

ISCKMC 2020
International Scientific Congress «KNOWLEDGE, MAN AND CIVILIZATION»

**INTERPOLATION OF ‘TRIDENT’ TECHNIQUE FOR
INTELLECTUAL ENRICHING LECTURE COURSE ‘LANDSCAPE
ARCHITECTURE’**

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Abstract

The article illustrates an interdisciplinary approach to updating the methods of educational activities developed by teachers as part of the professional retraining program “Teacher in the field of architecture, construction, design, landscape architecture” (SULUP) with regards to the requirements of the Federal state higher educational standards in the training programs “Architecture” and “Landscape architecture” and to Professional standard. A fragment of lecture is demonstrated in analytical form. The material presentation is based on a comparative method that contributes to the intellectual lecture materials saturation and the solution of problems in the landscape-urban design sphere. The composition “trident” in planning palace and park ensembles and cities of Russia and Europe of the 17th–20th centuries such as the palace and park ensembles of Versailles, Peterhof, Tsarskoye Selo, the cities of Rome, St. Petersburg, Kishinev, is subject to comparison. The continuity and development of their compositional solutions are shown. The study of functional, scenario, stylistic features of using “trident” technique in the composition of various landscape and urban planning objects helps students to better understand the methodology of architectural and landscape design, teaches them to choose the right techniques for solving the assigned design tasks. The use of the proposed method of presenting material in the lecture course “History of Landscape Architecture” contributes to its actualization.

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Keywords: Professional retraining, comparative method, intellectual richness, landscape architecture, ‘trident’



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1. Introduction

Russia's accession to the Bologna Process has established a system of multilevel higher education (bachelor's, master's, and postgraduate studies). Its integration in a certain way helped to realize the difference between these steps and at the same time reveal the features of their permanence (Oktay, 2020).

During the period of new standards implementation, teachers empirically found interesting approaches of a conceptual nature and developed methods of a competence approach in teaching architectural and landscape disciplines and implementing programs in "Architecture" and "Landscape architecture" blocks taking into account the requirements of Russian Federal State Education standards in higher education (FSES HE) and Professional standards (Ilvitskaya & Prikhodko, 2018; Valteran & Dudina, 2019). At the same time, the concept of an interdisciplinary approach was brought to the fore, going back to the goal of achieving a synergistic level.

2. Problem Statement

Students' inability to holistically perceive knowledge in subjects is one of the prerequisites for turning to an interdisciplinary approach due to the dominance of the so-called "clip" character of information assimilation. In this regard, methodological approaches to the presentation of educational material including the sequential structures of its presentation both on examples of comparative mutual influence and in evolutionary development are actualized.

Consequently, a prerequisite for achieving a high professional level and personal development of students is their ability to analyze and use the informational amount of knowledge which is determined not by its quantity but the amount of intellectual capacity to be increased.

3. Research Questions

The article contains a fragment of the lecture material being part of the module "Landscape architecture", which includes a comparative analysis of the objects of landscape architecture and urban planning in the framework of studying their compositional foundations. The proposed form of material presentation contributes to the development of students' skills in accumulating and analyzing information as well as its further use in professional activities in accordance with the requirements of students pre-project and research work organization.

In the article, this approach is presented on the example of lecture material concerning the use of different eras of one of the most famous compositional techniques for solving urban planning and landscape objects being the "trident" technique. The proposed emotional characteristic of the chosen technique is designed to show the necessity to involve the associative component in an architect's way of thinking.

The comprehensive spread of the compositional technique in a wide range of its capabilities is impressive. Specifically, it goes about a sign of an artistic style and a leader in the transmission of its aesthetic laws, a way of conveying illusion and a combination of aesthetic and functional scales, the

property of possessing harmonic plasticity to evolutionary changes in the development of an object, a guarantee of simultaneous coexistence of multi-scale solutions and a stable structure of a composite system.

4. Purpose of the Study

The purpose of the article is to demonstrate an innovative interdisciplinary methodological approach to teaching students of an architectural and landscape profile based on the presentation of material in a comparative and analytical manner.

5. Research Methods

A compelling evidence of this approach in teaching can be illustrated by the example of considering the interpolation of the “trident” as a method of intellectual saturation of the lecture material in the course “Landscape architecture”. Various objects characterised by the interpolation of the architectural and landscape technique and giving positive results in solving the set research and design problems are considered and compared. The proposed emotional characteristic of the chosen technique aims to convey the idea of the necessity to involve the associative component in an architect’s way of thinking.

To confirm the ideas mentioned above, it is useful to get immersed in the emotional environment of a number of architectural and landscape objects in which the composition “trident” is used, found in palace and park ensembles and in the planning of some cities. Among them are Versailles being an initial example, Peterhof, Tsarskoe Selo, exhibition complexes of Exhibition of Achievements of the National Economy (VDNKh), cities (Rome, St. Petersburg, Tver, Chisinau, etc.), (Gorokhov & Lunts, 1985; Lupashku, 2019; Mikhnya, 2008). The unifying characteristic of these objects is their large territories.

6. Findings

Consideration of the original object being the palace and park ensemble of Versailles shows the relationship between the “trident” and the main axis in its origin predetermined by the high energy of the entrance to the palace from three different cities. In the layout of Versailles, the architects clearly distinguish two distinct spaces, specifically, in front of the palace and behind it, in the park. At the same time, the transition from the scale of inter-settlement territories through a series of shrinking courtyard spaces to the scale of the entrance group to the building is regulated.

In the scheme, the so-called “tip” of the “trident” descent is crushed with the application of the enfilade technique and the cour d’honneur in the alignment of the facade contour. The dynamics developed by the “trident” virtually continues to spread along the trajectory of the central axis and further along the water surface of the canal. The regular composition is balanced by the rhythm of the transverse axes dividing the territory according to the laws of the golden ratio, and is also reinforced by accents in the form of fountain groups.

The generalizing axis of the canal is so independent and self-sufficient in its development that it allows the conditional symmetry of the park composition with a wide variety of individual constituent

elements (green rooms, etc.). The park ensemble includes independent objects built in the form of the main three-beam scheme (Trianon territory), and picturesque fragments of the future classicism style planning (the village of Marie Antoinette), (Moravcová et al., 2018; Ozhegova, 2018; Savarenskaya et al., 2019).

The continuity of this technique is due to its ability to structure spaces, which is always in great demand when solving architectural and landscape problems (San-Antonio-Gómez et al., , 2019).

Thus, the planning scheme in the palace and park ensemble of Peterhof is a mutually perpendicular superposition of “trident” not only in a plane frame but also in a volumetric-spatial one. In each of the compositions, the central rays reveal the axes. The first one emanating from the palace located on the edge of the slope faces the waters of the Gulf of Finland; the second (in the other “trident”) emphasizes the length of the coastline. The lateral axes serve as a reference to park objects that reliably connect the entire system of intersecting lines into a single stellar spatial structure, which justifies the choice and placement of verticals in the form of fountains creating this architectural symphony (Ozhegov, 2003; Gorokhov & Lunts, 1985).

The interpolation of inclined ray lines and axes from the facade of the palace in the form of a water cascade and a channel connected with the waters of the bay is most effectively elaborated rhythmically. The spatial grid of lines revealed by the road network and filled with highly artistic works of landscape architecture creates an object of absolute harmony and beauty.

In the composition of Tsarskoye Selo in Pushkino, the three-beam system of the park is used in the form of a decorative technique for drawing alleys and paths in the parterres revealing a regular part of the central approach to the Catherine Palace. This technique clearly articulates the space of the Baroque style in a whimsical interweaving of the regular and picturesque composition of the park occupying its niche in this harmonious and comprehensive whole of the famous object of landscape architecture (Ozhegov, 2003; Ozhegova, 2018).

The “trident” technique (Fig. 01) used in Versailles in the large-scale approach to the Trianon immersed in the outline of the vast territory of the ensemble is also found in Tsarskoye Selo Park. In the same way, a solution was found for the entrance part of the modern VDNKh plan.

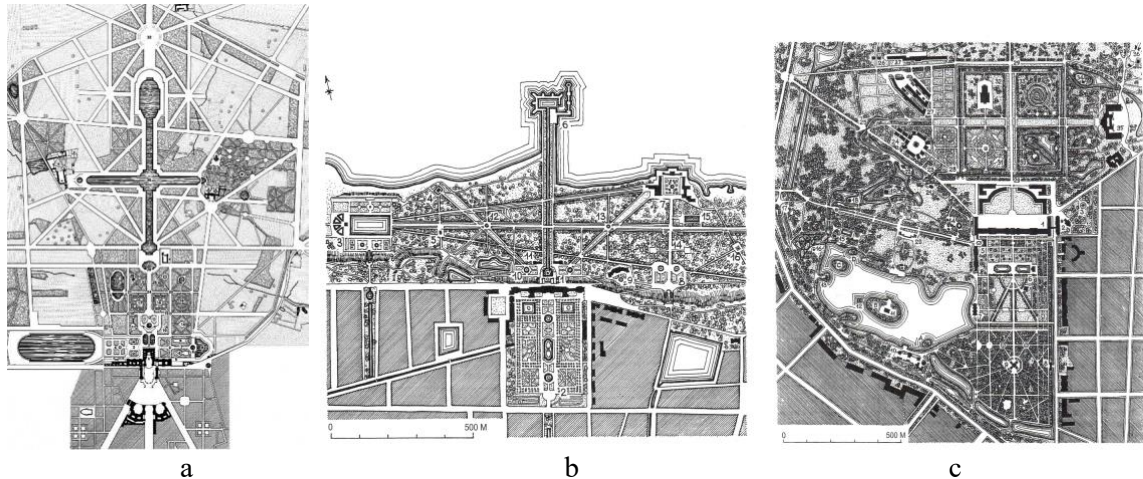


Figure 1. Technique “trident” in the composition of palace and park ensembles:
a) Versailles, France, 17th–18th centuries. (Gorokhov & Lunts, 1985); b) Peterhof, Russia, 18th century (Ozhegov, 2003), c) Tsarskoe Selo: Catherine and Aleksander parks, 18th century (Ozhegov, 2003)

The role of the “trident” technique is particularly significant in urban planning as the fundamental proof of the mutual integration of landscape architecture into the urbanized environment. Its effectiveness has been demonstrated in the reconstruction of Rome. The historically spontaneous composition of The Eternal City with its labyrinth of narrow streets acquired clarity of perception and spatial order due to the imposition of a large-scale “trident” in the layout of the main streets.

This form is included in the planning basis for the development of St. Petersburg. The three-beam composition of the city center comes from The Admiralty Spire. At the same time, the leading functional role is given not to the central vector but to the side one, specifically, Nevsky Prospekt. It encompasses adjoining spaces including Palace Square flanking it on both sides. Important architectural and landscape objects have formed the frame of the city center. In this case, the frame role of the “trident” is traced and the shifting of the functional and aesthetic emphasis onto the lateral beam of Nevsky Prospekt, which gives it a special hierarchical value (Gutnov & Glazychev, 1990).

The three-rayed composition was successfully used as a model in other cities of Russia: Tver, Yaroslavl, Kostroma, Novgorod, Pskov.

It was applied in the post-war years for intensive construction (1945–1947). It was also used by A.V. Shchusev being an academician of architecture when working on a project proposal for a general plan for developing the city of Chisinau, which is the capital of Moldova. His idea of enriching the expressiveness of the city consisted in the synthesis of planning traditions of historical quarters while solving the problem of preserving the plasticity of the existing building and its further development. The proposed master plan with a “trident” thrown across the river provides the potential for its territorial expansion. And although the further development of the city took a slightly different path, the idea of the continuity of traditions, laid down in the urban planning proposal of A.V. Shchusev, is seen in the enlarged scale of the planning and development of modern Chisinau (Fig. 02) (as cited in Lupashku, 2019).

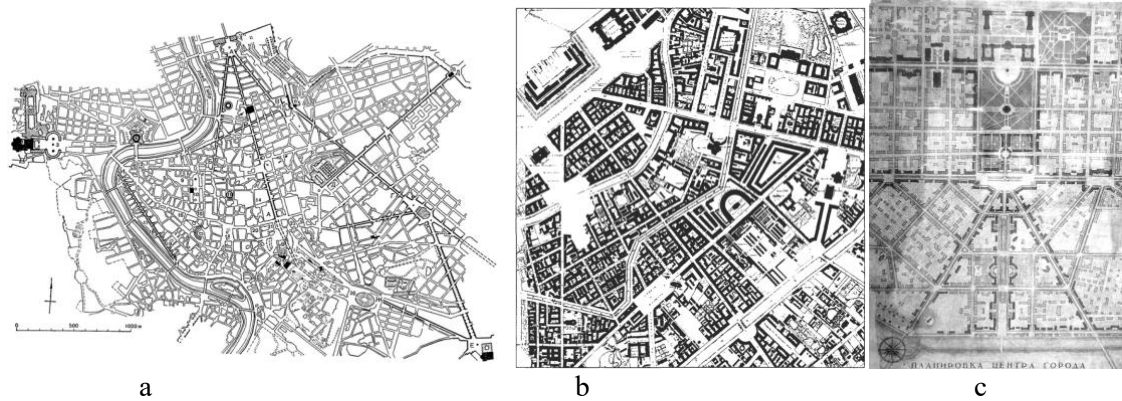


Figure 2. Technique “trident” in the urban framework of cities:

- a) Rome (Bunin, Kaplun, Maksimova, 1969); b) St. Petersburg of the 17th–18th centuries. (Kirikov, 2003), c) Chisinau (Gordeev, 2017)]

7. Conclusion

The presented range of interpretation of the compositional technique “trident” being a popular sample of cultural and artistic heritage convincingly showed that the methodology for studying materials of disciplines in training programs “Architecture” and “Landscape architecture” at the information level can be presented in a comparative-analytical manner. The results can appear both in testing based on the results of the knowledge gained in the form of essays, abstracts, research papers, and in the preparatory practice of teaching bachelors and masters, whose tasks include obtaining pre-project and scientific research skills.

In conclusion, it should be noted that the proposed methodological approach can be used in the development of architectural and landscape themes of a modern innovative nature linked to the history of landscape architecture, and containing information from related disciplines. Links to other publications of the authors of this article indicate the common ground for lecture materials of the main students training direction and related disciplines (philosophy, materials science, ecology, sociology), which need to be interpreted within the informational component of the main text of lectures in the refrain mode of proving their synergistic interaction (Ilvitskaya & Prikhodko, 2018; Ilvitskaya et al., 2017).

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