

English translations

Where does architecture stand today?

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The question posed by "Architecture Formes + Fonctions" to all those who are interested in this most vital of human activities is of such importance that it deserves to be discussed at length in an attempt to clarify the problems which are handicapping architectural development today. This crisis is principally due to the gap existing between the "artistic" and the "technical" which is apparent at both educational and professional levels and which was fostered in the last ten years of the 19th century. Previously, and from earliest times, the interdependence of these two fundamentals had defined and characterized architectural thinking.

In effect, the technical side became preoccupied with the development and refinement of structural systems, while the artistic element had to be content with the decoration of the finished structure—the possibility that a beautiful structure could, of itself, be considered as an architecture was never entertained by the vast majority of those involved in building.

In the past, such a distinction was unthinkable, and now the characteristics which enable us to recognize one historical style from another are as much apparent from the structure as from the decoration. Roman works, for example, even when stripped of their marble external and internal cladding as they are today, retain a totally different architectural expression from those of Gothic or Romanesque times and it would be absurd to consider changing the character of one by the application of decoration from another.

The work of the architectural schools, the entries for international competitions and the work published in the architectural magazines show how far we have drifted from this integrated conception of architecture.

It would seem that all too many architects are working in a way which negates the whole conception of architecture—building in defiance of the engineer, forgetful that all great architecture has been and can never be other than the work of a "super engineer".

One of the first steps to be taken in remedying this situation would be the combination of all university courses which contribute to the formation of those engaged in the design and construction of buildings.

The true architectural school should be free from superficial formalism and from an overdeveloped mathematical formalism. The architect, whether he be the creator of a project or responsible for its realization, must have a basic knowledge of every aspect of its construction and operation. He must be well versed in specifically human problems in order that any conception—from the family unit to the large urban complex—will make a contribution to the creation of an ordered environment, free from unnecessary fatigue, irritating restrictions and vulgarity. In other words, an environment which will exercise a continuous educative action, a phenomenon which can be observed in watching the effect on a crowd of a change in its surroundings. It seems to me that a serious effort of research must be carried out with a view to easing the life in big

towns. Why not, for instance, derestrict height limits in those parts of old cities where there is nothing of historical interest to merit preservation. This would permit a vertical development and thus control radial sprawl. Height is the greatest achievement of the modern builder, and is the only factor which can prevent large towns from attaining inhuman proportions.

Obviously a great deal of work is required in order to bring about a reform in the architectural schools, a reform that would enable them to evolve a system of education that would integrate the technical and artistic aspects of the profession, and promote an understanding of human needs—qualities which are indispensable to the true architect. However one can make a start by attacking the poor influence of many competition entries and published works which are presented without any valid technical indication as to whether they are realizable or not. I can give no more eloquent example than the well known "Mile High" project of Frank Lloyd Wright. With the greatest reserve, I do not say that it could not be constructed at the present time—my point is that at the presentation of such a revolutionary concept, not only an idea of the external appearance is necessary, but also the fullest possible information as to its technical, functional and financial feasibility.

Equally absurd is the manner in which the cost factor is completely ignored in competition entries, by competition juries and in the assessment of projects—to say nothing of the cultural atmosphere in the architectural schools. One would almost say that the architect was not obliged to work in the day-to-day world, but rather in a Utopia freed from all financial considerations. There is a good general rule which states that all human activity must show a return. The most important aim is to arrive at the point where all the designs entered for competitions be **technically correct**—in other words that they be completely feasible and within the limits of present day techniques in both their structure and their services. To achieve this, the jury will have to include experts from the various spheres of building activity—particularly with regard to the structure which becomes more and more important with the general increase in the size of buildings.

Another step in the direction of an eventual re-integration of the "aesthetic" and the "technical" would, in my opinion, be a closer collaboration between architect and engineer—using the terms in their proper sense and not simply as diploma titles.

Keeping these considerations in mind, it would seem a good opportunity to survey briefly the probable direction of future developments in building. The most characteristic aspects of building today are unquestionably prefabrication, high buildings and the possibility of spanning great distances for such applications as aircraft hangars, factories, bridges, etc.

Prefabrication demands a high degree of pre-planning and a far more developed organization than do traditional methods: besides this, the architectural expression must be handled in a totally different manner.

In the case of large scale works, the same holds good, if for different reasons. Right from the initial conception, whether the problem be one of great height or wide span, full consideration must be given to structural and constructional questions. In a large scale project, the structure must necessarily be of such proportions that it will be impossible to disguise it, even in part, by subsequent cladding or additions.

Once again the inescapable marriage of technique and art—this same unity that we find in Roman, Gothic and Renaissance work, despite the limited materials and methods available to the builders. Before closing, I should like to advance some thoughts on the formal aspects, or rather the style of construction, to be expected in the immediate and more distant future.

Human society has been transformed in a few decades in a quite revolutionary manner—more so than in several centuries of slow evolution of civilization and events. This transformation was initiated by the exploitation of mechanical energy in the service of techniques and production. Each time we come in contact with energy or confront natural laws, however, with the object of making use of them, we are dealing with powers beyond our control which impose on us their own conditions which must be respected. It is thus that although the exploitation of thermal energy permits the attainment of high speeds on land, sea and in the air, in order to attain them our means of transport must conform to a well defined pattern. The aeroplane, for example, evolved from a wide variety of forms to its present fairly typical shape as the result of experiment and research. It is no longer a human invention, but man's submission to something which is over and above his control, something that he is powerless to change. The form of a big arch or the structural system of a very high building cannot be arbitrarily designed and can never be achieved except by the harmonious arrangement of certain given factors, each one of which must be accepted as an inarguable condition.

The restrictions imposed on creative fantasy are constantly on the increase due to techno-economic and production line exigencies. The days when hand-work produced a richness of form in furniture, the decoration of buildings, coaches and ships have passed for ever. I don't wish to infer, however, that aesthetic expression is a thing of the past in all fields—and particularly in architecture. It will now have to be obtained through harmony of proportion, fine detailing, effects of colour and clever handling of materials.

We are assisting at the formation and spread of a new style, of which the most typical examples are big aircraft, powerful racing cars, sky-scrapers, bridges, prefabricated buildings and large-scale structures. These all have one thing in common—the essential character of form, an intrinsic order, the absence of superfluous, arbitrary and eye-catching decoration, clarity of conception. All these factors will contribute to the formation of better family environment and useful citizens—well ordered and happy—the essential foundation for the continued progress of mankind.

A contribution to the history and tradition of Dutch architecture.

Whoever cruises in a sailing boat on the waterways of Holland, moves from space to space and experiences the space-creating and delimiting effect of the long rows of trees along the waterways.

This landscape is man's work: the peasant had to think where best to plant the poplars and where to dig the ditches, water and wind were mastered and made serviceable to man, there was little room for chance, the elements demanded order and hard discipline; to ignore them would bring miserable destruction to men, animals and land.

But in this country a mild orderliness reigns over discipline and order.

That is how, in the course of centuries, the cultivated landscape of Holland was created out of the foggy lowlands swept by wind and water.

According to similar laws the towns came into being:

the water-ways for the transport of people, animals and goods, along the canals rows of trees giving protection from the wind, the narrow houses with high windows letting lot a of light into the deep rooms,

behind the houses the yards in which outdoor life sheltered from the wind becomes possible, rooms that go right through from the street to the yard pretending spaciousness in a small world of orderliness, the high uncurtained windows showing open-mindedness in the relations with neighbours.

This world needed hundreds of years to develop. Today new dimensions and categories are forced upon it, but they grow out of a sense of space and of spatial rhythm, a feeling for order, derived from the daily experience of what is open and concealed in space and society.

In social and political life a Calvinistic Puritanism is superimposed on this tradition, a Puritanism whose influence can be felt also outside the Calvinistic religious circles.

Contrasted with the compact social life in family and religious denomination is the open-mindedness in general national matters. City planning is not considered as an unpleasant but necessary task of the authorities, but as a means without which towns cannot be turned into places where life is worth living. This belief has not only been in existence since the big increase in population, it has long lived in a consciousness grown out of tradition. This tradition of city building has certainly had its influence on the golden age of Dutch architecture between 1880 and today. Developments in architecture have always been connected with the social, economic, political, and spiritual situation of a given time. Berlage even thinks "that architecture will be the art of the 20th century", a conviction that he also "based on the social and spiritual phenomena of the present time".

The work of the two Dutchmen van den Broek and Bakema, who differ from one another as to origin, appearance, temperament, mental make-up and age, has grown out of the security of a great tradition and the requirements of city building and society. Their work shows ways to the solution of new problems and yet it includes the tradition of a man-made landscape that struggles against the elements, the traditions of how to gain and plan space, and the traditions of social and religious bonds. These are reasons why their work has become a guide to the solution of the manifold problems of planning and building.

Van den Broek says that the physical as well as the psychical character of human society is revealed in architecture.

Architecture is a phenomenon in which creative power expresses the functions and the idea of a problem of construction with the help of the techniques of construction. A building is not so much

a monument but rather an organism, and a problem of construction is only solved when, in addition to the individual wishes of the clients the conditions of life in human society are fulfilled. "This way of looking at a problem of construction necessitates a thorough analysis so as to get to know the organism and to find out the position and the importance of the common social life in this organism". This is the 'New Practicality'. For what is new in the 'New Practicality' is the fact that it is not satisfied with the practicality as such, but that it wants to express the deeper meaning of a building as an organism. For the idea evolves from a deeper understanding of the purpose. The stress lies on the term 'deeper'. It is the finest term with which I can characterize the purpose of the new architecture, and I feel rather ashamed when I have to confess that it was not coined by an architect but by a German clergyman in the year 1906". Modern architecture does not only evolve from material things, but tries to meet general human needs with sincerity and love. This is "an educational task that is founded on the idea of cosmic relations and experience... The essence of architecture is an argument with the infinite, an argument which strives for harmony with the infinite, which after all is the aim and essence of all art".

When looking through the literature of Dutch architecture of the past 15 years, we find some 'explosions' and Bakema is always connected with them. There were sometimes fierce controversies especially with the representatives of traditionalism. Granpré Molière did not spare the modernists and these, in return, took him to task severely. But the discussions, always conducted on a high level, dealt with ideas and were not directed against persons. The adversary was respected as man and architect and was taken seriously. Granpré Molière attacks forced the modernists to think over anew the principles of their own position very thoroughly before they took up the fight; purely polemic argumentation with the well-prepared adversary would not have been successful. The form and level of these arguments not only show the characteristics of the Dutch, but above all the fact that in this small country there are a great number of architects whose capacity and personal integrity are such that even an adversary is forced to respect them. What important contributions has Bakema made to these discussions? He tried to keep the balance between intellect and emotion which the "Stijl" demanded and to express the simultaneity of things in his work. His thoughts found support in Bergson's philosophy of life: "...D'abord je constate que je passe d'état en état...". The leading principle is no longer the hierarchic and stable structure of the universe, but a world whose image is in constant change. That is why the ways of using a house or a town are no longer the only determinants in the architect's plan, but equally important are the relations between the various functions. What is between things is as essential as the things themselves. The architect has to try to include in his work life in its totality, even when he is sitting at a table with several specialists. "The equation 1+1=2 is no longer the only one valid, more important are the circumstances leading to the choice of the figure". "The striving for coherence is inborn to human nature and is a means of finding protection from chance. For this reason it is no luxury but a necessity to seek for motives, relations, continuity, and unity". "We get near to architecture when we experience personally what happens in man and nature generally". The relations of 'total life' can be made visible in architecture by means of 'total space'—space that is in constant motion—and the correspondence of each material and each construction (glass, wall, pillar, switch, lift, ceiling) with the mode and capacity for experience in man. In this way the form of a building expresses something of the relationship of man to the universe. It is true that a house is built to be lived, worked and slept in. But the form of a house can give meaning

to living, working and sleeping that is above mere utility. Architecture thus gains an ethico-religious foundation which has to be based on an ethico-religious attitude of the architect by dint of which "technology, which seems to have brought economic and social conditions to a crisis in the world", can be mastered. If architecture is such as to express 'total life', it will be saved from drying out and being purely decorative. The architectonic form then no longer expresses mere functions, it is no longer merely functionalistic, but becomes function itself: the function of form. What does this mean? The architectonic form is not only able to fulfil requirements, modes and ways of living, but it can stimulate and promote them. Form no longer fulfils only the utilitarian purpose of a problem of construction, but leads man and human society beyond thoughts and not only makes possible a way of life according to functions but also according to 'ideas'.

This metamorphosis of the form of function to the function of form is the decisive theoretical and practical contribution by van der Broek and Bakema to the new architecture. Lijnbaan is an obvious example, so are single elements of form that unexpectedly appear on all buildings, always serving the purpose to create relations from the interior to the exterior, from the top to the bottom, from the part to the whole, from the minor to the major.

The construction, always true to its own laws, corresponds to the form of the building, but it never imposes on it. The formal qualities of the buildings are rarely conspicuous, it is always the wealth of affinities of space, constructive parts, and elements of form that is in the foreground. It is not by chance that these ideas of architecture can only be fully realised in city building.

The work of van der Broek and Bakema is free from avant-garde manners. Their activities are not based on a manifesto; they are not only inspired by the springs of our time, but also by the broad river of European tradition. This is a sign that modern architecture has found its place in history. Avant-gardism has a comic effect today; the "Louvre" is no longer threatened by incendiaries. Danger lies in the multifarious phenomena that cannot be easily surveyed, in the rapid and constant changes of experience and in the insecurity resulting from them. We therefore need architects who have the power to bring order into the chaos and to fill this order with meaning. They must be led by "a desire for clarity and simplicity in the matters of social life. This is the basis, this is the way! Simplicity and clarity, and in art the symbols of love and truth!"

F. Füg

Urbanism in the second industrial revolution

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Urbanism, the expression of human conscience

The autonomy of man, woman and child in the family circle; the shortening of working hours and increase in leisure give the individual the opportunity of sharing in the creation of his own universe.

The crisis which is apparent in urbanism today is the absence of participation by the masses in this creation—a result of the monotony of our towns—there is no escape from anonymity.

Man's real aim is to establish himself as a complete and autonomous individual within society, and by his capabilities and talents to demonstrate the miracle of his existence. To this end, evolution must educate him the better to understand this miracle.

Constructed space is the expression of human function and takes two forms:

- protection from the influences of nature (universal space)
- creation of a bond with nature (universal space).

In the construction of buildings, the changed pattern of life already described, together with available techniques will soon permit the creation of huge urban structures in which man will be able to fashion his private universe. Urban planning can never reach into the privacy of his home however — his thoughts and sensitivity cannot be catalogued and filed by a planning group. Only the more general aspects of his life can be channeled, such as those of traffic organization, parking areas, services, central heating, refuse disposal, etc.

The aim is then to create, through urbanism, collective groupings in which the individual retains his privacy; coherent groupings in which there is retained as much freedom of architectural expression as possible.

Still unresolved is the interpenetration of private and public space, the relationship between motor and pedestrian traffic and between stationary and moving traffic.

We still have difficulty in relating the three spatial dimensions with that of time, and tend to consider objects without considering the relationship between them. For example; first the region, then the situation, then the town and finally the architecture, or vice-versa. We still don't understand the meaning of urban and regional architectures. It is possible to get man to understand the continuity of life or total continuity of space in creating unities and groups of dwellings which are just as much in harmony with the constant scale of the table and bed as with that of the highway and carparks. The scale of the transition is every bit as important as that of the extremes.

In 1963 we know both huge blocks of flats and small private houses in their own grounds. Between these two extremes there are many transitional types. The group of dwellings, for instance, which is served by internal roads which transfer the traffic from the exterior to the interior in an organic way, and channel it to the door of each apartment. Behind this door, the occupant must feel really alone. Each member of the family must have his own corner with the possibility of withdrawing to it to pursue his own activities. The town too, must have its corners, where small groups can meet without being oppressed by the monotony of long lines of façade.

The residential group can never be successful if it consists of endless repetition of one type of dwelling unit. Also it must be well supplied with internal roads and open spaces as privacy can only be fully appreciated if it is contrasted with the possibility of meeting other people.

In order to ensure a successful relationship between the different scales, the urban plan must be established with the construction programme. This is the decisive point. All too often, the architect is called in after the construction programme has been established — and as we know, the result is either a dull or an over-decorated architecture.

The basic work must be done at the conference table by all those who are responsible for the project. It is here that it will be decided whether our constructed space will be a contribution to an open society. The greatest drawback is that our architectural schools, in their present form, lack the ability to relate sufficiently the structure of buildings with the structure of society.

J. B. Bakema

Radiation and Shading

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(Data roughly composed by Andre Hardy from notes, client conversation sheets, correspondence and lectures on research concerning movable louvers, which Mr. Neutra has patiently carried on over a generation, to substitute for static devices of traditional architecture.)

From those days when Neutra first detailed and executed the idea of movable louvers to keep out sun—and sand laden high winds—in the "Desert House", and later in the Northwestern Insurance Building, he added the thought of light diffusion from the curved aluminum surfaces into more restful interiors.

The self-adjustable, sun shading blades have become one of Neutra's contributions to American architecture now almost taken for granted, and later through Swiss, Italian, German and French publications have reached European countries wherever his work had found friends.

With the electronically controlled louvers of the Hall of Records, now completed in Los Angeles, the front of the tall office building seems to have entered a new era. It is in this case a conspicuous public building very prominent on the Mall of Los Angeles, practically adjacent to the City Hall of one of the newest and now probably second largest city of the United States.

The history of its significant louvered front and of this architect's persistent study and research on a new vertical but now dynamically moving "order", to supersede the venerable static Greek orders is, in our fast moving times, already almost forgotten.

"An architectural façade is stereo-morph", as Richard Neutra once expressed in a Harvard lecture. This means it is static, unchangeable, rigid, not actively participating in the dynamics that play around it in the breeze or precipitation or radiation occurring in the open air.

Whether awnings or window shutters have been used, this has rarely resulted in a visually impressive or even well acceptable composition.

The vertical, movable louvers which the architect, after experimenting on paper and in a sheet metal shop, first used in the glaring landscape of the Colorado desert, have, from the beginning, quite conscious of form, been designed to make the building "share", and not be indifferent to the mood and exigencies of the living scene, full of events and processes in progress.

The building itself now acquires a "dynamically reactive character", instead of inertly just standing there. It responds like a flower opening and closing its petals, as a tree, that turns its substantial impressive leaves on their slender stems after the life regulating sun.

The sun may be fixed relative to the earth, but to us earth inhabitants it is moving. Richard Neutra has made a long series of photographs, often minute after minute, showing how the view from a bedroom window changes long, and immediately before the sun rises, and how breathlessly fast one has to observe if one wishes to fully appreciate lengthening or shortening shadows, glaring reflections and advancing intensification of illuminative intensities. If a building is determined in its site, like the west and north fronts of the U.S. Embassy in Karachi, Pakistan, or the Mall—and the north front—of the Hall of Records, in all cases a stiff, rigid treatment of shading and glare mitigating elements will not do. Organic well-being is involved.

It became clear, while the architect searched into this matter and corresponded with high ranking ophthalmologists, that movement had to be matched with movement. From lowly sheet metal details and under operation Neutra's idea became known in several continents and adapted to buildings in Milan and Stuttgart. But to get a public body of administrators, or a County Government in U.S.A. to adopt such a scheme the architect had to observe closely, not the mechanics or the electronics of such an inventive device, but the human beings —800 of them, working behind this protective, self-adjusting architectural feature. The wages paid between 9 and 10 in the morning were much lower than the wages paid to the same people between 3 and 4 in the afternoon, when the employees were seen walking to and from drinking fountains, making self-styled coffee and conversational breaks, or rested for minutes with a palm at the forehead. Fatigue phenomena can be brought into

an exact professional relationship to light and heat penetration, into large spaces which must by necessity be endowed with colossal glass fronts for deep daylight penetration—unless one wants to give up completely the contact and biological anchorage to the outdoors.

This latter scheme is also being tried out on the Hall of Records, where the entire archives wing is completely windowless and officials at work there must do without the stimulation of windows. Here a necessity, this treatment is not desirable for any other office spaces, and office workers are considered happier than miners working in cavernous surroundings.

The North front of the Hall of Records is only molested by direct radiation on early summer mornings, but all through the day, especially when the blue Californian sky is substituted for by the white milky smog, which now is being laboriously combatted by county authorities, "glare" is the major factor to be considered. The brightness axially in front of the eye and received by the high acuity spot on the retina is all right. Here a tremendous adaptation capacity is provided by nature, which however diminishes side ways to the peripheral areas of the retina.

In other words, if somebody looks at a candle in the dark and the light intensity wanes toward the periphery of his vision, this is perfectly agreeable and emotionally well accepted.

On the other hand, if straight opposite to the eye for instance was to be the dark area which would become gradually brighter toward the periphery of the vision field, there would be a continuous urge to turn the eye left or right, up or down. It seems something like a "phototoxic mechanism" —without implying that there is anything really mechanical about any organic phenomena. The frustrated urge of eye turning is unwholesome and probably could be measured subjectively and objectively.

On the south front the situation is more complex and the mobile, shifting angle of irradiation into the rooms must be answered by vertical louvers which follow this movement and at the same time, while they are shading, are of a material, aluminium, which would continuously diffuse the light, mutually reflected by adjacent elements.

Naturally, not only illuminative effects are affected by this device, but the reduction of heat loads of a climate-controlled interior were ascertained and submitted to the Government, as proof of how fast the installation would pay for itself by savings in cooling tonnage over the seasons. — From this qualitative demonstration of sufficiently convincing facts, the discussion shifted to aesthetic objections of seeing from the outside louver surfaces instead of the "customary windows." Verticalism, entirely arbitrary in so-called "classical buildings", treated only superficially, like one-room Greek temples, had given much aesthetic satisfaction through many centuries. There was no reason to fear the soaring verticalism of the louvers. They, in a way, were reminiscent of the ancient column treatment, in vertically tying together the whole building front, instead of playing up a pile of layers and stories. Glass fronts all over have first been used in the early Renaissance in Bremen, Holland—the foggy Hansa cities of the nordic European coast. Our office and shop buildings are often more in need of it, but meanwhile enterprising civilization has had its pendulum swing back not only into southern Italy, Sicily, "Magna Grecia", but into the sunny development countries from Tripolis to Mauritania, from Madras to Singapore or Karachi. Glass can and will never be dispensed with by man, who has invented and cherished it, but it will be shaded where need be not in a manner of after thought, and not once forever, but to fit the naturally changing circumstances, with the device electronically controlled by photocells. These devices together with those of climate control form with glass one integrated unit of thoughtful design. It is the contrary from being kept ever-active and thus self identical as a responding individual,

recalling and comparing its responses that sees, feels itself ever stimulated by what around it has been man made, a "psychotope", a soul significant spot, designed by the architect. He is the professional adversary of chaos, coma, and Nirwana, and the architect.

A new Bauhaus? "The Egg" study group

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Four years ago, in Paris, a group of young men, seeking to recreate a spirit similar to that of the Bauhaus which has lost most of its momentum, formed the study group "L'Oeuf" — "the Egg". They first attracted attention at the exhibition which had for its theme the villa "Atrium" and, impressed by the extreme richness in the handling of forms, volumes and materials in a completely contemporary and unacademic manner.

The group was founded by Jacques and René Bertoux, Pierre Pucinelli, Jean Piantanida, Maurice Idoux and Charles Gianferri — architects, sculptors, decorators and an economist. It was later joined by Roger Brusetti, Charles Miglierina, Françoise Idoux and Jean Souchal — respectively architects, decorator and administrator. They work as equals, spend a great deal of time together, share a common philosophy and conception of plastic research and a desire for complete liberty in their work.

This approach has eliminated any feeling of professional superiority and has helped to create an atmosphere in which complete integration of the different arts is possible. While building is the primary preoccupation, the system has been applied to the design of furniture, light fittings and industrial design generally. Besides this, much work has been done on the development of mosaics and new methods of treating traditional materials — with particular reference to concrete. Above all, the aim is to introduce the work of art as an every-day experience for the man in the street, rather than as something to be hung in a museum or gallery for the benefit of the critics and a favoured few.

Marc Gaillard

Is the message of the Bauhaus still effective?

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Although industrial design seems to be taking hold in the French speaking world, little attention is being paid to the problem of teaching it. This is, in part, the result of the "Bauhaus tradition" which has become the unshakable gospel in those countries which are most advanced in this field. Since the closing of the Bauhaus, however, some thirty years ago, many new problems have come to light, and it is timely to consider whether the Bauhaus system of education is still effective. The Bauhaus was founded in 1919 at Weimar by Walter Gropius, with the aim of reconciling art and industry. This aim, "the new unity", was achieved in two stages. In the first, the preliminary course, the student let his creative energy have free play and developed his individuality through the practice of art and manual work. During the second stage, he acquired, due to his craft experience, the integrity which was to make of him an integral part of the industrial scene. The Bauhaus broke the tradition of imitation which reigned at the time in the art schools and the violent attacks which it suffered led to its closing down. It was re-opened in 1925 at Dessau — a move which proved very successful — and its contacts with industry steadily increased. During this time, Albers made considerable strides in the handling of the preliminary course and of the Bauhaus in general. However, the school was once again threatened — from within by formalism and from without by Nazism. In 1928, Gropius retired and handed over the directorship to the Swiss architect Hannes Meyer, who re-organized and revitalized the school. Meyer's

influence was characterized by the emphasis he placed on the social mission of the Bauhaus, the teaching of science, the lessening of the influence of the painters, the organization of the workshops on a co-operative basis, the undertaking of work on actual commissions, the research into commodity types and consumer requirements, the democratization of studies and the close co-operation with workers' organizations and the unions. Meyer considered the formation of the designer to be a special aspect of technical education and it was this that caused him to be resented by those who considered that the Bauhaus should be a citadel of the arts. He ultimately paid for his advanced thinking and in 1930 had to resign. Mies van der Rohe took over, but had to transfer the school to Berlin where it survived with difficulty until it was finally closed by the Gestapo in 1933. Although its other ramifications were brutally cut short, the theme of the Bauhaus — and particularly that of Gropius — was able to take root again in the United States just before the second World War, where it had an enormous and widespread influence.

One of the rare schools to depart from the "Bauhaus tradition" is the Hochschule für Gestaltung at Ulm. Its curriculum includes a thorough scientific and technical education with a view to enabling the designer to collaborate usefully with industry and to consider the cultural and social consequences of his work. This programme bears a striking resemblance to that of Meyer and one may ask why his conception, weighted as it was in favour of the scientific and technical approach, was for so long completely forgotten, while that of Gropius — art and action — survived.

Until about 1950, the designer-artist carried out, more or less adequately, the work entrusted to him. Since then, however, it has become apparent that there is an ever widening gap between the designer, on the one hand, and the producer and consumer on the other. This serious state of affairs can only be improved by a revision of the principles of education. The development of production capacity demands of the designer far more than can be learnt in the "Bauhaus tradition". One must, however, guard against the impression that while art is no longer of great assistance to the designer, science can produce a miraculous answer to all his problems. If the teaching of industrial design can not be undertaken in the art schools, it must be tackled in the technical schools.

The most important lesson to be drawn from the Bauhaus is that the formation of the designer can only be properly developed in a school specially organized to this end.

C. Schnaidt

Building today 50 year of architecture in Switzerland

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It can be said that modern architecture in Switzerland dates from the year 1913, the date of the foundation of the "Schweizerische Werkbund". This movement was inspired by the architect Alfred Altherr (1875-1945) who was made director of the School of the Museum of decorative arts in Zurich in 1912. After studying in Germany, he was strongly influenced by the "Deutsche Werkbund" in 1907. The Schweizerische Werkbund adopted as its theme the principles of Henry van de Velde (1861-1957) — particularly those of rational form, adapted to function and to the materials employed.

An important event took place in 1914 — the foundation of the journal *Werk*. In its early days, however, it chiefly published works in the neo-classic and neo-baroque idioms.

One building, however, dating from this period, stands out as the first true break-away from tradition in Switzerland. This is the Kunsthau in Zurich, designed by Karl Moser. It is notable for its functional use of space and freedom from symmetry, the clear relationship between its

exterior and interior forms and the subtle use of decoration.

The "Schweizer Werkbund" organized its first exhibition in 1918 but most of the work presented was hesitant in its approach.

The twenties

A vital era, both culturally and artistically with Paris, Berlin and Amsterdam as the principal centres of the modern arts. The "Bauhaus", founded by Walter Gropius at Weimar in 1919, had a tremendous influence in Germany. In 1925, this "High School of Form" moved to Dessau.

In spite of a good deal of resistance, the new architecture began to take hold in Switzerland, first of all in the German-speaking and finally in the French-speaking parts. In 1913 the «Oeuvre Suisse» was founded in Geneva.

This period was characterized by the work and writings of such men as Karl Moser, Dr. Siegfried Giedion, Richard Bühler, Werner Moser, son of Karl and student of Frank Lloyd Wright, Hannes Meyer and Hans Schmidt.

The year 1927 was important for two reasons — the Stuttgart International Exhibition "Habitation" and the competition for the League of Nations building at Geneva. The former was the cultural and artistic climax of the twenties and presented the controversial model city by Mies van der Rohe — "Am Weissendorf". Switzerland was represented by work by Le Corbusier and Pierre Jeanneret, and M. E. Haefeli.

It was between 1925 and 1927 that the first works in the new spirit were constructed, of which one of the most controversial was Le Corbusier's house for his parents at Corseaux. In 1928 Moser, strongly influenced by Perret, built the church of St. Antoine at Basle in reinforced concrete. This, together with works by Haefeli, Artaria and Schmidt, Salvisberg and Brechbühl, Gabarel and Steger and Egenger, show that the "Neues Bauen" was having considerable success. This was crowned by the C.I.A.M. — the International Congress of Modern Architecture — which was held at La Sarraz in 1928.

The Thirties

The national exhibition 1939

The beginning of this period was marked by the building of the Neubühl at Zurich (1930-1932). The architects were the ex-pupils of Moser, P. Artaria and H. Schmidt, M. E. Haefeli, C. Hubacher, R. S. Steiger, W. M. Moser and E. Roth. This estate became the prototype for the construction of workers' homes in Switzerland and was notable for its programme which was closely related to requirements, for its rational approach and adaptation to the site. At the inauguration was held an exhibition of textiles, furnishings, carpets and household equipment.

Other notable work was done by A. Guyonnet, Steiger and Hubacher, Metzger, Vincent, Saugay, Schwertz and Lesemann, Senn and Mock; A. and E. Roth and Marcel Breuer.

The climax of this period was the National Exhibition of Zurich in 1939. With the architect Armin Meili as its director and Hans Hoffman as chief architect, assisted by a group of well known architects, this was the first exhibition of its type to have a theme. The architecture gave an effect of improvisation which set off the exhibits to their best advantage. By contrast, at the "Dörfli", a reaction to modernism was apparent in the reactionary, national-socialist style work.

The war slowed down construction work considerably and, at the same time, architectural development. There was even a swing to a pseudo-traditional expression. In the immediate post-war years, the growth of the national economy produced a boom in the building industry, though this was seldom favourable to the advance of architecture. There was too much haste and too much speculation and the general impression is one of confusion and monotony. To judge from work being done abroad, the prewar pattern of development was the correct one.

School design has received much attention and A. Roth, author of "The New School" in 1950 mounted an exhibition of school construction at the Museum of Decorative Arts, Zurich, in 1951. In 1955-1956, the architect O. H. Senn was invited to design an apartment block in the "Hansa quarter". The church work of Senn, W. M. Moser and Hermann Baur, and the hospital work of B. Steiger and H. Fietz also deserve attention.

The younger generation is producing some interesting work, largely due to the abundance of well-organized competitions. In this connection, the work of "Atelier 5" and in particular their Italian scheme near Berne (1959-1961) is worthy of attention.

Switzerland has, in some respects, dropped behind other countries in facing problems posed by population, industrial expansion and communications — problems which need urgent re-appraisal. It is to be hoped that the National Exhibition of 1964 at Lausanne will encourage efforts in this direction and in the development of our architecture and urbanism.

Alfred Roth

Architecture and the motor-car (page 86)

A difficult marriage of the functional with practical good looks.

It is difficult to define exactly the birth-date of the motor-car, being as it is a direct result of the invention of the internal-combustion engine. The use of this engine to the end of providing personal transport unfortunately posed no problems — it was merely a question of fixing it on or under the carriage as a replacement for the horse. Our civilization was radically affected, and in time buyer requirements and competition forced the manufacturers to rationalize their conception and techniques. Long after the turn of the century, one could still see motor-vehicles which drew their inspiration from the horse-drawn carriage.

In the last quarter of the 19th century, the motor-car was developed by an assortment of mechanics, engineers and handymen who concentrated on the mechanical aspect. It eventually became the task of the architect, in close collaboration with the engineers, to develop and perfect the motor-car as a whole. These are now known as stylists and often cause amusement by the production of revolutionary prototypes which, several years later, inspire a range of production models. The "dream car" serves as a basis for "Mr. Everyman's" car in the same way as competition develops the technical side.

Le Corbusier stressed the necessity of this architectural influence on automobile development in drawing a parallel between the motor-car and the house. He even went so far as to compare the Parthenon with a motor-car in saying that they represent, in their different fields, two products of selection, one of which had achieved perfection and the other which was progressing toward this end. Le Corbusier was undoubtedly being optimistic, as in 1920, when "Towards a new architecture" appeared, automobile architecture still left a great deal to be desired and those responsible for its development displayed, instead of eagerness and a sense of order, a certain dullness and confusion.

It would be impossible, even in a brief coverage of this vast subject, not to mention the work of Charles Faroux, Emile Claveau (the father of aerodynamic functional cars) and finally Walter Gropius, who in 1930 designed a car whose lines, elegance, comfort (reclining seats) were a glowing example. Happily the motor-car, this "moving house", which often fulfils the function of a second home, has found an architecture which is in a continual state of improvement and progress.

Henri-François Berchet

Reinstatement of Ptolemaic Architecture

(page 94)

The Ptolemaic period — which lasted from the 4th century B.C. until the 3rd-4th century A.D. — has left us some of the most imposing works of all ancient Egyptian architecture, including the temples of Dendéra, Philae, Edfou, Esna and Kom Ombo. This is the period of foreign domination in Egypt and it is often belittled or even ignored by Egyptologists, though in fact Ptolemaic architects and artists remained unaffected by this foreign influence and respected the ancient traditions of purity of line and form. There exists, however, a certain baroque quality which is evident in the richness of treatment of the composite capitals and sculpted decorations.

A detailed spatial analysis made by the author of the temple of Edfou underlines the skill with which the different volumes were handled — the progressive diminution of scale as one advances into the temple, the lowering of ceilings, the increasing gloom as one approaches the Holy of Holies and the judicious use of directed rays of light.

Finally, the bas-reliefs display no degeneration or Greco-Roman influence whatever, and there is no seeking after realism in any form. To the contrary, an ever present preoccupation with purity of line and integration with architectural form prove the vitality of work from the end of the Pharaonic era, and the continued influence of Dejezer, 3000 years after his death.

Henri Stierlin

A revolutionary experiment: Carouge 1775-1790

(page 104)

In the latter half of the 18th century, a village called Carouge was founded near Geneva by the kings of Sardinia. Their motive—particularly that of Victor Amédée III, who raised the village to the status of a town in 1786—was essentially political and economic: it aimed at competing with Geneva in draining the regional market and in the creation of industry. The success of the venture was assured by an exceptional religious tolerance, to which the Revolution put an end.

Carouge was the object of several projects. The first ones (Francesco Garella ca. 1775, Giuseppe-Battista Piacenza 1777) ignored the old linear town and proposed a "checker-board" plan with an astronomic orientation. Then a certain Manera proposed a solution which kept the existing core as the nucleus of his development, retaining the general plan and orientation. After him, in 1783, Filippo Nicolis di Robilant, then Giuseppe Viana each submitted two schemes developing this idea—the one which was built closely resembles Viana's second plan.

The retention of the original "core" has produced a compromise, the "impurity" of which is exactly what, to our eyes, gives Carouge its special interest—for the following reasons:

1. **The open conception**—not only was Carouge freed from the necessity of having fortifications, but the second of Viana's schemes provided for a zone for expansion, which is a far cry from the tight conception of baroque formalism.

2. **The integration of old and new.** The executed scheme didn't reluctantly accept existing elements—it integrated them in a coherent fashion. In the adaptation of the two systems to each other, the proportions of the earlier "checker board" frequently had to be changed. This tended to break down the existing axes and resulted in a punctuated whole.

3. **Planting.** The poplar lined avenues carry natural growth right into the centre, seeking to break down the hard town—country delineation. It is possible that the idea for the crescents came from England (Bath in particular); Viana's plan even includes a square.

4. **The "democratization" of the plan.** Carouge has no monumental centre. The public buildings are distributed throughout the town and besides this, social distinctions had absolutely no influence on the organization of the plan.

5. **The human scale.** Practically all the houses are on two storeys and the architecture is subjected to a morphologic and volumetric standardization. The property boundaries are hardly noticeable in elevation and the treatment of building angles and blocks clearly illustrates that the architecture was conceived in relation to the urban whole.

A mixture of formalism and the avant-garde, mediaeval survival and feeling for nature, Carouge went through a long period of decline. A development of new buildings has just been created on the minor axis of the historic city, to the west, seeking to create a valid integration of the old with the new.

André Corboz

The problem of today: unity, number, the greatest number (page 110)

1922

Le Corbusier

The new spirit

Towards a New Architecture

The neighbour plan

1925

Larousse defined "urbanist" as "one who practises urbanism" and "urbanism" as the "science of town development".

1928

The first meeting of C.I.A.M. at La Sarraz, Switzerland, which had for its theme the problem of modern architecture in relation to the urban scene.

1933

The C.I.A.M. in Athens. The Charter of Urbanism defining the four basic functions:

Living

Working

Development of body and mind

Circulation

1939-1945

The War — the creation of Ascoral — the Assembly of Constructors for Architectural Renewal. Its aim was to formulate a definite and coherent post war policy for reconstruction and to carry it out. The realisation that the problem went deeper than simply building.

Living today — the interdependence of the "technical aspect" and the "spiritual aspect".

1945-1953

Unprecedented reconstruction. Application of the Charter of Athens. Creation of an official and conformist urbanism.

1953

C.I.A.M. at Aix-en-Provence.

The formation of Team X.

Interrelation of the Basic functions

The idea of Continuity, Change and Mobility.

The formulation by Le Corbusier at the same time of the rule of the 7 V's.

Definition of the functions and emphasis on the necessity for their union.

1963

The rate of growth of population is greater than that of housing and quantity is taking pride of place over quality — a dangerous trend which is leading to over-simplification and is even destroying the idea of the family, the home, the dwelling and the city (Oscar Honsen, Poland).

Technology and the technician have been left behind. The present criteria of time and money must be replaced by those in which quality takes pride of place.

The acceptance of the right of the individual, of each individual, to have a decent home and way of life has become a reality and forces us to review our ideas and our work accordingly.

The theme of the 1961 Congress of the I.U.A. in London was "The influence of materials and techniques on architecture". Numerous speakers and discussion groups propounded their conceptions of suitable techniques for the construction of dwellings, site organization etc., and it was finally Peter Smithson of London who brought the debate back to earth: "...In order to decide on a form of construction we must first decide what it is we are trying to construct". Here is the crux of the problem: What will the dwelling of the future be like?

More and more we are forced to realise that we are far from achieving a solution which expresses today's needs. We are tied down by arbitrary and unrealistic regulations which are based on standardized and theoretic families, leading to the construction of endless, identical cells — an all pervading anonymity which must produce in the occupant a certain vulgarity, hostility and boredom. A complete rethinking of the whole problem is necessary in order to ensure a complete freedom of the family in the home and to help the individual to adapt himself to the changing conditions of the age and at the same time retain his identity and personality.

The container, i.e. the dwelling, must reflect the **contents**, i.e. the family and its way of life. This way of life is composed of unchanging and changing factors. The unchanging factors ensure a certain continuity while the changing factors express mobility and a state of continual transformation.

"The 24 hour cycle of the sun is the fundamental which dictates the rhythm of the life of man. The daily passage from night to day". (Le Corbusier) The life of man throughout the ages has a certain continuity. The same fundamental needs in the past, present and future. For rich and poor, for the white, yellow and black races. At the poles and in the tropics. Bodily needs; Spiritual needs; Climatic needs.

The idea of shelter against cold, heat, bad weather, noise, other people.

The idea of home and hearth to provide food, care, isolation, rest company.

The idea of contact with nature to provide sunlight, space, verdure, calm.

Man everywhere has, and has always had need of a certain number of cubic feet of volume, a certain temperature and sanitary and other equipment. These are the unchanging factors to which he has an inalienable right and it is biology, the science of life, which creates the norms applicable to a community. Such norms, however, cannot be applied to the individual. Each family has its own way of life and must be free to create its own private world. It is still possible to normalize certain factors — such as the organization and interpenetration of space, the separation of functions, etc., but there must remain sufficient scope for the expression of individuality.

The division between family life and the social environment of which it is a part is the threshold — "the greatest truth of the threshold".

(Aldo Van Eyck)

The social environment is continually affecting the family environment by the penetration of ideas. The idea of a fixed "family home" unchanged for a lifetime must be replaced by something much more flexible and in a state of constant change. "...Urbanized man is a nomad". (Le Corbusier) Modern man requires more and more space for living, learning and recreation. He needs an ever increasing variety of manufactured goods. Television, radio, automation, telecommunications — all have profoundly affected his way of life and his home for better or for worse. This must eventually instigate a completely new architectural approach.

The idea of building today for a life span of 50 years, with the imposition of norms and forms already out of date, is nonsensical, decadent, wasteful and paralyzing. The architect must conceive something which better expresses the reality of modern society.

Fifteen years ago Le Corbusier wrote: "I place the home in the centre of the binomial "individual-collective" and individual liberty being ensured by the home, I organize everything that collectively can provide".

Unfortunately 15 years have passed and "collectivity" has brought nothing but confusion, the total rupture of the urban structure, and the negation of the spirit of our epoch: "Spirit of mobility, change and growth"! Through a lack of imagination and vision, the urbanists have unwittingly become specialists in the organization of disorder and confusion.

Throughout Europe one can see the result. "Modernism" has changed only the exterior forms and not the spirit. "Conform with what has already been done, and above all, don't think".

The spirit of imagination, invention and research so necessary in this day and age is absent, and architectural progress is not in step with social compositions and the evolution of society.

Urbanism is architecture at the scale of our era and when the urbanist forgets his vocation as an architect, he produces very poor architecture. His most important function is as the creator of a programme, the analysis and synthesis of the problem, in order to be able to conceive a living environment and harmony between the individual and the collective.

The scale of urban activity has become so enormous that visual discipline alone is no longer sufficient. The idea of **composition** gives way to that of **organization**, the static to the dynamic. Thus urbanism becomes the driving force of architecture.

The various factors must be unified in such a way that urban life becomes richer and that ideal conditions be established for the realization of the future.

The crux of our society is expressed by man's — society of the Greatest Number, scaleless and by every man's — habitat. Man in the mass — the counted, not in numbers but in actualities: white, black, yellow: cold temperate, hot, rich and poor. Technical progress, social revolution and wars have completely upset traditional values; limits, frontiers and distance have lost their importance and significance. Growth is universal and the same needs are apparent everywhere. Under the influence of the Greatest Number, urbanism, architecture and the technology of building will sooner or later be completely altered. This, however, is the problem — the danger.

An American architect showed Woods a scheme for a new city proposing a 6-level expressway, garages, buildings — a vision of a frightful, artificial life dominated by the motorcar. Woods asked "Where will the children go?"

The problem is to find the relation between the town, the motor car and the child, but who is capable of finding this relationship?

The scale of the problem is such that the group must replace the individual and the men who form such a group must be trained to work together — a new hierarchy which will overthrow the existing structure of those responsible for the present confusion and disorder.

Candilis - Woods - Josic

Attempt at rationalization of the urban phenomenon (page 120)

In these days, statistics are often used in order to misrepresent facts, a state of affairs particularly applicable in the field of urbanism due to the complexity of the subject. This study aims at clarifying some aspects of the problem by graphic means, in a form readily comprehensible to the non-professional public.

The occupation of land is inherent in any work of urbanism and the systematic study of the various urban functions can raise many interesting questions.

We have sought to establish a basis for compa-

risson of the amenities in relation to the actual resources of these towns, with a view to providing a healthy balance between the two.

These needs, in tabular form, only give a quantitative indication of the necessary requirements, and don't, of themselves, ensure a high standard result. This can only be achieved by a detailed study of each individual case, taking into account the physical conditions of the site, its population and its degree of economic development.

Method:

We have established, by analysis, the various human requirements expressed by an arrangement of the physical framework of the habitat. These requirements have been grouped into active and complementary occupations. They have been calculated in taking into account an increasing population (1, 10, 100, 1000, etc.).

For the complementary functions which vary enormously from one town to another, we have accepted percentages in round figures, corresponding to an average calculated on European cities as a whole.

Fig. 1. The summing up of the results in this manner gives an overall picture of the area under study.

Fig. 2. The choice of a logarithmic progression for the number of inhabitants gives an inversely proportional reduction of the surfaces —

$1:100\sqrt{n}$ where 'n' = the number of inhabitants considered.

In this way a normal increase in requirements is indicated by similar areas, while an increase in area indicates the requirements of a larger group of inhabitants.

The rearrangement of the results as percentage figures gives some very useful information.

Let us first consider the "active" occupations by themselves.

Fig. 3. Then add the "complementary" occupations.

Fig. 4. The surface area covered by buildings has been estimated for each case.

In this way, a picture of the ground occupation in an ideal human environment, conforming to reality, can be obtained by statistical means.

The manner in which community requirements increase in relation to a growing population is astonishing and confirms the findings of Gaston Bardet:

"In any scheme of expansion, the type and scale of the existing nucleus must be taken into consideration, and a start made, not with the surface to be constructed, but with that to be kept free from construction!"

And Robert de Souza, did he not say, fifty years ago: "any town which has open country around it must first decide in which areas it will not build".

Comparisons:

Our tabular results have been compared with those obtained by evaluation of published material **Fig. 5:**

We find some striking similarities. The results can also be compared with some theoretic schemes, such as the Hook Study for an English New Town, or the Swiss "Neue Stadt" of Furtal.

The present study, to which the author attaches a rather academic importance, is of a more general interest. The research, of which the results are published here, deserves to be followed up with the object of obtaining a practical and inarguable working basis. A similar study could usefully be made for an agricultural area, though it goes without saying that any theoretical study of this kind cannot provide the easy answer for every problem.

We would repeat that the standard of any scheme depends on the correct grouping and planning of the various activities in time and space in order to create well regulated organic entities.

The place, its population, their resources and requirements—these are the "raw materials" which only the urbanist with his sensitive and human qualities can co-ordinate into a living and vital community.

P. Waltenspuhl

New mountain tourist resorts (page 124)

The increase in available leisure time and the opportunities for touring group travel permit an ever increasing proportion of the population to leave the towns and consecrate their freedom to their favorite sport.

The inadequacy of existing resorts in amenities and equipment make it clear that drastic re-thinking is necessary to safeguard the ski slopes and the inter-valley communications which are so necessary in ensuring a regional balance of tourism.

Experience in the Valais, in Gruyère and Haute-Savoie have permitted the formulation of the basic requirements for the planning of new resorts.

— the quality and size of the ski-ing area.

— local climatic conditions.

— accessibility.

— economic expansion of a rural area suffering from depopulation.

— certainty of an economic return due to a double winter-summer season.

It is up to the architect to explore, adapt and finally create an economic and functional group of which the seal and ambiance will be the best measure of success.

The importance of the circulation of traffic, skiers and pedestrians, the layout of skilifts, the zoning, the method of financing, the working out of construction phasing and legal considerations must not be allowed to override the creation of a vital and integrated whole. To this end, the architect will have to impose his will to ensure a unity of structure and scale—the final result will be entirely dependant on his success.

André Gaillard

The New York School of Skyscraper City Planning (page 130)

A pedestal determining the sidewalk, and supporting a tower which disappears in the haze; obviously of metal frame construction irrespective of height or design: this is the popular conception of a skyscraper.

From the point of view of City Planning, there are many classical examples of skyscrapers, conceived only for themselves, and planted haphazardly in their existing environment. Such are the Woolworth and the Empire State Buildings among the highest in the world. However, their planning did not deeply probe the important problems of congestion, light, air, space and extra-office life; problems barely under consideration at the time. Not really until the '50's do we find the first serious efforts to introduce areas of planting and water, and the open or covered plaza; the result of juxtaposed volumes or deliberate retreat from the sidewalk line. Thus the Lever Brothers' and Seagram's Buildings (1954, S.K.O.M., 1957, Mies van der Rohe) became prophetic steps in skyscraper planning. Yet even in these instances, the total problem of liberation of space and relationship with surrounding constructions could not be considered.

In fact, the first important and conscious city-planned skyscraper project was Rockefeller Center (1931-1937, 1940). Although the Center had to conform to the gridiron plan of New York (with the elimination of one street), here we find for the first time a striking visual exploitation of the various heights; a kaleidoscopic composition of angles. The all-over plan was conceived to create a fluid space which, unifying work and leisure, includes not only function (planting, water, promenades, restaurants, skating rink and exposition), but also "atmosphere".

Large hallways and a subterranean complex replace the conventional skyscraper "pedestal" with its varied functions, and permit the interior plan, with its dominating heights, to be penetrated in a tangible fashion by the exterior space. Not until after World War II did the evolution of skyscraper planning continue to exploit the unification of function and extraneous living launched

by Rockefeller Center. One of the most dynamic results has been the concept of the Connecticut General Life Insurance Co. (SKOM), decentralized from Hartford to the suburban area of Bloomfield. Obviously, the lower cost of land influenced this move, and, at the same time, offered remarkable possibilities for expansion. The present parking areas may easily become additional building units: the result, a horizontal skyscraper. These economic factors apart, the integration of various human elements with function has resulted in the happy unification of "Work and Play". The varied landscape, carefully planned, has contributed to a definite psychological factor, and an increase in work-yield has been statistically proven.

The result of this experiment in decentralization has also prodded individual ex-urban moves inasmuch as Bloomfield has grown with the development of family country life: shopping centers, schools, and sports areas.

These principles now had to be adapted to the City itself. The Lincoln Center for the Performing Arts (in construction, W. K. Harrison, chief arch.), has offered the opportunity to fuse the initial city-planning concept of Rockefeller Center with the basic social concepts of the C.G.L.I. Here again, in the heart of New York, the allocated space has been freed for a program of complete replanning, comprising an Opera, a Philharmonic Hall, a Theater, the Julliard Music School, a Music Library and Archives and an Administration Tower (not here visible). As in Rockefeller Center, the subterranean areas (parking and storage) unite the various buildings. The exterior plan includes a shell for open air concerts and a succession of plazas which recall the fluidity of the C.G.L.I. landscape. The variety of volumes surpass those of Rockefeller Center and the C.G.L.I. by introducing an expressive three dimensionality in the over-all plan as well as the sculptural façades. The interflowing areas of space are thus dynamically free to set off the individual character of each building.

The introduction in Lincoln Center of these sculptural qualities, comprising all concepts of movement, may be considered as a decisive contemporary interpretation of the City Planning of 17th Century Rome and Turin, of 19th Century Paris and Washington.

H.F. Lenning

Plantation in the Cemetery (page 136)

Existing and planned vegetation is of considerable importance in the composition and appearance of a cemetery, and must be considered from the preparation of the initial sketch plans. Where there is no existing vegetation, a survey must be carried out to decide on the various species which are suited to the ground conditions, orientation, prevailing wind and climate.

Experience has shown that the question of planting must be approached in three stages. First of all, a three dimensional study is necessary to determine rough sizes and colourings. Next comes the consideration, with an expert, of suitable species and finally their choice and lay-out. Special care must be taken in the relation of planting to the graves themselves in order to simplify maintenance; also in the choice of species to avoid a winter drabness. The choice of flowers requires skillful handling and good taste to avoid gaudiness and too great a variety of colours in a confined space—this, however, is largely dependent on public taste and education in such matters.

R. Auzelle

Towards the age of stretched structures (page 146)

Wound cables, following up the use of chains, opened up a huge field of possibilities which had for result such works as Roebbing's Brooklyn

Bridge (1869-1883), the Golden Gate Bridge; the arch forms Beaudoin, Lods and Bodiansky in 1935 designed to cover 25 acres; the Raleigh Fair Pavilion (1953-1954) of Novicki.

The Brussels Exhibition of 1958 with the French Pavilion of Gillet and Sarget and E. Stone's American Pavilion was rich in stretched structures. In 1956 considerable interest was caused by the "double web" system with opposed curves (D.C. N.) which was a double skin formed of a web of tri-axial cables stretched on a rigid framework with punched joints at each intersection of the web. An interesting application of the system is in the construction of radar aerials, where it has been modified to give a concave rather than a convex surface.

In 1957 experiments were carried out on "Monkey Saddle" systems — three point hyperboloids — based on the study of soap films. These proved the strength of these systems when pre-tensioned and led to a series of structures called "Funiculars of Revolution" (F.P.R.) in which webs of high tensile steel cable are stretched around a compressed nucleus, rings or diaphragms locating the meridional curves. The form recalls that of a molecular structure.

The importance of models in work of this sort cannot be overemphasized, and the use of steel wire permits stresses of several tons to be attained. These systems present a much more logical architectural expression than those in which the various members are partly in compression and partly in tension, in that each member is wholly in compression or tension. They permit hitherto undreamed of spans and result in a considerable economy in weight.

The use of such high quality materials, however, is dependent on the existence of a developed economy and such an economy must be based on the use of these materials. Hence apparent deadlock. Also our society, based as it is on competition, is unsuitable as a framework for the intensive development necessary, and only a highly organised scientific community can hope to succeed.

In order to evolve away from accepted standards and to arrive at a truly authentic conception of form, I would suggest a few simple experiments with soap films. These will provide a glimpse of certain miracles of nature which are infinitely richer and more complex than the human brain.

R. le Ricolais

The possibilities of plastic as a structural material (page 150)

The organisers of the Swiss National Exhibition 1964—'Expo 64'—at Lausanne have been faced with a rather special problem—the choice of a building type which will have a useful life of only 6 months. Obviously standard construction methods are out of the question, and the temptation to be original at all costs must be avoided. On the other hand, if the building can be regarded as an exercise in the use of fundamentally new methods, an experimental solution would be justified, and it is in this light that the decision was taken to construct in synthetic materials. As a result of development work to this end, we are now on the threshold of the economic exploitation of plastics as a structural material.

The principal asset is that a tensile strength similar to that of soft aluminium alloys can be obtained with a polyester reinforced with glass fibre. Its high cost necessitates its being used in thin walled, stretched arch forms, of which the double curved arch is the most suitable. Obviously its lightness in this form of construction makes the structure very sensitive to the effects of the wind and for this reason it is necessary to keep the material under constant tension. Despite the high cost of the raw material, the cost of the finished structure is comparatively low, due

principally to the elimination of cable reinforcements. Unlike tent canvas, it has no directional weave and a small but significant elasticity. In using it, the designer has a completely free hand in the choice of colour and degree of transparency.

The theories developed during experimental work have not been completely carried out in the 'mushroom' structures for the Expo 64. The double curved surfaces in reinforced plastic with their central support are completely in tension, but it was found necessary to reinforce the edges with metallic elements rather in the fashion of the ribs of an umbrella. The junction between the two materials raised many problems, most of which were solved, together with those of stability, by work on $\frac{1}{8}$ scale models.

It remains to be seen whether this building will open a new architectural field in the use of plastics as a structural material.

H. Hossdorf

Anti-Seismic towns

(page 154)

A young French architect, Paul Maymont, has been for some time preoccupied with the study of the problem of "anti-seismic" construction—a subject which is of particular interest in view of the series of earthquake disasters which have occurred in recent years. He recently proposed a series of solutions based on the principle of a floating town capable of resisting earthquake shocks, whatever their intensity, and it is these that we present here. While his propositions are still in the early stages and require an enormous amount of development, they provide the basis for a realistic solution to the earthquake danger in coastlying districts.

Paul Maymont qualified as an architect at the Ecole de Paris and then went to the University of Tokyo where he became interested in seismic construction. Japan is particularly preoccupied with this problem, due to its overpopulation, shortage of housing and the frequency of seismic disturbances. The traditional construction serves well enough—flexibly connected timber and light-weight partitions present little danger to the inhabitants even in the event of the building collapsing—but the same can not be said for heavy structures. Maymont discovered that the accepted technique was to build enormously solid structures in reinforced concrete set on 5 or 6 basement floors. Their efficacy is not known, however, as since 1923, when Frank Lloyd Wright built the Imperial Hotel, there have been no serious earthquakes in Japan.

Developing a "raft" system of construction used on the Pacific coast, Maymont proposed floating the "raft" instead of sinking it on to the phreatic sub-oil. He realised, however, that even in a floating condition, the earthquake shock would be transmitted through the layer of water to the building. To counteract this he proposed constructing the raft in the form of a honeycomb, with the cells designed to retain air and thus provide a shock absorber.

Calculations showed that 1m^3 of air would be sufficient to absorb the greatest possible shock in a floating caisson of 200 m. diameter. Once stabilized, it would be possible to build on top of this caisson. A series of them could be linked together to form the foundation for a town. Each element can be designed to house 10,000 to 25,000 inhabitants and they can be added to as conditions demand to form a completely flexible entity. A city of 10,000,000 people can be developed in stages on floating islands of 400-500 m. diameter.

To justify the high cost of the substructure, Maymont proposes a very high-density solution—in the region of 1200-1800 inhabitants/acre. A sort of mast, about 20 m. in diameter and 150 m. high, would be erected in the centre of each caisson, stabilized by a series of pre-stressed cables fixed to the rim. From these cables would

be suspended the town's "buildings". Each "island unit" would be connected to its neighbours by a series of motorways and overhead railways, and the caissons themselves, with a draught of 16 m., would contain the town's services, garages, factories, etc. Under this service core, the honeycomb "shock absorber" and the system of piles which keep the caisson in position.

Amongst Paul Maymont's other schemes is one proposing a town for the Sahara, a region previously ignored by architects. He imagines a complex for several thousand inhabitants, 400 m. in diameter and 120 m. high—a sort of air conditioned, self-contained oasis suspended above the ground in order to deal with the problem of blowing sand. This construction is achieved by a series of metal masts between which is slung an indeformable network of cables in the form of a lens. Access is by ramps, staircases and lifts contained in vertical shafts closed at the bottom by air locks. The town's walls are of insulated, prefabricated elements containing huge portholes to light the interior.

The dwellings are built up in tiers around the central oasis and the town is fully equipped to provide a normal urban existence. Underneath is constructed an underground car park and above the town are the ventilation shafts and the solar batteries which provide electric power.

Water is obtained by a development of the ancient method of condensing the vapour suspended in the lower strata of the sand. To achieve this, the outer surfaces of the walls and roof area are very slightly cooled by the passage of ammonia gas through them. The humidity in the night air is thus condensed and collected in underground tanks.

Paul Maymont has not only considered the urban problems of Tokyo, Monaco and Paris, but has worked out schemes for underground developments in many other cities—under the Thames in London, under the Tiber and Moscovia in Rome and Moscow; expansion plans for Toronto, Chicago, Seattle, New Orleans; anti-seismic developments for North and South American towns in earthquake areas on the Pacific coast; floating developments for Rio and Hong Kong to help combat overpopulation and finally an underwater 'technical town' around Manhattan island—several levels of motor-way, garaging facilities and a huge atomic shelter capable of holding 10 million people.

Paul Maymont is one of the group of young French architects which, by its advanced thinking, is playing such an important part in the world-wide movement towards the re-generation of architecture.

Marc Gaillard

Architecture in Australia

(page 160)

The climate

In order to make the overseas reader appreciate the geographic and climatic conditions of the area for which the buildings illustrated are designed, the following should be noted.

Sydney, the largest and oldest city in Australia, is located on its south-east Pacific coast, 35° south of the equator. It is on a corresponding latitude to that of Casablanca, Beirut, Shanghai, Los Angeles, Montevideo and Cape Town. The climate is warm. There is neither frost nor snow. The sun shines an average of seven hours per day throughout the year.

Winter weather is usually crisp but sunny and it is mostly during the evening that any heating is necessary. The average winter (May-August) temperature is 55°F .

In the summer (November-February) the average temperature is 71°F , but can frequently reach 80°F with intense sunshine.

Winds can be strong and gusts of 60 m.p.h. are common. At times cyclonic depressions combine these with torrential downpours. On the whole, however, the climate is very pleasant and conducive to outdoor living at almost any time of the year.

It should be noted, of course, that Northern orientation implies a sunny aspect similarly to that of south on the Northern Hemisphere.

Notes on Architecture

Truth, integrity and conviction seem to have been lost to architecture in this superficial, impatient and shallow era. Short lived thrills of appearance, fashion and constant need for something "new" have replaced the old revolutionaries' dedicated search for intrinsic honesty and integrity in building.

To regain some balance we must reject that which is irrelevant. In a world plagued by population explosion, a desperate shortage of housing and most other kinds of urgently needed building, in even industrialized countries, we should concern ourselves only with building which incorporates a genuine element of a "significant solution". The extravagant, the structural or sculptural "tour de force" will offer no solution and will only encourage the substandard, the undesigned and the misbuilt to be tolerated since they do not offer an alternative.

True values and genuine deep seated convictions are needed on what is significant in building and which superficial capricious tendencies should be rejected.

Only that is worthy which combines in every solution and selection the greatest economy of means with the most that material and labour can achieve. Building problems cannot be solved convincingly by oversimplified extremes. Building is neither all technology nor all form. To force industrialization is as false as insisting that above all form must be "creative". Has not our appetite for forms been cloyed by the desperate and hideous excesses of the misbuilt?

Architecture of lasting value and social consequence must be based on a humble and subtle approach, satisfying spiritual qualities by its integrity of conception and appropriateness to use and means.

Our eyes thrill to an architecture of space—it is its language with infinite means of expression. The feeling of the intimate and simultaneously infinite, the life giving elements and subtleties of light and shade.

A simple overriding idea must be the basis of every building design, with a convincing inter-relationship between use, structure, economy and expression—without one predominating over another.

We succumb to the skilled defying of gravity which has been in other ways the aspiration of man throughout history. Not structural acrobatics, but structure revealing its logical form—to clearly see and feel it take stress and to understand the simple direct way in which it was physically achieved.

Opposition will give life to environment. Not all transparency and not all solidity, not all soft and not all hard, but a skilled visual interplay between opposites. Planes opposing each other in space, verticals against horizontals, solid opposed by void, cold colour against warm, curve against straight line and above all in Australia's climate, sunlight against shadow.

Once a visual statement is made it needs to be emphasized by being recalled in some subtle way; not unrelated forms, but a theme carried throughout a composition, as counterpoint is in music.

Climate as much as use or structure will determine form. We live in a sunny, warm climate. We cannot exist in buildings which admit too much sun. Glass must be protected on the exterior. Light and open construction is thermally unstable. We need the heat storage capacity of solid construction and compact buildings.

Openings should be predominantly horizontal—the most efficient for admitting even daylight. Glass walls are ideally recessed from the face of the building's edge to form covered terraces.

No building escapes the rigours of nature, the fact that dust and dirt settle on it and rain will streak it across all surfaces. A good building will be visually strong enough not to be disfigured in time—without crying out for maintenance. Modern architecture must learn to grow old gracefully.

But the greatest unsolved problem remains our failure to deal with the totality of our environment. Our cities are visual and physical nightmares, monuments to real estate speculation where building form is dictated by shapes of allotments: chaos reigns. A total architectural environment will only be born after we have worthy physical (not preventative) planning and effective legislation to make it reality. This is truly the challenge for our generation.

Harry Seidler

Modern Indian Architecture (page 170)

India is an ancient Country whose architectural splendours are enshrined in thousands of monuments. We have a long and rich tradition — the dawn of which was seen five thousand years ago. The artistic and creative minds of Indian architects and sculptors have created the Buddhist monasteries, the sculpture-decorated temples, the Moghul palaces and gardens, the mausoleums and tombs. But little has been written on modern Indian architecture in the sense of an architecture of international style. Architect Antonin Raymond built his Pondichery dormitories much earlier than the Rio de Janeiro Ministry of Education Buildings, designed by Le Corbusier, Lucio Costa, Oscar Niemeyer and others; both had the horizontal sunbreakers providing a space which is cool, shaded and well ventilated. But while the latter paved the way to the evolution of youthful and vigorous modern Brazilian architecture, the former remained isolated; bearing no effect on contemporary Indian architecture. The reasons were both political and educational. Pondichery was a French settlement at that time and in British India the creative Indian mind ceased to function when a colonial architecture of late renaissance was imported. No doubt there were some good examples—public buildings of pomp and grandeur. There were very few schools of architecture and these were too often incorporated in colleges of art having very little technological background. With industrial growth, urbanisation has become a rapid process, yet about 80 percent of the total population still live in villages. Therefore we can say that though the birth of modern architecture took place in Pondichery, this vast country with her climate, people and tradition has had to wait for many years. So far the decorative and massive Indian architecture spoke the language of a privileged few—an architecture of pomp and grandeur—but independence in 1947 changed the scene, democracy needed an architecture for the common man—towns and houses, places to live and work and places for cultivation of body and mind. New schools of architecture were created in Engineering Institutions with a modern western syllabus suited to Indian conditions. Some young Indian architects came back from abroad and some went for further studies.

The State of Punjab needed a Capital and Chandigarh was created. It opened new avenues of ideas to the young Indian architects, though some of them were lost in the wilderness. The town-planning scheme based on seven routes, the Capital, with civic buildings by Le Corbusier, have become widely known. Le Corbusier, his cousin Pierre Jeanneret, Maxwell Fry, Jane B. Drew and some young architects created a violent reaction in India. Jawaharlal Nehru, Prime Minister of India, has rightly said: "Chandigarh is of enormous importance regardless of whether some-

thing in it succeeds or something in it does not succeed. As a matter of fact, even now many things in Chandigarh have spread, many ideas, in small and big ways. It is a thing of power coming out of a powerful mind. There is no doubt that Le Corbusier is a man with a powerful creative type of mind; because he has that he may become extravagant occasionally. He can produce extravaganzas occasionally but it is better to have that than a person with no mind at all".

The impact of Chandigarh was great in an urban atmosphere where every building is covered with meaningless ornaments. The Indian cities have already become curio shops with windows of Ajanta caves and gothic churches, brackets from Gujarat, motifs from Moghul architecture and with the luxury of British colonial houses. Architecture is shaped by the climate. The climate of India is mainly hot arid and hot humid. Here sun and rain control is necessary and at the same time good ventilation is essential. A new form was seen in the buildings of Chandigarh and some other places with elements like louvers, Jali screens, sun breakers, etc. These elements were wrongly copied throughout India by some architects who wanted to become "modern" overnight and by some civil engineers practicing as architects.

Modern Indian architecture should be studied with all its perspectives. There are three currents in the profession in India. Firstly, a number of foreign architects working in India, secondly a limited number of Indian architects trained in western countries and thirdly the younger generation of architects trained in Indian schools. Some of these Indian architects have already shown great merits in architectural works with proper function and aesthetics executed in available local materials.

Again there are three schools of thought in India—this may be natural in a country with rich tradition. One group believes in the imitation of the past for the sake of national sentiment, the second group copies Western technology and architectural developments ignoring the climate and economy, and the third is really the modern group in its proper sense.

As India has very few architects (one architect per 300,000 population) the number of good architectural examples are few. Instead of giving a detailed review of the historical evolution of modern Indian architecture, it is advisable to discuss the architectural projects recently completed. In Chandigarh Le Corbusier's Assembly House has been opened recently. It is a drama in concrete, a piece of sculpture, and here again one can see the manifestation of Le Corbusier's ideas. Pierre Jeanneret is responsible for many schools and houses apart from his consultative service as chief architect of the organisation. Under him architect B.P. Mathur has designed the Punjab University campus and its various buildings, dormitories, staff housing, library, administrative building, Gandhi Bhawan, etc. Jeet Malhotra's secondary schools are known to many with their simplicity and livability created out of the local materials. The Tagore Theatre by Aditya Prakash is another striking example.

Besides Chandigarh, we find architectural concentrations in Ahmedabad and in New Delhi. Personally I feel that Ahmedabad has some more lively examples than Chandigarh. In a city of medieval mosques and palaces and modern cotton mills, one can see Le Corbusier's houses, the Mill-owners Association building and the Museum. It is said that Frank Lloyd Wright designed one building for Ahmedabad which did not materialise. The American architect Louis Kahn is designing Ahmedabad National Design Institute. In this city some good examples of leading Indian architects are to be seen. Balkrishna Doshi's low cost houses, Chinubhai house, Institute of Indology and others, A.P. Kanvinde's office building and daily farm, C.M. Correa's hotel, the younger Talati's houses, etc.

In the Capital City of New Delhi one can see

examples of the three schools of architectural thought mentioned previously. The Diplomatic Enclave has given rise to many architectural exercises recently. Of these, the U.S. Embassy building and recently completed U.S. Ambassador's house designed by Edward D. Stone have been claimed as examples of neoclassicism which are Indian in character. Other notable recent buildings are H. Rahman's Rabindra Bhawan — an academy office building and World Health Organisation building, M.S. Rana's Bal Bhawan, a children's centre; A.P. Kanvinde's Indian Council of Applied Economic Research and Council of Cultural Relations, Gandhi Memorial Hall and J. A. Stein's India International Centre, and American School. In India the greatest problem next to food is housing, and multistoreyed apartments, though a new thing, can be seen in the skylines of big cities. With the problems of housing comes the planning of new towns and the development of congested cities.

India is on the march to industrial development and with industrialisation, quite a good number of new townships have been planned and intensive construction activities, especially in housing, are in rapid progress. A master plan for Delhi has been prepared and a planning organisation with the consultative service of the Ford Foundation is busy preparing a masterplan for Calcutta with an area of about 400 square miles. It is one of the biggest city planning projects in the world. Calcutta is the biggest Indian city but it has little or no architectural merit. It is hoped that the Calcutta plan will provide a new foundation of ideas for the younger architects. Calcutta has always been a centre of learning and culture, from here new ideas of the fine arts, literature, music and drama have been spread throughout India and we believe that when Calcutta is awakened by modern architectural thinking, the whole of India will follow.

Santosh Ghosh

Hotel-Architecture in Greece (page 174)

Before the last war, Greece possessed practically no architectural work of merit, being tied down by reactionary thinking based on the ancient Hellenic glory. The urgent post-war need for housing encouraged commercial speculation, although the architect had little or no influence on this place, which, in fact, was confined principally to Athens, and one or two centres such as Salonica.

It was not until 1956 that the need for architects became felt, coinciding with the boom in the tourist industry. The government decided on an extensive programme to encourage the building of hotels, motels and holiday camps, which is still under way. This has permitted modern architecture in Greece to take hold and has produced some very good work indeed.

The architect, however, is not without his problems, not least of which is the low rate of fees provided for by law. He also has had to rid himself of the classic tradition which has so hampered Greek architecture in the past. This has brought many, led by the journal *Architectoniki*, to pose the question: "Should Greek architects try to develop a national style rather than adopt a more international idiom?"

This idea has not met with much support, the general opinion amongst both architects and the public being that such a radical approach would be out of touch with reality and contemporary requirements, and thus doomed to failure.

Greece now possesses a school of young architects which in the last ten years or so has produced work of quality, not only in Athens, but in other centres and in the country generally. As the problems which they face become less, the possibility of their doing justice to themselves and to their country will increase and the future is full of promise.

Anthony Kitsikis XXIII

Britain found itself after the war faced with the enormous task of repairing the havoc caused by the air bombardments and to catch up with six years enforced neglect of rehousing. The hasty erecting of prefabricated houses was in effect a proliferation of prefabricated slums. A better solution was found with the building of satellite towns, for which the pre-war garden cities of Welwyn and Letchworth served as models, but which embodied new solutions in the zoning of industry and housing and in the separation of motorised traffic and pedestrians. Seventeen such cities are at present in course of development.

The most interesting single scheme of large-scale reconstruction in Britain has been that of Coventry where practically the whole centre of the city had been destroyed, including the famous cathedral. That disaster has become a challenging opportunity and has resulted in the creation of Sir Basil Spence's masterly new church and of a whole new town centre which is now a subject of close study by architects and town planners all over the world.

Another new departure in British architecture has been the erection of "skyscrapers" in all large cities and particularly in London, where, for the first time in the 2,000 years of the capital's history, the church steeples are no longer the highest features in the townscape. Some 250 such towers have been built in the past ten years—and it is only a beginning, as the need of floor space is still acute. The largest of these high buildings, the Shell Centre, is architecturally not the happiest but New Zealand House and the Vickers Tower at Millbank can be compared with the best in other countries.

As more and more offices are being made available in London, one of the chief problems facing town planners is increasingly that of traffic bottlenecks, for which no solution is yet in sight.

The necessary reconstruction of industrial and commercial plants has also increased public interest in industrial design, as shown by the rapid development of the Council of Industrial Design and the keen competition among industrialists for the Duke of Edinburgh's Prize for Elegant Design, won in 1963 by the Milward Courier cordless electric shaver and previously by Eric Marshall's Ultra portable transistor radio set.

Interest in industrial design, architecture and town planning is steadily increasing in Britain, both among the authorities and the general public, and bids fair to regain for British architects and designers some of the respect and admiration they once enjoyed.

René Elvin

Robie House Restoration

(page 267)

An international committee of more than one hundred architects, historians, critics, and educators has been formed to raise \$250,000 for restoring Frank Lloyd Wright's Robie House in Chicago. Its members represent all parts of the United States, plus Switzerland, France, Australia, India, England, Germany, Brazil, Italy and Japan.

Wright last visited Robie House in 1957, to aid in preventing its demolition. "To destroy it would be like destroying a great sculpture or work of art", he said when he conducted a tour of the house. Later in 1957, Webb and Knapp, Inc., real estate developers, purchased the house from Chicago Theological Seminary, for temporary use as the firm's offices for an urban renewal project in Chicago's Hyde Park area. In 1963, Webb and Knapp donated Robie House to the University of Chicago. The University has agreed to use and maintain the house in perpetuity, provided that the necessary amount can be raised for restoration. University funds cannot be used for architectural work of this type.

The fund-raising goal of \$250,000 is based on a cost estimate prepared in conjunction with the University. The estimate included costs of restoring the original details of construction, as well as bringing the house into conformity with current code standards. New tuckpointing, roofing, and interior work in accordance with Wright's specifications are planned. A considerable amount of hand removal and repair is required. The fact that the house has not been used as a residence since 1926 has added to the necessary work to be done, such as new plumbing and wiring.

Once the funds have been raised, the University will select an architect and arrange for restoration work. Although the University has not made a final decision on the exact use of the house, it may be designated as a residence for visiting scholars. A portion of the house will be open to the public at specified times.

Ira J. Bach, Commissioner of the City of Chicago Department of City Planning, is chairman of the Robie House Committee. Total contributions as of early May were approximately \$25,000. The committee has set the end of 1963 as the target date for obtaining the additional amount. Contributions should be sent to the Robie House Committee, Room 1006 City Hall. They are then forwarded for deposit in a special restricted fund at the University. Checks should be made payable to "Robie House Restoration Fund of University of Chicago".

The National Executive Committee of the American Institute of Architects is among the organizations which has endorsed the Robie House fund-raising project.

Robie House, built in 1909, established new patterns in domestic architecture in this country and abroad. Sigfred Giedion, Swiss critic, historian and author of "Space, Time and Architecture", wrote in 1959: "The Robie House is really equivalent to Brunelleschi's Pazzi Chapel in terms of contemporary architecture—it was the modest origin of a worldwide expansion."

Wright designed the house for Frederick C. Robie, a bicycle manufacturer. Robie wanted to avoid box-like rooms and window shades. He asked for indoor play space for the children and for windows on the upper floors which would provide both privacy and a view. He told Wright he wanted "a fireproof, reasonably priced home built to live in—not a conglomeration of doodads."

Wright's translation of these requests marked a dramatic departure from the architecture of his day. The free-flowing interior spaces, overhanging roofs to shade windows and balconies, indoor recreation space, and strong horizontal lines of Robie House forecast trends in house design during the following fifty years.

Peter Blake, managing editor of "Architectural Forum", has called Robie House "perhaps the most perfect demonstration of the principle contributions to modern residential architecture made by our country's greatest architect; it is a perfect demonstration of the open plan, of indoor spaces being literally projected outward through ribbons of glass, of how a house should be sited to become part of the ground rather than a foreign object on it, and of the power of simple asymmetrical forms assembled in a masterfully balanced composition."

Giedion has characterized Wright's homes built in and near Chicago before 1910 as his most influential work. "Wright was never an architect for the very rich. The really wealthy believed that only imitations of the chateaux on the Loire or minor Versailles could express their prestige. Wright also had no opportunity to build skyscrapers in his youth. He simply built single-family houses for the middle classes and a few rather more wealthy clients; the man who commissioned the Robie House ran a bicycle shop. It was these humble buildings that gave Wright his world-wide fame", Giedion wrote in the "Christian Science Monitor" in 1959.

The Robie family lived in the house for only two and a half years. The next owner, the W. Taylor family, sold it to Marshall D. Wilber after six months. The Wilbers lived in the house for fifteen years, longer than any other family. In 1926, they sold it to the Chicago Theological Seminary, which used it as a conference center until 1957. The Seminary maintained the house and conducted tours for architects and other interested visitors. However, faced with the need to expand, the Seminary announced plans to build a new structure on the Robie House site in 1941. William F. Deknatel, Chicago architect and a student of Wright, headed a committee then formed to prevent demolition of the house. When World War II began, building plans were necessarily delayed. Again in 1957, the Seminary announced its need to expand. This was the year when Robie House received its most widespread public recognition. A panel of leading architects and art historians cited the house as one of the two outstanding residences built in the United States in the previous fifty years, as reported in "Architectural Record".

The Chicago Commission on Architectural Landmarks was also established in 1957 by the City of Chicago. In April it designated the Robie House as a landmark and offered assistance to the Seminary in preserving the building.

The Commission's citation to the house stated, "In recognition of the creation of the Prairie House—a home organized around a great hearth where interior space, under wide sweeping roofs, opens to the outdoors. The bold interplay of horizontal planes about the chimney mass, and the structurally expressive piers and windows, established a new form of domestic design."

In December 1957, it was announced in the office of Mayor Richard J. Daley that Webb and Knapp, Inc., had agreed to purchase the house for use as their headquarters for the Hyde Park project. On February 4, 1963, William Zeckendorf, chairman of the board of Webb and Knapp, presented the deed to Robie House to Dr. George W. Beadle, president of the University of Chicago. The ceremony marking Zeckendorf's contribution also opened the present fund-raising drive.

Contributions to the fund to date have come from students, visitors to Chicago, businessmen, city planners, and architects from throughout the country. Architectural magazines in the United States, Europe, and Australia are supporting the effort through editorial coverage and donations. The range of contributions demonstrates the international concern for Wright's work. Ludwig Mies van der Rohe described Wright's impact upon European architects when an exhibition of his work came to Berlin in 1910. "After this first encounter we followed the development of this rare man with wakeful hearts. We watched with astonishment the exuberant unfolding of the gifts of one who has been endowed by nature with the most splendid talents. In his undiminishing power he resembles a giant tree in a wide landscape which, year after year, attains a more noble crown," Mies wrote in the catalog for the 1940 exhibition of Wright's work at the Museum of Modern Art, New York.

Edgar Kaufmann, Jr., architect who resides in Wright's famous "Falling Water" house near Pittsburgh, arranged for a \$10,000 contribution to the fund from the Edgar J. Kaufmann Charitable Trust. "The Robie House has become a symbol of self-respect in our country. If we save it we speak for the cohesive power of the arts as a working element in our way of life. If we junk it we demonstrate once more that rapacious attitude toward cultural resources that we have learned to reject in regard to natural resources." Kaufmann said.

The Robie House effort is a test case: to determine whether private citizens can express their concern for architectural restoration in a tangible way, assuring the preservation of a great landmark for future generations.