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Features of the Color Scheme in the Design of Student Residential Complexes

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Abstract: The purpose of this article is to correctly select a color solution when designing student dormitory complexes, and the research methods on the topic of the article are formed from a systematic analysis that allows you to consider the color solution factors of object formation and development in an interrelated way. The results of the article are a summary of the goals and objectives achieved for the living environment in student dormitory and through the use of color, and the color solution for creating a comfortable environment in educational, work and recreation rooms relevant to the mental work of the modern student dormitory object.

Keywords: Student dormitory, functional, aesthetic, color, spectral colors, achromatic colors, polychromy, monochrome, visual, volumetric.

Introduction

A person's visual perception of space and objects is based on intensity and its reflection through light reflected in color. One of the most important components of our environment is color and it is included in design practice according to specific circumstances, taking into account the psycho-physiological, psychological and aesthetic aspects of its perception by a person. Goals and objectives achieved for the living environment and through the use of color can be divided into the following categories:

- color participation in the system of direction, visual information, perception of the environment, volume, means of space;
- color as a factor of psychological and physiological comfort;
- color as a factor of creative, emotional and aesthetic impact;
- information about functional zoning of color space;
- improve the direction to the environment when the color is taken overall.

The participation of color as a factor of psychological and physiological comfort:

- ✓ creating optimal conditions for certain tasks related to activity in this space (use of psychophysiological colors, favorable lighting, etc.);
- ✓ creating favorable conditions for the functioning of the body (including the negative impact of the labor process, color compensation for climatic and microclimate conditions).

The effect of color as a means of emotional and aesthetic impact:

- ✓ independent effect of color and color combinations on human perception

- ✓ the use of color as a compositional tool (matching the color scheme with spatial compositional, interior in general, etc.).

In the process of using color as a factor of psychological and physiological influence, it is necessary to take into account the assumption and preferences of colors. However, this information may differ depending on whether it is indicative and the color is clear, its combination with other colors, the conditions of vision and visual perception, as well as other parameters of the state of a particular project [1]. The general characteristics of the effect of color on the human psyche can be described as follows.

Methodology

Red has a stimulating effect, leading to strong reactions and muscle tension. This can make you nervous, activated, and excited.

The **jewel** evokes a feeling of joy, excites, creating a feeling of warmth, well-being and fun. Also, this color can increase the heart rate by affecting the speed of physiological processes in the body. However, long periods of time in an environment that consists of a jewel color lead to rapid fatigue.

The shade of **yellow** also has a similar stimulating effect, which, as noted in some studies, can stimulate the ability to enhance mental activity.

Blue and **green** colors-on the contrary, relieve agitation, reduce activity, are considered to have a calming effect and help to relax. The blue color is associated with sleep and rest, and also evokes a feeling of cleanliness and purity. Green color, as well as blue to a lesser extent, contribute to lowering blood pressure. The pulse, mixed with green and blue, slows down a little. Some studies characterize green as a discipline because it encourages people to strictly control their actions, emotions and work.

Purple, on the contrary, causes a desire to abandon activity, feelings of sadness and coldness.

Brown has a calming effect, increases concentration, reduces activity and dulls emotions. In some cases, it can cause a feeling of sadness.

Blue, green, yellow colors - in general, have a positive effect on the human psyche and increase the efficiency of its working capacity.

Purple, blue, red, on the other hand, cause rapid fatigue and can reduce productivity in working capacity.

A large number of **black** and achromatic dark gray colors have a depressing effect but when Black is used in small quantities, according to the law of contrast, they enhance the brightness and effect of other colors combined.

White and achromatic light gray gives the impression of cold and emptiness. But, like all achromatic color environments, they serve as a useful background for bright chromatic surfaces and elements. It should be borne in mind that in a light gray environment, the brightness of colors may decrease slightly.

Choosing a color palette for any designed object, whether it is an interior or an exterior, requires careful analysis of the available color schemes. The color scheme is formed under the influence of many factors, which can be divided into two main groups: anthropogenic (architectural) and natural [2].

- ✓ create optimal conditions for certain tasks related to activity at the object (use of psychophysiological colors, favorable lighting, etc.);
- ✓ creating favorable conditions for the functioning of the body (color effects, climatic and microclimate conditions that negatively affect the labor process).

Recently, a new approach has appeared in the design of the exterior of public buildings. This trend was inspired by modern ideas about the ecological, humanistic and symbolic meaning of buildings in the urban landscape.

These ideas depend on:

1) complex flexibility of modern architectural solutions [3].

2) changing color preferences of society [4].

Results and discussion

3) liberation of the creative mind of artists and architects in the 20th century. During this period, the emergence of Elya Lisisky's prunes, Color plastics of B. Kandinsky, Geometric compositions of P. Mondrian, Innovative ideas such as vasareli's optical illusions emerged.

4) Konstantin Melnikov, Ilya Leonidov and Alexander Vesnin use colors in designs.

5) modern use of supergraphics in the works of Charles Moore.

6) new methods of parametric design.

7) the emergence of new building materials (transparent and LED panels, bright panels, ventilated facades consisting entirely of composite materials, color properties can be combined in the production process) [5, 6, 7].

Some examples of how modern architects apply new approaches to the formation of new compositional thinking are given in figures 1-2.

Figure 1-Karolinska conference hall "Aula Medica" Medical University in Sweden

Figure 2. Complex of university campuses in Skolkovo

As the architectural form approaches, pointillist reveals a unique play of colors similar to the impressionistic brushstrokes of artists. Such a color scheme gives the impression of movement and change in space and time. At a distance, when we see only the outlines of objects, the colors look the same, but not flat and heavy, but light and airy. Approaching the architectural form and starting to consider the buildings in more detail, we see how the color changes and becomes more complex and saturated. This is similar to how pointillist artists create their own paintings using small dots of different colors [8].

This color selector gives the impression of movement and change in space and time. From a distance, when we see only the contours of the objects, the colors look the same, but not flat and heavy, but light and airy.

The interaction between polychromy and architectural design manifests itself in various forms. Polychromy identifies and emphasizes spatial forms of architecture [9]. Polychromy also fancifully changes the architectural geometric shape. In addition, an independent polychromy scheme with strong opposites can change the visual perception of the architectural form and bring a new compositional regret [10].

In the process of developing a color palette for student housing objects, we focused on both general color combinations and individual elements that act as independent color objects. We took into account the various features of these elements and their role in the architectural object. For monolithic forms, we chose monochrome colors that create a sense of harmony and unity. That is, the monochrome combination of colors in one palette in the interior design of the student residence object is a good solution for all rooms, from any room i.e. the study room - to the leisure bedroom. Based on denying accepted norms, combining inconsistencies and incompatible techno, loft new styles tend to quickly put painful pressure on the psyche. Especially if you constantly live in such a room. Suitable for avant-garde youth meeting places, living rooms. The most optimal color solution for comfortable perception if we look at the point of view of psychology and Feng Shui is the interior created in monochrome. At the same time, for more complex forms, we can apply less saturated polychromy, when creating a work, polychromy is achieved by using raw materials of different colors or painting works in different colors. This will give them a smart and elegant look. Smaller and more detailed elements such as accents and decorative details are highlighted by their background colors, which gives them a unique expression.

Combining color and shape, this concept of color diversity allows you to create a unique and charming modern student residential town landscape. These structures serve as a bright center in the color scheme of modern urban landscapes.

These compositional principles-the interaction of color and shape at several levels-the monochromatic color palette can serve as the basis for the color scheme of modern projects of new student residential buildings that require the use of chromatic accents.

Conclusion

The formation of the appearance of residential buildings by modern students plays a large role in the design process. The proportions of the parts, volumetric elements and parts of the facade surfaces are distinguished by any color. The Shape of the building as a whole, the ratio of composition to the structural scheme of buildings, scale, location of light elements on the facade, etc. coordinates the color comps of the facades.

Thus, in order to create a comfortable environment in educational, work and recreation rooms belonging to the mental work of the object of modern student housing, it is necessary to pay attention to warm brown, light gray and also low-intensity yellow, green and blue colors.

In such rooms, the overall color scheme is better to use close-up shades that create a favorable atmosphere for intellectual work and help to concentrate. Rooms designed for relaxation, communication and active rest, as well as in public places, it is better to choose brighter and contrasting colors. They help to distract from the monotony of mental work and relax psychologically.

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