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THE ROLE OF THE LAWS OF PERSPECTIVE IN THE ACTIVITIES OF FUTURE ARCHITECTS

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A B S T R A C T
This article will discuss the need to study the importance of the legislative perspective in the work of future architects studying architecture in higher education institutions.

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INTRODUCTION

Methods of creating images based on the laws of perspective were known in ancient times. Thus, in the work of Euclid (III century BC) entitled “Optics” there are references to some rules of linear perspective. More ancient works on the perspective of Ptolemy and Eleodor Loris have reached us. Many tasks for creating perspective images were considered by the Roman architect Vitruvius in his work “Ten Books on Architecture” (1st century BC). Lacking a theoretical basis, he created architectural and construction drawings, including rules for constructing perspective images, as well as plans and facades of buildings. He summarized the works of Aeschylus, Democritus and other ancient Greek scientists who made a great contribution to the development of promising sciences.

Examples of the practical use of perspective images (or close to them) also date back to ancient times: the Greek artist Agatharchus (second half of the 5th century BC), as well as wall paintings of houses by Pompeian artists that have a predominantly “frontal” perspective. (1st century BC – 1st century AD), etc.

All ancient authors describe such images with the following words: “The art of seeing correctly.” Over time, the term perspective appeared (from the Italian perspicere - to see correctly).

The science of perspective did not receive further development for a long time for a number of reasons, the main one of which was associated with the advent of a new era of development. It was only during the Renaissance that the theory of perspective began to develop again and artists made their first contributions to it. It is believed that perspective as a science originated in the practice of Italian artists of the 15th century. The discovery of the laws of perspective was a great event in the field of fine art. The use of perspective by artists has become a prerequisite for those who work in a realistic direction.

At the same time, a number of terms related to perspective were introduced: center of projection, picture plane, main point, horizon line, etc. Leonardo da Vinci (1452-1519) was a great Italian artist and scientist who made a great contribution to the theory of perspective. He expressed his theoretical views in his "Treatise on Painting." The views of the artists who contributed to the development of perspective were as follows.

Pero Della Francesca - "Many painters abuse the rules of perspective because they do not understand the lines and laws of drawing; in perspective it is necessary to depict various shapes and lines in proportion. Therefore, in my opinion, it is necessary to show how necessary such a science is for the visual arts.... I emphasize the need for the science of perspective painting. It shows proportionality in the description of our environment, like real science, it proves that all sizes are reduced by lines and sizes. Thanks to this, many ancient artists gained fame."

Leonardo da Vinci - "Perspective is demonstrative reasoning by which experience confirms that everything sends its similarity to the eye along the lines of the pyramids."

Leonardo da Vinci: "Those who are in love with practice without science are like helmsmen who sail without rudder or compass, because they can never be sure where they are sailing. Practice should always be based on good theory, for which perspective serves as a guide and without which nothing good can be done in painting." "...in the future, theory will become a captain, and practice will become a soldier..."

Albrecht Durer - "Perspective is a Latin word meaning to see." This concept includes five criteria:

The first is the seeing eye.

The second is based on size.

Third is the distance between them.

Fourth, all objects can be seen along straight lines, which are the shortest lines.

Fifth, distinguish between visible things...

This creates a cone, the apex of which is in the eye.

Nikolai Nikolaevich Ge- Study perspective and, as soon as you master it, include it in your work, your painting. Never separate it from the drawing, as many do, that is, draw by touch, and then correct it according to the rules of perspective - it is better to let perspective be your constant companion and faithful guardian in your work.

P.P. Chistyakov - "The line, which is the beginning of the beginning of an object in space, cannot be drawn completely correctly only by a "talented eye," which requires strict accuracy based on the most precise techniques and rules, that is, it requires perspective. An artist may know the rules, but not how to put them into practice. He must have the ability to look at nature and, above all, to practice perspective...". "...fine arts, drawing and writing skills, as well as a "subtle knowledge" of perspective are necessary for any talent, only in such conditions a real master is created, and the more talent, the more knowledge and skills he will have and should have...".

The first work on the theory of linear perspective in Russia appeared in 1834 (St. Petersburg, author Lavit). Many Russian scientists and teachers devoted their works to the prospect: N. I. Makarov, N. P. Nechaev, V. I. Kurdyumov, B. N. Nikolaev, N. A. Rynin, A. I. Dobryakov, A. G. Klimukhin, Yu. K. I. Koroev, G. A. Vladimirovsky, N. S. Pa. Cow, N.S.Pa. Cow and others.

In 1973-1993, Associate Professor Ikromjon Rakhmonov was the first in Uzbekistan to create a textbook called "Perspective". Polat Odilov created methodological manuals "Solving positional and metric

problems in perspective" in 1999 and "Perspective" in 2000. Valiev Azam also created the textbook "Perspective" in 2009. Askarov Yu., Jabbarov A., Ibragimov A., Saidaliev S. In the chapter of the textbook "Drawing geometry and computer graphics" 2020, the perspective is highlighted separately. Currently, "Perspective" is taught as a subject in the faculties of architecture, art, construction, design and some engineering faculties of universities and institutes.

Various graphic images are widely used in many fields of science and technology, and in the fine arts their purposes are very diverse. It is impossible to imagine the life and activities of people without their use. Any image on a plane (or any other surface) is a collection of points, lines, tone and color spots that reflect the spatial forms of objects in the real world. The most common graphic images associated with human activities and obtained by the projection method are drawings and perspective drawings.

In order to competently draw and describe the things around us, it is necessary to know methods for constructing three-dimensional spatial forms on a two-dimensional plane or any other surface. This theory constitutes the content of a science called "Drawing Geometry". "Perspective" is one of its departments and an integral part.

What is perspective? The word perspective (French perspective) means "looking into the distance." It comes from the Latin verb "perspicere" - "to see clearly", "to see", "to look carefully". Ancient authors describe perspective and similar images in the following words: The art of seeing correctly. Over time, the term perpettiva appeared (from the Italian perspicere - to see clearly and accurately). The term "perspective" has several meanings. Let's get to know them.

In architecture, perspective is the image of objects on any surface in accordance with clearly visible changes in their sizes, clarity of shape, and the relationships of light and shadow that can be observed in nature. Perspective art is a special subject studied in higher and secondary educational institutions. A vista is a flat or open area with a view of the city skyline as well as a river and forest in the distance. The word "perspective" is often used colloquially. It is used in the sense of realizing future plans and implementing planned ideas.

In this article, the importance of the laws of perspective for future architects is an integral part of the topic and, based on scientific laws and rules, practical methods for constructing perspective images that are as close as possible to the visual perception of objects are discussed. in the real world around us and methods in connection with nature. To acquire practical skills in constructing perspective images, you need to know the basics of theoretical material.

In the design work of future architects, geometric perspective is predominantly used to create a perspective image, that is, the physical characteristics of the environment are not taken into account. Geometric perspective is divided into three types:

1. Linear perspective. In this case, the image is taken in a plane.
2. Panoramic perspective. The image is made on the inner surface of a cylinder or cone.

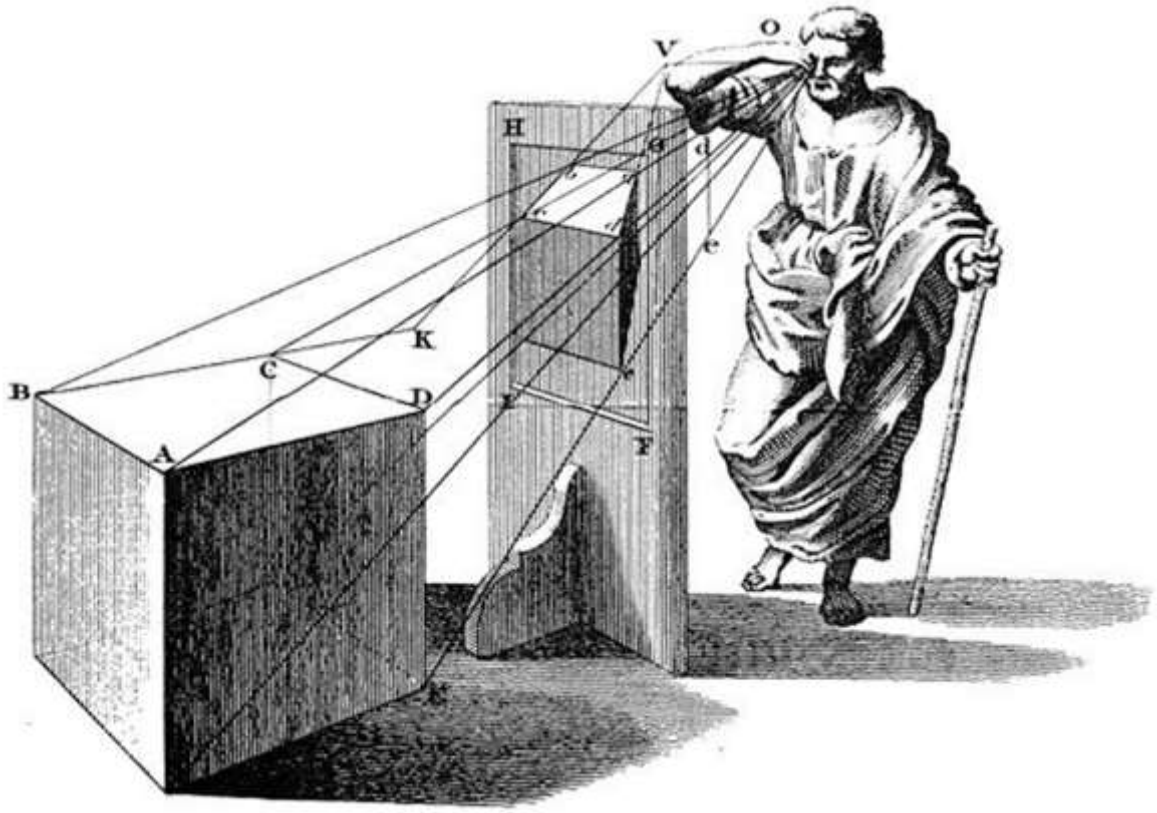


Figure 1 a

If an observer looks at an object (for example, a ship) through a -plane made of transparent material and draws an outline of it from the -plane, then the resulting image is called a perspective image or short perspective of the object.

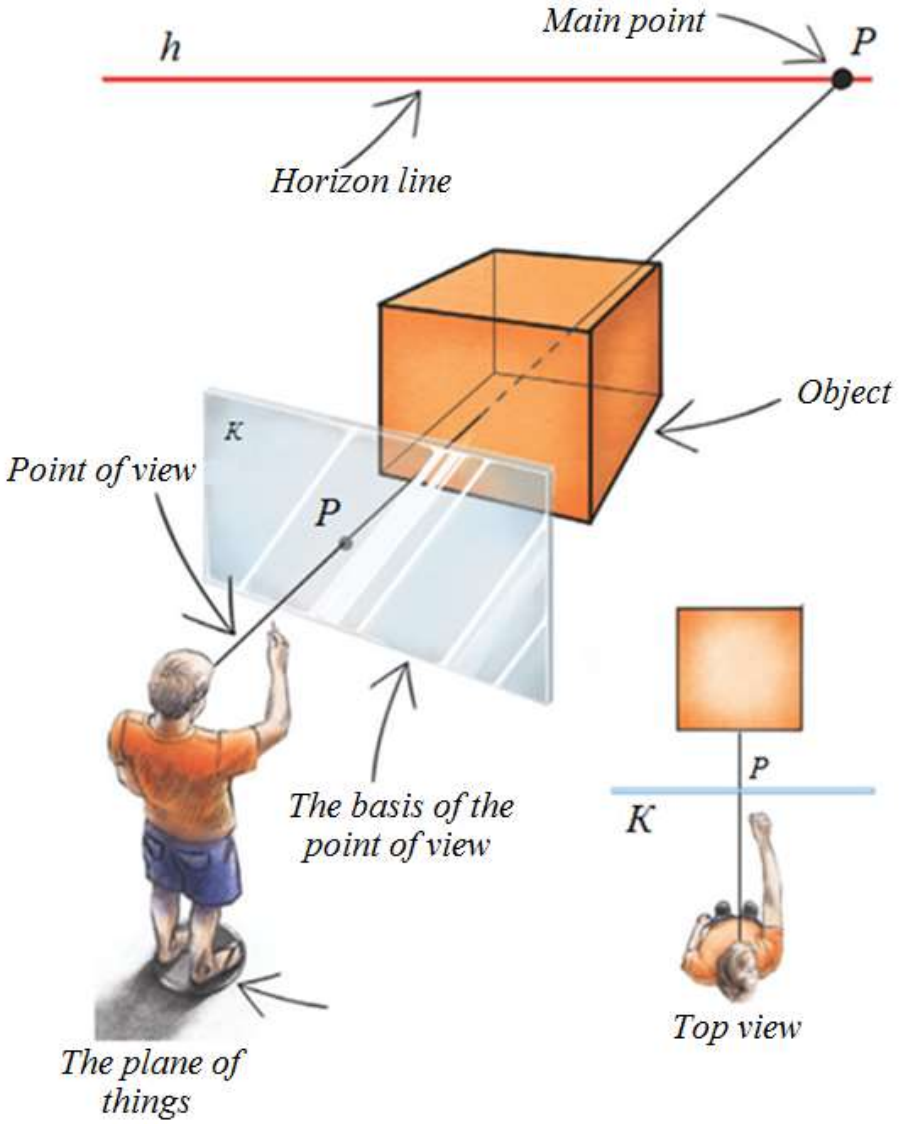


Figure 1 b

This image leaves the observer with the impression that he is seeing the object itself. Because the human visual apparatus is geometrically similar to the central projection apparatus (where the center of projection is the eye of the observer). The clarity of the perspective image will be so high that it will be possible to check whether the proportions of the individual elements of the designed building are correctly selected, its volumetric composition is successfully resolved, and on its basis it will be possible to make the necessary corrections to the orthogonal drawings. The way of depicting things based on central projections and the resulting image is called perspective.

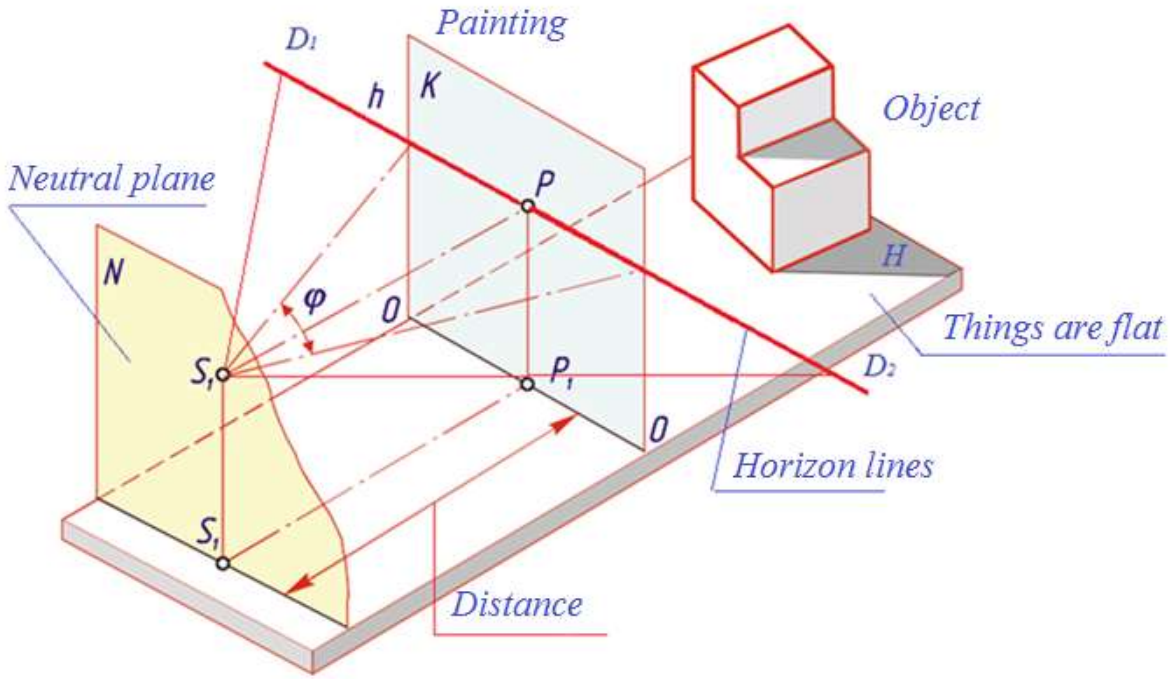


Figure 1 V

Linear perspective. Since a person sees the world around him in 3D, future architects must have the skills to visualize this 3D world on a flat two-dimensional surface - a sheet. Perspective helps him with this. Linear perspective (also called geometric, mathematical, or even optical) involves one simple idea: objects closer to the observer appear larger than those further away. Linear perspective allows you to depict a volume in a realistic three-dimensional state using geometric construction techniques. When creating a drawing, future architects use points and lines that help draw the correct perspective. To understand how to determine and construct the required depth, we need to understand the basic concepts of linear perspective - the horizon line and meeting points (Figure 2).

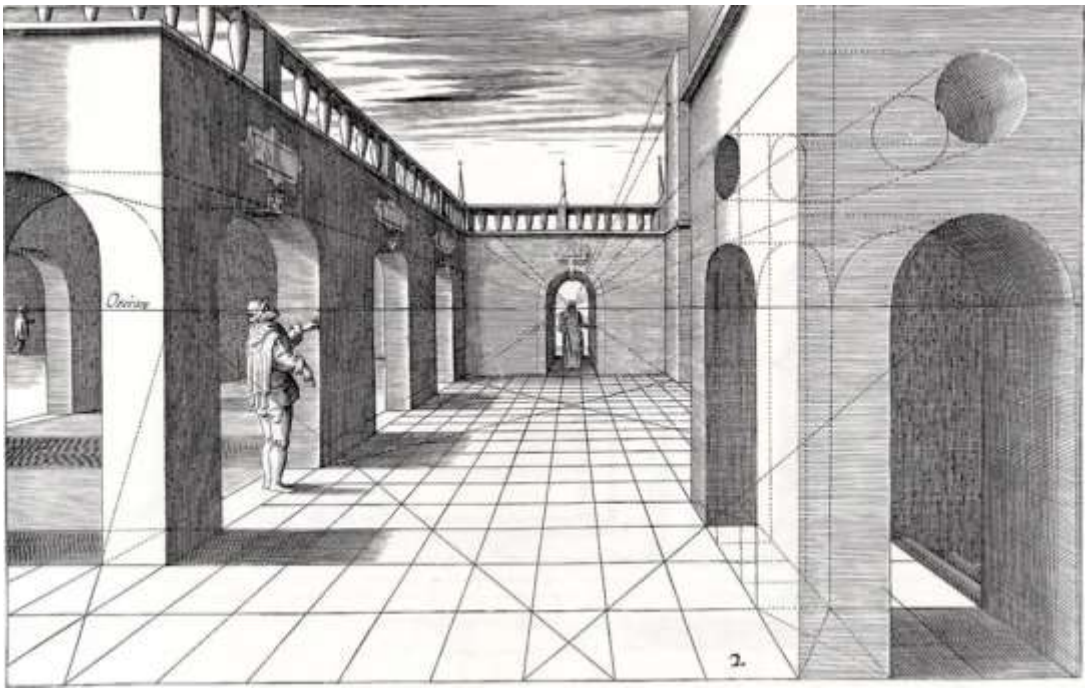


Figure 2

Panoramic perspective. An image constructed on an internal cylindrical (sometimes spherical) surface. The word "panorama" means "I see everything." Literally translated, this is the perspective in the picture

of everything that the viewer sees around him. When drawing, the point of view is located on the axis of the cylinder (or the center of the ball), and the horizon line is on the circle at the height of the viewer's eyes. Therefore, when viewing panoramas, the viewer, as a rule, should be in the center of the round room where the observation zone is located. Perspective images in a panorama are combined with the foreground, that is, with real objects in front of it. As a rule, a separate room is occupied by a diorama, in which the front wall is replaced by a cylindrical surface, and it depicts a landscape or panorama of the city. Dioramas often use backlighting to create a lighting effect. In the field of architecture, the rules of panoramic perspective are used to apply paintings and frescoes to barrels and ceilings, cavities, as well as to the outer surface of cylindrical vases and vessels.(Figure 3)



Figure 3

Dome perspective. In architecture, a dome is a type of concentric vault, usually formed by a surface of rotation (parabola, ellipse, etc.), convex upward, curved around a vertical axis. The dome shape is often associated with a hemisphere. There are many other types, both in contour and design. Because of its tensile strength, the dome is subject to downward vertical compressive forces and the supports to horizontal thrust forces. In addition, according to the rules of structural mechanics, each drum of a building ends with a dome. This architectural form can be not only part of the building, but also its main supporting structure. Therefore, his perspective drawing creates a domed perspective by applying circles and ellipses to the rules of perspective



Figure 4

In short, without them it is impossible to imagine future architects to create a perspective image in design work, mainly in terms of geometric perspective, linear perspective, panoramic perspective and dome perspective, as well as mastery of the sciences belonging to all specialties. . When drawing their perspective, it is necessary to fully comply with the laws of perspective.

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