

The Role of Spatial Experience Anticipation in Architectural Education and Urban Design

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Abstract

Space and its matter substance are the main subjects of urban design, in which an architect, by setting in order the functional-operating relationships and the matter-dimensional manifestations of the formed structure, operates with the aim to achieve general harmony, functional and expressive complexity. Demanding a process, which coordinates relationships in all space dimensions, requires flexible openness of the work documentation during the conception period. Experience proved that such requirements are satisfactorily accomplished by the method of space-modeling, where the creative process happens on the working model.

Introduction

At present, when reevaluation of relationship between the human society and material values of environment takes place, a man becomes more deeply interested in spiritual dimensions of knowledge and perceives cultural aspects of forming of the material environment more sensitively. He evaluates all manifestations of the matter in the environment more intensively by quality aspects. The basic manifestation of a human settlement is a town spatial structure, which completes the manifold picture of a city by varied capacity and by a continually developed form. Variety of unrepeatable signs as spatial manifestations of town structure elements and their inner balance reflects the quality of the lifestyle and culture of an individual or a town society. According to Kevin Lynch individuality of inhabitants determines the identity of the surroundings in such a way, to make it satisfy the variety of needs and requirements of its inhabitants. This is the main aspect to be regarded by architects and town-planners in the creative process: to complete and transform the structure of the environment continuously and to give it its own identity [1]. The complexity of architectonic and urban design is defined by a whole range of processes, which participate in the value transposition route of the work from an architectonic idea and its elaboration towards a man as a user of the product, its perceiver and evaluator. As an introduction the subject of our reflection requires choosing and recapitulating typical aspects mainly of those processes, which are relevant with respect to architectural education and the aims of urban design.

Perception, Identification and Interaction of Subject in Space

A human being perceives his surroundings by his individual senses - receptors. The mediated information reflects a notion of existence in the space to his mind. The sensory identification of the subject of the perceiver with the real surroundings takes place. Identification in the space is mediated by senses based on double-canal information transfer: the ears - double-canal hearing of the space and the eyes - binocular viewing of the space. The double-canal identification causes the basic experience of 3D real space in the psychical system of a man.

From the space identification point of view, the most important for the process of perception are visual perceptions of iconic manifestations of the spatial structure (nearly 40 % of all sensory information). All techniques of creative and architectonic space representation are based on this fact. Full identification of the perceiving subject and his interaction in dimensions of spatial parameters takes place only within synchronic time dimension, i.e. during a movement. The degree of freedom of the subject, from a viewpoint of choosing the standpoint of perception or movement and alternation of the views, is considered to be, in a certain sense, an interaction movement, a general sequence dynamics. While perceiving a man does not evaluate only objective manifestations of the space, but judges its content and quality from a point of view of previous experience and mainly from a viewpoint of demands of his own activities and his own usage [2].

Model Simulation in Architectural Education

Space and its matter substance are the main subjects of urban design, in which an architect, by setting in order the functional-operating relationships and the matter-dimensional manifestations of the formed structure, operates with aim to achieve general harmony, functional and expressive complexity. Demanding processes, which coordinate relationships in all space dimensions, requires flexible openness of the work documentation during the conception period. Experience proved that such requirements are satisfactorily accomplished by the method of space-modeling, where the creative process happens on the working model.

Such a process is of didactic importance in education of architects, since it enables continual checking of the space topic and conception. Immediate model expression gives rise to creation of varied situations, which further develop new topics. In such a way the quality of the result improves causally [3].

The reality, though diminished in a simplified form, is depicted by working by accessible methods and means on the model. The model simulation of the structure, within which the author is spontaneously aware of the inner spatial aspects of the surroundings formed by the matter, takes place. Through imagination the author performs both the simplified form of the spatial perception anticipation and individual interaction in the designed environment. Primary perception relationship, which accompanies the author and the work during designing with the help of the space modeling, is - despite this - oriented mainly on the object of the modeling, i.e. on the structure [4]. The user, for whom the urban-architectonic solution is designed after the realization, is, however, interested chiefly in the quality of the inner spatial content, its utility and expression value, identity, etc., which can support his identification and acceptance in a positive sense.

Spatial Experience Anticipation

To direct and secure the information communication towards the draft - realization - the user with respect to pre-realization searching and consideration of the conception, necessarily has to cross the time disproportion between the draft and the reality. Today there are optical and electronic media available for architects, which help to secure the demands of both the designer and the evaluator and user in this sense. We are acquainted with 3D computer simulations resp. animations of virtual spaces, but also the method of endoscopic sensory simulation, which is able to achieve the imagination of spatial experience on the monitor in advance, i.e. in an anticipated way. By adapted periscope the endoscopic method develops the method of spatial modeling in new media dimension and enriches it towards creativeness by enabling the simulated space to be perceived on a traditional artificial model in the natural horizon of a man.

To secure the anticipation by visual simulation of spatial experience on the monitor in a trustworthy manner with respect to "real reality", according to relevant aspects of the conception, the visual simulation must respect the rules of sensory perception of a man in real environment. From procedure point of view of perception the most significant fact for the psyche is the sequence dynamics of the subject and the movement of the perceiver in the space. This means that in the mind of the subject of the perceiver the most emotionally reflected is the dynamic spatial experience.

Despite the known disadvantages and technical circumstances of model building [2] the method of spatial endoscopy proved itself in didactics, mainly in the approval phase of the aims of urban composition and shaping of an urban space, especially because it enables to carry out the sequence research and

evaluation of the simulated space on the working model by interactive means, directly in the studio or in laboratory conditions with relatively low expenses, and with the possibility of immediate correction and subsequent evaluation of the effect. Similarly, its audiovisually elaborated media outputs may simultaneously complete the identical model presentation within evaluating and approving continuations in professional gremiums or in making the results of urban and architectonic solution popular in the layman public.

References

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