

Application of Plane Components in Space Design

Shengying Xiao¹, Dameng Liu², Na Li³, Qibin Han⁴, Xiaonan Zhang⁵ and Lihong Tang⁶

ShanDong Vocational and Technical University of Engineering (China ShanDong 250200)

Keywords: Plane Composition; Space Design; Application

Abstract: Plane composition is a very important part of modern design foundation. Points, lines, and surfaces are not only the basic elements of the plane, but also the basic factors of the space design. In different space designs, different visual treatments can be created for people through different artistic treatments of constituent elements and rules. This article will further explore the application of plane constituent elements in space design based on the basic elements and application rules of plane constituents.

With the development of society, many emerging design concepts have also emerged. People's needs for space functions are no longer limited to basic living needs, but aesthetic needs are integrated into them. Plane elements, as an important part of space design, will play a huge role.

I. The role of plane constituent elements in space design

(1) Enhance the visual beauty of space

With the advancement of science and technology and the continuous improvement of people's living standards, people have also put forward higher requirements for space function requirements. They are no longer limited to their basic living functions, but have begun to attach importance to their aesthetic functions. In space design, the designer uses the basic elements of the plane and supplements the aesthetic characteristics to enhance the visual beauty of the space.

(2) Enhance the scientificity of space design

As we all know, space design covers many fields and various types. The use of planar components can enhance the science of space design invisibly and better interpret the effects pursued by space design.

(Three) narrow the distance between space and people

In the context of the prevailing visual culture, designers can make full use of planar components to better convey visual information to people. For example, when designing an interior space, designers can use tables, ceilings, lamps and other elements to give different connotations and values to the space, create different space atmospheres for users, and finally narrow the distance between the space and people.

II. The application of the principle of plane composition in space design

(1) Symmetrical coordination

Symmetric coordination is also symmetrical equilibrium, which is especially important in space design. Symmetry itself has balance, it is a static balance. In space design, most designs have symmetrical balance. For example, in interior space design, especially the Chinese style design can perfectly interpret this style. The Chinese style design combines the traditional Chinese concept of yin and yang balance to design the interior space. To regulate the indoor ecology. In addition, in the interior design, the furniture is placed symmetrically, which can attract people's attention, and make it stay in the middle position to protrude the main object in the middle position, which can give people a more solemn feeling. For example, in the living room, the TV background wall is symmetrically balanced to arrange some more chic furniture, which can make it slightly lively in the balance. If there is balance, there will be imbalance, but imbalance is also a kind of dynamic

equilibrium, a state of mechanical equilibrium. This state is also called asymmetric equilibrium. This balance focuses on the visual and psychological feelings, and is a dynamic balance formed by a material with different shapes and different materials. The sense of balance mainly depends on the trade-offs of the shapes, colors, materials, etc. of the objects being decorated. For example, when designing a TV wall, different shapes, colors, and materials are used to achieve a balanced state, which creates a sense of tension in the space, making people's aesthetics sublime from the plane to the beauty of the space.

(2) Rhythm

Rhythm is a rhyme and rhythm in our understanding, but in spatial design, rhyme refers to displaying a static form and causing people to feel the rhythm of vision. It is very coherent and organized. And repeatability. And the rhythm is like the music we usually listen to has a change in beat height, length, strength and weakness. In the space design, we can break the simple and repetitive design through the changes of shape, color and texture, so that my final design will show a smooth, upset, and layered sense, which will give people a certain sense of rhythm., Which in turn produces deep emotional fluctuations.

(3) Balance and harmony

The constituent elements of a plane are mainly points, lines, and faces. In the process of use, the balance and harmony of points, lines, and surfaces must be guaranteed to better ensure the comfort of the design work. The transformations between plane elements are mainly some form changes, which can be changes in size, shape, color, texture, etc. For example, a visual artist in South Africa, Alexis Christodoulo, used 3D design tools to create some geometric architectural scenes. These surreal virtual buildings look strange with soft colors. These designs make full use of points, lines, and surfaces to make the design look beautiful, but the whole gives a sense of balance, and at the same time it has a visually psychedelic feeling. In daily life, the sense of closedness or expansion of the space that people feel is caused by the edge line, which has the function of defining and dividing in the space design. Elements such as points, lines, and surfaces are not isolated individuals, but interdependent combinations. Therefore, in the process of space design, we must pay attention to the coordination and connection between various elements, and finally create a balanced and harmonious design work.

(4) The principle of practicality

Space design will eventually come to fruition, that is, in daily life. Therefore, in the process of space design, we must follow the principle of practicability of elements to bring people the ultimate aesthetic experience and cause people's psychological resonance. It is undeniable that the designer's matching, transformation and adjustment of the planar constituent elements can enrich people's visual space and bring people different psychological experiences. However, in the process of space design, you cannot add all the elements to the elements in order to use them. Incorporating into a work, the original intention of the designer to design the work is based on practical value. Therefore, the principle of practicality of the elements must be considered in the design process.

III. The plane constituent elements and their application in space design

(1) Little

A point is the smallest element of a plane component. From a geometric point of view, a point is only used to indicate a position. It has no size or length. It only indicates the beginning and end of a line, or where the two lines intersect. In space design, points have size and shape. Its size is relative to the environment, and smaller shapes can be called points. If a shape is relatively small in a picture relationship, it can be regarded as a point. If this shape is placed in another relatively large picture, it will give people a sense of face. For example, a row of paintings is hanging on the background wall of the bedroom for decoration. From a small area of the wall surface, the painting at this time is a surface. But if you look at the large space as a whole, painting can be understood as

a row of dots. The different visual sensations in space design are produced through the movement, arrangement and combination of points. In addition, there are differences in the size, position, and shape of dots, and their different sizes, placements, and shapes will give people different visual feelings and heart space feelings. For example, a regular arrangement of points will give people a sense of stability and order. Conversely, permutations and combinations in an irregular manner will produce completely different feelings. Therefore, when designing a space, the designer can make full use of the different characteristics of the points to make a new arrangement and combination, and finally generate a new visual center point, giving people a new visual enjoyment.

(2) The line

The points move into a line. In geometry, lines have a certain length, direction, and location. However, in space design, the appearance of the line as a plane constituent element must be an elongated object having a length and a position. It can not only convey the emotion of the designer, but also play an important role in the division of space. Lines in space design can be divided into two types: solid lines and sensory lines. Usually visible and usable lines are solid lines. The line where the faces meet or where the faces turn is called the sensory line. The existence of lines in space is very diverse and universal. A beam of light, cement seams, and stitching seams can all be considered as the existence of threads. It is generally divided into two types: straight lines and curved lines. Next, the author will categorize and explain its application in space design.

Application of straight line in space design

Straight lines can be seen in the space design. Different straight lines also give people different feelings. Horizontal straight lines give people a sense of stability and stretch, so dividing high spaces with horizontal lines can reduce the sense of space. The vertical lines give people a sense of towering, erect and solemnity, which can extend the space vertically. Slashes give people a sense of jumping, liveliness, and speed, which can be used to create a dynamic space. For example, gym, KTV, etc.

2. Application of curve in space design

Curves are also very common in space design. It always gives people a sense of activity, vitality, vitality and mobility. Therefore, it is mostly used in leisure places. It is mainly divided into two types of regular curves and irregular curves. Regular curves refer to geometric curves, which have obvious geometric characteristics. It usually gives a geometric beauty. The irregular curve gives a sense of fluidity and randomness. Therefore, the curve is mainly used in space design to break through the inherent atmosphere and give people a sense of innovation and randomness.

(3) Sides

In the plane components, points are aggregated into faces, and lines are moved into faces. As an important part of space design, surface display is also very diverse. From a morphological point of view, noodles can be either concrete or abstract. In the space design process, it is necessary to combine specific topics to perform transformations. From the point of view of nature, the noodles can be divided into two categories according to the reality and reality, one is the positive noodles. One is a negative face. It can also be called real and virtual. The solid surface has a clear outline and shape, and also has a substantial internal structure, so it is powerful. On the other hand, it is an imaginary surface. The imaginary surface is not necessarily a real surface, but it can be perceived by people. For example, when designing an interior space, you can create a virtual and solid effect for the interior by combining virtual and solid surfaces. Enhance indoor light and dark contrast. In addition, designers can also make full use of points and lines to add some faces to make the space richer and more vivid.

Conclusion

Points, lines, and planes are the basic elements of a plane, and the forms of arrangement and combination are very diverse. Therefore, in the process of space design, it is necessary to pay attention to the importance of the three in space design, and to better use the planar constituent

elements and rules in space design to bring people a better aesthetic experience.

References

- [1] Cheng Wei, Li Ying, Yang Mingdong. On the Application of Graphic Design Elements in Interior Design. *Modern Decoration (Theory)*, 2015 (7).
- [2] Xu Chenggang, Huang Zhixin. Multidimensionalization of graphic art design elements from the perspective of exhibition space. *Fine Arts Education Research*, 2012 (19).
- [3] Yang Yifan. Application of graphic design elements in interior design. *Design*, 2017 (17).
- [4] Yang Zhengzhong. Analysis of the application of graphic design elements in interior design. *Art Education Research*, 2014 (24).