was also a beginning: The gateway to the Orient.

Born of the Gold Rush, it was rich from the start. Its development never stopped. In the 60's, after the gold mines petered out, there was silver. Tho the Nevada mines, located near Virginia City, were outside the legal boundary of the State, they were in effect in the suburbs of San Francisco. Following mining came agriculture, lumbering and industry. So, the development of the State continued without a stop.

More than rich, the population of the young state was of high quality and cosmopolitan as well. The news of the discovery of gold spread like wildfire over Europe. When you remember the Gold Rush was in 1849, remember also that 1848, the year immediately preceding, was the year of revolution in Europe. This meant that the Gold Rush drew to California many people who would never have left home in happier times,—some of them to be the last real democrats to come out of Europe.

In the Orient, the Tai Ping Rebellion in Canton in 1846 left southern China with a legacy of famine and misery. As a result thousands of unhappy Cantonese came to this land, later to build the railroads as well as to wash the clothes and raise the vegetables and cook the food that went into the formation of the region.

Thus events on other sides of the world provided much of the manpower that built up the country. The potential rewards from the silver mines drew some of the finest business minds of the world to San Francisco. Also part of the early ferment, responsible for the special nature of the region, were writers, painters, naturalists, philanthropists, conservationists and reformers. None of them were born there. Few of

them were there by accident. Most were drawn there by the life, the freedom, the beauty and the opportunity the place afforded.

Among the writers were Joaquin Miller, Bret Harte, Mark Twain, Ambrose Bierce, Jack London, George Sterling, Frank Norris and Gertrude Atherton. And William Randolph Hearst's entry into the newspaper field in 1894 was an important factor in building up the life of the city.

Among the painters were William Keith, whose large canvasses of the Sierra scenery brought large sums from the nature-loving San Franciscans. The Bohemian Club became an important influence in the life of the City and State.

Among the philanthropists, interested in social betterment, were Lick, Leland Stanford, and Phoebe Apperson Hearst. An observatory, the Lick Observatory, a privately endowed university, Stanford University, and a substantially stimulated and assisted state university, The University of California, are existing records of their interest.

People loved the beauty of the country and were desirous of preserving it. John Muir signalized this love. He also signalized the early Conservation Movement which included Theodore Roosevelt and Franklin K. Lane among its ardent supporters. Theirs was an important part in the determination to establish the National Forests. Then there was the Sierra Club, founded as much for the preservation of the Sierra as for the enjoyment of mountain climbing. And not to be ignored was the Southern California Automobile Club which from the beginning did much to make scenery accessible to motorists thru its work for good roads.

People's interest in nature was not restricted to what they found here. They were fascinated with the possibilities of what could be established here. They greatly enlarged the variety of plant life with importations from the Orient, the South Pacific and the Mediterranean. They warmly applauded the successes of their fellow Californian, Luther Burbank, who developed many new species and was known as The Plant Wizard and held in the same high esteem as his contemporary, Thomas A. Edison, The Electrical Wizard.

I have gone into so much detail and have recalled half-forgotten names because it is important to recognize the intellectual ferment—the state of mind—that marked the region that was to be distinguished by the architecture of Bernard Maybeck, Greene and Greene, Willis Polk, Myron Hunt, Irving Gill and many other only slightly less gifted designers.

The state of mind that distinguished the region made their work possible. They contributed to that state of mind, but alone they would have been powerless to create it. Architecture, I have no need to tell you, cannot exist without buildings, and buildings cannot exist without clients, and clients cannot be pushed or led very far in advance of the head of the procession—at least not in sufficient numbers to create a movement broad enough to be called a regional expression. And without some degree of general acceptance it is only rarely possible to win the assistance of the builders, the mills, the craftsmen and, perhaps most important of all, the bankers.

I believe there is more than one kind of regionalism. One kind is typified by the Old French Quarter of New Orleans. What is regional there now was once quite general. The small scale of its buildings and its spaces was widespread during the 1840's—"the hungry forties". So was the ironwork, plentifully produced and widely marketed during the hungry decade. These and other features of the Old Quarter have disappeared elsewhere. Because they still remain in New Orleans, they are now regional. This regionalism is the result of standing still while the rest of the world changes. It may be induced by poverty, resulting in meager proportions; by isolation, producing ignorance of developments in more favored localities; by lack of transportation, restricting the choice of building materials to those native to the region; by iron-clad traditions, imposing living patterns rooted in a vanished past. Such regionalism prides itself on its exclusiveness. It cares more for preserving an obscure dialect than for expressing a new idea. It is anti-cosmopolitan and anti-progressive. Such regionalism becomes a cloak for the misplaced pride of the region and serves to build-in ignorance and inferiority. Happily, such regionalism is disappearing as we become more nearly one world. Let's call this type of regionalism the Regionalism of Restriction.

Opposed to the Regionalism of Restriction is another type of regionalism; the Regionalism of Liberation. This is the manifestation of a region that is **especially in tune with the emerging thought of the time**. We call such a manifestation "regional" **only because it has not yet emerged elsewhere**. It is the genius of this region to be more than ordinarily aware and more than ordinarily free. Its virtue is that its manifestation has **significance for the world outside itself**. To express this regionalism architecturally it is necessary that there be building,—preferably a lot of building—at one time. Only so can the expression be sufficiently general, sufficiently varied, sufficiently forceful to capture people's imaginations and provide a friendly climate long enough for a new school of design to develop.

San Francisco was made for Maybeck. Pasadena was made for Greene and Greene.

Neither could have accomplished what he did in any other place or time. Each used the materials of the place; but it is not the materials that distinguish the work.

Maybeck used wood, concrete, Transite, steel sash, corrugated iron—all before 1910—and used them with great distinction. But there is no reason to believe he would not have used marble and bronze equally well and just as cheerfully. He was equally indifferent to where his forms came from. Whether from Imperial Rome, Twelfth Century Italy, a log cabin or a twentieth-century factory, it is only what he made of them that matters. He did not reconstruct the past; he made something altogether new under the sun out of these relics and reminiscences of the past. As a result, any previous incarnation of these forms appears as mere preparation for their present role. Perhaps Maybeck's clients believed him when he told them they had Twelfth Century souls and so he was giving them a Twelfth Century building. But if they did, their leg was being pulled, for the Twelfth Century was never like this!

A region may develop ideas. A region may accept ideas. Imagination and intelligence are necessary for both. In California in the late Twenties and Thirties modern European ideas met a still developing regionalism. What was relevant was accepted and became part of a continuing regionalism. In New England, on the other hand, European Modernism met a rigid and restrictive regionalism that at first resisted and then surrendered. New England accepted European Modernism whole because its own regionalism had been reduced to a collection of restrictions.

The Regionalism of Restriction has many friends among architects. Perhaps the reason for this is that it relieves the architect of some decisions and responsibilities. Whether he admits it or not, the unified character of his building will be partly owing to his limited choice of materials, forms, methods and ways of living. Many of his choices will be made for him. So, to achieve unity, he will not have to depend on a central thought powerful enough to permeate the entire design and comprehensive enough to make it part of the technical, social and spiritual life around it. What unity the building will have will be achieved without benefit of thought. Behold! Automatic Architecture! The designer has depended on poverty to produce decorum. Unconsciously, perhaps, he has recognized that riches require discrimination. So, making a virtue of his lack of discrimination, he will call his poverty "restraint". His restrictions, he realizes, are his best friends.

A mind that cannot perceive unity has to have unity forced upon it. The same mind that craves the restrictions of a church or a patron also craves the restrictions of a

region. It is the designers of this sort who are the proponents of regionalism-as-restriction. Their personal interest in this restrictive feature must not be allowed to limit more original designers to limit the development of the region itself.

To be expressed, an idea must be built. To be built, it must be particularized, localized, set within a region. And what are important are not the limitations of the region but the resources of the region. A region's most important resources are its free minds, its imagination, its stake in the future, its energy and, last of all, its climate, its topography and the particular kind of sticks and stones it has to build with. It is the free minds, the imagination, the stake in the future that make up the state of mind that is the condition necessary for any kind of regionalism in architecture worth preserving.

NATIONALISM

Having been asked to talk twice, and each time on an assigned topic, I have tried to see the second talk in relation to the first and, if possible, to make it a continuation of the first. In doing so I have probably exaggerated the differences between the two expressions. Therefore let us begin by asking the question: How does a national expression differ from a regional one?

In my opinion, as I described it yesterday, a regional expression at its highest is the expression of liberation. It is a picture of adventure into new territory, new ways of living, new forms of construction, new harmonies of form. It is the picture of individual men discovering the Universe in architectural terms and realizing themselves more fully than before. It is a picture of liberation, of expansion, of diversity.

A national expression, on the other hand, is, at its highest, the expression of consolidation. A nation is a people consolidated. The purpose of a national architecture is to further unite people as citizens. Since the nation is essentially a symbol, a national architecture must provide an image of the qualities the nation symbolizes. Like a national literature, a national architecture must evoke images of the qualities people desire. The nation needs buildings which hold up a picture of what their citizens would like to believe they are, that call their achievements to the attention of the world, that advertise their power. This is what consolidates citizens. This is why conquerors always build. Hitler, Mussolini and Stalin were following the pattern of their predecessors. They were no exception to the rule. To the nation, therefore, the spirit of an architecture is its most important, its most valuable, its most practical,

aspect. A national architecture, expressing symbolically the spiritual needs of the people, is therefore much more common than one expressing both spiritual and physical needs.

As a result of the need to create spiritual values in its buildings, nations often look for a style derived from buildings of some former time,—a time important in the historical development of the nation and hence useful as a national symbol,—symbol by reason of association. As a consequence, the national expression may very likely result from the accident of time and place.

Because columned porticoes adorned the houses of the more fortunate citizens of the South in the period of their greatest prosperity, columned porticoes became a symbol of wealth and power and glory, and half a century later were being used to bolster the pride of citizens for whom wealth, power and glory had vanished. As the symbol of an idealized past of which Southerners are proud, these porticoed buildings serve a present service in stimulating the spirit of people for whom they have little physical use.

In a similar way the early New England farmhouse, conceived in poverty and born during the colonists' bitter struggle with cold, famine and adversity, is identified with New England's pioneer past. For many today it symbolizes America, though its primitive amenities have little to offer of a physical nature that is not surpassed by an untraditional modern house. It is a symbol of America-the-heroic rather than America-the-abundant.

While not undervaluing the heroic, I nevertheless find it difficult to understand why today we are not more proud of our present day achievements and why we do not idealize our abundance, amplitude, fertility, independence and beauty of action.

Both of the examples of symbol-by-association which I have cited are symbols of Colonial America,—not the United States of America. The Colonies were not American in their ideals,—they were European. Even at the time of the Revolution the American Ideal was a picture in the imagination of only a few of the rebelling Colonists. To the European of today, the architecture of Colonial America, as well as the importations of later times, are, in some respects, the symbols of the very ideals which the new nation was dedicated to oppose! Colonial architecture was part of a general colonial attitude. Like that general attitude, colonial architecture had developed under ecclesiastical and monarchical influences. Unlike the political and, to a lesser degree, the social parts of that general attitude, American building failed to cleanse itself of

those European elements which are opposed to the American Ideal. Hence we have a confusion of symbols in which the same building represents a diametrically opposite spirit to two different people.

More than this, the entrenched patterns that could not have destroyed have acted as a brake on the development of an architecture directly expressive of the American Spirit and expressive also of modern America's physical needs and means. That braking action is only now being overcome. Both the Middle West and California benefited by the lateness of their development, and I expect the North West to later benefit in a similar manner. Lateness has meant distance in both time and space from the relics of a contradictory past. As a consequence, both the Middle West and California were more nearly able to develop forms expressive of the American Ideal and at the same time more fitted to the physical needs and physical means of the time and place than were those parts of the American Commonwealth more closely connected with its colonial past.

It is usually difficult to see clearly the pattern of anything in which one is himself involved. So, for a change, let us look at Mexico. Quite a number of American architects attended the 8th Pan American Congress of Architects there a year ago last fall. What they saw was a gigantic symbol of modern Mexico on which the finishing touches were then being put. It was not difficult to see the new National University as primarily a symbol because it seemed that whenever the demands of symbolism appeared to conflict with those of utility and art, the demands of symbolism always prevailed. Fortunately these demands did not always conflict and there are some fine buildings as well as fine symbols. But it was most evident that the intention above all else was to dramatize the new Mexico. And the National University benefited by being the modern instance.

The picture that appears is of a Mexico that is, first of all, modern. The shapes of the building are as late 20th Century as scholarship can make them, and their technology as advanced as can be found anywhere. Next, Mexico is big. La Ciudad Universitaria is neither small nor modest; it is enormous and exultant. To make it large and to give it the freedom of an unspoiled site, it was placed so far from the center of Mexico City that it works a serious hardship on both students and faculty, most of whom must work and live in the city. And despite the fact that a large number of its buildings are quite tall, they are spread so far apart that communication between them on foot is quite difficult. Furthermore, some of the professional schools which, for professional reasons, might be more satisfactorily located apart,—as the law

school near the courts and the medical school near the hospitals,—are nevertheless retained to swell the size and the effect.

Next, Mexico is strong. La Ciudad Universitaria would have been a tremendous undertaking for the U. S., requiring probably 5 years to design and another 5 years to build. Yet Mexico completed the design in less than two years and the construction in less than another two, as I recall it. I believe that to do so she used the services of almost every architect and engineer in Mexico, and all but stopped all other construction in order to make materials available for this great effort.

I have mentioned some of the faults of the scheme as viewed with an eye to utility. But this has been to emphasize the importance placed in this instance on symbolism. La Ciudad Universitaria serves to dramatize not only the National University but, even more, Mexico's modernity, her technology, her resources and her power. She has put architecture to work to arouse the pride of her people in their nation and to further her technical and industrial development to a point where succeeding buildings of this kind can be built by means as modern as their product,—not by men in bare feet working with bare hands. It is an instance of the dynamic function of architecture, —of an architecture's power to embody the spirit of a nation in a symbol that her citizens recognize and which arouses them to further expressions of it.

I have applauded Mexico's recognition of the dynamic function of architecture and have used it as an example of a national expression. I now want to criticize it because in doing so I can point out a weakness in our own efforts.

La Ciudad Universitaria satisfies an immediate spiritual need but for the most part lacks the elements necessary for development into something really theirs. The immediate gain can be an ultimate loss if it postpones the development of buildings fitted to their physical needs and expressing in direct, rather than borrowed terms, their more intimate spiritual aims.

Mixing pyramids with the pilotis has given the Mexican something familiar to take hold of. But unless the Mexican finds other uses for the stilts, the thin vaults, the cantilevers and the sun-breaks that are exhibited in the National University buildings, they will remain mere symbols of an alien modernity. Colonial forms delayed the development of a truly expressive architecture in the U. S. and the virulent colonialism of Latin America has delayed the development of a native expression there even longer. Despite the nationalist intention of the new architecture, the new forms from Europe could become the new colonialism of Mexico. It would then enslave rather than free.

An architecture that is only symbol—and a borrowed symbol at that—is a china egg. It will not hatch. Unless it stimulates the hen to lay a real egg it had better not be used. It will be a brake on the development of a living architecture. Furthermore, it will prevent people from recognizing a real architecture when it does develop. How is the grip of such restrictive forces broken? Usually, by outside forces acting not upon art but upon society. The occasion will be brought about by a new situation and an architecture's inability to accommodate itself to it. Thus architectural change is usually the result of social change. Social change in our world has been brought about by science. Sometimes the effect has been direct, as was the concept of organic evolution developed by 19th Century biology. More often it is indirect, science working thru technology. In any event, the dynamic force at the root of all social change today is science.

The development of the American continent, the most important occurrence of its kind in the 19th Century, was accomplished by means of technology. By means of the railroad, the steamboat, the McCormick reaper, the telegraph, the telephone and, at the end, the automobile—to name but a few—the 19th Century did more than any previous century to break the shackles that bound an architecture to its past and to open the gates to an almost unlimited development. This does not imply that the architecture that follows will be any greater than its predecessors but merely that an opportunity was given 20th Century architects to make contact with the life of their time.

For architecture to be really great it must express the variety, freedom, expansiveness, love of the physical world that is the product of the best regionalism—the regionalism of liberation. At the same time it must provide an image of those qualities people want to believe expressive of themselves and their nation and that unite them in a great national expression.

SELECTED BUILDINGS WITH COMMENTS BY THE ARCHITECT

An article prepared for this publication

Make one whole wall of the room of glass and open the room into a garden. With the solid material that the glass displaces, build a wall around the garden.



Fred R. Dapprich Photographer

Lowe House, 1934

Sometimes . . . the slighter the construction the better, the simpler the materials the more harmonious, the quieter the shapes the more satisfying.



Fred R. Dapprich Photographer

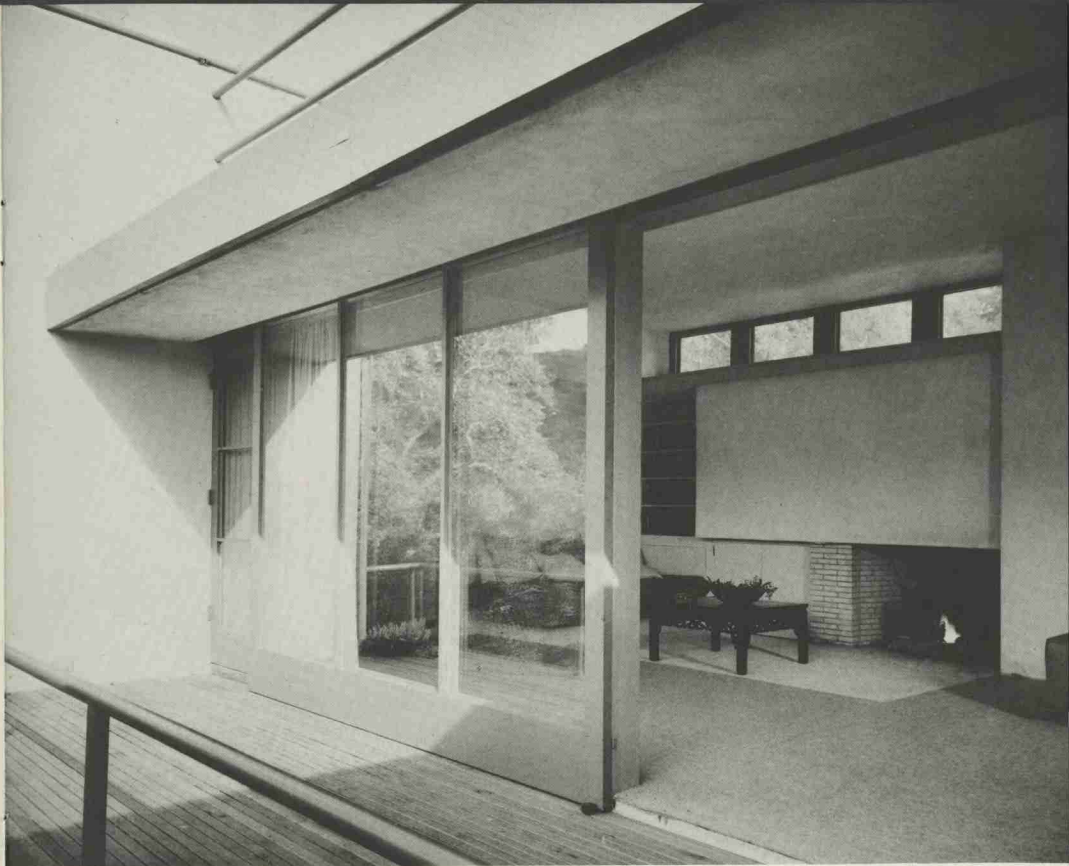
It is the nature of hillsides to slope, . . . and a level floor need not stop them. Neither need it dam the water nor scare away the plants.

"This is the kind of house I *don't* want", said John Entenza, "but because you could design this house, I know you can design (turn the page)



Fellowship Park House,
1936

... the house I do want."



Fred R. Dapprich Photographer

Entenza House, 1937

The hillside, with its native growth, comes almost into the house. And the inside finishes — sand plaster, natural wood and grass matting — would be equally at home outdoors.

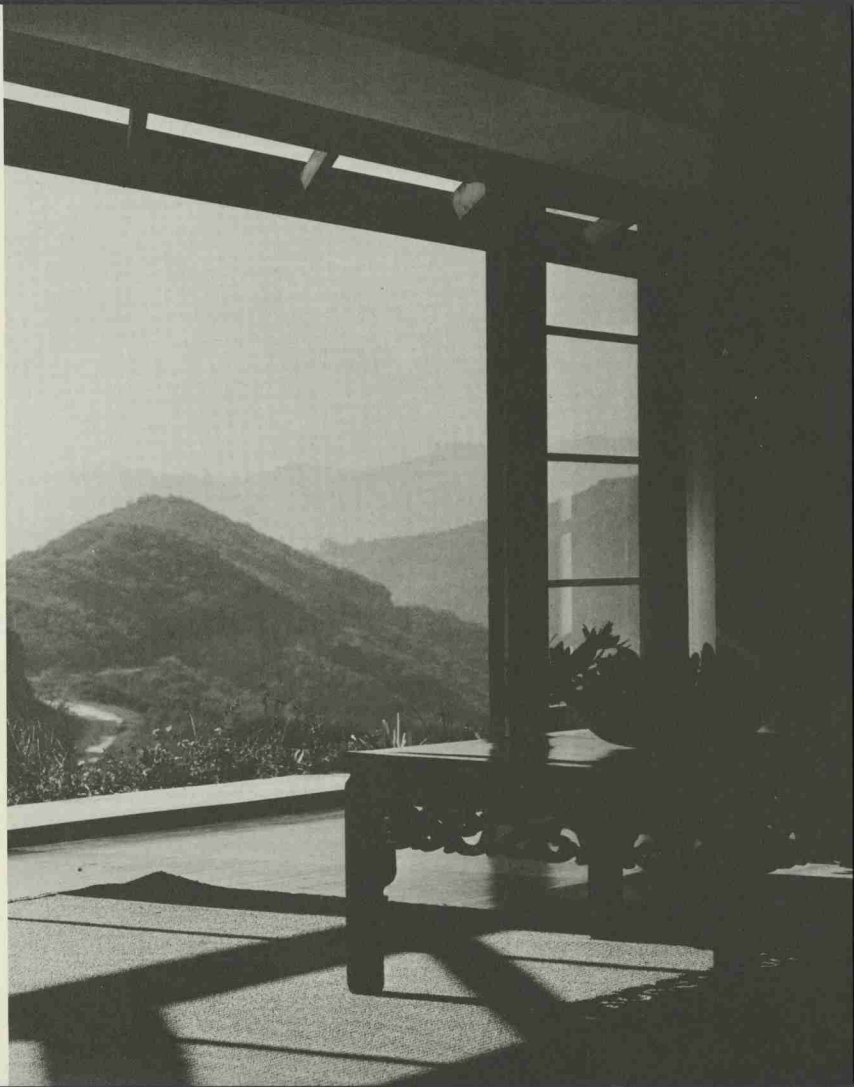


Fred R. Dapprich Photographer

Bauer House, 1938

Brush and carved teak.

Granstedt House, 1938



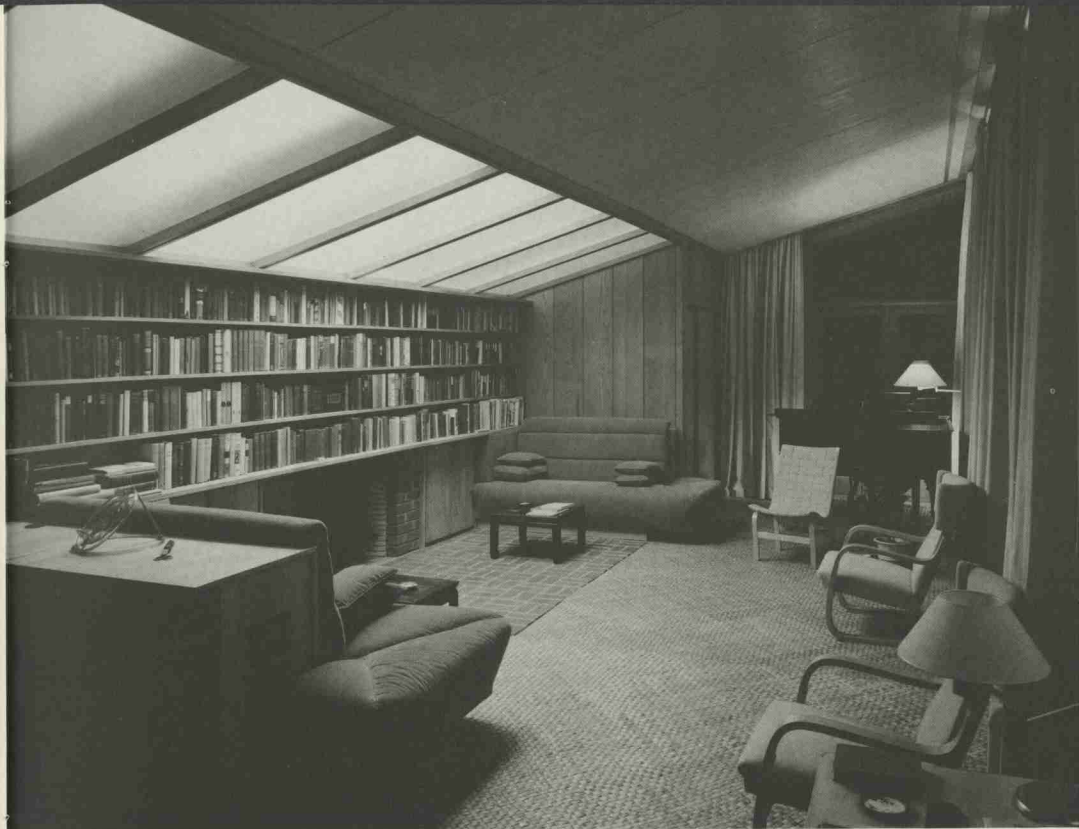
A sky house for eagles, and



Man Ray Photographer

Havens House, 1941

.... A cave for moles.



Courtesy of Roger Sturtevant Photographer

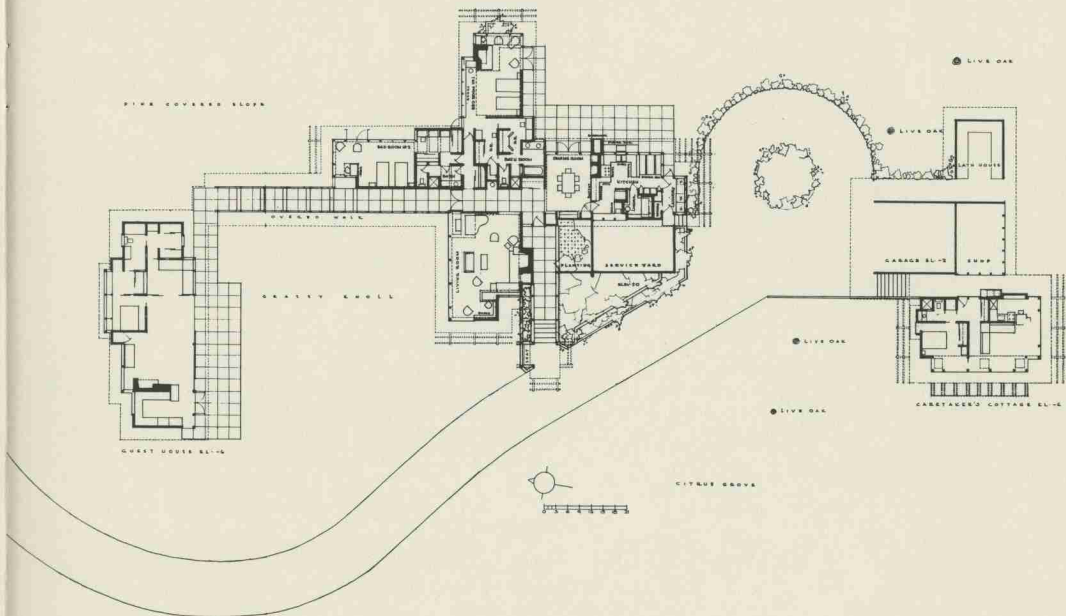
Havens House, 1941

"The Adventure of Three Boards" might be the name of this house, so continuous are the three redwood members that crown the walls, inside and out, mark the cantilevered floors and pergolas, and form parapets around terraces, — in the course of which they disappear at points only to reappear at other points.



Birtcher House, 1942

A wing plan allows three exposures for the room at each wing's tip. This is worth having when the site is a knoll in a valley ringed by picturesque mountains. In this plan the major rooms occupy the tip positions; the minor rooms are in the middle, lighted thru openings in the roof.



WYLE HOUSE, CULVER, CALIFORNIA
 HENRY HAMILTON HARRIS / NOV. 1948

Wyle House, 1948

The rooms at the tips not only have three exposures but are really several spaces in one, owing to their shaping by walls, ceilings, furniture and outlook. In the livingroom there is the main space facing the fireplace and, as sub-spaces, the library alcove under this dropped gable and the music alcove (not pictured) under a flat ceiling. The soaring main ceiling unites the three spaces and adds to the apparent dimensions of the room.



Wyle House, 1948

Maynard L. Parker Photography

Sticks and boards are limited in their width and length. Combined in a structure they remain separate. Each behaves differently, twisting, shrinking and weathering according to its individual nature. The wise design will make a feature of these differences. It will begin by recognizing the individual members and marking the limits of each by a visible joint. No matter how much a member may twist and shrink and change color, it cannot destroy the form, — for the visible joints that separate it from its neighbors were a part of that form from the very beginning.



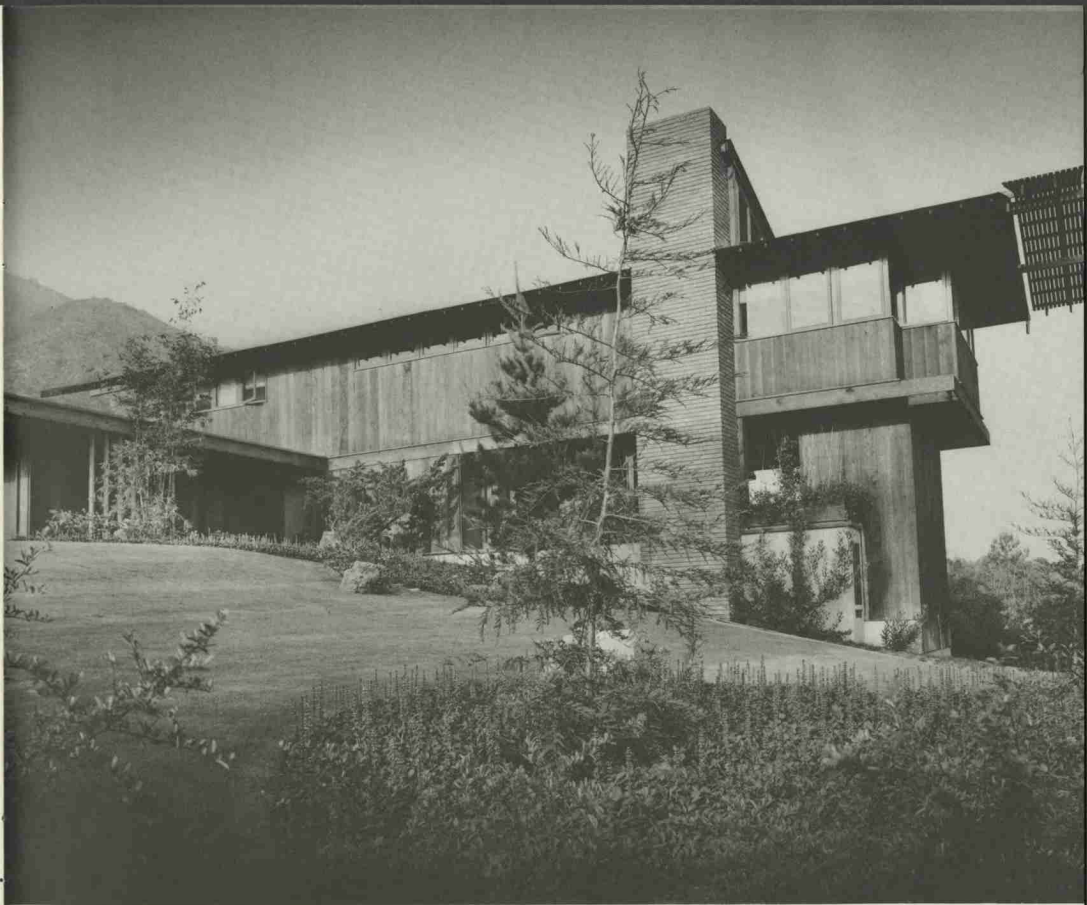
Ralph Johnson House,
Los Angeles, 1948

Inside, the effect of naturalness owes less to choice of materials and more to clear intention and corroborative detail.

Ralph Johnson House,
Los Angeles, 1948



A house in the foothills. The livingroom is on the second floor to better catch the view, its gable window shaded by a trellis.



Courtesy of Julius Shulman Photographer

Mulvihill House, 1949

The vault is the simplest way to cover a large space. When it leaps from the ground instead of the walls, the ground takes the "kick". If the ground is shifting sand, metal ties between opposite footings counter-balance the "kicks" and stay conveniently out of sight. The hurdles over which this roof leaps are eight-foot-high screens of concrete block, — and the roof clears them by about four feet. The high space between the screens is for exhibitions. The low space outside is for covered passage.



Larry Kelley Photographer

Feature Exhibits Building, National Orange Show, 1954

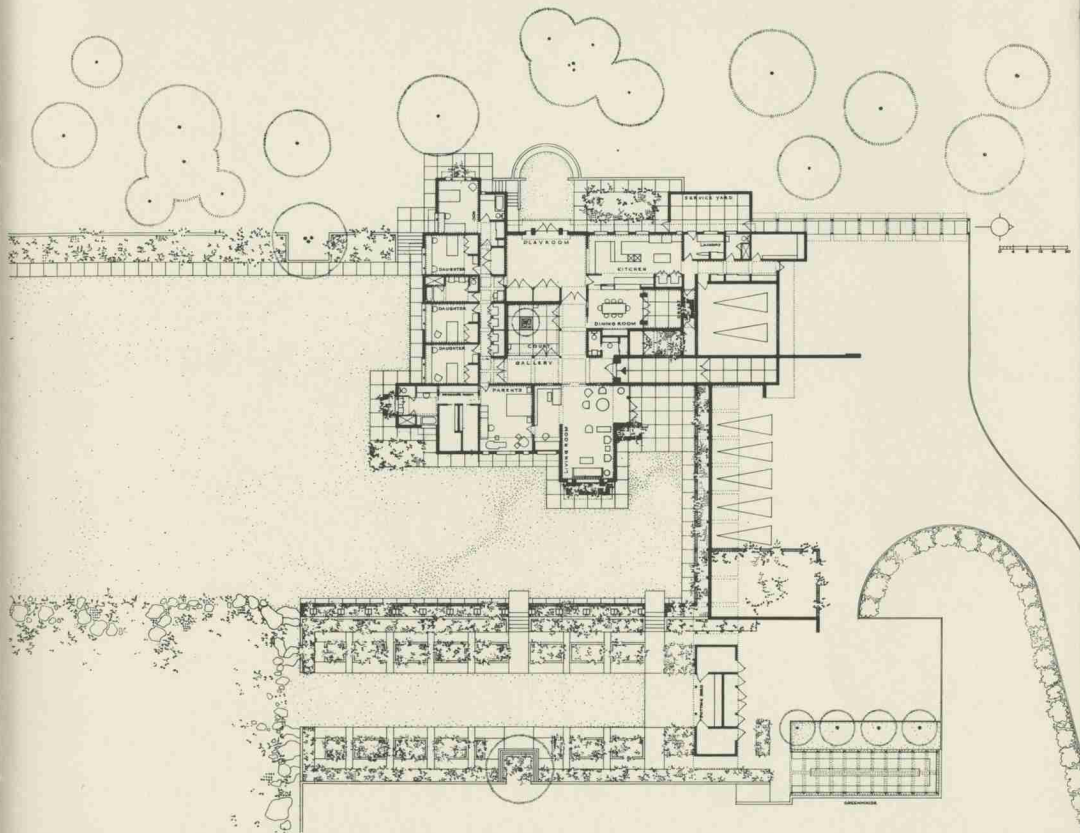
For the extremes of Texas weather, brick replaces wood, openings become smaller and the indoor climate is manufactured.



Wayne Andrews Photographer

House in Fort Worth, 1956

Zoned, the rooms are private; wrapped around the central court, they are convenient; combined, they invite parties. The gallery joins together livingroom, diningroom and playroom; the court outside each extends the space further.



House in Fort Worth, 1956

The other half: outdoor architecture.



House in Fort Worth,
1956

A Texas garden moves indoors to escape the extremes of heat and cold and the violence of three-day dust storms. Even the view of the out-of-doors is shut out. The climate is manufactured. The plants are natural. Prism glass top-lights flood the space with natural illumination while excluding the direct rays of the sun. Walls are golden tan brick. Floor and pool are marble.



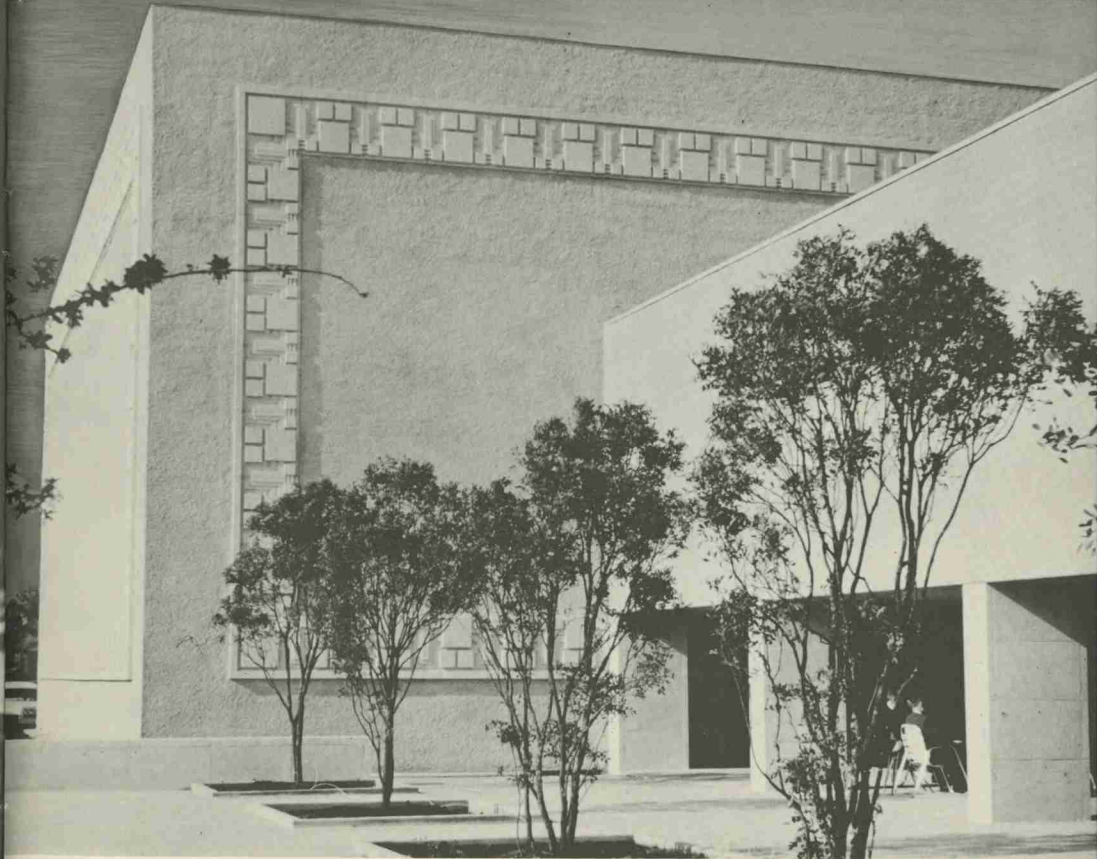
Treanor House, 1959

Another building with an inside garden. At the center of this concrete monolith is a court flooded with sunlight and inhabited by plants and water. A clear glass roof covers the court during hours of chill and rain and silently disappears at other times — thanks to an electric motor. Heated air, circulating beneath the pavement, adds warmth when that is needed. The exterior facing of this public mausoleum is golden shellstone; the ornament is cast stone.



Greenwood Mausoleum, 1959

A windowless building, illuminated by daylight. The ceiling of this sanctuary stops short of the walls, turning upward to meet a prism-glass roof seven feet above it. Light streams down around the cloud-like ceiling like rain pouring off an umbrella. The walls become a curtain of light, not so much enclosing space as marking the limits of ones interest. So, the sights, sounds and suggestions of the world outside cease to exist and ones thoughts turn inward.



Associates: David B. Barrow, Jr., Beran and Shelmire

First Unitarian Church of Dallas, 1964

Co-editors: Keller Smith Jr., Reyhan Tansal
 Business Manager: Wayland Plaster
 Circulation Manager: James C. Posey
 Faculty Advisor: Richard Saul Wurman

Staff: Intercollegiate Round Robin Exhibition: Roy Colquitt, John Kinney
 XII Annual Art Auction: Co-chairman Gary Giles, Eugene Brown

Acknowledgements The staff would like to thank Dean Henry L. Kampfoefner for his continued support and the secretaries of the School of Design for their invaluable help: Anne Craddock, Winifred Hodge, Elizabeth Pippin, Elizabeth Young.

For the support given to the issue, we are greatly indebted to:

Joseph Courter	Galen Minah
Raymond Craun	Harold Ogburn
Hugh E. Haggitt	Bert Oliver
Gary Holland	Patsy Posey
Frank Hough	James Ross

Art Auction Contributors: For their generous contributions of art to the XII Annual Art Auction, we are greatly indebted to:

Russell Arnold	R. Eugene Messick
William J. Baron	Raymond Mussewhite
Jack Berkman	Cork Newman
George Bireline	William C. Nichols
Robert Brodersen	Morris Parker
Joan Condoret	James Ross
Joseph H. Cox	William Sewell
Fred Eichenberger	Brian Shawcroft
L. Evans	Anne K. Shields
Ligon Flynn	Marjorie Shiffman
Reingard K. Goethert	Joseph C. Sloane
Robert Howard	Duncan Stuart
L. V. Huggins	Wayne Taylor
Mary Anne Jenkins	Class of Dorothy Wurman
Louis L. Kahn	Richard Saul Wurman

Subscription rates:

Donor: \$50 or more

Patron: \$16 or more

Vol. 14 #1, 2, 3, 4 slipcased \$8

Vol. 14 #5 Selected Writings and Buildings by Harwell Hamilton Harris \$2

Annual subscription based on number of publications issued per year, \$2 per issue.

Address all inquiries to: Student Publications of the School of Design, P. O. Box 5273, Raleigh, N. C.

Distributors: George Wittenborn and Co., 1018 Madison Avenue, New York 21, N. Y. and Alec Tiranti, Ltd., 72 Charlotte Street, London W. 1, England

Printed by: North Carolina State of the University of North Carolina Printing Plant.

The staff would like to express its appreciation to the following
for their generous contributions:

donors:

(50 dollars or more)

Arts and Architecture Los Angeles, California
Pietro Belluschi Boston, Massachusetts
Joseph N. Boaz Raleigh, North Carolina
Leslie N. Boney Wilmington, North Carolina
James L. Brandt Raleigh, North Carolina
Alden B. Dow Associates Midland, Michigan
Rockwell King DuMoulin Washington, D. C.
Charles M. Goodman Washington, D. C.
Harwell Hamilton Harris Raleigh, North Carolina
Henry J. Heinz II Pittsburgh, Pennsylvania
Vincent Kling Philadelphia, Pennsylvania
E. Archie Mishkin Philadelphia, Pennsylvania
Walter A. Netsch, Jr. Chicago, Illinois
A. G. Odell, Jr. Charlotte, North Carolina
Department of Architecture,
Rice University Houston, Texas
James M. Strutt Ottawa, Canada
Student Government
N. C. State Raleigh, North Carolina
Student Supply Stores,
N. C. State Raleigh, North Carolina
Kenzo Tange Tokyo, Japan
M. L. Wurman Philadelphia, Pennsylvania

patrons:

(16 dollars or more)

Frei Otto Berlin, Germany
Henry Robert Kann New York, New York
G. E. Kidder Smith New York, New York
Dale M. Wiars Milwaukee, Wisconsin

For their past financial support we thank Wallace K. Harrison and
Edgar J. Kaufmann Jr.

