

Articles

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Architecture

Although the word "architect" derives from the Greek phrase meaning "master builder," in practice "architecture" has gradually acquired the connotation "art of building." Today not all architects would admit that it is an art. Several of them would insist that it is an application of technology, while others would claim that it is a science. However, all would agree that the product of the discipline is real, whether it be a single building, a group of buildings, a community, or a whole city- even if the architect is concerned only with the design and conception.

The fact is that architecture started as a technique of construction, which was gradually specialized into the construction of buildings rather than the building of bridges, roads, and public works, which became the special domain of the engineer. Architecture began as a technique and was transformed into an art - sometimes completely overshadowing the technique. It began as handicraft and artisanship (the architect was the actual builder-entrepreneur), then turned to design and management. Architecture is concerned with individual houses, large composite building complexes, and even whole cities, although the latter specialization is also the province of the town planner.

Through architecture, space is compartmentalized : there is the usable interior area; the total area, that is, the shell and the means; and the external space, which is indirectly changed after the inner area has been defined. The degree to which these different kinds of space fulfill the expected requirements qualifies the degree of success of an architectural work.

Social architecture. Architecture is sometimes called a social art or social technology. This is valid in terms of the content and extent of architecture. Moreover, architecture is social in that it expresses a social trend even if that is very limited in extent. Architectural style does not represent the efforts of a single architect or of one class or even one generation but those of many persons through a number of generations, who express themselves in a way that represents all their beliefs and aspirations. For example, in ancient Greece people built timber roofs over mud-brick walls; over several centuries this particular style of construction was adapted to marble. This architecture did not have an inventor or original designer - every temple had its own master builder, who contributed minute details of refinement to an enduring style. This was a social architecture in expression and form.

Architectural needs. In every period consumers define

their architectural needs in terms of quantity, volume, cost, quality, and content. In every community there is the demand for shelter; the variable occurs in the quantity and quality of shelter demanded. In the simplest effort the consumer's needs and demands coincide, as the consumer asks first of all for what is indispensable, thus automatically adjusting his needs to the possible. When incomes and technology develop, needs increase, while the previously suppressed demand starts rising; then a gap between need and demand appears. As a result the suppressed demand rises even more, and so do the needs, causing an increase of supply, and thus we have a trend toward better and higher architectural forms. As architectural needs and demands become more complex and expand into open areas, roads and public squares take on architectural significance. They then receive corresponding attention, ranging from very elementary (for example, regulations defining rights of way and heights) to very detailed (specification of the elevations, addition of works of art, and so forth).

Architectural creation. The accumulated knowledge of modern science has changed the nature of architectural creation and modified its function. Thus, that which was once a simple, natural act of covering man with shelters and helping him to survive became more and more artificial and complicated and required the mobilization of many skills and resources for its fulfillment. At the same time, the architectural solution - derived from nature in the beginning, like a cave or a hut made out of branches - became unnatural as it moved away from the simplest forms. Such an evolution had its impact on the process of creation of architectural styles. One may suppose that the outstanding builders in every community were given the most important jobs, the temple or church, the mosque or the ruler's palace, bridges or fortifications. By trial and error they learned how to produce the best; public taste was strongly influenced by the master builders and, in turn, influenced and shaped the general architectural evolution. Over a long period of time, under relatively constant external conditions, this process resulted in the creation of an architectural style. It usually took several centuries for a naturally evolving architecture to acquire its own characteristics, a specific style. The fact that in our era the distance from the natural architectural creation is increasing, together with the fact that economic, social, political, technological, and cultural conditions change so quickly, explains why we do not have our own recognizable architectural style. This lack of a distinct style creates a confusion of ideas about architecture. Today many architects try, in a completely unjustified and facile way, to create their own "styles," as if one man or group of men could overnight replace the action of a whole society over a long period of years.

Client-architect relationship. For hundreds of years the client-architect relationship was quite simple. When in

need of a building, the client turned to the architect, and together they worked out an agreement for full services - from advice to design, construction, procurement of materials and labor, transport, and perhaps even financing - until the building was completed. In some way this was similar to a constituency - politician relationship. In general, the clients selected and guided their architects, who in turn led the clients within a framework of technological possibilities. Their relationship was impersonal. This situation became complicated, confused, and sometimes irrational, especially in the twentieth century, when architects were first educated in art schools and then trained in professional schools of architecture.

Specialization has been advanced to the point where, in many developed countries, members of architectural associations are not allowed to act as builders; thus they are deprived of their most important function and the ultimate justification of their profession. There is no question that the architect, in order to practice his profession properly, now needs the assistance of a great number of experts, including research specialists in the physical and social sciences.

The architect. The evolution of architectural creation and practice had its impact on the architect himself. In the early days of architectural specialization he was a mason and a builder, while the best was called a master mason, an architect. He was an artisan, known for the quality of his product in the same way as were the best painters, sculptors, decorators, and saddle, cart, and carriage makers. During the nineteenth century the process of change began that is transforming the architect-craftsman into a white-collar worker or administrator. Today most of the people actually creating what we commonly call architecture belong to the traditional class of craftsmen, while university-trained architects constitute a very small percentage of the total. The ratio of architects to population varies greatly from country to country - from the high percentages found in countries like Denmark and England, where architects are sufficiently numerous to deal with interior decoration and furniture, to the very low percentages of architects found in most of the developing countries.

Architectural evolution

In early human history local, natural architecture grew much like a plant (conditioned by the local climate and easily obtainable raw materials). Where conditions warranted (reasonable climate, enduring building materials, and the processes of civilization), the architectural plant thrived. Local architecture did not everywhere lead to great styles, but where it did, architectural efforts of the past continue to influence present-day traditions.

The buildings we have inherited from the Near Eastern civilizations of antiquity belong predominantly to religion - especially in Egypt - although there are some examples of fortifications and palaces. Regular houses, even of the wealthy families, seem always to have been built of materials that could not withstand weather and time; thus, we know only how people built for gods and kings, not how they built for themselves. Whatever we have inherited shows architecture as a monumental art and not at all as an art of everyday life.

In comparison with the previous monumental architecture, that of the Minoan period was much more human. In both enclosed and open spaces the builder's interest was not to impress humanity and serve souls and gods but to serve man in the best possible way by creating functional human spaces adjusted to the climate. Mycenaean architecture was also close to the Near Eastern tradition. We know little of the architecture of the common man in either of these periods; it may have been only a simpler expression of the architecture of palaces and fortresses, or the earlier types of buildings, constructed in less durable materials, may have continued. Classical Greek architecture is admired for its character, but also because of its use of raw materials, particularly marble. The Greek temple is perhaps the apex of the pyramid of architectural achievement. Its value also lies in the fact that it was not a monument isolated from life, but the real crown of an architecture which started with humble, timbered, mud-brick and stuccoed houses, and public buildings just one degree better than the houses, and progressed to the "agora," or central market square with its buildings, and finally, to theaters, stadiums, roads and squares, exedras, monuments, and temples. More than any other, Greek architecture was holistic, an architectural conception of the human community represented by the political unit of the city-state. The largest political unit of ancient Greece -the city-state-was so small (the average size being forty miles square) that a person standing at some height could see the entire area at once. With the acropolis at its center, the architectural composition expressed the idea of the culture.

Roman architecture differed from Greek in both content and technique. Not only did it contain greater internal differences, as between the slums of Rome and the luxurious villas and palaces; it also took big steps toward the architecture of large buildings. There were important public buildings: baths, amphitheaters, roads, bridges, and aqueducts. Brick construction played an important role, in addition to stone and marble. There still exist many examples of well-conceived and well-built Roman cities in Europe, Africa, and Asia. They do not manifest the cohesiveness of cities found in Greece, but city-fortresses paved the way for technological advancements in later periods.

At the end of the Roman Empire and with the spread of Christianity, there were two distinct movements toward new architectural forms: one followed a path from Italy to the European mainland; the other moved eastward, back to Greece, Constantinople, and the Middle East.

The first new form -Romanesque architecture-was at the beginning a major stylistic attempt to express the new religion. The Gothic style followed and became the typical architectural expression of the long medieval period with its small, walled city, where the only hope was in God, up in the sky. The architecture of the vertical and the arch reached up, as high as possible, away from the secular world. It is not strange that such architecture was more successful in churches and cathedrals than in houses and public buildings.

It was in southern Europe with its bright light and colors that man returned to an architecture much more human in content and expression. The Renaissance started first in Italy and then spread to the rest of Europe. Although in spirit it represented a return to humanism and to ancient Greece, its direct roots came from the Italian countryside, where the peasants' houses were the prototypes of the more luxurious houses of the great landlords. When these rich men became urban dwellers -merchants or bankers-they built their cities and palaces, created their piazzas and monuments, public buildings, churches, and fortifications in a new and consistent form of architectural expression. There was continuity from the humble peasant's house to Michelangelo's Piazza del Campidoglio in Rome and to the Piazza della Signoria in Florence. As in other great periods, sculpture and painting were blended with architecture.

The Renaissance declined, and baroque style, with its sculpture and monuments, arose - an architecture of intellectual creation rather than a natural art having roots deep in the life of the people. The styles that followed, rococo and then neoclassicism and neoromanticism, widened this gap, emphasized by the art nouveau of the late nineteenth and early twentieth centuries.

At the southeastern end of Europe, in the eastern Mediterranean and Middle East, local architectural expressions blended with the technology of the Romans, especially in major brick constructions, and with Greek tradition. Byzantine architecture thus combined East and West and predominated for long centuries, longer perhaps than any other style we know of, until its decline in the late nineteenth century. Although this style produced great cities, palaces, and works of art, it will be remembered mainly for its churches - from the largest, like Saint Sophia in Constantinople and the monasteries of Mount Athos, to the smallest, most humble one-room churches spread over many countries in the Balkans, Greece, and

the Middle East.

Special mention should be made of the Muslim-Arabic style, which, born in the Middle East, followed the road to eastern Europe; then through northern Africa and the southern coast of the Mediterranean, it entered Europe via Spain, where it produced some of the best monuments of domestic and landscape architecture.

Architectural evolution, even when studied with European emphasis, is not as simple as it may look from such a division of styles by groups and periods, because styles have seldom been confined to one place, country, or era. In general, architecture has common origins and roots. The basic elements are people, whose needs are more alike than different, and building materials -mud, bricks, stone, and timber- which behave everywhere in very much the same way. Thus, architectural expressions in early human history were similar to one another; we can speak of a universal origin of all architectural styles, based on the needs and creative potential of man. Then local, semi-isolated cultures tended to develop their own architectural expressions as local or national styles. Some styles remained of importance only in certain areas, while others, especially those with more universal characteristics (generally the simplest ones) spread over wider areas, together with the civilizations and cultures to which they belonged. For example, the ancient Greek, Roman, Muslim, and Iberian styles spread to Central and South America, and the hybrid styles of northwestern Europe were brought to North America, Africa, and Asia by the Anglo-Saxons, the French, and the Dutch. As stylistic influences diffused, they became diluted, merged into one another, and tended toward a cosmopolitan mixture.

The present and future of architecture

Today we live in an era of confusion, especially with regard to the human settlements that have become mere heaps of architectural and public works. Our villages are abandoned, and our cities gradually turn into a nightmare, where all sorts of forces, people, machines, buildings, and projects of all kinds struggle for survival and control. Architecture itself, in the original meaning of the word, is losing its importance, as the value and identity of the single building decrease with the passing of time. City inhabitants do not have the opportunity to see buildings as wholes; they know them only from the inside. Public spaces have completely lost their architectural importance. Moreover, the bulldozer tears down buildings that retain historic and aesthetic value -even relatively new buildings- whenever changes in the texture of the city demand.

In this world of change, architecture finds itself in very rapid evolution. In addition to cosmopolitanism and the decline of significant styles, other phenomena have had a great impact upon architecture. Technological innovations

that permitted the construction of buildings of more than the previous limit of five or six floors were made about a century ago and spread rapidly after the invention of the elevator in 1854. In the past hundred years, industrialization and urbanization have given rise to social movements that demanded better housing for the exploding population, especially for workers in overcongested areas. Architecture has not only conquered the third dimension - height; it has also changed its content as attention has turned from the construction of monuments to the provision of services and facilities for people. A rational architecture, fostered by the great revolutionaries of our era, Gropius, Le Corbusier, Mies van der Rohe, and others, has begun to emerge. Architecture entered the second quarter of our century with new forces and has started the third one with enough momentum for the completion of this revolution.

In the meantime, the situation is not simple, and public opinion is still caught between academic and modern, between old and new. Many architects have turned toward a new eclecticism and are searching for a compromise, an easy way out, personal expression, and so on. This is far removed from the real needs of humanity, for architecture, if it is to be true to its great traditions, must cease to be merely the practice of an art form and once again become a technique that serves all the people, in the best possible way.

In this tremendous effort, during this great era of change, concepts are confused. People mix the notion of new with that of progress and invent solutions, even when the traditional ones serve us best, or they tend to defend a local style rather than an international architecture, not because it might have greater values -very often it has- but just for the sake of tradition, which, if it does not serve the people any longer, should be abandoned.

However, today's greatest problem is a quantitative one. The great masses of people on earth live under unbearable conditions. We must face the real issues. The world population, and especially the urban one, is increasing at a rate not matched by architectural creation. At the same time, the full recognition that we need facilities for all has increased the dimensions of the problem. We must find the way in which architecture can catch up with changing economic and social phenomena.

Architects and all those concerned with architecture and city planning fear that a revolution may easily turn into a new academism or lose its momentum and thus stagnate. In many ways the answer lies in a return to the concepts of the past, although the materials, human and technological, are different.

The architect must find a way to bring together the knowledge and experience of the engineering industries,

government, and the arts and blend them with local and international demands. In order to succeed in his new role, the architect can no longer concern himself with single buildings but rather must deal with entire settlements. He must build a habitat, which is a rational entity and should correspond to human dimensions. The architect must resume his traditional role as master builder, coordinator of all aspects of architectural creation, not limiting himself to the designing.

There must be the kind of architectural synthesis that will correspond to the magnitude of expanding human settlements. The architect must participate in industry, government, and centers of research and education where new notions about ways of living, the art of living, construction, and the needs of production are being developed. In this way architectural creation will be influenced at a level with which the architect is not yet acquainted but one with which he must familiarize himself if he is to achieve his purposes. In order to utilize knowledge contributed by the physical and social sciences, he must gain a much broader education than he has at present. An attempt to realize this aim is being made through the study of "ekistics," or the science of human settlements, which proposes to synthesize the economic, social, political, and administrative sciences, technology, and aesthetics into one coherent whole. The new type of human habitat can no longer be cast in the mold of the static city of the past but must be fashioned after the dynamic settlements of the present, which are spreading in all directions around pre-existing cities. Such a dynamically changing frame is bound to come into conflict with static architecture. That is why we need to build our new cities by using a basic cell that will be static but that can be repeated, thus allowing for growth. Such a cell would represent the "human community," whose dimensions would correspond both to actual human needs and to the dimensions of the city of the past. Its area should not exceed 2,000 yards square, and its population should be limited to 50,000 people. Within such communities, architecture and architectural space could retain their values without being impaired by the intrusions introduced into our urban life by fast-moving machines.

Houses and buildings must be seen in a way that allows them to be, simultaneously, individual units serving separate families or functions and also connected elements of a group that has its own internal cohesion. This may mean that a group of houses will have an internal street or square for pedestrians only, so that even if cars approach every single house, there will still be a part of the whole community that brings the residents together, around a common playground, a common garden or nursery, etc. The same principle suggests that buildings be arranged around a common courtyard or around a series of courtyards where there is no access for automobiles. This

would provide a continuum of human space from room to house to courtyard, paths, gardens, and squares, a continuum big enough for the creation of real architectural space, where architecture is not limited to walls and elevations but to the broadest possible conception of space for man.

Thus, the roots of the new architecture are to be found in the entire range of architecture that preceded the nineteenth century. Such an architecture is going to be urban in character and human in content and will utilize a standardized technology. In this way architecture will become more consistent in expression and tend toward a new ecumenical form. The ecumenical qualities of architecture in the past were rooted in common responses to natural conditions; now they are reinforced by the participation of architects in what is gradually coming to be a world society.

The direction of the road toward such solutions is discernible, but the road itself is not yet open. A hard and long effort will be required of all those concerned, an effort to define the subject and a return to the proper concern of architecture: construction. Our only hope is to become good masons, so that we can expect some master masons (architects) to rise from among us. And we must try to abandon the subjective for the sake of the objective approach. If we achieve these aims, it is possible that in a few generations humanity may pass from the completely rational-utilitarian architecture- on which it must now concentrate - to a new humanistic, monumental architecture and thus a new architectural style.

References

[Directly related are the entries CITY; PLANNING, SOCIAL, article on REGIONAL AND URBAN PLANNING; STYLE. See also the articles listed under ART.]

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