

ASPECTS OF THE STUDY OF ARCHITECTURAL COMPOSITION THEORY IN THE CURRICULUM OF SENIOR YEARS OF ARCHITECTURE STUDENTS

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ABSTRACT. *The article deals with the problems of studying the new “Theory of Architectural Composition” course, introduced into the curriculum of students of the architectural direction of senior years of universities. Special attention is paid to the issues of compositional analysis; it is aimed at expanding and deepening the knowledge in the field of compositional laws, rules, forms, and types of compositions and compositional expressive means. The article touches upon the techniques, methods, and history of the study of composition, types of composite thinking and stages of its evolution necessary in the architectural practice. The emphasis is placed on an integrative approach to the compositional analysis taking into account the synthetic image created in architectural creations. The conceptual basis of special tasks aimed at finding compositional parallels and analogies in architecture, painting, music, sculpture, and theater envisaged in the content of the curriculum, is considered. The author considers existing approaches in the analysis of architectural composition in terms of such categories as space, volume, plasticity, color, time, etc. The author's topics included in the course study and focused on the synthetic organization of the architectural environment help the students to understand the artistic language of architecture and the compositional structure of buildings, to identify the logic of architectural forms and semantics of the imagery, to master modern research approaches in the analysis of architectural composition.*

Keywords: theory of architectural composition, aspects of the study, composition analysis, analytical approaches, topics and content of the course, material interpretation

1. INTRODUCTION

The modern architectural theory is becoming increasingly interdisciplinary in nature. The application of computer technologies and the concept of integration of sciences and arts open up new possibilities in architectural forming, at the same time expanding the range of tools for analysis of architectural heritage. However, not only tools got changed; new architectural trends and directions have begun to develop under its influence. With all the breadth of coverage of the problems of the theory of architectural composition, the problem of studying them at the level of the university formation of shaping practically unexplored. This is the scientific problem and the intent of this paper. In addition, the material accumulated in the world architecture at the moment has reached that “critical mass” when its further synthesis is necessary for further advancement in science, a holistic view of the existing heritage, which has not yet been done. The existing system of professional architectural education appeared not so long ago, but neither its structure nor content meets the new means of communication and the needs of modern society. The matters of the theory of composition are only touched upon in the “Architectural design” courses incidentally and are not sufficient to carry out specific professional activities. This seems insufficient and requires the revision of educational strategies from the standpoint of the study of the theory of composition as an artistic creation in the environment formed by new technological forms of communication. This is especially true in senior years, right before the choice of graduate qualification work, where it is necessary to theoretically justify the compositional organization of the project, the choice of sources, and its stylistic solution. [1]. In addition, related arts participating in the compositional appearance of buildings, namely painting, graphic arts, sculpture, decorative art, and design, are defined in the old syllabi as autonomous artistic specializations, while the dominant didactics in today's education is aimed at the development of specialized knowledge and skills necessary for the implementation of both the specific professional activities of future architects

and those working in contact with other professions involved in the implementation of architectural projects. “While the interdisciplinary approach in design practice and theory of architecture has great heuristic potential, it also has a number of outstanding issues. In particular, there is the issue of “translating” new scientific knowledge into the language of architectural science” [2]. The use of the theoretical and conceptual compositional approach providing a qualitatively new perception of the environment at the turn of the millennium is of an interdisciplinary nature, on its new evolutionary cycle combining architecture with various exact, natural-scientific disciplines, social, political and economic disciplinary fields, with modern art. “The current time is characterized by particular global volatility and difficulty in predicting the future, which leads to the emergence of new ways of interacting with nature, the desire to create according to the laws of nature, changing the architectural and spatial environment”. [3-5],

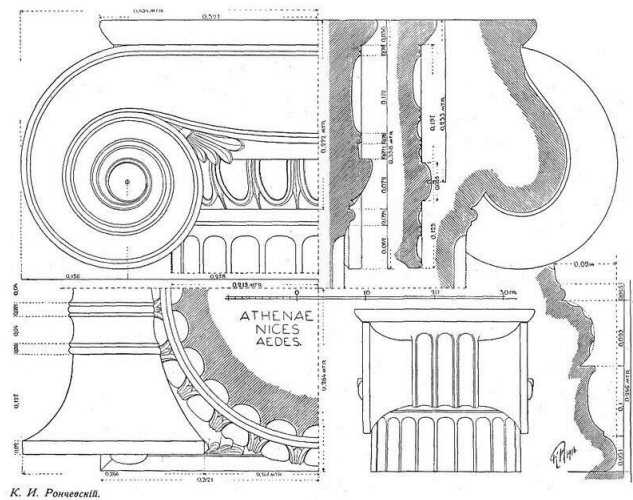


Fig.1. Classical order system.

Today, the issues of the theory of architectural composition are actively studied in the theory of architecture in its aspect of the laws of architectural formation, as well as in the art criticism in its aspect of the theory of style. "In turn, the "Theory of Architectural Composition" discipline does not see any difference between stable compositions and composition (i.e. the process), primarily considering the general laws of composition. It is a discipline that studies the structure of an architectural work before its creation, the very patterns of its creation". [6,3] Therefore, the essence of this discipline is the idea of the artistic expression of the image of architectural construction.

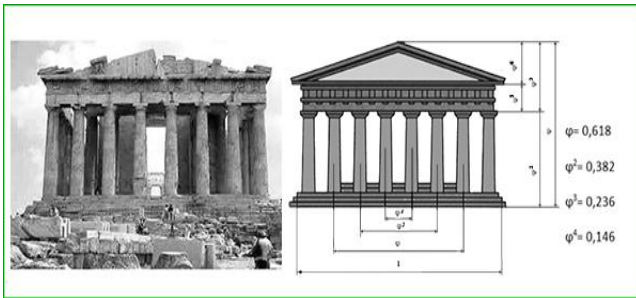


Fig.2. Parthenon. Architectural and compositional analysis

The second important aspect is the issue of the architectural sign: the metaphor. And, finally, the third essential component is the specific means of architectural expression: conventionally speaking, the very language of composition, which is derived from the first two components. In the education of architecture students, the harmonious combination of technological and aesthetic components of professional activity is necessary, as they are stipulated by the very specificity of architecture as a kind of art meeting the criteria of "usefulness, durability, and beauty" (Vitruvius).[7]. Being professionals, architects should respond to the rapidly changing socio-economic conditions, the development and implementation of the latest technologies; they should be able to independently solve complex professional issues associated with the creation of modern buildings having aesthetic value. This requires additional knowledge, and therefore new theoretical foundations.



Fig.3. Mobile technologies in compositional analysis

The aim of the research is to develop an approach to determining the meaning of the theory of architectural composition, which is considered both from the perspective

of artistic heritage and in the modern aspect of its study, including an integral model of design actions providing the formation of functional, safe, informative, artistic, and substantial composition included in the university syllabus for the architectural direction.

The hypothesis of the research consists in the analysis of the main topics of the "Theory of Architectural Composition" course, patterns of architectural formation with the help of compositional rules, methods and means used in architectural and urban environment, as well as a complex of factors reflecting the specifics of a separate architectural object as a spatial and temporal phenomenon. This allows justifying the design method of complex composition analysis of architectural monuments, as well as to form an analytical approach that helps to reveal the specifics of the formation of modern architecture, to identify new characteristics, to adapt the experience of the architecture of the past in modern architectural and urban design.

Research objectives:

- to consider the main aspects of studying in the "Theory of Architectural Composition" course, highlighting the most significant of them;
- to develop a model and methodology for the comprehensive coverage of thematic material with informative, artistic, and expressive content;
- to formulate the concept of compositional and artistic unity in the spatial and temporal context of architecture;
- to study integration approaches and artistic aspects of modern scientific compositional theories, on which the latest architecture is based.

«XXI century architecture is necessary to explore as an open system in which large streams of information from different

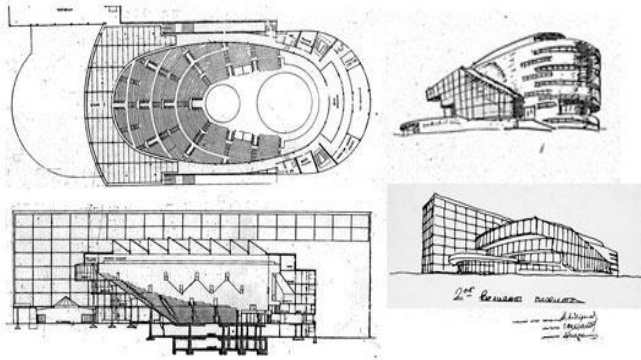
areas of knowledge. Properly navigate this information, select it in accordance with their own hierarchy (system) of professional and general cultural values possible without the skills of interpretive analytical thinking. The formation and implementation of this type of thinking is the decisive role of the methodology: set of principles, methods of research and creative architect's activities.» [8],

2. METHODS.

The interdisciplinary approach and the complex analysis of studying the architectural theory were used in the study, enabling using various specific methods of research, including systematic, structural, historical, and logical methods. They are used as a methodological approach in the study of the heritage of the past, as well as in the formation of conceptual and compositional approaches in the modern design practice. [9-11].

The methodological basis of the study includes the following works: fundamental research on the theory of architecture [12,6,13,14,1,15,16]; pedagogical concepts for the development of professional creativity [4,16,17]; matters of the professional training of architecture students at universities (B. G. Barkhin, A. K. Burov, M. Y. Ginzburg, D. Jones, Y. Zhuravsky, A. V. Ikonnikov, A. E. Korotkovsky, N. A. Ladovsky, K. S. Melnikov, etc.). The works by foreign researchers on the problems of architectural theory and education used in different countries (Hilde H. [18], Krista de Jonge, Marie F. [19],

etc.) are of great interest. Nevertheless, there are no scientific works in art history and architecture theory devoted exclusively to the methodology of teaching "Theory of Architectural Composition". These matters have attracted the attention of researchers in the context of broader topics (Cunningham A. [20], Carlos E. Cuesta [21], Cuesta, C. E., del Pilar Romay, M., de la Fuente, P., Solórzano, M. B. [22], Navasa, A., Pérez, M. A., Murillo, J. M. [23], Kenneth H. Craik. [24], Branko Mitrović [25]



**Fig.4. Project Theater them. Su Meyerhold, Moscow.
Compositional planning system**

RESULTS AND DISCUSSIONS:

The documentary materials involved in the presentation of the discipline content can be divided into several groups:

- Materials documenting the history of the creation of the compositional system of architectural construction, i.e. extant manuscript texts;
- Working drafts and sketches showing the progress of architectural design; .(Fig.3)
- Plans and sections of buildings showing their compositional features; .(Fig.4)
- Materials produced in the process of construction and reflecting the creative work of architects with representatives of related professions involved in the project;
- Sketches of architectural elements, both of exteriors and interiors of buildings, artistically decorating the space and its filling, and forming a stylistic solution; .(Fig.2)
- The author's implementation of a project that includes fragments of his original thinking and is perceived by students directly or on video

Thuswise, we offer the principles for considering architectural composition as the following:

- a spatial and temporal phenomenon, where it is taken into account (sequence of visual impressions; dynamics and structure); .(Fig.1)
- the means of securing functional processes in the architectural space (safety, comfort, and ecology);
- the expression of the semantic and artistic content of the architectural space (aesthetics, artistic and imaginative expression). .(Fig.5)

Traditionally, in the process of learning architectural design, students are tasked with obtaining knowledge about the designed objects, methods and techniques used in urban planning, and acquisition of practical skills of modeling. At the same time, the teachers who organize this process do not pay attention to the creative aspects of compositional

thinking, which leads to reluctance (and often inability) to think subjectively. In the process of modeling, the students repeat the already known samples, not always taking into account the real conditions in which the designed building will exist, do not rely on the laws of artistic perception and ideas about the aesthetic significance of the created objects, which leads both to the depersonalization of individual buildings and to the replication and standardization of the architectural environment.

The world around us is generally seen today as undergoing significant change. Ecology and sustainable development are among the most important guides in the process of architectural research, so the aspirations to find ways to maximize the use of material and artistic components of architecture in terms of geometry, structure, design, function, shape, decor, and creation of an original style are perfectly understandable.

Due to the processes of globalization actively developing all over the world and the accompanying struggle for the preservation of identity, it is the multidimensional architectural and artistic integration that acts as a means of dialogue and is manifested in the cultural space of the city, in the creative concepts of architectural activity, in the aspect of historical and cultural communications, as well as in the methodology of architectural and artistic education. [5]

As a result of studying the "Theory of Architectural Composition" discipline, students should master the following professional competencies:

- the ability to develop architectural projects according to functional, aesthetic, constructive, technical, economic, and other basic requirements, standards, and legislation at all stages: from the conceptual design to the detailed design and evaluation of the completed project subject to the criteria of the project program;
- the ability to demonstrate spatial imagination, developed artistic taste, and mastery of methods of modeling and harmonization of artificial habitat in the development of projects;
- the ability to apply knowledge of disciplines related and attendant in the development of projects, to act innovatively and technically competently when using construction technologies, materials, structures, life support systems, and electronic media);
- the ability to collect information, identify problems, apply analysis and critically evaluate the work done at all stages of the pre-project and project processes, and after actual implementation of the project;
- the ability to design projects by identifying the needs of society, specific customers, and users; to assess contextual and functional requirements for artificial habitats;
- the ability to carry out a comprehensive analysis and assessment of a building, building complex, or an artificial habitat;
- the ability to correctly represent the architectural concept, to transfer ideas and project proposals, to study, develop, formalize, and translate them in the course of joint activities by means of oral and written speech, modeling, manual and computer graphics, and quantitative assessments.

As a result of studying the discipline, the student must:

- *know*: the basic types of composition; the basic means and techniques of composition; the patterns of architectural, urban planning, and design volumetric and spatial formation; the psychophysiological features of human perception of the appearance of environmental systems, urban planning, landscape, and volumetric objects; the features of architectural composition in architecture, urban planning, landscape architecture, and design; the features of the composite structure, functional, and artistic organization of different environmental systems; the modern research approaches to the analysis of architectural composition; the features of modern composition.

- *be able to*:

consciously select composition means and techniques that are the most effective in a given situation, control their effectiveness in the artistic design; optimize the spatial conditions of visual perception of the architectural environment.

- *employ*:

modern research approaches to the analysis and evaluation of compositional solutions of real objects; the methods of forming the appearance of the habitat in the process of architectural, urban planning, and aesthetic design; working and demonstration modeling skills.

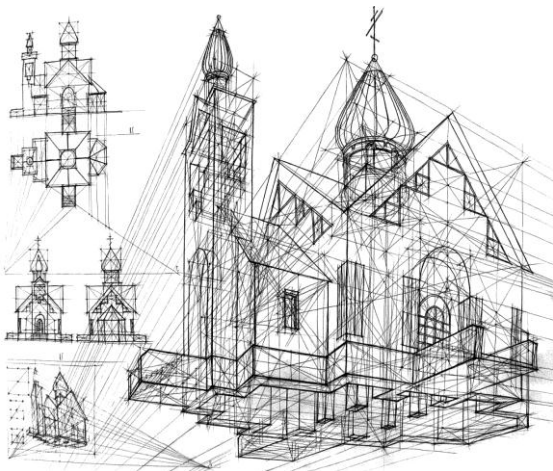


Fig.5..Volumetric-spatial composition of buildings

The practical significance of this research lies in the fact that the work contributes to the comprehensive study of the problem of studying and teaching the “Theory of Architectural Composition” discipline, to the creation of an optimal system of continuous education from the initial design courses, where the primary knowledge of composition is obtained, to the theoretical issues of compositional analysis, and the deepening of knowledge necessary for the conceptual implementation of the future diploma project. The materials given in the article can also be used in the development of dedicated architectural courses and seminars, in the creation of teaching aids for these disciplines, in further research of continuous education systems of various countries and Russia, as well as to expand and strengthen scientific and cultural cooperation between universities.

4. CONCLUSION.

The result of the research is the formulated value of architectural heritage and modern architecture due to the acquisition of important knowledge and new approaches to the study of the course “Theory of Architectural Composition” that are necessary for the formation of the architectural environment of cities. A consistent solution of the set objectives has led to the following results: the development of spatial, semantic, and figurative characteristics, conditions of visual perception, architectural and structural features of the style are presented in the historical slice. The integrated compositional model is an algorithm of design actions based on a step-by-step theoretical analysis of the functional and artistic properties of buildings and urban environment affecting the composition of their visual image. The course “Theory of Architectural Composition” is in line with the modern education system and aimed at the formation of the analytical abilities of students, teaches analysis and systematization of information, reveals possible ways to use, broadcast results of analytical studies in their practical activities. Such a methodology is an interesting and promising one, having common ground with global trends in the teaching of architecture. These processes are related to the innovation policies of states in the field of education and improvement of the quality of teaching, which attaches greater importance to the study and has a positive impact on the process of involving architect students in the global context.

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