

Analysis on the Furnishing Application of Geometric Symbolic Furniture in Modernistic Residential Interior Design

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ABSTRACT

In modernistic residential design, designers began to use geometric symbolic elements in the design, using the basic features of geometric shapes to stimulate people's visual senses. Meanwhile, geometric furniture is also a product of modern people's needs. This article reflects on the current use of geometric furniture by introducing the background of modern style and the aesthetic characteristics of geometric furniture, and studies and analyzes the furnishing application of geometric furniture in modern residential interior design.

Keywords: *geometric shape, residential design, modern style, furnishings*

I. INTRODUCTION

With the development of society, fast-paced has become synonymous with contemporary cities. As a result, more and more people prefer simple and comfortable residential spaces in order to abandon complex, tense, and depressed emotions and relax the mind and body. In addition to the above social reasons, the author believes that contemporary interior design tends to be more Scandinavian, simple, and modern style, which is also reflected in furniture design. And the most prominent is geometric symbolic furniture. Geometric furniture is the choice of more and more people nowadays, but the question is what kind of style and what kind of furnishings can reflect its value. People tend to put the appearance of furniture first in choice, but ignore its role in space. A suitable piece of furniture can make the entire space flexible and smooth, otherwise the furniture itself will be useless no matter how good it looks. Therefore, the furnishing design itself is to put suitable furniture in a suitable place so as to serve the overall space.

II. MODERNISTIC DESIGN OF RESIDENTIAL SPACE

A. The formation background of modern style

Modern style is also called modernist style, which originated from the Bauhaus School established by Gropius in 1919. The appearance of this style catered to the reality of the time. The nobles and young people liking modern things hoped to decorate their homes in a more stylish and trendier style, and even hoped to have

a mini bar, audio-visual center and other content. Their many design demands for interior space also resulted in the birth of modern style. Of course, it is also a product of industrial society, which is widely used in architecture and space. The design of the Bauhaus period sought a breakthrough from tradition and paid attention to function and spatial relationship. It also respects the characteristics of the material itself and exerts its structural beauty, and opposes complicated decoration and excessive furniture language. The modern style also emphasizes the relationship between design and industrial production and the viewpoint that design is designed for the general public. Therefore, in terms of architecture and furniture modeling, simple geometric structures are more convenient for industrial production. The modern style is also divided into eight major schools: high-tech school, style school, white school, minimalism, decorative art, post-modern style, deconstructionism, and new modernism. In interior design, modern style is also a more popular style. It pursues fashion and trend, and attaches great importance to the unity of the layout and use of the living space. No matter how large or small the indoor space, the purpose of modern style is to make the space appear spacious. Its purpose is to maximize all the functions, thereby reducing all unnecessary decorations, and allowing the space to be coordinated with the furniture as a whole to the greatest extent.

B. The performance characteristics of modernistic interior design

Nowadays, modernistic interior design is highly regarded, and its design can show both individuality and modernity. The simple design style and single

furniture material do not affect the beauty and comfort of the interior space. It has always adhered to the principle of "less is more" proposed by Mies van der Rohe. Its characteristics can be summarized into three points:

1) *The collision of spatial color*: In modernistic interior spaces, high-purity colors are often used in color, and more personalized, flexible and bold use gives people a avant-garde and unrestrained sense. The entire living room is dominated by a pure color, swanking but not exaggerated. And it uses a large number of new materials such as aluminum alloy and tempered glass in decorative materials. It collides the exaggerated colors in the space with the pure colors in the furnishings, giving the whole space more fashionable elements.

2) *Simple and personalized space*: The modernistic interior space is completely different from the traditional European style. It abandons unnecessary decoration and uses simple lines and modernistic soft furnishings to form the entire space language. Most modern styles are presented in the interior design as a coffee table, a TV cabinet, and a group of simple sofas. Simple combinations and lines form a simple living space, equipped with modernistic paintings, personalized soft decorations, and metal or glass lampshades. This is the portrayal of modern style in interior design, giving people a relaxed and comfortable feeling.

3) *Multifunctional space combination*: Modern style emphasizes functional design, so it is also reflected in interior design. Modernistic interior design advocates maximizing the use of functions in a limited space, focusing on function and space organization, exerting the beauty of the structure itself, and opposing meaningless decoration. It also adheres to the concept of "form follows function" in the selection of furniture. For example, in the wall space design, green plants and decorative paintings can be added to the shelf made of logs to give the space a sense of nature and personality.

III. GEOMETRIC SYMBOLIC FURNITURE DESIGN IDEAS

Geometric symbolic furniture has always been symbiotic with modern interior design. The exploration of this style design idea can be analyzed in the following two aspects.

A. The forming background of geometric furniture

After the First World War, the design of Germany as a defeated country began to consider the relationship between design and production. Traditional hand-manufacturing is costly at its stage and outdated. At this

time, modernist style appeared, and geometric furniture began to enter people's vision. The Dutch Style Movement that was born as early as 1917 can actually be said to give birth to geometric furniture. The Style Movement pursued artistic abstraction and simplicity. In this movement, the architect and furniture designer Helit Rietveld created the Red and Blue Chair, which exactly used a geometric structure. In the same period, Sottsass, the founder of the Memphis design group, also began to geometricize furniture design. Although the geometric shapes are more of rational sense, his works integrate sensibility and are a playful and cute design style. In the American modernism at the beginning of the 20th century, everyone began to consider how geometric shapes were not monotonous in furniture, and began to emphasize the function and aesthetic effects of furniture.

As literally, geometric furniture is a furniture conceived and designed through geometric figures, and it is a breakthrough in design from arts and crafts movement to modern style. Compared with the previous furniture with fine handwork and complicated decoration, geometric furniture gives people more simple and bright feelings. At the same time, the simple geometric shape is more suitable for machine manufacturing, and the assembly is also very convenient, which greatly reduce the production cost and improve the manufacturing efficiency. In this social context, geometric furniture has gradually predominated.

B. Geometric definition and aesthetic characteristics

Geometric figures are made up of points, lines, and surfaces. Everything people can see in their lives is made up of geometric shapes. Geometric shape is also abstract. It is defined as a variety of figures abstracted from real objects, collectively called geometric figures, which are mostly displayed on furniture as cubes, prisms, cylinders, cones, spheres, etc. Geometric figures are unique in aesthetics, and they are expressive when combined with furniture. In terms of design, both the plane impressions and the three-dimensional look are novel and bold. Meanwhile, the symmetrical use of geometric figures in space also gives people a strong sense of ritual and spatial sequence. In geometry, the beauty of geometric figures exists in many aspects, one of which is the perceptual beauty formed by figures. In other words, in terms of form perception, geometric figures have different permutations, combinations and transformations, and the aesthetics also change. The aesthetic feelings are countless. The second is the three-dimensional beauty of the geometric shape itself. This is different from perceptual beauty. Perceptual beauty exists in the external dimension, and three-dimensional beauty is an aesthetic of structure within the external. Handing over geometry from the complex geometric formulas and geometric concepts, people can perceive

them in a more detailed and profound way. The third is the creative beauty of geometry. The geometry can be single or irregularly combined. The new geometry formed by the same combination has a unique aesthetic. It gets creative inspiration from different things.

IV. THE FURNISHING FUNCTION OF GEOMETRIC FURNITURE IN MODERNISTIC RESIDENTIAL SPACE

A. The relationship between geometric furniture and modernistic residential space design

Geometric furniture is developed with the change of people's aesthetic taste. It may be difficult for people to see purely geometric furniture in the Middle Ages or the feudal era. At that time, people paid more attention to objective images, enhanced objective image with protective power and endowed them with the feeling of "god". Therefore, furniture was also a manifestation of the social period at that time. The society has gradually changed ideologically, economically, and politically, and then modern styles have emerged and have been applied to residential spaces. Geometric furniture grew up between the two world wars in the 20th century. Various genres have begun to use geometric shapes in furniture design. Such simple graphics can often bring impact to the space. Using the collision of geometric figures and colors, the originally monotonous space has an instant bright spot.

Geometric furniture is ubiquitous in modernistic residential spaces, and geometric shapes are an indispensable part of this type of space design. From the designer's exploration of cubic furniture to spherical furniture to various modular furniture, it can be seen that geometric shapes are one of the important forms that highlight modern style. It extracts the elements of the furniture, and then gives them basic geometric shapes, using vertical and horizontal geometric structures and asymmetrical structures, and using rational thinking to break inertial thinking, thereby obtaining a different shape. And this shape has the characteristics of a furniture, which may be the first geometric furniture. This form of breaking the convention is mostly used in modern style, making the entire dull space full of personality.

B. Application and furnishing function of single geometric furniture

Single geometric shapes (such as cubes, spheres, cylinders, cones, three-dimensional triangles, etc.) have many forms as the main body in furniture design. Most of them do some simple addition and subtraction to the shapes to create. Addition is to form a new shape by combining basic geometric shapes through alternation,

repetition, and gradual change. Subtraction is to divide and cut basic geometric shapes to achieve new and innovative shapes. These are common methods of designing furniture shapes using a single geometric shape.

"Fig. 1" is an interior design of the Waterfrom Design Company in Taiwan, which is a living space designed for couples engaged in the technology industry. Because of the owner's profession, they pay attention to the accuracy and practicality of spatial measurement. The intuitively designed function reduces the traces of man-made figuration, and the texture of the paint brushed on various substrates replaces the pretentious carving. This interior space is a typical modern style, a brief but not simple design. In an elegant gray-white base space, a piece of fine contrasting color organism is cut out to tease the visual senses. From the perspective of furnishings, each space seems to be a rectangular volume filled in the entire carrier. From the cylindrical wooden coffee table to the marble round dining-table top, as well as the spherical chandelier in the dining room, they all echo each other. Furniture with round elements can take advantage of the soft visual effects of rounded lines, and compared with the sharp linearity full of the corner angle, the space is more splendid. Several different circular size combinations in the residential space can also give people a variable characteristic, making the entire space flexible. The entire space is mostly a stack of geometric blocks, which are connected in series with each other in this kind of angular space in the form of block and volume. The use of round spherical furniture can soften the space very well and play a role in scheduling. While the furniture with a single geometric shape is simple and direct. It makes the entire space less complicated and less impetuous, and gives people a sense of walking into a giant cube paralleling to rehearsal and disorder, and one can also feel the interest outside of the calmness of the space. ("Fig. 2")



Fig. 1. The sketch of living room.

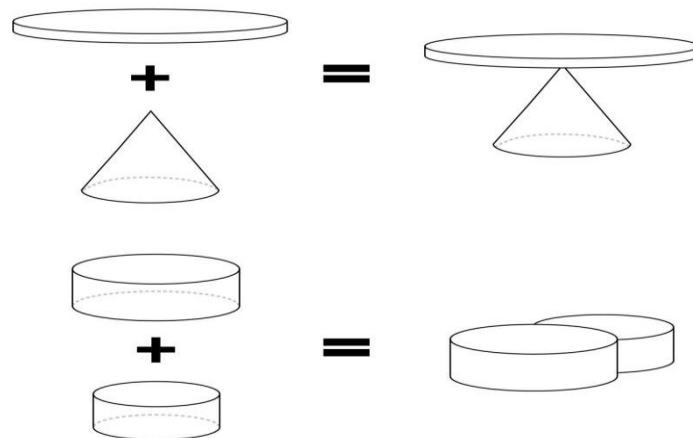


Fig. 2. Simple combination sketch of some furniture.

C. Application and furnishing function of multi-combination geometric furniture

Multi-combination geometry can also be said to be a composite combination geometry. This kind of geometric furniture takes a certain geometric shape (sphere, square, cone, etc.) as the basic base or module, and then carries on the creation such as interweaving, stacking, binding, twisting and squeezing on the basis of it, thus forming a brand-new unique new product with concise appearance. It discovers changes in the whole, merges the whole in the changes, and uses this common furniture form combination to obtain beautiful and personalized design works.

The A3 apartment designed by Israeli designer Raz Melamed for a group of art curators is located in Tel Aviv. The most important thing about this residence is to meet the needs of the host to entertain guests. Therefore, Melamed removed the original walls in the apartment and replaced it with glass partitions. Residents can open or close the glass partition wall between the toilet and bathroom according to their own needs, so that the size of the entire space can be changed according to the situation. The design of the kitchen in this residence is very distinctive. It is an island-style kitchen designed by the Italian brand LANDO ("Fig. 3"). Compared with traditional L-shaped kitchens or "—" shaped cabinets, island-style kitchen can greatly increase the area utilization of the

kitchen, integrate the kitchen into the living room, and increase interaction. The island-style kitchen in the A3 apartment is a simple splicing of multiple cubes and cylinders, which is brief but not simple. And the black marble and dark wood color used in the color make it the visual focus of the entire space. Everything in the kitchen is integrated to create a moderate feeling of space.



Fig. 3. LANDO island-style kitchen.



Fig. 4. Poise Collection.

Combined furniture will be more distinctive and individual. Just like Desmond Lim, a Malaysian designer born in London, his Poise Collection is a combination of ash wood and artificial stones ("Fig. 4"). This is a combination of warmth and coldness. On the basis of the seat composed of simple geometry, it seeks a new change, using wooden table legs to support the ash wood table top, and the cylindrical artificial stone is stuck between the two wooden table legs to maintain the balance of the whole structure. The new shape made with stones is added to the basic shape, which is a kind of stacking, which not only makes the appearance of the Poise Collection playful and simple, but also can be well adapted to various modern style spaces.

V. CONCLUSION

The current economic and social development makes people prefer a simple and comfortable living environment. More customers are pursuing modernistic interior space, and geometric furniture has become a part of modern residential homes. It is simple and

without losing the sense of design, meeting the needs of more and more consumers. The furnishings of geometric furniture in the indoor space also play a key role. The use of neat geometric structures, bright lines, and concise artistic forms makes the entire space diversified, interesting and individual. The purpose of studying geometric symbolic furniture is to explore different furnishing forms through the use of different geometric furniture in the space, to create the atmosphere of the entire residential space, and to provide designers with different perspectives of thinking to meet the various needs of consumers.

References

- [1] Li Lei. The application of geometric forms in modern furniture design [J]. *Art and Design (Theory)*, 2010, 2(11):230-231. (in Chinese)
- [2] Yuan Yuan. On the geometrical composition of modern furniture design [J]. *Packaging Engineering*, 2017,38(14):211-213. (in Chinese)
- [3] Xu Changqi. Discussion on the application of geometric forms in modern furniture design [J]. *Technologist*, 2013(11):212. (in Chinese)
- [4] Zhang Yan. A brief discussion on the style and genre of interior design [J]. *Tomorrow's Fashion*, 2020(16):51-52. (in Chinese)
- [5] Qi Xuying, Yuan Gaosong, Zhou Chao. Research on the application of geometric elements in the design of modern furniture exhibition hall [J]. *Popular Literature and Art*, 2019(13):131-132. (in Chinese)
- [6] Ma Zhiming, Hong Xue. Analysis of modern furniture design application based on geometric shapes [J]. *Science and Technology Innovation Guide*, 2011(13): 221+223. (in Chinese)
- [7] Wang Zhaojian. Research on the application of geometric form language in modern indoor space [D]. Qingdao University, 2017. (in Chinese)
- [8] Hu Yuan. Research on the application of geometric forms in the design of interior furnishings under the sense of order theory [D]. Southwest Jiaotong University, 2016. (in Chinese)
- [9] Liu Feifei. Research on the application of Chinese traditional decorative elements in modern interior design [D]. Hunan University, 2010. (in Chinese)
- [10] Wang Meiqi. A brief discussion on the use of colors in the design of interior space environment [J]. *Ju She*, 2020(01): 26. (in Chinese)
- [11] Guan Dongling. Theoretical study of geometry in classic furniture modeling [J]. *Furniture and Interior Decoration*, 2019(03):67-69. (in Chinese)
- [12] Luo Yubin. Analysis of Dutch "style school" architecture and furniture design [J]. *Popular Literature*, 2016(10):91. (in Chinese)