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Graphic And Sculptural Images in the Educational Environment of An Architectural Student: Peculiarities of Visualization of Artistic Language

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Abstract

This article dwells on a synthesis of spatial plastic art - communications, performing an informative educational role. The features are revealed and the significance of graphic, plastic and pictorial communications in the educational process of the student-architect and their impact on an architecture were emphasized. The pictorial and expressive capabilities of each species are noted. The drawings are also revealed as a basis of creativity which has various means of expression such as sketches, etudes. A sculpture was considered from the point of view of its plastic qualities and commonality with architectural spatial composition. The points of contact of painting and architecture lie in the plane of color solutions. The role of the academic education, traditional and checked by the time professional school that hasn't lost its significance in the field of the newest visual communications is also highlighted in this article. The visualization tools of our time in various computer and digital analogues further emphasize the importance of traditional visual and plastic arts, which are a figurative concentration of ideas and meanings.

Keywords: *Architecture, Communication Tools, Space, Graphics, Visualization, Means of Expression.*

Introduction

The studying process of the future architector is multilateral and includes a complex of professional subjects.

Let's dwell on the role of graphic, plastic and pictorial communications in the aspect of their inconnection, where each one of them has its own informational species features. It's important to note that in the system of arts the graphic, sculpture and painting have their own relevance and demand in the educational process of students that study architecture. The space and the world of subjects, that are formed by different kinds of art, in the architectural sense are speculative values. The architectural image can be easily imagined in the graphic version, then in the pictorial one and then we can feel the real volume of the sculptural model. This kind of tie was well understood in the past. Therefore, the synthesis of visual arts was so organic, for example, in a temple or palace ensemble.

Researchers underline the importance of synthesis in the practice of the architect. First of all, they pay tribute to the graphic means of the image. In Wan James opinion (2012), there is that power in the graphic image, which helps fair logical judgments and forms architectural tectonics. Kendra Schank Smith (2006) defines the graphical sketch as a kind of window in the mind of the architect. To create a multilateral architectural image, professionals use drawings. Julia Morrough (2015) supposes, that a freehand drawing is a necessary skill for conveying ideas in the field of architectural design. This kind of «inspiring» drawings (1997) contribute to the design, modeling. The drawing lifts the status and authority of the architect up (1994). Focusing on significant drawings for architecture, Peter Cook (2008) tells about how drawn images influenced on the modern architectural way of thinking. Here computer drawing towards traditional sketches is not a contradiction but is taken as natural evolution from a human-made image to a technological one. In this case the traditional method of «deception», that's created to expand the real space through the illusion of painting, along with graphics, demonstrating the techniques of supernaturalism that comes from ancient times to the present day. The sculpture and its influence on the architecture are considered in a

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similar way. So, Edouard Lanteri (2012) supposes, that the long-forgotten area of figurative sculpture, demanding in the form of expression, can make impact on the formation of a strict tectonic clarity of the architectural image. Penelope Curtis (2008) summarizes the experience of the modern architecture of the postmodern era, underlining its abstract qualities.

As a result, researches come to the conclusion that age-old disciplines of drawing and modeling remain vital and inventive (2002) in the row with various modern technological developments. The synthesis of visual arts (communications), as a conceptual task of the past and the New Age, doesn't lose its significance, on the contrary, it gets more actual in the plane of modernity on the wave of the latest information and technological process.

The purpose of the article is to identify the importance of graphic and sculptural images in the educational process of an architect student, those visual qualities that are characteristic of these types of fine and plastic arts, representing a unique artistic degree of visualization and naturalization of the model. By influencing thoughts and feelings, they, together with the latest computer visualization tools, are able to form a student's spatial thinking and, importantly, the creative potential that will be realized in a professional environment.

Methodology

The method of this research is a theoretical analysis of graphic-spatial communications in a historical perspective, what lets us to determine the value of the object in the plane of modernity. The classification method makes it possible to identify the structural elements of fine and plastic arts. The comparative analysis helps to identify the essential aspects of human-made graphic, painting, sculptural images, what's even more valuable because it gets projected onto the practical activities of the young generation of future architects - students who comprehend the object-spatial world. Planning and modeling it, they eventually get to know themselves.

Results and Discussions

Let's touch on an important issue - the perception and understanding of the figurative nature of spatial and plastic arts and trace their sphere of visualization to the formation of architectural thinking, the addition of an architectural image. As it was mentioned above, researchers pay attention to the question of the interaction of spatial plastic arts in the context of the tasks of their time. In the perspective of this article, we will focus on their role in the educational process and those essential psychophysical and aesthetic qualities that directly affect the mind of a young person.

First of all we'll talk about the graph (graphic communications), the fundamental type of which has been being a drawing since the days of academic education, that nowadays is called to stay a basic professional study, but sometimes in the dizzying environment of new information and visual communications its role is unappreciated. However, we shouldn't forget about its imaginative nature. The drawing is characterized, above all, by a concise expression of the main idea. It's not accidental that there is the concept of "quick drawing", which appears in the varieties of sketches and sketches, as a convincing evidence of the constant and direct analysis. The latest computer technology can not replace his living perception and impact. This is exacty the way of how the idea gets formed twhat always was and remains relevant in the creative activity of the artist and the architect. In this process we should remember about aesthetic side of the drawing, its «culture». Only a clear, expressive, graphic image will give the necessary and right idea of the architectural model. Indeed, to form a model in a holistic architectural ensemble, it will require expression in a graphic image. That design and the necessary tectonics inherent in architecture are also inherent in the nature of the graphic image. Materialized on paper and not in real space, due to the inherent specificity of visual means: the laconism of lines, strokes and spots, their contrasts, already in the student's thought process, and then in the drawing, is able to convey the necessary quality of constructive expression.

(Fig. 1, 2).

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Fig. 1. Architectural Drawing. Paper, felt-tip pen

Fig. 2. Architectural Drawing. Paper, felt-tip pen

Even in the early stages, such a pattern forms a model in its constructive and artistic sense. Exactly this skill of a concise vision of the image, which is different from graphics, is put in the basis of activities of the future architect. The artistic expressiveness of the drawing in its flawless technical performance can be found in the works of the "old masters (Fig. 3,4).

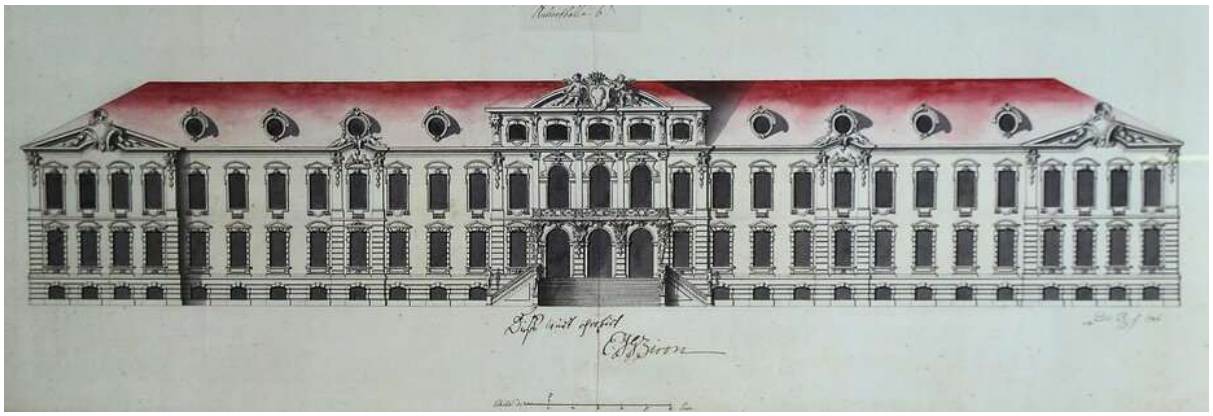

Fig. 3. F.B. Rastrelli. The Palace of Duke Biron of Courland in Rundal. Graphics of the 1730s.
https://architectstyle.livejournal.com/200745.html?ysclid=m3lq9as9r5214881823

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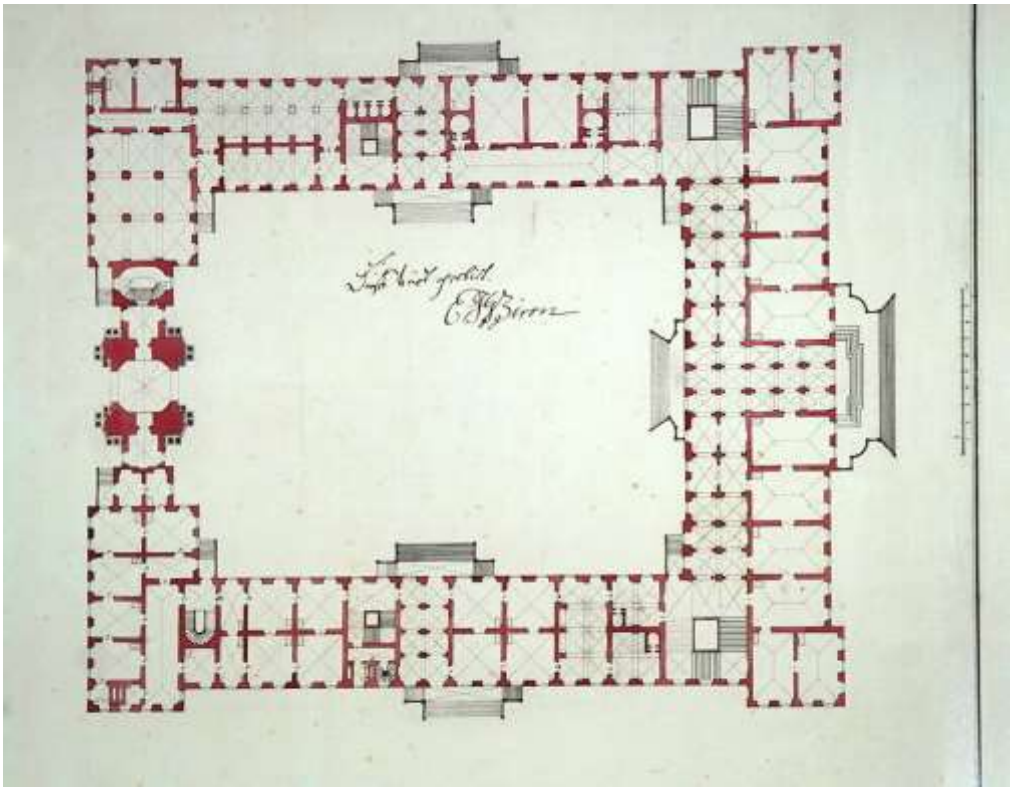

Fig. 4. F.B. Rastrelli. The Palace of Duke Biron of Courland in Rundal. The schedule of the 1730s. https://architectstyle.livejournal.com/200745.html?ysclid=m3lq9as9r5214881823

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Fig. 5. Francesco Camporesi. View of the Royal Palace in the Kremlin from the opposite bank of the Moskva River. The 1780s-1790s. Graphics. https://antiqueland.ru/articles/552/?ysclid=m3lrlgz4zx392792530

This is an image of architecture in a spatial form in the environment. Let's note visual unity of the whole, that creates a feeling of the spatial world, a certain "universe" and focusing on the stylistics of historical monuments. Exactly the three-dimensional pattern plays a role of some kind of future projection of the artistic architectural image. Its aesthetic features will be refracted by the artistic features of the architectural monument itself, often playing the role of the bearer of one or another historical style, what in its turn is quite valuably, because it contributes to the formation of the aesthetic taste of the future architect. This type of drawing can be an exhibitor at exhibitions, introducing a variety of architectural and natural environment to the audience. So, that way in the field of the professional education we can underline the remaining significance of the figurative nature of the pattern, that can make an impact just with an contour - an outline and a system of strokes and tones, causing a real aesthetic pleasure from a thoroughly detailed performance.

Now let's see how sculptures work with graphics and how important it is to consider these subjects together, what kinds of skills they form in a process of comprehension of their figurative nature. As we mentined before, the understanding of specifics of drawings not only expands the student's knowledge in the field of visual arts but also contributes to the formation of a holistic vision. The sculpture has the same function, cause the perception of it gets rated first of all by a silhouette, then it goes deep into the form. The outline of the sculpture silhouette, that has a linear plastic certainty, is perceived by the observer continuously along the contour and finally creates an impression about the model. The line in the graph, that has features of plasticity and the line in the sculpture, which is its essence, get refracted in architectural design in a special way. The structure of the architectural model is initially linear, then volumetric, just like in sculpture. Speaking about the volume – necessary means of expression of sculpture and architecture, it's important to evaluate two factors: the space-forming function and its perception by people. The compositional expressiveness of the sculpture gets achieved by proportionality of volumes, masses, clarity and conciseness of the whole silhouette, textured surface finish. The space in the sculpture is dynamic and interacts with the image. The line and volume, being organic sculptural volume is focused on the spatial environment, whether it's a monumental sculpture (space of a city square), landscape (space of a park, a garden), easel (museum space), sculpture of small forms (interior space). In the similar way, spatial problems are solved by architecture. (Fig. 6, 7).

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Fig. 6. Architectural Layout. Paper

Fig. 7. Architectural Layout. Paper.

Thinking about the sculpture of the 20th century, N.I. Polyakova (1982) called the plastic space not a layer or a sphere enveloping the shape, but a dynamic enviroment that has all diffrent kinds of ties with the plastic volume. "The peculiarity of these connections is that the space in them plays an equal to the volume and sometimes even more active figuratively plastic role». The volume-spatial composition of different types of sculpture (easel, monumental, monumental-decorative, plastic small forms) defines by the nature of the tasks facing them. Each one of them affects the viewer in its special way. In the composition of monumental and decorative sculpture: in the nature of the plastic interpretation of the image, its main volumes, in the modeling of subordinate details, the law of contrasts is important. If in the easel sculpture the main contrasts are black and white, that are able to reveal the shape, combine the details, in the monumental and monumental-decorative sculpture important moments are contrasts of the volumes and general silhouette expressiveness. According to its nature, this sort of plastic is tend to generalization, focused on a silhouette perception and decorativeness, it's supposed to solve different art tasks with a less individualization of the image. Every kind has its own typical movements, that are not just mechenical, external but also internal, reflecting the psychological state of the model. B.Wipper, who, thinking about the nature of the sculpture image, endues this image motor energy created by the rhythm of convexes and hollows that is typical for a human and animal. He writes: «The statue must have a special exciting, significant, productive moment of plastic energy, which in reality is never realized with such absolute intensity (….). The viewer not just «sees» the sculpture but also repeats, gets an experience of all the complex work of motor energy, that the creator of the statue has already experienced (…). Only the sculpture among all kinds of arts is able to give such a concentrated organic energy, increasing sense of life. This feature gives the sculpture a huge impact force.» (1985). This internal motor energy, which the author speaks about, in its now visualized architectural form is capable of materializing in no less force in the structure and volumetric plasticity of the structure.

This statement is fair and we can suppose that a psychological power of influence of the sculpture is in the process of learning. Direct manipulations with malleable material cause some associations and understanding of divine co-creation, just like God created man from the dust of the earth, putting a spirit inside of him. Alive material in hands of the student sets his or her thoughts free. The sculpture is «pure» as an initial idea and at the level of intuition and then of consciousness gradually crystallizes into an energetic plastic image (Fig. 8, 9).

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Fig. 8. Sculptural Model. Clay.

Fig. 9. Sculptural Model. Clay

This process of the sculptural plastic is important because in every step of work the student evaluates the structural properties of the material, the quality of the volume and plastics, the materialization of the idea itself in an aesthetic form. This statement is fair towards the achitecture. We can feel the same «motor energy» in the tectonics of the architectural design, it's diversified and shows up in different styles. For example, romanesque construction brings the "energy" of the fortress in statics, the gothic one brings lightness in dynamics, the baroque construction influences the feelings of the viewer with its exaggerated power of sensual forms and a sense of its cosmic nature. Classicism is focused on peace, its "energy" is balanced, the design is clear and strict etc.

In the Commonwealth of Arts, painting also takes its rightful and necessary place, and the degree of its impact on the feelings of the audience is important. It has the inherent properties of color formation, including the entire "energy" of the composite-plastic construction of the image. Influencing the color system, it forms the qualities of visual culture. The future architect comprehends colors in all their specific features, ranging from the psychology of color, the perception of different color groups, and ending with various color models of the finished architectural work. If a painter, by the nature of his activity, appreciates the coloristic qualities of a model, the achitect evaluates the color in proportion to the structure. The knowledge of the main laws of color and color harmony lets it realize a stylistically complete architectural image. The difference by a coloristic unity, interconnection of the whole and details, it reaches aesthetic value, gets greater appeal. The student-achitect, who studies the color law, should remember about that.

In general, studying expressive means of graphics, sculpture and architecture in their unity and interconnection, the student learns how to use them in pracice and gets an ability to create an original image of the future architectural work, identifying a unique sample already in the project, which can be called realistic. By the definition of T. Belskaya the image not only «recreates the sensual concreteness of life, but also visually, in a generalized-figurative form reveals its internal patterns and structures» (1973). Perhaps, this is what phenomenal graphics, sculpture and painting, as types of visual art and their organic refraction in the architectural composition, consist of. Mastering graphic, plastic and pictorial communications is a difficult mission. Obviously, firstly in theory, then in practice students comprehend the essence of the

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question. Therefore, it makes sense to consider graphics, sculpture, painting in the aspect of its importance and in the context of history, in the assessment of modernity.

If we consider them in the context of history, first of all we'll highlight the academic school, traditionally being a stronghold of craftsmanship for many generations of artists, sculptors, architects of the XVIII-XX centuries. It ensured the accuracy and strength of graphic, pictorial, sculptural and architectural constructions, including sketches and finished works. The school gave a whole range of professional knowledge in the field of the theory and practice of the visual arts, followed a consistent method of teaching certain skills.

The researchers of the XX century took as a basis rules and laws of the great masters of the past. Artists V.V. Kandinsky (2001), V.A. Favorsky (1986), A.A. Deineka (1961), also supposed that the future artist and architect should master inital foundations of the academic drawing and plastic. N.N.Rostovtsev (1995) was writing about it, calling established teaching methods based on careful observation of the study of nature with valuable material, the basis for constructing the new one. The researcher believed that education degrades if it steps back from the scientific method of knowledge, denying the rules and laws of the visual arts. A rational, consistent approach to the studying of the model in an academic school was defined not only by the educational tasks, but also by the artistic style of that time, which was the classicism . It dictated the severity, clarity and proportionality of the image. Historically, in European and Russian artistic practice, the leading role belonged to academic art, which was getting developed within the limits of classicist iconography. Architectural and sculptural models were used in the process of the educational practice, they were accurate and didn't allow any changes in the accepted norms of composition, they retained the general style modeling. In the picture or on the sheet, all the figures, objects, and environmental space (interior, landscape) were clearly and harmoniously arranged. In this case, the work was considered as compositionally complete. In this aspect, the composition of the sculptural image was considered and its image had a clear modeling, fixation of all the details. The composition of the architectural design, worked out in the classical version, allows you to convey all the exterior features of the architecture, contributing to the formation of professional spatial thinking of future architects. So, the sublime representation of the architectural image was formed in frames of classic style. The definition of this image included the idea of stately monumentality, ensemble, stylistic unity, slimness and restraint of architectural decor. At all levels of the educational process, the expediency of an academic drawing was emphasized by the practical activity of the student-architect and proved the importance of artists and architects in the professional environment. The analysis of curricula, plans and other documents of the 19th century Academy of Arts suggests that questions about the need of studying of natural forms were brought up. «The Academy, following idealistic normative aesthetics, though didn't really want to expand the ties of learning with reality, couldn't limit itself to the narrowly handicraft tasks of class plays. (…) The ideas of realist artists who relied on a deep knowledge of life around them, in general, contributed to the search for new, more convincing image qualities. " (1984).

We also point to a serious study of composition in the academic school, as an important component of the basis of all plastic arts. And today the unifying basis of teaching the discipline "graphic, pictorial and plastic communication" is the formation of students ' compositional thinking,

In different historical epochs there was an understanding of the composition, its role in the art work. So, in the classical era of the second half of the XVIII - the first half of the XIX century, in academic painting, focused on the principles of ancient art, there was a cult of a strict, balanced picture, where all the figures, objects, environment space (interior, landscape) were clearly and harmoniously located. In this case the painting was considered as a compositionally complete one. According to this aspect, the composition of the sculptural image was considered, it had a clear modeling. Although, according to its nature, the sculptural composition doesn;t have a multi-figure (unlike the relief), it's also limited in the choice of plot, but still it's visually organized. In the second half of the XIX century, artists of the realistic direction brought up a different principle of compositional image, which main idea was to put all the life truth of the depicted motive or plot, all elements of which were put in the order on a plane to let reveal the ideological and psychological essence of the conflicts and characters in the most clearest way. Then the developement of

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the composition in painting went along the line of synthesis and overcoming the previous contradictions, in the unity of plastic balance and life truth. The sculptue image was also discribed by these qualities.

Thus, the established visual and expressive techniques of plastic arts, which have found distinct expression in the academic school and up to the present day, can be represented in the form of two tables. One demonstrates visual arts visualization tools: graphics, painting, sculpture and their influence on the architectural image, the other demonstrates the main functions and stages of visual arts visualization (Table 1,2).

Classification of types of fine arts and their influence on architecture

	Graphics ⇩	**Painting** ⇩	**Sculpture** ⇩
Architectural image	Laconism, clarity of visual language in the harmonic structure of lines, spots, strokes ⇦	Local monochrome and polychrome in their warm-cold, contrasting and nuanced colors ⇦	Volume, plasticity of real shapes in contrast, softness, lapidarity, fluidity of their transitions ⇦

Table 1. Visual Arts Visualization Tools

	Functions	**Graphics**	**Painting**	**Sculpture**
1	Educational and cognitive function	Cognition of the subject through concise means of artistic language	Cognition of an object through color (the entire spectrum of colors)	Cognition of an object through real volume and plasticity, materialized texture of the material
2	Aesthetic function	The beauty of lines, strokes, spots, tones	The beauty of color is in a certain harmony of color combinations	The beauty of real three-dimensional volume and plastic shapes

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	Stages	Graphics	Painting	Sculpture
1	The idea	A concise representation of the graphic image	Representation of a pictorial image in a coloristic unity	Representation of the sculptural image in its entirety
2	Sketches	Sketches, sketches, sketches of compositions and individual motifs with graphic materials	Sketches, sketches, sketches of compositions and individual motifs with pictorial materials	Sketches in the volume of the composition and individual motifs, forms in the material
3	The finished work	The finished image in the integrity of the graphic tools	The finished image in the integrity of pictorial means	The finished image in the integrity of volumetric and plastic means

Table. 2. The Main Functions and Stages of Visual Arts Visualization

Conclusion

In General, we can talk about the absolutization of academic education, about the universal role of plastic arts, which for two centuries were formed in a single synthesis.

Artists-academicians saw the value of graphics, sculpture, painting as separate species with its specific features and noted their universalism, the community of artistic nature. On the basis of understanding and studying their inherent laws, various methods of work were developed. Professional skills formed the basis of training of future generations of masters. In a broad sense, the works of artists and architects reflected the worldview of the era. Let's draw an analogy with student works. Already at the level of training we can talk about the creation of the "second nature", about the creative process, as a reflection of sensual reality and human psychology. And what can be more valuable than understanding the human worldview. Spatial plastic arts are designed to serve as the material through which ideas are crystallized and implemented in living material, forcing to activate the entire mechanism of the creative process. The artistic image of our days, expanding the boundaries of visualization, possessing the property of versatility and polyphony, turns out to be very fruitful at all stages of the educational process when studying each of the types of fine and plastic art. In its final form, as before in the academic environment, it organizes the subject-spatial perception now at the level of other categories, far from traditional realism.

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