

Philosophy of Scientific Knowledge and the Architectural Science

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Abstract: This article presents an attempt to analyze the philosophy of the formation of architecture as a scientific sphere on the basis of an interdisciplinary approach, taking into account the accumulated changes in historical time and space, as well as in the context of philosophical and ideological transformations.

Keywords: philosophy of science, architectural science, interdisciplinary approach, philosophical problems and foundations of architecture

Modern philosophy of science is presented as a field of interdisciplinary knowledge and one of the applied philosophical disciplines, the knowledge of which is necessary in our time not only for philosophers, but also for researchers in a particular practical field, especially at the initial stages of scientific activity. The need to master the philosophy of science as a general structural model makes it possible to adapt more successfully to architectural science and correctly assess its capabilities.

Before identifying and specifically defining the philosophical problems and foundations of architecture, it is necessary to articulate the basic categorical and conceptual arsenal of the history and philosophy of science as such and to define the main range of theoretical (epistemological) and practical (applied) issues of modern philosophical knowledge. However, it should be noted that epistemological reductionism narrowly appears to be a phraseological interpretation. In this sense, the modern philosophy of science is not reduced only to epistemology, philosophical analysis of the structure of scientific knowledge and its development, as it was throughout its previous history, starting with ancient philosophy. The diversity of such structural aspects of the philosophy of science as sociology and cultural studies, axiology, praxiology and anthropology, testifies to

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their internal interconnectedness and correlation. The constitution of a rational worldview is based on a comparison of philosophical and specifically scientific ontological schemes, as well as taking into account other ways of mastering reality by a person: everyday cognition, artistic and aesthetic culture, everyday life activities, moral rules, legal norms, religious imperatives, etc.

One of the basic principles of the philosophy of science is to understand the ideological components of the scientific industry and its contribution to the overall picture of the world. Despite the fact that modern science is focused primarily on the practical application and empirical substantiation of theories, models and hypotheses, it cannot do without evaluating the ideological content of the relevant concepts. However, the discussion of this issue should take place not in the form of philosophy imposing the current view of the world as a kind of final and unconditional truth, but in the form of a respectful dialogue and a common interest in determining the real ideological content of science.

Another philosophical principle is aimed at the empirical study of real science in its history and current state. In order to understand and comprehend architectural science as a special kind of objective reality, it is necessary to study its real structure and patterns in the historical perspective of its formation. However, this does not mean that philosophy should be engaged in the empirical study of scientific problems, in our case, architectural ones. This is not a philosophical, but specifically a scientific problem solved by a whole complex of private sciences, such as the history of science, psychology, sociology, statistics, economics, etc. In relation to architecture, the theory and history of architectural creative and scientific activity are of the most important importance. Modern philosophy, when constructing general models of the structure and development of science, is obliged to rely on data from a variety of specific scientific disciplines. To generalize, synthesize and interpret scientific knowledge with the help of philosophical categorical means – this is the task of the philosophy of science.

If we apply this thesis to the philosophy of architecture, then it can be defined as an applied discipline, an interdisciplinary-complex and philosophical-scientific base that uses methodological resources not only of ontological reflection, but also empirical, historical and logical methods in specific research areas of architectural activity. The empirical basis of the modern philosophy of architectural science is primarily the historical and theoretical material of architecture, through

the prism of which the general philosophical problems are highlighted, reflecting the meaningful and functional unity of philosophy and architecture. The philosophy of architectural science is an applied philosophy reflecting the general scientific structure of architectural activity, historical patterns of its development, philosophical foundations and philosophical problems.

The philosophical foundations of science, by their logical structure, represent certain rules of conformity of a mixed type, which include both concrete scientific concepts of a fundamental theory and certain philosophical categories. In the field of architectural science, philosophical foundations and problems serve as a philosophical interpretation of its content and fundamental scientific and theoretical research methods. At the same time, the ideological significance and methodological features of architecture are revealed, which in the process of historical development are saturated with new social and creative meanings.

The typology of the philosophical foundations of architectural science, as well as other special scientific branches, is very diverse. The scientific-theoretical, practical and philosophical-ideological foundation of architectural knowledge consists of ontological, epistemological, methodological, logical, social, cultural-applied, value and other significant structures. Their specificity is determined by the concrete scientific and philosophical content of architecture. However, it should be noted that there are no identical and uniform philosophical foundations not only for science as a whole, but also for individual scientific disciplines. The meaning and interpretation of philosophical foundations change with the development of science, often determined not only by the content of scientific knowledge, but, to a large extent, by the choice of scientists, their trust in a particular philosophical concept or direction. In this regard, the philosophical foundations of architectural science ensure the connection of the architect-creator with the worldview and culture of his time, inscribing scientific achievements into the total amount of knowledge accumulated by mankind. The philosophical problem of science is also a point of productive interaction between philosophical and concrete scientific knowledge. Structurally, it is a synthesis of philosophical and concrete scientific concepts. There is, potentially, unlimited number of philosophical problems of various sciences. Effective solution of philosophical problems of science requires professional knowledge from researchers of both the relevant field of concrete scientific

knowledge and professional knowledge of philosophy, its history and categorical apparatus.

The philosophical problems of modern architectural science undoubtedly include the problems of hermeneutical interpretation of the architectural environment as morphogenesis of the second nature, analytical study of the correlation of cognitive and creative forms of thinking and activity in architecture, as well as the problem of the subject and methodological originality of architectural thinking.

The continuity of philosophy and architectural activity is primarily expressed in the understanding of design as a creative process that requires not only laborious physical efforts, but, to a greater extent, spiritual and mental. It is impossible to create something valuable and worthy without thinking, without reasoning, without philosophizing ... An architect always strives for the meaningfulness of his decisions on the basis of a certain philosophical paradigm that allows to take into account the vital needs and needs of a person as much as possible and orients the creative efforts of the architect to achieve good goals, reflecting the well-being of society. For some, architecture is “frozen” music (Schelling 2020) or “numb”/“petrified” music (Goethe 1885) or, like St. Peter’s Basilica in Vatican City, it resembles “continuous frozen music” (Germaine de Staël 2014). The Roman architectural theorist Vitruvius defined the basic architectural principles in the first century BC: strength, usefulness and beauty. In relation to the professional qualifications of an architect, Vitruvius imposed rather strict requirements: “He must be a competent person, a skilled draughtsman, study geometry, know history comprehensively, listen carefully to philosophers, be familiar with music, have an understanding of medicine, know the decisions of lawyers and have information in astronomy and celestial laws... I do not think that anyone could suddenly declare himself an architect, except for someone who, from a young age, gradually ascended from one branch of education to another and, having absorbed the knowledge of many sciences and arts, he reached the very heights of architecture” (Vitruvius 2019, 16-17).

The development of philosophy and architecture contains a pronounced commonality of historical principles that bring these two seemingly diametrically opposed spheres of the development of reality: spiritual and applied. First of all, the sources of the development of the architectural phenomenon and philosophical knowledge have deep roots going back to ancient historical times. A

vivid example of this is the creative flourishing of architecture and the intellectual rise of philosophical knowledge, which were observed in the period of classical antiquity, when for the first time their visual and strong connections appeared in terms of anthropomorphic and cosmological worldview and worldview of being - one of the main philosophical categories. Scientific interpretations of being in ontological and architectural-creative terms are, to a certain extent, consonant, since the first contains the eternal question of the general understanding and structure of the world as such, and the second fixes the ways of creating and organizing the world as a building being. The description of the world in philosophical and architectural languages is different in form, but it is brought together in meaningful sense. Philosophical science is aimed primarily at the study of worldview structures, the perception of natural, social phenomena and spiritual states of both the individual and society as a whole. Architecture, as a creative activity, “projects” the environment in the architect’s plan, while gradually acquiring the character of a scientific branch that theoretically reflects and practically recreates reality with the help of a whole arsenal of sustainable applied ways to “materialize” the author’s idea. This is how conceptual and categorical means of architectural science are formed, which makes it possible to prioritize both projective activity and the ability to “read” an architectural text, to reveal numerous philosophical meanings of the created structure.

Philosophical problems and worldview foundations of architectural creativity were implicitly expressed in old textbooks on architecture and especially in works devoted to the history of architecture. However, the philosophy of architecture gained independence and scientific independence in the 20th century. The genesis of the philosophy of architectural science has changed significantly during the period of the avant-garde movement in the world artistic and cultural space. There has been a kind of shift in the aesthetic paradigm, which has led to significant changes in general in art and, in particular, in architecture. Architecture acquired a new scientific glow in the style of Constructivism, Cubism and Futurism, asserting an engineering aesthetic thought that expressed mainly the pragmatic interests of man and society.

The intellectual analysis of the architectural creative process, the scientific symbiosis of the theoretical and practical platforms of architecture testified to its new philosophical approbation, namely: architecture began to be perceived not only as practice, creativity and

art, but as science. If before this period architectural activity was interpreted unilaterally as the creation of actual material objects (buildings and structures) or urban planning plans, planning systems (urbanism), then since the middle of the twentieth century there have been fundamental changes in the philosophical understanding of architecture. There is a possibility of dialectical modification in the space of the whole variety of changing architectural forms. Thus, Siegfried Giedion developed a new vision of architecture as a space-time concept, which is based on the interaction of internal and external space and the simultaneous perception of this connection (Giedion 1984, 455). The prevailing rationalism developed since ancient historical times and received its innovative embodiment in positivist and postpositivist scientific directions, which subsequently gave rise to many modern philosophical concepts; it is closely connected with architectural creativity, defining its scientific, theoretical and practical integrity. "Architecture asserts classical rationality, reproduces and imprints it in stone... Thought develops like a building and, if necessary, asserts itself by destroying cities or, at least, their oldest buildings, or founds a new city, as Descartes suggests in his discussion of the method" (Veselova 2006).

One of the main directions of the philosophy of science of the twentieth century is the socio-humanitarian interpretation of science, aimed not only at the process of scientific cognition, but also at its results. This direction is represented by the concept of cultural and historical dynamics of science, hermeneutics, radical constructivism, cognitive sociology of science, poststructuralism. The humanitarian direction of philosophy has determined a significant impact on the development and functioning of science, not only the content of the objects studied by it, but also socio-cultural factors, conditions and prerequisites for the implementation of the process of scientific cognition. Representatives of structuralism, poststructuralism, continental philosophy and other leading directions of the humanitarian paradigm of modern philosophy of science (Lacan, Foucault, Barthes, Deleuze, Derrida, Kristeva, etc.) believed that scientific discourse is not fundamentally different from any other discourse, even non-scientific, for example, everyday knowledge, mythology, etc. Proponents of structuralist analysis noted some common properties of any discursive phenomenon, such as lack of agreement, lack of justification, subjectivity, dependence on context, heterogeneity of discourse. All these constructs, from the standpoint of

structuralist philosophy, were considered as a consequence of the communicative nature of language and the narrativity of any text. Architecture through the prism of philosophical analysis, acquires scientific and theoretical contours in Michel Foucault's book *Discipline and Punish*, in which the author attempted to interpret modern culture through the architectural penitentiary project of the prison "Panopticon" as a special transparent habitat for prisoners under constant personal supervision. In addition to the main conclusion that influenced the social practices of punishment, Foucault achieved another goal. Using architecture as the main tool, the philosopher was able to identify the philosophical potential and cultural meaning of this topic (see Foucault 2018).

Poststructuralism has become the basis of the postmodern philosophy of science, claiming universality and representativeness in relation to all modern culture. Changes in architectural creativity and architectural science were most clearly and acutely manifested in the period of postmodernism. The philosophy of postmodernism has left an indelible imprint primarily on architecture, in which some researchers see the source of revolutionary innovative transformations in art and culture in general (see Donougho 1987).

Currently, architectural philosophy has firmly established the traditional principle of interpreting urban space as a dialectical movement and the development of all components of architecture (see Veselova 2006; 2014; Trushina 2000). The "dialogical" character of the development of the integral spatial organism of the city is presented not only as the dynamics of styles and engineering-constructive diversity, but also reflects the spiritual and ideological state of historical time. In the process of aesthetic perception by the modern recipient of the urban architectural environment and through its scientific analysis, the philosophical parameters of the city are constituted. The interdependence of discourse is born primarily in terms of terminology between architectural creativity, construction practice and philosophical reasoning on the basis of an organic metaphorical connection. According to the apt expression of S.B. Veselova (2006), "Architecture, being a material construction in the field of urban planning, acts as an immaterial metaphor in the field of philosophy; it is a mediator between them".

The interdisciplinary nature of the modern philosophy of architectural theory and practice is expressed primarily in the fact that architecture enters the anthroposphere along with technology,

agriculture, transport and information communication systems and many other infrastructural components of the artificial environment, which are interconnected and change both quantitatively and qualitatively in the course of evolution. Environmental issues related to complex and ambiguous processes of imbalance in the natural and artificial environment are directly reflected in architecture. The essence of one of the most important scientific and architectural concepts of the “environmental approach” is to take into account the diverse mediated functions within a dynamic holistic organism of the environment. Such a comprehensive methodology of scientific testing of the environment allowed the domestic architect I.G. Lezhava to formulate the concept of “functional potential” to define and cover a wide range of both purely functional meanings of a particular structure and symbolic-artistic meanings “built up” in it (see Lezhava 1988; Gelfond 2017). The functional program of architectural objects within the framework of an artificially created environment as a whole seems dynamic and historically changeable, coupled with general value changes in all spheres of human activity: material, moral, scientific, artistic and aesthetic, etc.

Thus, the formation of the philosophy of architectural science is closely connected with the development of the whole variety of scientific knowledge, based on theoretical scientific research, on historical changes in philosophical and worldview “plateaus”, and on applied practical experience.

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