

# ARCHITECTURE AND THE PROBLEM OF DESIGN

Dr. Wagih Fawzi Youssef

## Abstract

This essay discusses the problem of design and the challenge for architects to address the dimensions of design in the architecture of a building. The problem of design encompasses many interweaved dimensions at several levels: the level of morality, the level of aesthetics, and the level of pragmatic function. The dimensions of the problem include attention to proximal space, critical perspective of conventional design, communication of truth, and learning how to see. The essay presents functionalism of the modern movement as an example of dealing with the design problematic. The solutions of modern architects such as Le Corbusier and Frank Lloyd Wright are discussed as a beacon for architects undertaking the challenge of design without delimiting its dimensional complexity.

Keywords: *personal space, inner and outer vision, truth, functionalism, beauty*

## Introduction

For too long, physical forms and arrangements based upon outdated views of human activity let designers shape people as well as buildings. Accordingly, the superordinate question about persons as they relate to society's goals has been ignored.

An architect is in a position to accord with the demands of limitless professionals, technicians, and codes of practice. The architect must also make his designs functional according to the required program of the building in question. However, it would be more gain for the client if he tells the designer about his use behavior as a guiding principle. Too often, designers are consulted too late and asked the wrong questions. Yet, it is curious that most of the designers who are concerned with functionalism put much emphasis upon form rather than function. Curiously, the cohesiveness of separate square and rectangular units have become the dominant function with little emphasis on the activities which are taking place in the edifices. This is because architects are trained to look at buildings without people in them. Most colored interiors in magazines show empty rooms with sofas and tables, but no sign of people occupying the space and what is involved is standard practice in architecture. Designers must shift away from the past and the future towards the study buildings of the present and from the standpoint of user behavior.

## Personal Space

Public territories provide people with freedom of access. Nevertheless, every individual must have a personal space. Several studies have shown that introverts remain further away from other people than do extroverts, which is another way of saying that spatial distances as well as social distance are aspects of introversion. Fear of rebuke tends to increase individual distance but approval seeking reduces it. Individual distance is not an

absolute figure but varies with the relationship between the individuals, the distance at which others are placed, and the bodily orientations of the individuals' one to another.

Personal space is an area of space surrounding the person's body to avoid touching another person. There are differences between cultures in the distance that people maintain – English men keep further apart than Frenchmen, Americans, or Japanese. Furniture in the American's home is placed around the edges, but the Japanese family gathers in the middle of the room.

Personal space is affected by population density and territorial behavior. During rush hour, subway riders lower their eyes under conditions where privacy, dignity, and individuality are so reduced to be accepted. The violation of individual distance is the violation of society's expectations. A man in a crowd requires at least 1.00 meter square. A fat man would require twice this amount. People in dense crowds have 0.75 to 0.85 square meters each, while in loose crowds where people move in and out, there is an average of 0.95 square meters per person. There is an upper limit to these boundaries. For instance, conversation is hard to maintain between persons in two chairs placed across the room where the boundaries of personal space are exceeded.

Increasing population density is reflected in buildings that are tall and oriented upward; it is possible to give everyone a flat of his own as well as dominion over the enclosed space but without owning or controlling his domain. We can understand how he can maintain feelings of privacy in non-owned space.

Hospital patients complain that their personal space is violated by nurses, and physicians besides a number of visitors. Area shape has a significant effect on personal space. An irregularly shaped area is difficult for one who needs to have his personal space provided. Compact circular or square areas make personal space easier for having personal space. Avoidance works best in a room with many corners, alcoves, and side areas hidden from view. Retreat usually requires a person to go to some remote and less desirable section where an offensive posture can conceivably hold the best location. A wall location is the best to be at.

### **The fallacy of conventional design**

A designer is rarely criticized for doing what has been done in the past; he may not get much praise for it either, but there may be few cries of indignation or outrage in some cases. There are historical, cultural, economic, and functional reasons why things developed as they did. Studying the nature of nature has always been an important part of any scientific field although one finds it occasionally labeled as a preliminary or pre-experimental activity.

A library, where interaction is discouraged, requires knowledge of how to arrange people to minimize unwanted contact. One possibility is to use the rank order of preferred arrangements by interacting groups as arrangements to be avoided, a socio-fugal space. On this basis, corner seating would be less satisfactory than opposite or distant seating in a socio-fugal setting. To an increasing extent, we find ourselves being arranged by impersonal environments in lecture halls, airports, waiting rooms and lobbies. Many

aspects of the proximate environment have been placed for ease of maintenance and efficient cleaning with little cognizance given to their social functions. These principles will be of most help in institutional settings where the occupants have little control over their surroundings.

### Conventional design of a school

The school is an institution devoted to learning but designed for a particular model of teaching that many educators feel is outmoded. Designers lack adequate criteria of classroom efficiency. The present rectangular room with its straight rows of chairs and wide windows was intended to provide for ventilation, light, quick departure, and a host of other legitimate needs. The typical long narrow shape resulted from a desire to get light across the room. The front of each room was determined by allowing window light to come over the left shoulder. Despite new developments in lighting, acoustics, and structures, most schools are still boxes filled with cubes, each containing a special number of chairs in straight rows!

Movement in and out of classrooms and the school building itself is rigidly controlled. The straight rows tell the student to look ahead and ignore everyone except the teacher; the students are jammed so tightly together that psychological escape, much less physical separation, is impossible. The teacher has more free space than students with the mobility to move about. He writes important messages on the white board with his back to his students. Teacher and children may share the same classroom but they see it differently. From a student's eye level, the world is cluttered, disorganized, and full of people's shoulders, heads, and body movements. His world at ground level is colder than the teacher's world. The teacher has a clear view of what is going on. He sees order, organization, and any deviation from it. The pupil is expected to sit on a hard seat, not to move, or gaze out the window, to listen, to answer questions by raising his hand. He may be permitted to ask questions but, for the most part he is expected to conform. As he grows older, he moves into cubicles with larger chairs and taller students. They congregate in the corridors, outside the locker rooms, or in the stairwells seeking refuge from crowd pressures. These aspects of educational life are derived more from classroom form than from the new math or computer logic.

### Truth

Every design is a social communication; what matters is the emotional intensity with which the essentials have been explored and expressed. Truth is a most important quality in design of any dimension and people tend to recognize it when they see it. An important aspect of great architecture is that the architect has assumed total responsibility for communicating the truth as he perceives it.

This responsibility of the designer is to develop an architect's awareness of the modern world, and by this I mean a total awareness which integrates the outlook of the scientist who is acting creatively. Our world is a world in which more is always being done by less. Less is the question of how a design comes into existence and how it is refined to a certain degree of excellence.

The channel through which the designer's idea flows to become shaped are by tradition and technology. With technology moving slowly, tradition becomes the main guide towards suitable form, and design development tends to go on over generations with individual variations. Egyptian architecture is an outstanding example of the persistence of established forms that support prevailing belief in an eternally static situation.

### **Learning how to see**

Selecting appropriate shapes and forms can be derived from the surrounding world but this varies enormously with individuals. Design is the result of a personal totality of experience, and is expressed as vision focused on a problem. This problem needs enlargement of vision: outer vision and inner vision. To put the question another way, how can we learn to see the world? It is the world we are living in, and we look at it all the time. But what we see is not the world of the early 21st Century, but a series of outdated inherited buildings of earlier periods. The world over which we have no mastery at all is a world we scarcely see at all. Our vision is a world we scarcely see at all. Our vision is cluttered with retained images and it is too narrow. Awareness of the shapes and forms of our time requires an extraordinary intellectual and emotional effort. Enlargement of vision is one of the most difficult assignments an individual can assume and the revision of habitual modes of thinking is no easier. It is only the genius who can ever see past the bare outline of the age in which he lives. In architecture specifically, we can build only up to the limits of our vision. One cannot design a building when he is unable to grasp it in his thinking and feeling.

The modern way of seeing things starts with the assumption of a dynamic rather than static situation, and it proceeds from this assumption to a growing understanding that relationships can take us closer to the truth about things than the things themselves. What really makes today's modern building is not its technique but the form of the architect's response to the contemporary world. There can be modern buildings which employ the resources of an advanced technology, just as there may be sculpture, but the vision of the architect and the extent to which he has perceived the shape of the world today is the crucial factor. In architecture it is obvious that transparency has become a functional and aesthetic factor; where building is becoming less of a traditional art and more an integrated sheltered network for communication, illumination, air conditioning, and that strength in tension which is constantly increasing its advantage over strength in compression.

### **Functionalism**

Architects nowadays are talking of functional approach in design, and there is a great deal of interest in the elimination of decorative detail. All of these characteristics can be observed in our buildings and in our furniture. Because of this general orientation, one finds a tendency to ignore values emphasized in other arts. And one hears bold assertions that tend to bear out this assumption. For example "it looks well because it works".

If one examines the work of the leading architects of our time, one will find a preoccupation with functional design without preoccupation for aesthetic or moral values. The influence of the painter Mondrian, for example, is now so well-known as to be a

commonplace. The work of Mies van der Rohe is only one of many examples that might be cited to show cross-fertilization between the arts. The work of Frank Lloyd Wright with its tremendous concentration on organic unity demonstrates this same point although the resources happen to be different. In the work of Wright also, there is a moral element which may or may not be aesthetically justified. Wright's work has always said, in effect, not only, "this is the way your building ought to look" but also "this is the way you should live in a building". Similarly in the projects of Le Corbusier, despite the over-emphasis given to his "machine for living" propaganda there is an enormous concern for what he considers aesthetic values and even greater disposition to preach on how people should live whether in individual houses, apartments or cities.

### Villa Savoye

In present day architecture one finds the functional considerations are put aside in favor of aesthetic ones. Making buildings lighter has become one of the most widespread and important concepts underlying our entire civilization. A look of lightness becomes associated with the very idea of beauty. As an example of residential architecture is the Villa Savoye by the Swiss who had adopted the name of Le Corbusier instead of his name that was Charles Edward Jeannerette-Gris. Whenever one departs from the normal, there are usually two reasons: accident or novel response to existing circumstances.

Le Corbusier's existing circumstances were the known techniques for building, and the living requirements of a family in the twentieth century. His response was that of novelty of approach that is still being explored. This one dwelling, Villa Savoye, is a store-house of ideas still as provocative as ever, still to be considered as the core of today's best architectural thinking. That building that bore any little resemblance to anything identifiable as a house at that time. The Villa Savoye became the center of professional controversies that raged from Paris to Tokyo and, even today it has little in common with the average Egyptian house in appearance, and conception, but one of the remarkable things about the Villa Savoy is the consistency with which a bold concept of living has been expressed throughout.

If there are any of the usual architect's compromises in this house, they are indeed hard to find. The arrangement of the house, compared to more familiar patterns, make none whatsoever. None of the usual first floor rooms are on the first floor. There is a garage, to be sure, but the rest of the first floor is taken up by maid's rooms, a chauffeur's apartment and a laundry. There is also a large entrance hall, and leading from it, a circular stairway. But this stairway is inconspicuous and secondary; the main stairway is a ramp! Le Corbusier saw the house as an industrial product that should be industrially made, and would be, if people were more intelligent. Le Corbusier said, "I built the house in such a way that no one could put too much furniture in it" ... "To take care of any lack of taste on the part of the owners".

The main lesson of the Villa Savoye lies in its suggestion that architecture can give freedom to living and that function can be described in psychological as well as physical terms and that the expression of fantasy is legitimate.

## Taliesen West

Frank Lloyd Wright, when he began building Taliesin, wrote that he wanted to build a natural house. Taliesin is built into a hill. In summer it is all but hidden in the trees. Wright's work is a perfect example of a great and creative personality who rejects the values of his time and sets his own standards. Later on his work is copied, bought by museums, and put in history books. Taliesin built it 1913, has been copied all over the world, so that today it looks almost familiar.

Function here is not any more an abstract unspecified concept, neither is it chained to visually comprehensible patterns. The form of building develops slowly out of the defined needs that it has to satisfy, using the resources available and confronting the limits of the situation within which we have to create out a product. The product is no longer a building; it is an interacting pattern of building and activities; a complex of physical fabric and its use. In addition, a design product is now supposed to be measured and evaluated objectively in respect to other parallel alternative or rival design products and solutions in relation to consciously chosen objectives to obtain a rational solution to an architectural problem, and that non-conscious action are no longer adequate. The transformation of non-conscious design into conscious design represents a fatal loss of innocence.

The efforts of functionalists to impose discipline were confronted by the difficulty of being understood by architects who thought design as an inexplicable mystery. It is difficult to be understood that design does not necessarily mean a pattern drawn on paper nor does it involve some strange originality, but should be just the appropriate shaping and finish for the thing required. The attacks on ornament from this point of view are not only attacks in its inexplicable role as signifier of a forgotten language, a means of contact of a vanished society, or its wastefulness, the wrong type of hoarding, but also on its playful nature.

## **Conclusion: structural efficiency, beauty and ornament**

Structural efficiency was one of the directions the rationalization of architecture took as anticipated in the Vitruvian trichotomy by the criteria of "firmitas" and "utilitas". Structural efficiency was the first central principle to be defined and promoted. The principle of functional efficiency cannot be measured with ease because it was difficult to grasp and record, because it had to do with processes that take place in time, mostly through human factors.

Obviously, ornament has no place in such a system. Functionalists shared the same distaste for ornaments as the theoreticians of structural efficiency. There are only a few exceptions permitted. Ornament can be accepted under the condition that it is for the honoring of useful structures. Otherwise, useless decoration is considered immoral since it does not contribute to human welfare. Consequently, the laws of beauty, which are the laws of stability, correspond to the laws of morality. The impressions of beauty are neither sensual nor intellectual but moral.

Both the structural and the functional approach preached efficiency through the rationalization of the design process, but both still take terms of harmony or beauty as the

actual objective of the edifice. The visual identification of harmony or beauty in a building was taken as proof that the rational requirements of efficiency were respected in its design. Thus, beauty depends on the expression of the precise proportions of the materials which are put in use in a building or a fabric, and ornamentation is no less foreign to virtue, which is the strength and vigor of the soul.