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THE SYSTEMATIC APPROACH IN THE SOLUTION OF MODERN PROBLEMS OF ARCHITECTURE DEVELOPMENT

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Nowadays, the method of "systematic approach" is the most efficient in the solution of challenging tasks, incidental to the modern stage of development of planning and designing practice.

This approach is in some way universal methodology for investigation of urban development, architectural, esthetic, and artistic problems, etc. Today, there is no thought wave as for concrete content of "systematic approach". Furthermore, there are no terminological definitions of terms (i.e., the terms "theory of systems", "system analyses", "systematic investigation", "systematic methods" are widely used), but certainly, it is general principle, which requires investigation of objects and processes in their integrity.

The terms "theory of systems" and "systematic investigation" are clearly defined since their appearance. So, in the works of L. von Bertalanffy, the last stresses that the "theory of systems" investigates the principles related to the systems in general. As for "systematic investigation", it should be understood that it means "the complex of scientific and technical problems, tasks and developments, which having all different specificity are alike in dealing with the systems of one or other kind and nature. On the basis of this method any object of science or practice could be considered as the system".

The systematic approach to the solution of problems in architecture is set as top priority deductive analysis of problem – from the most complicated urban development systems to simple architectural tasks. So, it means the investigation from the functioning of the system in general to investigation its simple parts. The movement from up to down during the analysis of architectural systems is reasonable not because of great influence of human upon the nature, but because of the fact that decisions made, i.e., on the level of city system, are more responsible and important for all lower architectural sub-systems. That is why, taking up and investigating of architectural-territorial systems reasonably should be started from the top level. It is also necessary to take into account the fact that architectural-territorial systems are the component elements of a more complicated ecological system.

The human ecological systems could be divided into natural, artificial and mixed types. The pure artificial ecosystems nowadays are developed only in cases when human cannot exist in natural environment (in space, under water, etc.). The natural ecosystems are impossible on the modern stage of mankind evolution. That is why all human ecological systems, which are in the area of architectural investigations and designing, including trading services system, are mixed systems, which contain both artificial and natural elements.

Nature as environment of society life, impacts on it with its factors, making necessary the creation of artificial environment, which provides the conditions of protection and consumption of this objective, energy and information impact. The population impacts on nature and changes it only using "another nature". During interaction with the nature, the society is in functional unity with the objects of artificial (architectural) environment – with premises, buildings, urban areas, machineries, communications, etc. Undoubtedly, the human influences upon nature also directly, but these contacts are only of "passive" character and specific for biological systems. That is why only direct link "nature-population" exists.

In interaction of demoecosystem with the nature, it is the human who establish tactics and strategy, being in this system as motivator, means that here the main criteria are different from those generally accepted technical-economic criteria.

In the process of scientific analysis depending on the investigation task set, the architectural objects could be divided into components by two characteristics – functional and areal. As a rule, one of the above-mentioned characteristics is not enough to solve the task that is why in the majority of cases appears the necessity to create two interrelated models. The systematic approach requires first of all, the functional analysis of the object – its dividing into qualitatively different from the functional point of view elements.

V.A. Lefebvre investigating the problems of the objects as system, wrote the following: "when we look at human as functional element of social organism, then the human only due to its external relations is in integral unity with the elements of technics, household, sign system and finally, with its activity. And here, the special principles for dividing, not areal and time, but functional, are necessary."

So, the components of architectural object should reflect necessary from the functional point of view (system creating) kinds of activity, which characterize him as integral system. On the basis of this principle, all

kinds of activity, taking place in architectural system, can be conditionally divided into two groups: productive and communicative.

The first group includes the processes, which reflect the purpose of one or another system. The communication activity serves for material, energy and information transfer between all without any exception, components of the first group. Certainly, each component of these two groups of activity can in its turn be divided into its specific components. For example, the material element includes reproduction of population, creation of artificial environment (machinery, premises, buildings, etc.); the energy element can be represented as complex of activities for energy production and energy raw materials for machinery, foodstuffs for people; information element includes scientific, leading activity, etc.

Once again it is necessary to stress on conditionality of this division, which follows from necessity of accuracy of functional analysis: so, for example, for information activity the system needs materials and energy, which provide production, storing, transporting of the information of this type at the distance set, etc.

The division of architectural objects into functional components is qualitatively different from its areal division, where the population is separated as areal localized object and is a subject of structural analysis in the same way as artificial and natural environment. Certainly, during designing and forecasting of development of different levels integrity architectural systems, the more detailed division of system components is possible. And in this case it is necessary to follow strictly the correspondence of this or another area component to the level of hierarchy of the following system or subsystem.

The principle of interrelations of different levels architectural systems in that the result of formation of the system of the following level determines the area for possible decisions for the system of lower level. The detailed analysis can retrace, split any object into simple components, but it does not mean that on the basis of empirical knowledge after this analysis it is possible to create the integral structure needed, which is the most viable from the point of view of society vital function.

The general, formal definition of object and subject of investigation is insufficient for determination of structure and level of architectural system organization. It is necessary to determine clearly the borders of the system by the way of separation of main system creating elements and to disregard elements and relations which are unessential for decision making. The authenticity of scientific results depends upon the correctness of execution of this stage.

If refer to existing practice of determination of borders of architectural objects of different levels of complicity, then in number of cases it will be obvious that the optimization of objects which have no functional integrity, took place. So, for instance, it is difficult to make conclusions as for volume and area organization and economic practicability of the shop without taking into account the information on demography, level of welfare of population, etc.; it is impossible to tell about the practicability of shopping center not knowing the level of integrity and self-sufficiency of this object from the functional point of view. On some stages of urban development there were some attempts to build "optimum" city; with expansion and development of knowledge about mechanism of cities development it was stated that on modern stage of urbanization city is relatively integral object in functional sense, and its growth and functioning depend on character of the system of populated areas, the organic part of which it is. So, the background of formation and development of city are determined on higher level of architectural hierarchy.