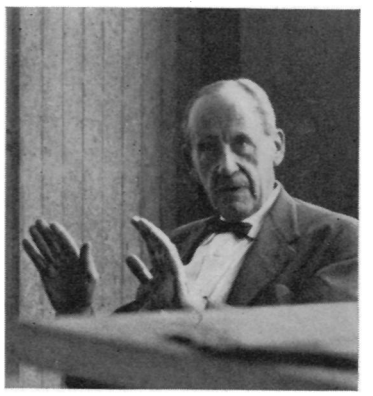
Buddha statue (wood, 5′ 2″ high) in the Chuguji Nunnery, Nara, Japan; called "Nyoirin Kannon"; seventh century.

Architecture in Japan



by Walter Gropius

Walter Gropius recently returned from three months of travel in Japan. His trip was sponsored by the International House of Japan, based on a Rockefeller grant.

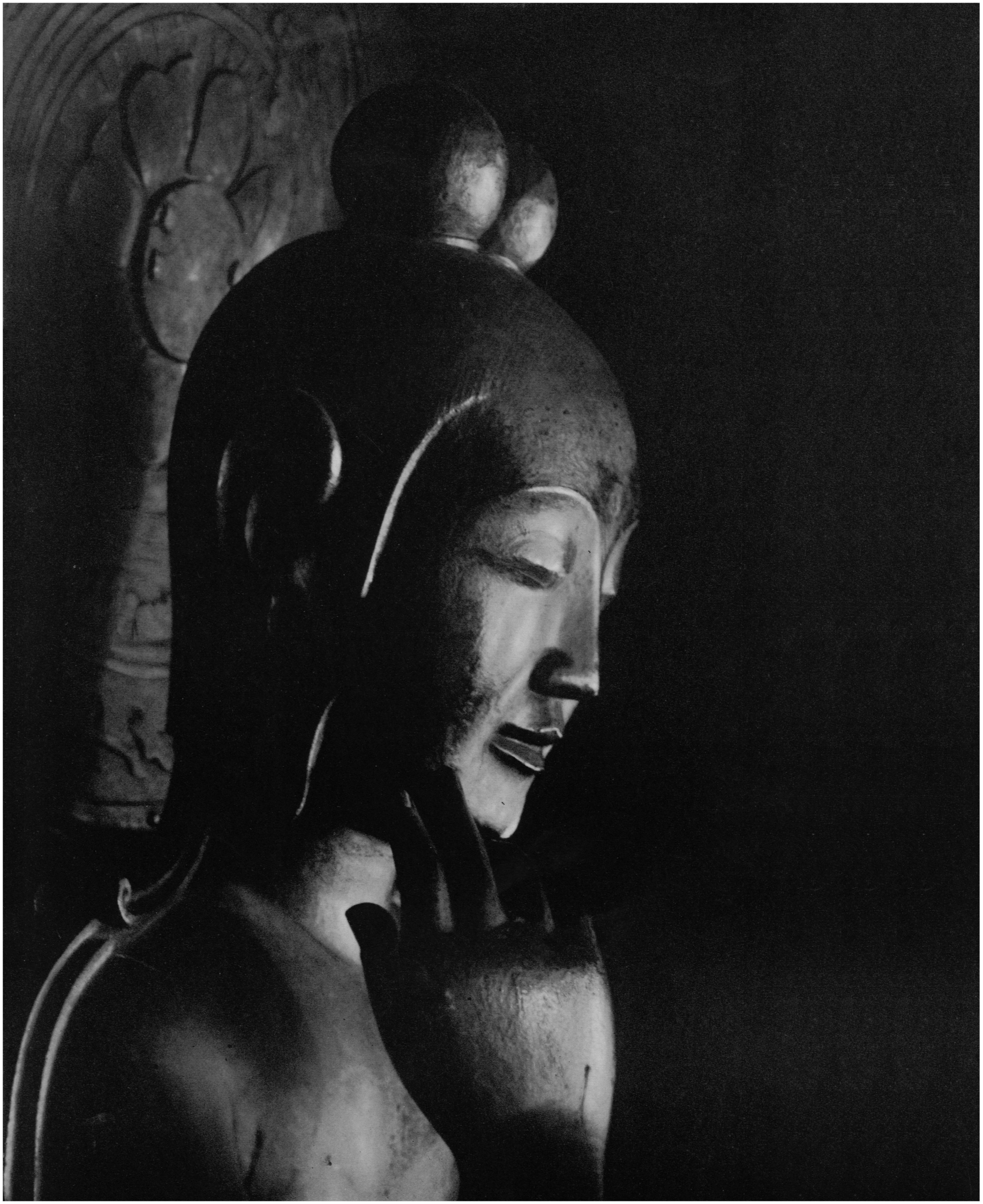
It is a great privilege for a man of mature years to travel around the world and to find the opportunity to compare human activities while, at the same time, trying to discriminate between the essential and the incidental. During the last two years I have crossed many oceans and continents, so I have had ample opportunity to observe the gradual conversion of many countries from a feudal past into the now familiar pattern of a modern industrialized society. It has been far from being an always gratifying experience. I made it a point to find out which countries had succeeded in retaining cultural initiative and an integrated, balanced form of living and the rewards of my search, except for some remote and primitive societies, were few and far between. Everywhere the impact of the machine age had created so much confusion that the disadvantages of the conversion were much more in evidence than the advantages.

When I arrived in Japan, the first question I was asked —and by a customs official at that—"are you engaged in culture?" I am indeed engaged in culture, but the question has never been put before me so bluntly. It made me wonder more than ever what exactly happens when an old culture like the Japanese meets head-on with a civilization that has decided to abandon most of the cultural values of a pre-industrial era in favor of establishing a new basis created by science and technique, which is able to raise the standards of material living to an unprecedented height, but has as yet often failed to enlist the emotional loyalties of the very people who developed it.

I wonder whether we are able to provide some of the answers to questions which a thoughtful Oriental mind might put to us, when we think of the many split personalities among ourselves—minds who dwell in the past where their emotional life is concerned, but who employ the latest technical devices in their professional lives. I have gotten the impression that the western mind, in its restlessness to capture new horizons in the outer world, could learn a lesson in spiritual intensification from the Oriental mind; i.e., how to capture new horizons of the inner world. We should compare with each other the deeper motives of our existence, so that we shall be able to find out what unites us rather than what divides us. For the physical world has become too small for us, to be able to afford ignorance of each other— ignorance which inevitably leads to violence. If we share our native gifts we may yet be able to build a more durable structure for the man of the twentieth century than has seemed possible before.

These are the thoughts which occupy my mind at the end of a year of globe-trotting. Uppermost in my mind, as a travelling architect, has been the question: What can artists, architects and planners contribute to a new cultural entity? How can they overcome that piecemeal development of our physical surroundings which so often offends the culturally interested citizen? It seems to me most important that every designer think responsibility first of the whole into which he blends his individual design, for only then shall we be able to finally find a common denominator of form expressing our modern life.

What in fact represents a cohesive cultural entity I have never seen more clearly than in Japan. The reason for the depth and ramification of the old Japanese culture is probably the fact that they have not been disturbed by wars from outside for over a thousand years, and that for all that time, they have been under about the same type of government. This culture has become so deep-rooted and ramified that even today the plain man and the farmer still exemplify it subconsciously. Beauty is still a basic requirement of life for the Japanese, a cultural factor of great importance more and more missing in the Western world. These attitudes have become part of the Japanese character and cannot be easily eradicated. They should be looked at as positive factors, holding dynamic potentialities to be combined with those qualities and features of the Western culture which will make them stronger. East and West must adapt their attitudes and enrich each other, discarding what is weak and obsolete on both sides. The deification of science in the Western world has brought about such a pauperization of other fields of



Rice paddies near Tokyo. Slopes are artfully terraced for the expansion of food-producing soil. (Photo by author).

Town of Kurashiki (Okayama Prefecture). Organic unity combined with individual variety. Repetition of roof angle and building materials. (Photo by author).

human endeavor, that a better understanding of Oriental culture might also help to reinstate neglected values and open our eyes to experiences that are now missing in our lives.

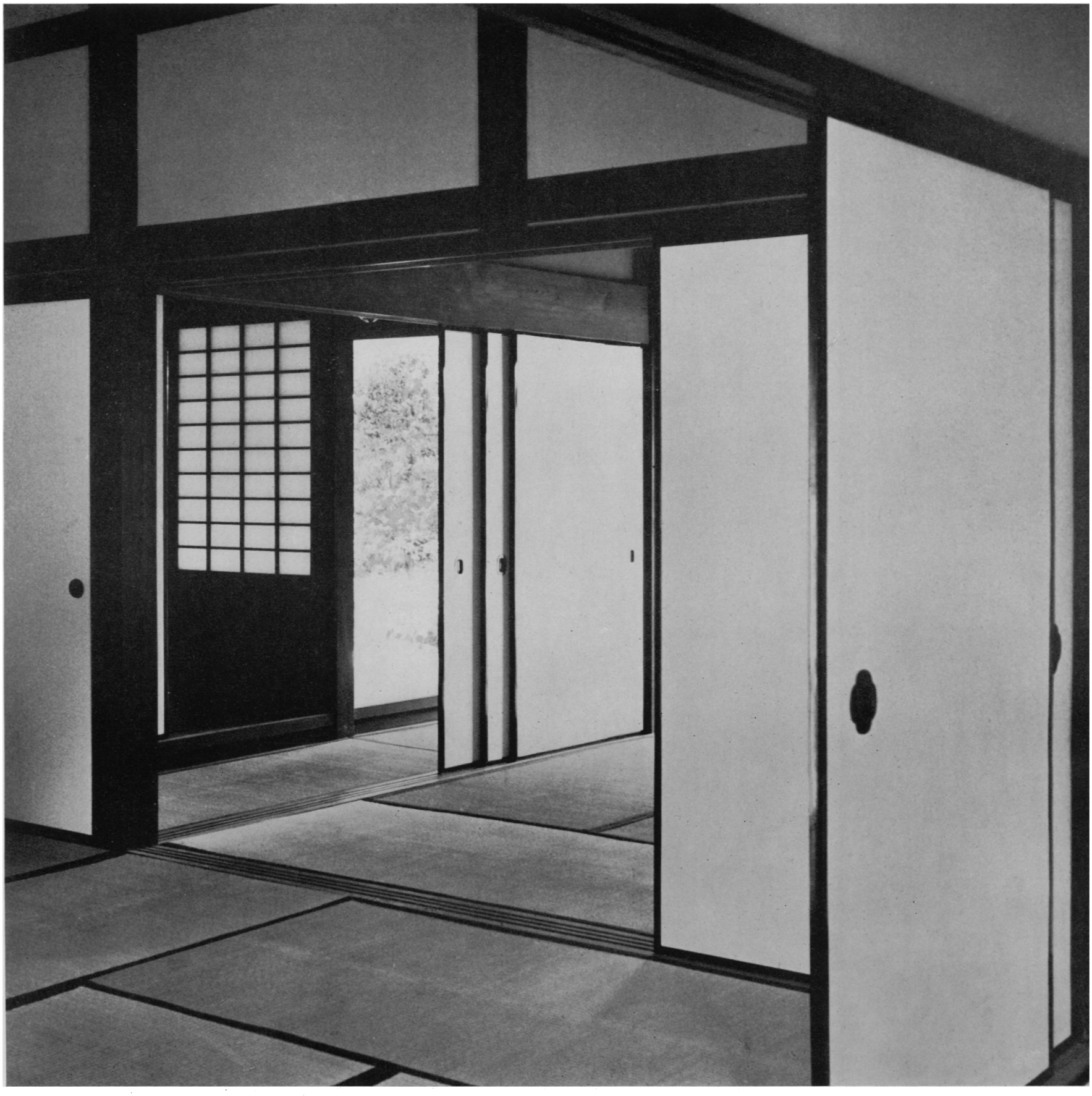
It has always attracted and interested me to find that a very strong common denominator of form-expression had been attained in Japan that did not, however, stifle individual variation. The old hand-made Japanese house had already all the essential features demanded today for a modern prefabricated house; namely, modular coordination—the standard mat, a unit of about 3 x 6 feet— and movable wall panels.

You cannot imagine what it meant to me to come suddenly face to face with these houses, with a culture still alive, which in the past had already found the answer to many of our modern requirements of simplicity, of outdoor-indoor relations, of modular coordination, and at the same time, variety of expression, resulting in a common form language uniting all individual efforts. All this is based, of course, on handicrafts, which we know are losing their foothold in our modern world and which eventually must be replaced by industrial methods and tools. The advantage for the Japanese in this transition development seems to be that they are still attuned to and in the presence of such perfect examples of the balance achieved between individual initiative and voluntary subordination to a common principle that they should be potentially able to make the otherwise so painful and difficult transition from a handicraft to a machine culture with greater ease and without the loss of orientation, direction and tradition which have threatened so many other peoples. It has been my contention always that it is not the tool—hand tool or machine that is at fault when things get out of hand, but our mind which controls or fails to control our technical progress.

During my stay in the East, I have found that the typically Western approach to a problem, which usually takes the direction of trying to find the most practical, rational, hygenic and comfortable solution, covers very little ground in the Orient. Past associations, deference to historically meaningful symbols, consideration of beauty and propriety, the recently developed urge to express one's individuality—something new in the East—the wish to catch up with Western civilization and at the same time the resentment against Western domination and influence—all these things mingle and counteract each other and make it difficult for anyone, Easterner or Westerner, to work out a common platform from which to operate.

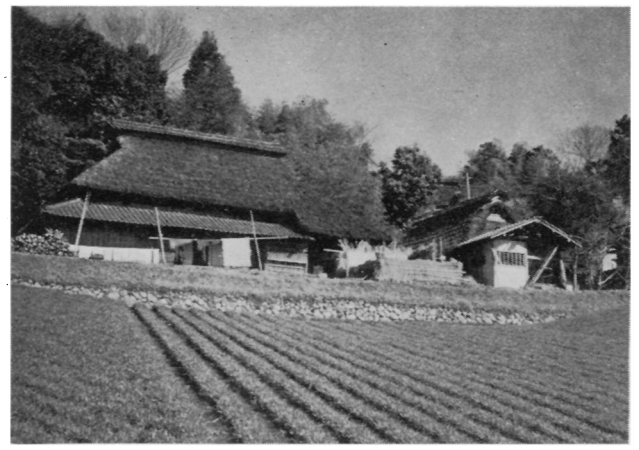
What impressed me in Japan is the fact that the cultural strata of over a thousand years reaches clearly into present day life, and I think no one can understand or predict Japanese reactions at all properly who does not bear this in mind. The main problem, of course, is the overpopulation. The gradual cheapening of everything under this pressure is disheartening to watch, particularly in a country where one is surrounded everywhere by such high standards of the past. Many architects feel quite discouraged by those conditions.

Although Japan at present is certainly one of the poorest and most crowded countries in the world, the peasants man-

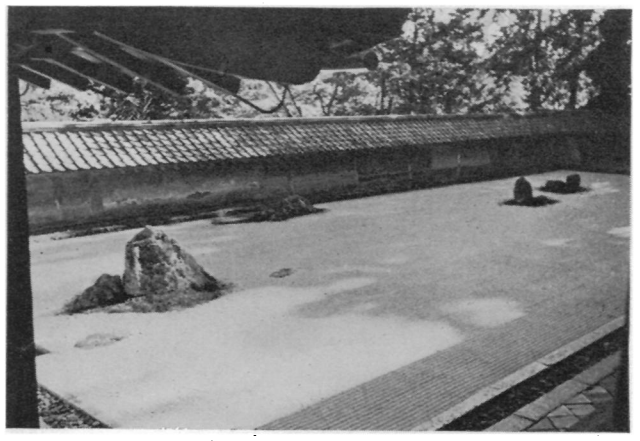


Tea Pavilion "Shokintei" of the Katsura Imperial Villa, in Kyoto (1620-24). Superb example of the Zen influenced simplicity of means combined with architectural perfection. All materials are natural, not painted, except the pink stucco panels.

Preceding page:
Living room of a 400 year old farmhouse near Osaka. All its partitions are movable providing utmost flexibility of use. Modular coordination by standard straw mats, 3' x 6'. Natural wood handrubbed and framed paper screens. (Photo by Norman F. Carver).



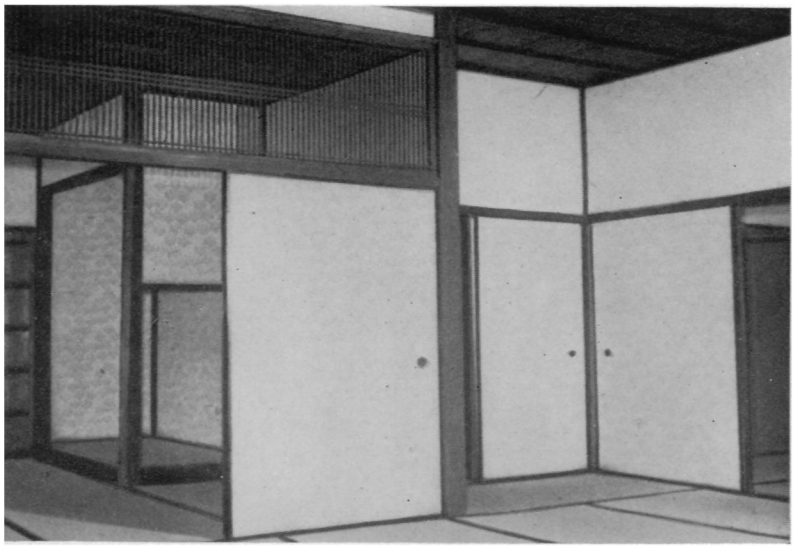
Farmhouse near Hiroshima. (Photo by S. Sato).

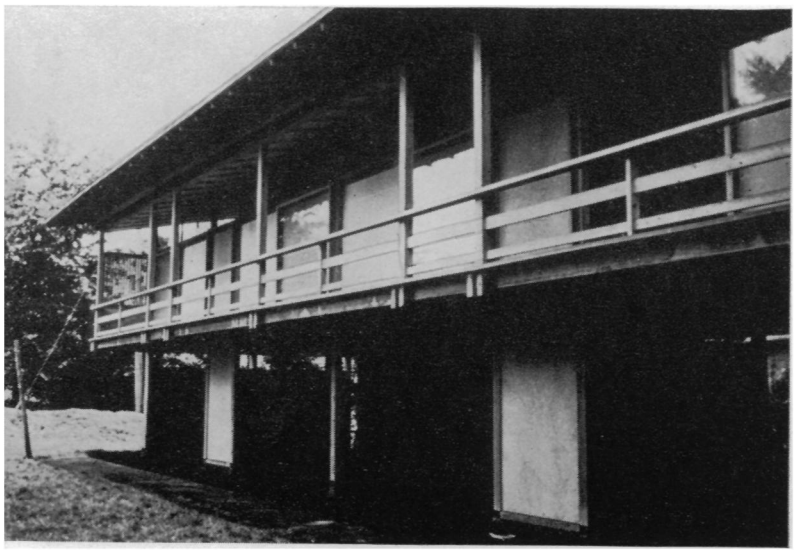


The Ryoanji rockgarden. Said to have been designed by the famous Zen Priest Soami at the end of the fifteenth century. Fifteen rocks standing in carefully raked white gravel against a quiet wall. No plants. A space composition of rare ingenuity, a place of great beauty and peace. (Photo by author).

Small rockgarden alongside a wooden terrace; white gravel, very few trimmed plants. Kyoto. (Photo by author).

The original pavement leading to the main entrance of the Katsura Imperial Villa. Casual informality avoiding symmetry and axial approach provides an intimate human scale. (Photo by author).





age to keep their houses in excellent repair. As the family, —or rather the clan-spirit, is strong, the building of a new house is the responsibility of everyone belonging to the same clan, and in this manner they have been able to maintain a standard which has become quite impossible in the cities, where the lower classes often live in miserable quarters. Looking out into the neat little villages, I never saw yawning holes with dumped bedsprings or smoking trash heaps as in our country. No dirty, neglected backyards, no waste fields or glaring hot, unshaded highways. The tightly folded craggy hills divide the fields from each other and are always covered with lovely trees, and the banking and grading of the rice fields is a stupendous achievement. The peasants have contrived to turn agriculture into a veritable optical art, and the whole country looks like one gigantic, basic design course. You have perhaps seen pictures of rice paddies before, but to see them with the people working in them in their highly colorful clothes is another thing. You stand in admiration, wondering how it has been possible to turn one of the dirtiest jobs by human ingenuity into a thing of such beauty.

Most Westerners believe that Japanese architecture is only a branch of the Chinese. That seems to be unfounded. Particularly the Japanese residential house and the tea house show strong independent characteristics: no symmetry, emphasis on human scale by breaking axis and changing their direction, surprise effects, openness and flexibility of plan. These are timeless virtues which could be utilized today with our new technical means even better than during the centuries of the crafts. Some examples of Japanese architecture are of the highest cultural order. Not until I saw the Partheon of the Acropolis on my way back westward did I experience again an architectural spirit of such high rank.

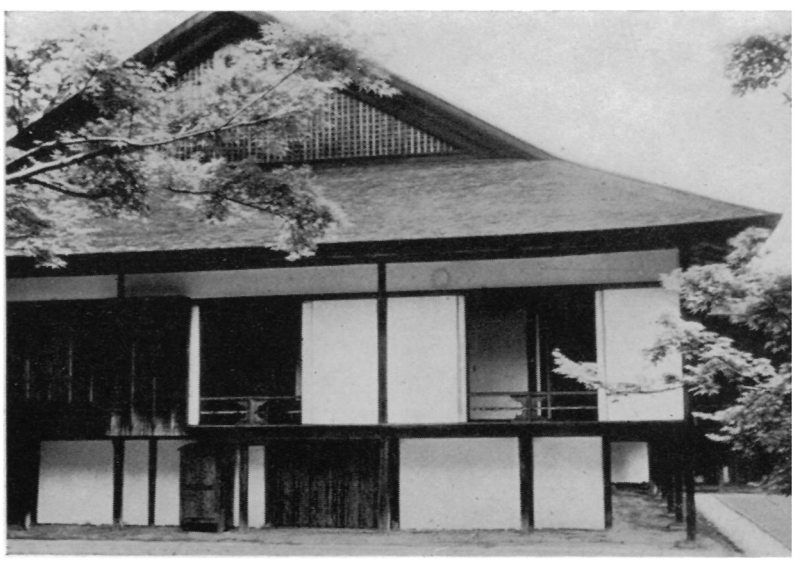
We can understand architecture of nations and periods only as we win an inside knowledge of the way of thinking and philosophy of that period. The Japanese architects have

Top:
Living room—Shoin—of the Katsura Imperial Villa (1620-24). All walls are sliding. Natural wood also on ceiling and cream paper on walls give subdued background to highly colorful clothing worn in the seventeenth century. No principal difference from concept of farmhouse living room on page 11. (Photo by Dr. Osamu Mori).

Center:
Residence of the Architect Kenzo Tange (1954) in Tokyo. Cypress wood, plaster and glass panels, a double roof like a tropical tent. Beautiful proportions. (Photo by author).

Below:
A corner view of the Katsura Imperial Villa (1620-24). The building gracefully hovers above the ground. Note how the building is related to its site by contouring its outline with different ground materials, such as pebbles, moss, lawn and steppingstones. (Photo by author).

been deeply influenced by the Zen sect, which started in China as a Buddhist sect and was influenced by Confuscianism and Taoism, creeds which overlap in Asiatic countries without creating much antagonism to each other. The Zen creed never became very popular in China, while the Japanese embraced it wholeheartedly, and allowed their conduct of life to be strongly formed by it. Zen is not a religion, but is a human ideal of self education by Spartan means. At its start it was a very aristocratic creed. It would have probably remained largely unpopular with the masses but for its genius of expressing conviction in a very direct way which went straight to the heart of the matter and manifested itself in action rather than confining itself to speculative thinking and meditation only. It is a way of self perfection which lent enormous effectiveness to whatever philosophical conviction an individual might have happened to acquire. It became popular first with the war lords and samurais who in their hazardous life during the period of rival fighting when the Emperor had lost his power to the Shoguns—as these war lords were called—looked for a discipline that would enable them to become impervious to danger and independent of the vagaries of individual fate. This influence could still be detected in its radical form in the suicidal Kamikadze pilots of the last war. But it also inspired the tea ceremony which has formed the Japanese character of all classes by its example of simplicity, combined with acute awareness of values and its restrained approach. It is much more than a tea ceremony, it is expressive of a whole way of life and every visitor to Japan is still impressed by it. The extraordinary thing is that the Japanese culture, which has had centuries of time to ripen and to go through various stages without being interrupted by foreign domination and influence, has culminated in a cult of utter simplicity and austerity. Nothing in this simplicity is left to chance though, and we, with our casual, offhand manner must look to some of them like so many unformed youngsters who go to an incredible waste



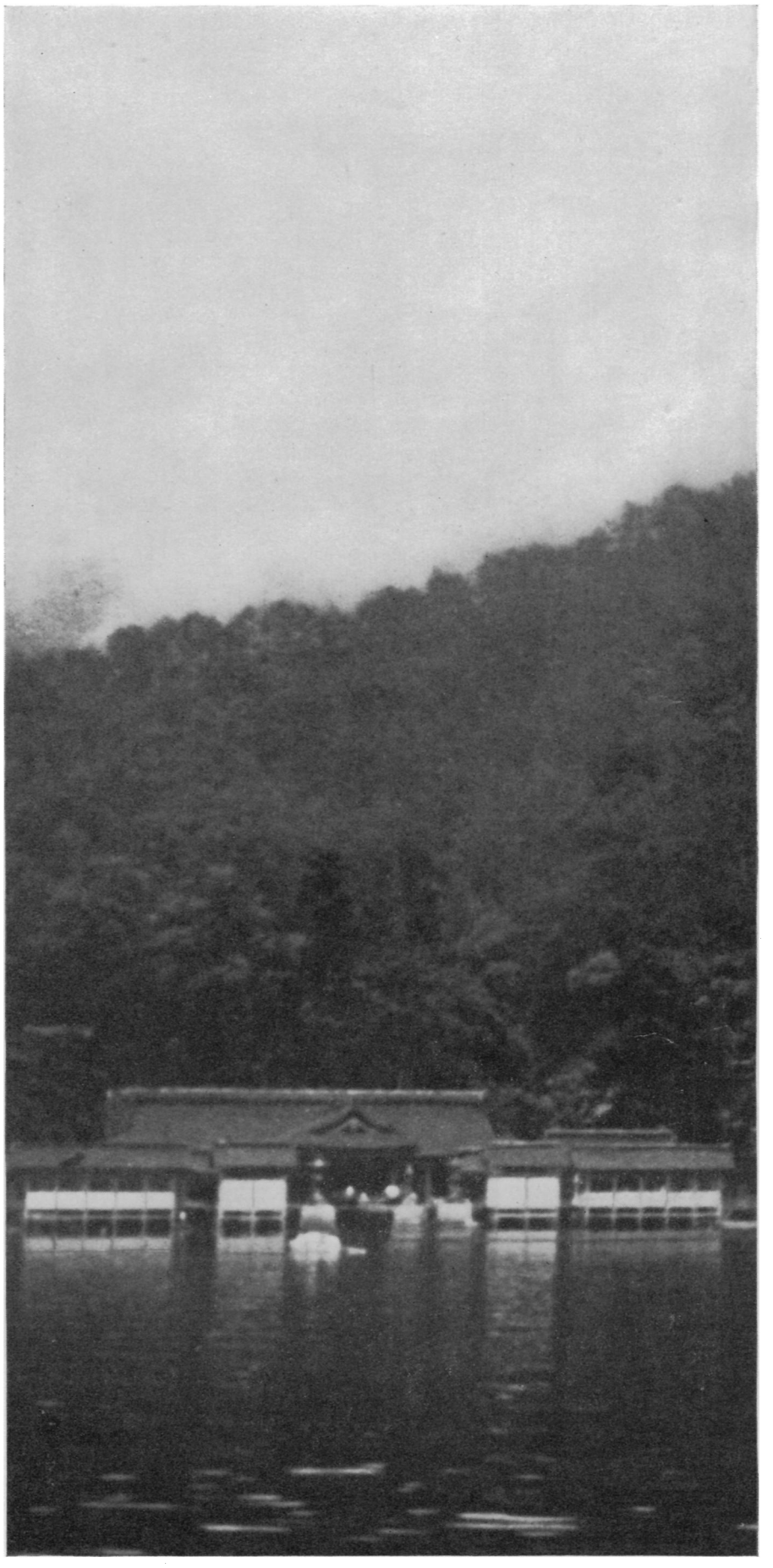
Top:
Farmhouse near Choshi, east of Tokyo. Natural wood frame, stucco panels, whitewashed, paper screens; thatched roof of cedar bark. (Photo by author).

Center and bottom:
Main view and side view of the Katsura Imperial Villa in Kyoto built 1620-24 for Prince Toshihito by a team of designers and craftsmen who worked under the spiritual influence of the famous teamaster Kobori Enshu. The most mature and consummate example of Japanese architecture and garden design. (Photo by author).

of material because we have never learned the significance of economy in matter *and* spirit, coming from a civilization where an overabundance of haphazard shapes and forms reign today. I was amazed how strong the influence of the tea ceremony has been on all architectural concepts. The Zen philosophers, whose ideas are so subtle that they would probably never have become popular, have been entirely successful in demonstrating their principles in the tea ritual, and that in turn has had far reaching results on the rest of the way of life and on the design of their implements and buildings. Undemonstrative noble poverty, most discriminating use of simple, well-formed tools, restrained use of color in the tea houses, and always a carefully planned garden leading up to it. The tea ceremony itself, though still regularly performed by the older generation, has changed into a simple tea party for the younger set, but the spirit remains even now. It has given dignity to poverty and it is probably accountable for the extraordinary morale people display as a rule, even when they find themselves under most adverse conditions.

Nowadays the young Japanese themselves are fed up with this self-imposed economy of means and begin to revolt against this setting of "noble poverty." What delights our eye has become to them a symbol of failure to provide more comfort and convenience, and they argue that their simplicity is not voluntary, but imposed by circumstances. However that may be, it will remain an unspeakable loss to all people with strong artistic inclination if the introspect form of Japanese life should give way to our indulgence in material pursuits and to our rather shallow hunt after change for change's sake. This would be a very different matter if Japanese past achievements were representative only of a feudal past; as it is, they are still pregnant with unrealized potentialities and it would seem to need only an eye-opening act on the side of objective bystanders to make these people believe in their own cultural strength.

Right now they are ready to cast away everything that determined the past. I have listened with sorrow to their self-abuse. Of course, we have to bear in mind that Zen-Buddhism provides no answer to the social problem of human relations which is so uppermost in everyone's mind today. Also its conviction that it is impossible to raise the standard of living without imparing its quality seems untenable nowadays. That one can improve his lot only by robbing his brother and so prepare the way for retaliation and war does not seem a convincing assumption any longer to us. Not only has scientific progress branded by Zen-Buddhism for its analytical, purely intellectual character, in its modern form, come to share the tenets of those who presuppose a superior, undefinable force at work in the universe and has thereby closed the abyss between religion and



A Torii, the large wooden entrance door—painted bright red—to the Itsukushima Shrine (thirteenth century) near Hiroshima; built of camphor wood in the water. It symbolizes the Gate to Heaven. (Photo by author).

science, but it has also become possible to raise the standard of living without lowering its quality. That this latter possibility is not generally realized and applied does not detract from its validity and only proves that we are morally weak and addicted to old prejudices. Certainly Zen, in its old form, with its old social associations, has become unsatisfactory for the present generation, but, stripped of its incrustations and rejuvenated, it seems to me to contain more vital germs of life than cruel, steam-rolling Marxism.

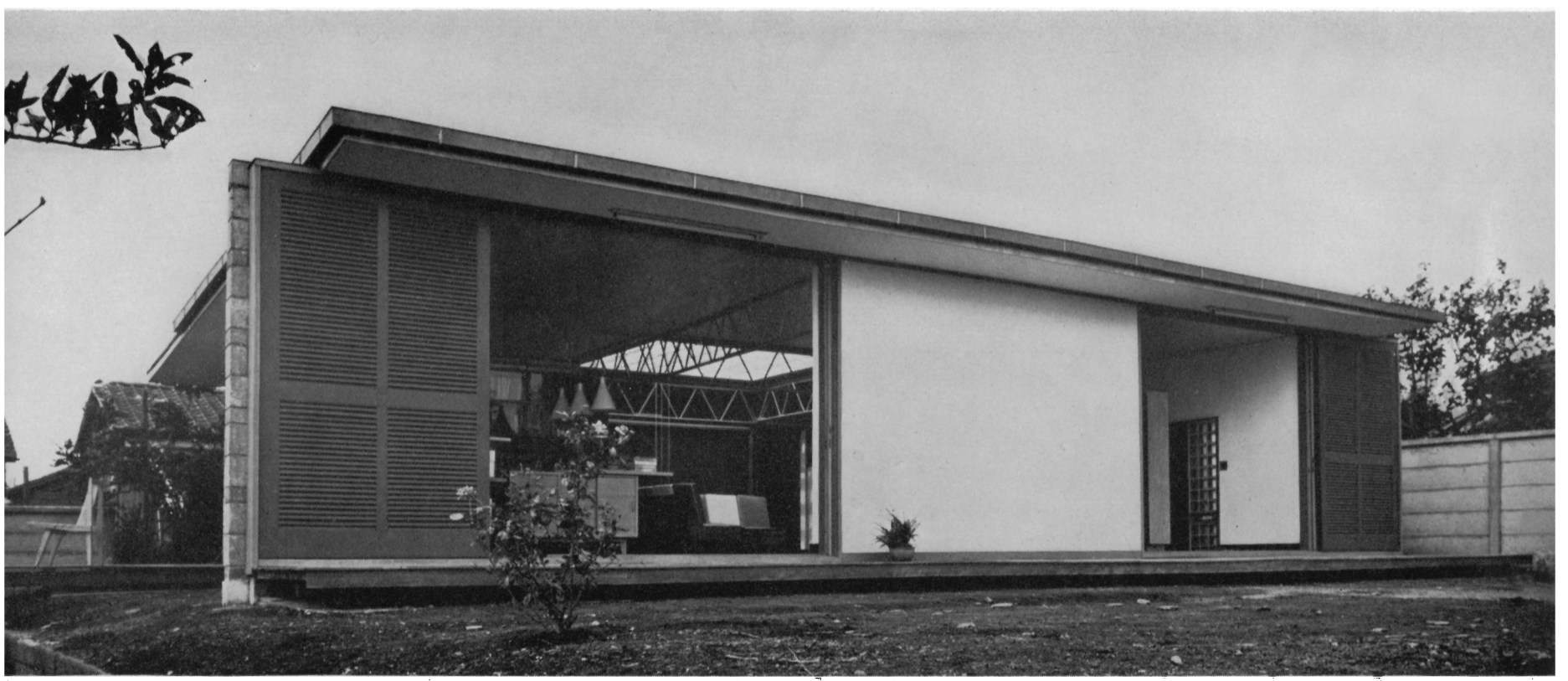
One point of the Zen philosophy interests me particularly, namely, that it considers art impulses as more basic, more innate, than those of morality. It takes morality to be only regulative, but art to be creative, and so finds its inevitable association with art, not, in the first place, with morality. At the close of innumerable discussions in a Japanese inn near the Fujiyama with a score of architects, I closed our discussion by quoting a sound Zen advice which has attracted me so much: "Develop an infallible technique, and then place yourself at the mercy of inspiration." This underlines the Zen abhorance of intellectual reasoning—"the logical impasse," as they call it—and the emphasis on instinctive response to direct experience. My own trend of thought as exemplified in the Bauhaus has here been startlingly confirmed.

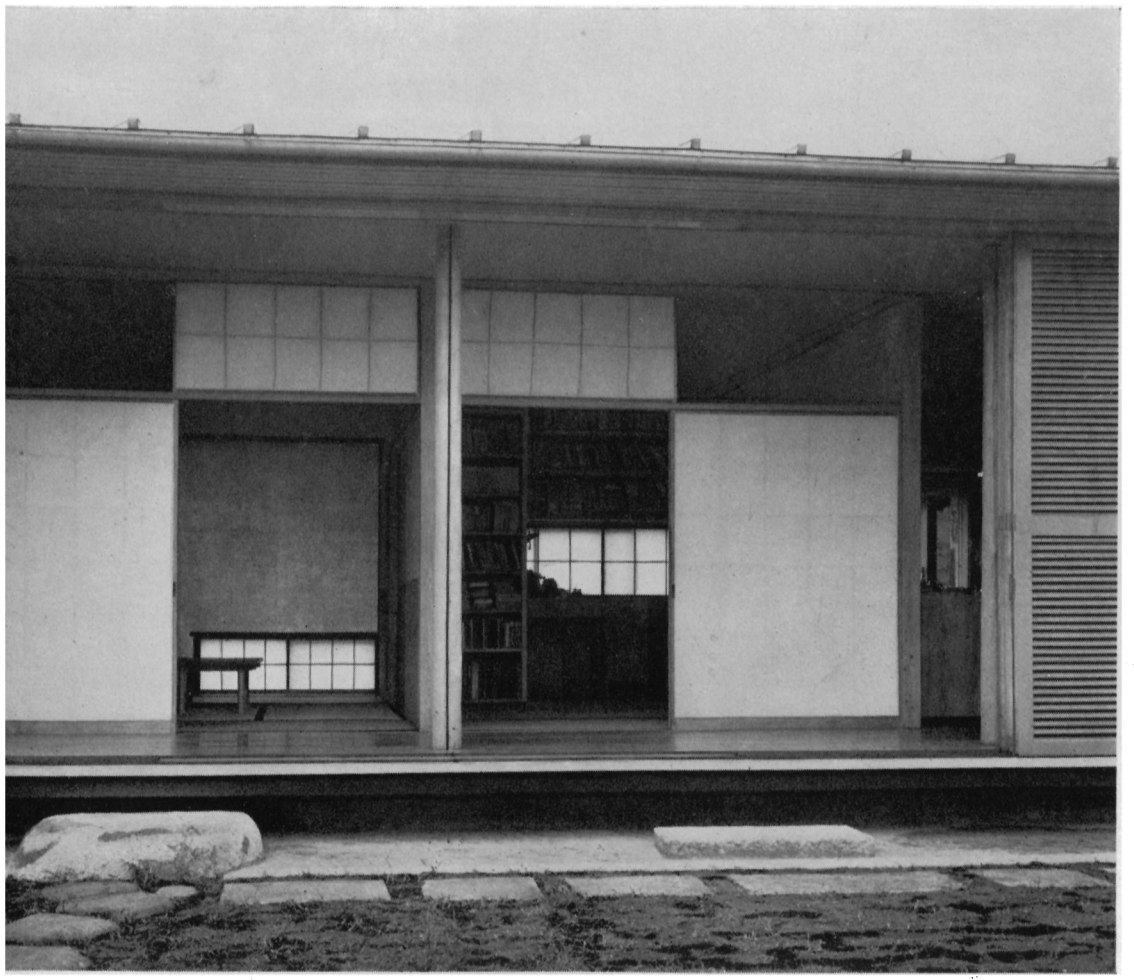
Left:
The Main Hall—Kondo—of the Toshodai-ji Temple in Nara. A most venerable building of the Nara period (eighth century), probably built by a Chinese priest of the Tang Dynasty. (Photo by Asuka-en Nara).

Left-center:
Hall of the Great Buddha—Daibutsuden—of the Todai-ji Temple in Nara. Originally built in the eighth century, it burned down several times. The present replica of the old Temple dates from 1708. It contains the largest bronze Buddha, weighing 452 tons and measuring 53 feet in height. This large Hall is representative of the early Chinese influence. (Photo by Asuka-en Nara).

Below-left:
The Imperial Palace in Kyoto. The present buildings were erected in 1855 after the old buildings of 1788 burned down. In spite of the large size of the Palace, its architecture and decoration are of great simplicity and restraint, not much different in character from the old commoner's residences. (Photo by author).

Opposite page:
The Ise Shrine is the oldest relic of Shintoism; its origin goes back to the fifth century, It has been rebuilt about every twenty years to keep it always in perfect condition. This view is of the just-abandoned Shrine after the new one—the fifty-ninth—has been built on an adjacent lot. Utter perfection of workmanship, roofs of cedar bark, gilded metal shoes protect all ends of wooden members. (Photo by Norman Carver).





Above:

House for Dr. Miyagi, Tokyo, 1953, by Architect Kiyosi Seike. Concrete block walls with open web steel beams. The white square: crushed stone stucco on concrete blocks.

Left:

House for Dr. Mori, Tokyo, 1951, by Architect Kiyosi Seike. Middle part. Wood frame construction, movable paper screens, wooden shutters.

Opposite page:

House for Professor Saito, Tokyo, 1952, by Architect Kiyosi Seike, Built entirely of wood on a concrete foundation. Graceful lightness of appearance.

The spiritual forces of the Zen philosophy have deeply influenced Japanese architecture, particularly the conception and composition of the dwelling, as the container for the daily life and the design of the garden. The modernity of the traditional house is striking as it contains perfect solutions —already centuries old—of problems which the contemporary Western architect is still wrestling with today. Complete flexibility of movable exterior and interior walls, changeability and multiuse of spaces, modular coordination of all the building parts and prefabrication, though on the basis of a handicraft production. Still today, one can buy in Japan all the standardized component parts of a wooden house on the market and assemble them on the site. The flexibility of use of these component parts is so great that they can satisfy the two seemingly antagonistic requests, namely, to offer at the same time a common denominator of form-expression and infinite individual variety. Such an achievement of continuity is always indicative of great depth and ramification of the cultural development.

The indoor-out-door relation between house and garden which has only been so recently rediscovered in the Western civilization, was a matter of great concern in Japan centuries ago. Openings, terraces and balconies were placed with an eye to the landscape and far and near scenery. Most of the gardens were designed to be looked at from the terraces that surround the house or temple, not to be used for picnics or rough games. These terraces of smooth glistening wood are protected by a roof overhang and lifted off the ground by wooden supports as protection against the dampness of the rainy season. People sit and children play on these terraces and look down into the garden. They are accessible from the rooms by big sliding doors. One of the most attractive and modern features of the traditional house are the vistas across various rooms at different angles, and eventually out into the garden.

Japanese man-made landscape and gardens are so beautiful because a deep understanding of nature has been all-prevailing throughout the land. The Japanese approach of persuading and stimulating nature will have a greater future value than the present Western method of "conquering" and "exploiting" her. I was driving once through a small place in the vicinity of Tokyo, when, at one point, our car was momentarily blocked by a large, beautiful tree standing awkwardly in the middle of the highway. It bore a big sign which, my interpreter explained to me said: "Let's love this tree." It had been put up by the townspeople who felt they just couldn't part, for the sake of traffic, with this impressive individual.

Beautiful gardens are found by no means only around temples or big country estates. In fact the particular ingenuity of the Japanese gardener is that he can turn even a

continued on page 79

GROPIUS (continued from page 21)

tiny court between two rooms into an imaginative, enchanting space. Wedged in between townhouses, in back of diminutive restaurants, in odd lots that would be nothing but dumping places in our towns, one comes upon the most exquisite plant arrangements and beautifully trimmed trees. In case green nature cannot be easily accomodated, rocks are placed in such arresting pattern that the eye is caught in delight. The Japanese are partial to stones and rocks. What, in the beginning, may have been a very practical arrangement to keep paths dry during the inundations of the rainy season has become a real art which is so ubiquitously applied that it has now become necessary to prohibit by law the indiscriminate removal of rocks from riverbeds and the open landscape.

One of my really overwhelming experiences was my visit to the Ryoanji rockgarden of a Zen monastery in Kyoto (1480). This is a rectangular place, backed by a long low wall with sloping dark grey tile coping, flanked by similar walls and a building opposite the long wall. One looks down on the rockgarden from the wooden terrace along the reception hall of the monastery; it is only 30′ x 79′. The first reaction upon entering this charmed place is speechlessness. What you see is fifteen well chosen rocks put in the white gravel that covers the entire place. The gravel is painstakingly raked into the parallel lines except for the places directly around the stones, where the gravel is raked into a wavy pattern. The absence of any time-bound, man-made object or of plants takes it out of the realm of perishable values and the simplicity of the stones, which are by no means of exceptional beauty, though chosen with a keen eye for proportion, keeps the composition from oversophistication. The scale is truly monumental in spite of its insignificant size. A feeling of complete peace, though not of stifled imagination, is created because the stones do not look final in their relative size, but more like indications of potential forces, of a balanced tension, which occupy and stimulate the mind.

The Japanese writer Hasegawa has observed that the cultural growth of Japanese art of the past has been democratic in character in spite of the politically feudal regime. This is true indeed. The house and the garden of the common man and that of a monastery, a prince or even the Emperor reveal the same spirit of approach. They differ in size and quality of materials but not in their basic conception as similar buildings did during the feudal regimes in Europe.

The most illustrious example of this democratic spirit is the Katsura Imperial Villa in Kyoto. It was started in 1620 by a team working under the spiritual influence of the great tea master Kobori Enshu. Though its owner was an imperial prince, there is no pomp, no superfluous luxury; with great simplicity and restraint of means, a truly noble edifice has been created from which freedom and peace are emanating as an inherent quality. The skill in the workmanship is equally remarkable with that of the methods of design. The

structure is a simple skeleton of post and beams, almost all exterior and interior walls are removable and non-structural. The windbracing is placed invisibly under the roof, strong hidden joints make the structure typhoon-proof.

The modular construction used at this period was the most subtle known, more than that of the Egyptians, even more than that of the Greeks. The rooms were laid out on a multiple of a standard mat—the Tatami (about three feet by six feet)—all the building parts were dimensioned on a multiple of the column thickness—which varied with the size of spaces and their respective spans.

The Katsura Villa and its gardens represent the highest form of Japanese genius for creating architectural space of truly human scale. Here spirit has triumphed over matter. Greatness of conception is expressed by means of utter simplicity, the intangible by the tangible. The timeless modernity of this prototype of the Japanese residence is striking: outdoors and indoors the building and the garden are one continuous space composition; a sequence of interior spaces suggests unlimited flexibility by sliding walls and windows, no static spaces, no symmetry, no center focus. Space—here the only medium of artistic stimulation—appear to be magically floating. This is the lofty abode of man in equilibrium, in serenity.

So deep was my impression of the Japanese architecture of old, that, to the surprise of my Japanese colleagues who knowing me as a rebel and innovator expected me to act accordingly, I implored them not to discard the great spirit of their traditional architecture, for I felt that it is still full of new potentialities for a modern way of life.

The problem the modern Japanese faces, though, is formidable. The impact of the Western civilization on their old culture has thrown them into wide confusion. In the old house people lived in small but beautiful empty spaces, no chairs, no beds, their only furniture were some low tables. For sleeping they take a mattress out of a closet, put it on the floor and roll it up again in the morning. They now understandably start to covet Western comfort and gadgets, when they introduce chairs and beds, and their living space, being now too small and cluttered up, explodes.

Even greater complication causes the introduction of heating, unknown in the old house. The traditional wood and paper panels and lacquered goods all crack and warp under the influence of heating. From what I know of the educational principles which prevailed, I believe that the absence of heating devices was not an outcome of uninventiveness, but rather of a Spartan trend in the Japanese people. They have been brought up so long with the idea that it is more important to develop the spirit than to pamper the body, that even today, when this spirit is waning, they are still slow to seize on modern amenities of life, quite apart from the fact that now, after the war, they are often financially unable to afford them.

The majority of all the building-parts are still made by hand, using the old materials, mainly wood. This still is the most economical way to build. Advanced equipment and fireproof construction methods have hardly entered the residential field, because the replacement of those handmade parts by modern means is still unsolved and would throw too many people out of the market. This is, of course, a retarding factor caused by the economic difficulties. At a time when everything is in the middle of a depression after the war and new housing for the lower income groups is likely to be shoddy and makeshift for lack of funds, the modern architect who wants to introduce a new type of building for new living habits is indeed severely handicapped. The vast army of craftsmen who now produce the entire housing for Japan must find methods of increasing their production by gradually increasing the use of machines which are here to stay as the modern vehicles of form. But the economic safety margin is so precarious that all attempts at revolutionizing the building industry too quickly would throw many people out of work and disrupt many habits of living which are still in full command. This, of course, is agonizing in many ways to the modern architects who are waiting impatiently for more modern methods. They have to make their own expensive experiments and cannot count on the carpenter to cooperate on good modernized methods. Taken out of his traditional orbit, the carpenter feels lost, and it will take a new generation simultaneously trained by masters of industrial craftsmanship and of design to give the development a new direction.

A vigorous modern Japanese architecture should boldly progress without sentimentality. Its growth, however, needs all the live elements of the past as well as the present for a new independent expression. Japan is still blessed with the most precious heritage of the past—an integrated cultural entity kept cohesive by the subconscious habits of the people. It still shows that mark of deep and genuine culture, a standard of form so broad that it admits continuous individual variety. I believe that the difficult transformation into a new form of the Japanese society, adapted to the industrial age, must be created in the spirit of their *own* culture, enriched by the new technical achievements of the West, but *without imitating* Western form.

The West could learn from the old Japanese experience, how to combine the seemingly incommensurable opposites, simultaneously to acquire by intensification of our life a common cultural standard *and* infinite individual variety, i.e., an organic cultural entity.

Leaving Japan I felt that an important chapter in my life had come to an end, a great surprise at a time when I did not expect the world could still hold such wonders in readiness for me. It is their living, present-day value that I cherish and wish to share with others. I am convinced that invaluable benefits await a contemporary student of art and architecture from a visit to Japan. Here he will find sublime, mature solutions of the intricate problems of space and of human scale—the very media for the art of architectural creation.