STUDY OF COLOR IN LANDSCAPING

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RESEARCH ARTICLE

Abstract

The choice of this theme is a response to the need to understand the notion of color, which appears as one of the most important elements of aesthetics used since ancient times and to which the most interesting meanings have been attributed. The correct use of color in landscape design requires a deep understanding of color and practice of plant personality in order to plan integrative and sustainable territorial planning of green spaces as a starting point for the requirements of modern man, prisoner of concrete and of a dynamic and active life, but who aspires to a place in nature that will provide him with the peace, air and sun necessary for life.

Color, in landscaping, goes beyond simple aesthetics, it represents a visual language that communicates, motivates and creates a captivating experience, contributing to the success of initiatives to promote an active and healthy lifestyle. All this implies a good knowledge of the physical characteristics of color, color theory, how we can combine colors for a harmonious and balanced result, the strong correlation between complementary colors, understanding the notions of contrast, complementarity, color "temperature" and other theories that make it possible to use colors effectively and correctly in landscaping.

In conclusion, we can say that choosing colors in landscaping green spaces can be confusing and a little intimidating, simply because there is such a wide variety of plants and colors available, but we cannot guide specific color schemes.

Keywords: color, color scheme, green space, harmony, balance

INTRODUCTION

Man has used color since ancient times, serving as a point of inspiration for artists, representing an important role in the spiritual and religious life of communities. Throughout history, various civilizations have experimented, learned and innovated, obtaining new colors and shades, writing new guides about colors and their meanings or about their role and influence in everyday life. "Any history of colors can only be a social history. (...) Society is the one that "makes" color, defines it and gives it meaning, builds its codes and values, organizes its practices and sets its stakes" (Pastoureau, 2006).

Color is one of the most important elements of aesthetics. Throughout history, color has been attributed very different meanings from one era to another and also from one culture to another. The cosmological significance of colors, in the opinion of Carole La Pan, is defined by the 12 zodiac signs represented by different colors, a system of predicting the future that affects individuals in all spheres of their lives: destiny, chance, luck (La Pan, 2005).

Also, in mythological symbolism, each color had a well-established role, being associated with a deity (Borțun, 2001), a cosmic sector or a season, a principle or foundation of life, a symbol of immortality, abundance or renewal. Colors have also left their mark on

religious symbolism, easily found in all traditions and beliefs. Thus, in the Christian tradition, the color white is attributed to the Father, the color blue to the Son and the red to the Holy Spirit (Gheorghiță, 2017).

An ancient form of medicine characterized by various ancient practices used different colors to influence health and healing, even a particular philosophy was created that treated the whole being - mind, body and spirit. This history dates back thousands of years, in Egypt, China, India or Greece, where light therapy was practiced, it was also believed that different colors could impact the human body differently (Ades, 2009).

In 1704, physicist Isaac Newton published the work "Optics" and laid the foundations of the contemporary view of colors, a work with a major impact on subsequent color theories, where for the first time the dispersion of light through a prism is demonstrated, according to which a ray of light passing through a prism (Newton, ed. 2010), decomposes into the colors of the spectrum and thus establishes seven primary colors.

Chromatic theory divided colors into three groups, namely, primary, secondary and tertiary colors. Primary or fundamental colors are the strongest, most energetic and cannot be obtained from any pigment mixture, therefore they are considered pure. The primary colors are: red, yellow and blue, which in quantitative and proportional mixture with white or black, give rise to approximately 200 shades (Gurney, 2010).

Secondary or binary colors are obtained from the mixture, in equal quantities, of two fundamental colors. Thus, from red mixed with yellow results orange, from the combination of red with blue results violet, and blue mixed with yellow will give the color green (Bomford at. all, 2000). Secondary colors are less bright compared to the primary ones and stronger than the tertiary colors.

Tertiary colors are the result of combining a primary color and an adjacent secondary color, as follows: red mixed with orange will give orange-reddish, red mixed with violet will give violet-reddish, blue mixed with violet will give violet-bluish (indigo), blue mixed with violet will give green-bluish (turquoise), yellow mixed with green will give green-yellowish, yellow mixed with orange will give orange-yellowish (gold) (Feisner, 2001).

We can also talk about bright and vibrant warm colors, these are shades of yellow, orange and red and cold colors in shades of green, blue and violet give the feeling of freshness, cold, distance (Koenig, 2003). Complementary colors are pairs of colors that are diametrically opposite on the chromatic circle proposed by Newton, respectively the fundamental complements: red - green, yellow - violet, blue – orange (Fehrman, 2000).

Contrast consists of joining opposite colors, of different hue, brightness and saturation, which has the effect of creating vibrant, energetic sensations, of movement, of diminution or exaltation.

By using colors in a controlled and subtle manner, it can be said that their psychological resources are exploited to arouse emotions and convey moods.

MATERIAL AND METHOD

The outdoor space of living areas represents "a blank canvas that only needs to be painted, and color is the brush" with the help of which landscapers transform ordinary areas into breathtaking refuges using plant material, plants and flowers, natural colors that cheer up the spaces, increase enthusiasm and vibration, offering the joy of an escape from the concrete-laden urban landscape. Landscaping or exterior design, as a narrower part of a multidisciplinary field of activity, represents an activity specific to environmental design that at first glance is reduced to a design strategy focused around the natural environment, but today this activity also focuses on living and social environments.

The choice of this theme is a response to the need to understand the notion of color, which appears as one of the most important elements of aesthetics used since ancient times and to which the most interesting meanings have been attributed. The correct use of color in landscaping requires a deep understanding of color and practical knowledge of plant personality in order to plan integrative and sustainable territorial planning of green spaces as a starting point for the requirements of modern man, a prisoner of concrete and a dynamic and active life, but who aspires to a place in nature that will provide him with the peace, air and sun necessary for life.

For this project, we conducted a study of the corridor in terms of its physical properties, the classification of colors according to certain criteria, issues regarding the history of color, their implications in social life, in the beliefs and significance of colors in different stages of history and in different areas. The study also included an in-depth research into the psychology of colors, color design and how the use of color in landscaping influences the urban landscape in order to configure a component that is as pleasant and harmonious from an aesthetic point of view as possible, usable and informative to stimulate outdoor activities. In landscaping, color goes beyond simple aesthetics, it represents a visual language that communicates, motivates and creates a captivating experience, contributing to the success of initiatives to promote an active and healthy lifestyle.

RESULTS AND DISCUSSIONS

Each person perceives colors differently, this is where personal physiology, light, environment, shape and dimensions of perimeter elements, lighting system and many others come into play, but regardless of the budget or style we use in arranging a green space, the color scheme we choose directly impacts us, transmits a subtle message about us to the viewer, gives rise to a unique visual

experience, influences our mood, creates harmony and beauty.

Thus, when it comes to choosing and incorporating color into landscape design, the situation can be slightly confusing and intimidating, simply because there is such a wide variety of colors available in plants today, but we must take into account the following important principles: intended for the space to be arranged, the color of the compositional center, the style approached, the availability of plants, perimeter textures, the size of the space and other characteristics of it.

By carefully planning the colors used in landscaping, the landscape architect or landscape designer creates a design theme or color scheme. There are at least six different color schemes to choose from, and they mostly refer to positions on the color wheel. Each evokes a different psychological response (Oyama, 2003).

A monochromatic color scheme uses a single color, other than the green of the foliage, using different values, shades, and tones of it. Light and dark variations of the same color add interest and depth to the space, thus achieving a harmonious visual effect (fig.1). Color choice is even more important if we have to decorate a small space, in which case we must take into account the light and the time of day in which the space is used. Light colors usually work better in the shade and if the space is used more in the evening or at night, white gives the space an ultra-modern, refreshing and sophisticated look, while darker, brighter colors are recommended in areas with a lot of sun (Austin, 1998).

Figure 1. Monochrome color scheme

The use of evergreen plants whose leaves provide permanent color instills a sense of harmony and peace, evokes freshness, vitality, helps with relaxation, has a calming effect and improves concentration, and the spaces created in this way represent an escape from the urban landscape.

The analogous color scheme is the easiest way to achieve a wide range of colors in the designed space with the least likelihood of chromatic dissonance because it includes three to five colors that are adjacent on the color wheel (Feisner, 2001). Analogous colors are quite similar and in nature, they blend in a gradual way so viewed from a distance the area appears the same color, while seen up close the analogous colors create a rich and visually harmonious chromatic mix. Similarly, from a distance analogous schemes that contain blue and green often appear monochrome.

Figure 2. Analogous color scheme

The complementary scheme uses complementary colors (fig. 3), opposite on the color wheel, which creates a strong contrast. The most common sets of complementary colors are red and green, purple and yellow and blue and orange. Complementary colors can also be used to create dominant elements, focal points, to capture attention or direct the eye (Feisner,2001).

Figure 3. Complementary color schemes

The primary color scheme uses the three primary colors, red, yellow and blue, which when used together create a luminous and energetic space (fig.4). The use of primary colors involves a very good knowledge of how to combine them, through repetition you can obtain either a stimulating and balanced area, or a disturbing and tiring space, the phenomenon can be avoided, ensuring the chromatic unity of the composition, by interspersing areas with lighter or pastel shades, plants with smaller flowers or those with more foliage in order to reduce by compensation (fig.4).

Figure 4. Primary color schemes

Warm or cold color scheme. Colors can be described as cold or warm, green, blue and purple are identified as cold colors, while warm colors are yellow, red and orange with all the shades and tones that derive from them, their influence on feelings and psychological effects on our mind establish the character and individuality of the landscape by playing (Tedford et all, 1977).

The spatial qualities of a landscape are also affected by color. The "temperature" of colors can affect the perception of distance and space (fig.5), thus cool colors are perceived as being further away, making the space feel larger, which is important in the case of small spaces; while warm colors advance or are perceived as being closer, making a space feel smaller, thus we can visually enhance a certain element of the arranged space, an important role in its construction (Di Renzo, 2001).

Figure 5. Warm and cool color scheme

Pastel color schemes can be used by landscapers to evoke strong emotional responses of peace and calm (Blay, 2001). Pastel color schemes use color tones to create soft and subtle effects in the landscape (fig.6). Pastel colors combine best with other pastel colors, their presence in combination with plant elements of strong, pure color, softens the chromaticism, sets the mood, dictates the style and gives cohesion to the arranged space.

Figure 6. Pastel color schemes

Color scheme according to season, seasonal changes have a great impact on the color of the landscape (fig.7). Many plants have a specific coloration in spring or autumn, quite different in other seasons, this factor can lead to interesting combinations of plants and color schemes that change completely from one season to another. Seasonal color changes can be used to create additional interest and richness in the landscape, but can also lead to unsightly reactions when plants, individually, change their chromaticity so that it does not harmonize with other plants during a particular season. Starting from this idea, it would be a waste to plant a plant with spring flowers next to one with autumn flowers, regardless of the chromaticity of the latter, the seasonality of the color is an important aspect in every landscape (Feisner, 2001).

Figure 7. Color scheme according to the season

The color scheme depending on the intensity of natural light is established depending on the degree of insolation of the space (fig. 8). Sunlight animates and energizes, influences both the physical properties of colors and the physical and mental state of people. The choice of plants is made taking into account the preference of plants for exposure to the sun, facilitating the work of landscapers who can

also capitalize on more or less shaded spaces. Spaces less exposed to light have a less vibrant chromaticity, the light that passes through the crown of trees optimally renders volumes, facilitates the perception of details and blurs the hardness of textures, thus the shadows become less accentuated, without a clear outline (Boyatzis, 1994).

Figure 8. Color schemes depending on light intensity

The color scheme that combines vegetal elements with architectural and semi-architectural ones (fig. 9), requires a thorough and practical understanding of the personality of the plants, is ideal for arranging spaces intended for sports activities or children's play in the construction of which bright colored material, large volumes and proportions were used. It is very important to choose plants that do not accentuate the feeling of chromatic pollution, do not cause a state of confusion, of visual discomfort (Rahmatabadi, 2011).

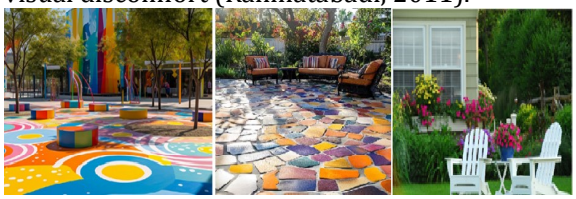

Figure 9. The color scheme that combines vegetal elements with architectural and semi-architectural ones

The neutral color scheme is one of the most durable and versatile design choices in arrangement that can create a timeless, elegant and harmonious space, which complements any architectural style. Neutral shades are versatile and can be perfectly integrated into any landscape, regardless of its style or location, they can adapt to the surrounding environment improving the overall aesthetics making them ideal for creating a unitary and relaxing environment, favoring the feeling of balance and serenity (Ronchi, 2003).

Figure 10. Neutral color scheme

Conclusions

Choosing colors in landscaping can be confusing and a little intimidating, simply because there is such a wide variety of plants and colors available, but we can guide ourselves using certain color schemes.

- The monochromatic color scheme uses a single color, which is very effective used in small spaces. To remove monotony, it uses different values, shades and tones of the same color, which add interest and depth to the space, creating a harmonious and sophisticated visual effect.
- The analogous color scheme includes three to five adjacent colors on the color wheel. It is the easiest way to achieve a wide range of colors with the least likelihood of chromatic dissonance.
- The complementary color scheme uses opposite colors on the color wheel, creating a strong contrast between them. Complementary colors highlight each other, by joining them they are more vibrant provided that one of them is dominant in relation to the other, avoiding their use in a relationship of equality in which case the effect is canceled.
- The primary color scheme uses the three primary colors, red, yellow and blue, which used together create a bright and energetic space, also make the spaces easier to understand for people with special needs.
- The warm and cool color scheme reinforces the identity of the arranged space. They also have spatial qualities, the "temperature" of the color can affect the perception of distance and space, cool colors are perceived as being further away, an important aspect in the case of small spaces; while warm colors advance or are perceived as being closer, making a space seem smaller.
- Pastel color schemes use tones of color for a refined and subtle result in the landscape, adding an ethereal, diaphanous effect, especially when gradually transitioning from white through pastel versions to the base color.

- Seasonal color schemes are determined by seasonal changes that have a major impact on the color of the landscape. Many plants have specific coloration depending on the season, a factor that can lead to interesting combinations of plants and color schemes that change completely from one season to the next. A well-thought-out color palette can be used to differentiate seasonal color changes and can be used to create additional interest and richness in the landscape. Incorrectly used color can create unsightly reactions, if plants, individually, change their chromaticity so that it does not harmonize with other plants during a certain season.
- Color schemes depending on the intensity of natural light influence both the physical properties of colors and the physical and psychological state of people. Shade-loving plants have less vibrant colors, semi-shaded or shaded areas optimally reproduce volumes, facilitate the perception of details and blur the hardness of textures compared to areas where sunlight animates and dynamizes the space through strong and energetic colors.
- The color scheme that combines vegetal and architectural or semi-architectural elements requires a deep and practical understanding of the personality of the plants, the surroundings and the chromaticity of the environment to select colors that complement each other harmoniously. A well-thought-out color palette can be used to differentiate certain access areas, of some spaces, they can also be safety indicators, signaling the limits of an access area, playground, sports tracks or various equipment.

The neutral color scheme includes shades of white, gray, beige and earth tones, they are timeless colors with a calming effect, making them ideal for creating a unified and relaxing environment, fostering a sense of balance and serenity.

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