ARCHITECTURE AND EXPERIMENT

By

B. BALOGH

Department of Drawing and Composition, Technical University, Budapest

Received: March 20, 1979

Presented by Prof. I. BALOGH

Man is endowed since earliest times by a desire of recognizance. A typical endeavour of our age is to find hidden springs behind illusion. What are these springs in architecture? How they act? How to be reckoned with in design?

The architect cuts out parts from space and by further dividing them, forms inner spaces. The building can be walked round, it divides the outer space; both its exterior and interior are perceptible as a visual space sensation, a row of consecutive frames when approximated, hence also a time sensation.

At the same time the architect creates human environment related to nature; this built environment has the function to meet social, human needs. Building activity relies on economical foundations.

This is its essential doubleness: by purport a real, by form a visual phenomenon. It can be acquainted with by approaching it from two distinct aspects. The architect thinks material and structure, ponders economical factors, at the same time he moulds the building, with its concomitant aesthetic aspects. The final product of designing is the erected building, its tridimensionality is conditioned by spatial thinking.

Thus, requirements for architecture — involving interactions between factors, their complex synthesis — are essentially met by visual spatial thinking.

Plane and arched architectural surfaces — visible parts of walls or roof — are essential by transmitting the form.

The designing architect draws upon his wealth of knowledge (material, structural, technological, sociological etc.). This complex knowledge matter hampers to make a fresh look at a problem, just as in painting and sculpture.

Kenzo Tange told a sanctuary to exist in Japan that is from time to time demolished and reconstructed according to the changed taste. This is how the architect ought to deliberate himself from prejudice in each new problem and approach it with a fresh mind, from new bases. Namely no radical change of mind can be expected if not by beginning from the roots.

Space and proportion sense are bases of visual culture. Anthropocentricity of architecture makes exact and safe knowledge of human proportions self-intended.

Remind, however, that the quoted knowledge (subjective knowledge, space and proportion sense, human scale) has a double meaning: by purport, a real structural material, but by appearance, an abstract formal phenomenon.

This doubleness is worth of interest by being present in architectural education. Recently, little stress is laid on the tracing and visual education of architects. This phenomenon is concomitant to the industrialization of architecture, stressing its technicity and neglecting its art side, making the architect — in final account — a highly qualified technician. Aspects of forming human environment get eclipsed.

In spite of his changed situation, the designing architect is not only a co-ordinator of economical, industrial, technological, sociographical etc. factors, but also a researcher of the resultant of their entity.

Several, other than pecuniary, factors decisively affect the design such as sensory world of man, spatial vision etc.

The *Bauhaus* masters were the first to recognize the need of peculiar studies for architects.

Indispensable faculties are topped by creativity, to be considered below.

An architect creating an individual, new-type work rather than following a routine needs a lot of abilities such as creativity, comprehensiveness, intelligence, problem-solving faculty, associativity and intuition.

Because of the multiplicity of architecture, it would be erroneous to delimit faculties, even it should be stressed that all components of creativity are needed.

Much stress is laid on "spatial vision", but what it is in fact?

For a while it had been realized that the depth sensation was due to the stereoscopic effect due to the overlapping of both visual fields. GIBSON refuted witful this concept in "The Perception of the Visual World".

To now, depth sensing of the visible world has been believed to rely exclusively on the stereoscopic effect of binocular vision. Actually, the depth sensation seems to be simply a dimension of visual experience.

By analysing the depth sensing systems of man moving in space, *Gibson* could demonstrate thirteen of them, rather than one or two.

Space sensation differs in different geographical areas. In eastern art, the viewpoint is shifted and the scenery is considered as fixed. In western art, the opposite prevails. Thus, the two cultures differently sense the space itself. A Westerner perceives objects but not the space separating them. (Just as our students do.) On the contrary, in Japan the space is not only sensed but respected and called *today*, i. e. an interval. Our vision is not passive but active, an interaction between man and environment shared by both.

The architectural creation process raises problems decided by the sensory world of man, the complex synthesis of spaces, feelings and activities.

A phenomenon featured by cities throughout the world is of special

interest, namely that the typical order of magnitude of four storeys for buildings in the 19th century has recently abruptly grown, the more startling if the appearance of man on Earth is taken into consideration.

All these are too complicated not to recognize the impossibility of designing a building perfectly fitting its environment and at the same time meeting its purpose and functional requirements, — and though, one has to design.

It is a contradiction that society expects a perfect plan — and its end product, the perfect building — often missed by the experiment.

For instance, Japanese opened a competition permitting this experiment without its economical consequences, such as "House on the Crossroads" in 1976. Several competitors attributed an abstract meaning to crossroads (between sky and earth, fancy and truth, light and shadow, past and present, etc.) adopted in their competition.

Some ideas are hoped to arise, likely to prove that the research of visual phenomena, forms, and the spatial experiments are no luxury, not more than are fundamental research works (though lacking direct benefits). With the advent of a technician approach to architecture, considered itself a science, it cannot exist without experiments, either technological or such embracing human aspects.

These considerations started from an assumed development of a novel human consciousness likely to render architecture conform to futur requirements, in addition to meeting economic restraints of actual projects.

The solution resides in the consciousness *in statu nascendi*, the conception of man opening fresh eyes on reality.

Summary

Architecture means creation of a human environment related to nature meeting social, human needs and at the same time being form, visual phenomenon.

Built environment is tridimensional, its design requires spatial phantasy, decisively affected by several, non-pecuniary factors such as the sensory world, the spatial sight etc.

These human aspects seem to be rejected to the background against the predominance of technician aspects raising a contradiction between social expectations of a perfect building and the outcome of the "experiment".

Ideatic competitions are tools for realizing such human-tinted spatial experiments without economic shortcomings.

References

GIBSON, J.: The Perception of the Visual World. Boston, Houghton Mifflin. 1950.

GRÓH, J.: Visual Studies in the Training of Architects. Periodica Polytechnica, Arch. Vol. 20. No. 1.

HALL, T.: The Hidden Dimension. Anchor books, Doubleday, New York, 1966.

HEISENBERG, W.: Physics and beyond. Encounters and Conversations. Harper and Row Publishers, The Japan Architect. International Edition of Shinkenchiku. December 1976.

Balázs BALOGH, H-1521, Budapest