Light - Space - Architecture

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The necessary division of labour among men has led to the fragmentation of knowledge. The fragmentation of knowledge has in turn produced specialisation formalised by educational methods. Specialisation is not, as can be seen in our time, without consequences. Contemporary architecture has been transformed by lighting and the availability of glass from a STRUCTURE DOMINATED MODE of building, into what is almost its opposite. Given the predominance of new building materials, architecture as it has been known is rapidly loosing ground. This change places new demands on the architect who in the past was supported by empirical knowledge derived from the wisdom of the ages.

Architectural lighting on the other hand is based on a newer, more accessible form of wisdom. Its principles are based on scientific reasoning and are not accessible by conventional methods.

The problem is an acute one for the architect. How should he evaluate the type and the quantity of lighting which is required in a given situation? How should he organise information about lighting which is available to him in a highly formalised form. The answer is not a simple one! One has to make use of the novel methods if one is to understand their application.

In a more advanced age light and space will again be considered simultaneously as one. Using such a frame of reference space will be defined on two interdependent levels. As a physical enclosure and in terms of illumination. Space as a physical concept is an arrangement of concrete, brick or glass.

A new definition of the Architects' function

The elements of this physical space, its boundaries function also as SECONDARY SOURCES of illumination. Participating in an active manner in the exchange of energy according to known physical laws.

Such an explicit definition of space leads to a new definition of the architect's function, who has to satisfy structural as well as illumination criteria. This definition is not obtained from the conventional concept of "design", where the form criteria dominate. Walter Gropius coined the concept "design as a science". This redefinition of the concept "design" may have been in his mind. Implying that design can be "informed decision making". That in part, it can be based on explicit elements of knowledge.

Bruno Zevi wrote in his book *Architecture as Space*: ... Newspapers devote whole columns to a new book by Koestler or an exhibition of Morandi, but none to the construction of a new building. This is good criticism well directed. It is purposeful to the point. It was addressed to society several decades ago, it was addressed to society's institutions, which include schools of architecture and newspapers. Newspapers will undervalue common sense and common purpose aspects of human existence as long as society approves. There may be a chance for change somewhere in the wind, but one sees little confidence that is displayed in our schools of architecture. Students of art, and of architecture, represent through their work human experience which can be shared by all. The tendency of students of art and of architecture to react against the environment in which they live, is apparently an expression of the position in society to which they have been assigned by other elements of society, where empirical knowledge and conventional human wisdom is undervalued. This is true for certain highly organised elements of society represented by the sciences, technology and management. Still human knowledge is essentially empirical. There is no absolute wisdom because it has to be re-acquired by every new generation, and passed on to the next generation. That is *all* our knowledge—which ought to be regarded as something of value beyond "definitions".

The social role of Art and Technology

Less than a generation ago the scene seemed to be quite different. The engineer in England, especially the Lighting Engineer was prepared to consider and to reconsider his position in the workings of society in relation to the architect. The discussions which have been carried on are well documented on this score in the Transactions of the Illuminating Engineering Society of Great Britain. It makes for very instructive reading indeed. These discussions on the social role of art and technology (one could put it thus simply) began earnestly right after the war. It became more intense during the fifties and led to the reform of the programme offered by English schools of architecture during the late fifties and early sixties. There is very scant evidence that anything happened along these lines on the continent. The prime concern was the development of material technology per se. While on the North American continent, the student of architecture led his well sheltered life in the heart of tradition. Dreaming the last dreams of the fading Beaux Arts tradition. Then came the explosive sixties paradox and puzzling to all. Everybody, especially educators seemed to be surprised and even offended. One may ask, can educational patterns which have been maintained at the School of Architecture at Yale University in the past, be held also responsible for the setting afire of the new faculty building during this time? If there is no direct link to be established, there may be a connection between the problems of society and architecture, through the architecture which has been generated by students educated at Yale. Perhaps mainly due to the fact that the students educated in an unreal and detached environment had lost touch with the real world made by science and engineering and technology. A world from which the architect as well as the artist tends to absent himself habitually in order to react against it.

As important as good ventilation or acoustics

Derek Phillips, an English architect, said in analysing the situation during the 1950s "... Lighting Engineers employed by the lighting industry have virtually no design (visual) training ... and are limited in their approach." Speaking of the architect, he stated that, "... it seems to me essential for the architect to have a knowledge of the basic principles of lighting, surely this is as important as good ventilation or acoustics in a building.")

David Medd another English architect, reflecting on the fact that architects are the product, of using natural light as the primary illuminant in buildings observed: "I am one of the many architects who have passed a training with virtually no reference to DAY—or ARTIFICIAL LIGHTING. We never thought of lighting as a positive medium of design."

These statements are in agreement with the fact that in 1956, among 18 schools of architecture in England, only two offered any instruction in lighting. Although artificial methods of illumination had been fully established in modern building practice. Gropius said many years ago: "We have to study man's biological way of life, his way of seeing, his perception of distance in order to grasp what scale will fit him!" This statement contains a lot of truth. For one, in even the most enlightened of ages, there are very few who develop a perfectly balanced mechanism of perception. The rest, as always, will be led by those who are quite certain that they are not blind. The English educational system made note of this fact and produced courses of instruction under the title of "What is man". This topic was to become well known and misunderstood on other continents. Indeed man does not have to ask "What is man"? Or does he! Does he fully or even nearly understand himself and his next fellow? Artists believe they