

Study on Expression of Datum Line in Contemporary Interior Design

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Abstract—"In an era like this, art satisfies only the low needs, the material needs. It looks for content in vulgar material because it doesn't know anything better. Objective objects are always like that, and people think that the purpose of art is to reproduce them. From then on, the question of "what it is" have disappeared, leaving only the question of "how to express it", namely, to use what method to copy these material objects. "When the method becomes the foundation, art loses its soul" — "Concerning the Spiritual in Art". In the "interior art" varnished by the rich social resources, some expressions are made for the sake of expression, and decoration for the sake of decoration. This paper will uncover the surface of decoration and explore the most essential rhythm in formal beauty brought by "lines" in interior design. Through exploring the "datum line", the proportion assigned to a measure of mathematical calculation and the construction of harmony within the framework of pattern, and its attributes that meet the needs of interior design, the study is devoted to establishing its "personality" and looking for the reliable perception of order given by rules and laws, and the pleasing spiritual understanding endowed with rhythm.

Keywords—interior design; datum line; expression

I. INTRODUCTION

Regarding the generation of "lines", Kandinsky pointed out that "In geometry, a line is an invisible entity, which is the track left by a point in its movement. Thus it is produced by motion, and indeed it is produced by ending the final resting state of the point. The line is thus the parallelism of point, the fundamental element of painting. Therefore, it may be called, strictly speaking, the second element." A line in geometry has length, direction, and position, but no width. As a design and visual element, visible lines not only have length, direction and position as lines in geometric concepts, but also have certain width, dynamic and emotional concepts.

II. DEFINITION OF SPATIAL DATUM LINE

Le Corbusier provides a better definition of "line" in architecture — "The datum line brings perceptive mathematics and provides a reliable perception of order." When people march in procession, they walk along geometric paths, and the distance between is the datum line in design, which comes from our arm length; when people eat, they choose the right cutlery according to the width of

the palm and the length of the fingers regardless of the line of motion between actions. Stride length, palm width, arm span, and height are the most natural, primitive, and accessible measurements. People can instinctively and naturally choose to apply datum line because the concept of "lines" is already buried in their consciousness. A man creates his own measure by the length of his feet and arms, so that everything around him is in proportion to their own, and so that the self is in harmony with its surroundings. After it is determined that there is an appropriate measure between all objects, harmony generates rhythm. This ability is innate and has existed since the beginning of human activities. It has always been rooted in consciousness, so that it can continuously create wonderful art in history, whether in primitive society or today. Based on the progress of science and technology in the modern context, the datum line is no longer what it was in the primitive society and changes with different environments. It can be found in the armor of a ship or a train, in the civilian space of red brick and rubble and in the crystal box of the Louvre, where the category of datum line spreads like light. In general, although the concept of "datum line" is vertically extended and inclusive, it conforms to the laws of nature and the foundation of order is consistent.

III. ORDER AND AESTHETICS OF THE DATUM LINE

"The datum line is a satisfaction with the spiritual order that leads us to investigate the relationship between proportion and harmony, and it gives rhythm to the work."¹ Rhythm was originally used to express the rhythm of poetry or music, but it also originated from human instinct. Based on the datum lines, people consciously imitate and apply nature to create rhythms which may be organized, repetitive or continuous. Hegel's remark that "Architecture is frozen music" is not a metaphor, as architecture was indeed the freezing of music Numbers. Through the continuity and repetition of the structure, space can create a simple and clear rhythm, and it can also reflect the rhythm of cadence through regular component changes like height, ups and downs, shade, density, blankness and fullness, advance and retreat and interval, etc. Much like the overture, expansion, crescendo, climax, repetition and rest in music, it can give people an exciting sense of melody. The satisfaction of this

¹ (France) Le Corbusier. *Vers Une Architecture* [M]. Zhejiang: Phoenix Science Press, 1923.

order and the rhythm of harmony can be found in many buildings and paintings. It can also be found in interior design, as a derivative major of architecture. (See "Fig. 1", "Fig. 2" and "Fig. 3")

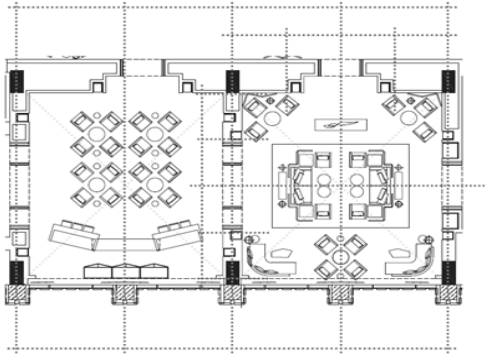


Fig. 1. The layout plan of Beijing Waldorf Astoria Hotel Chinese Restaurant.

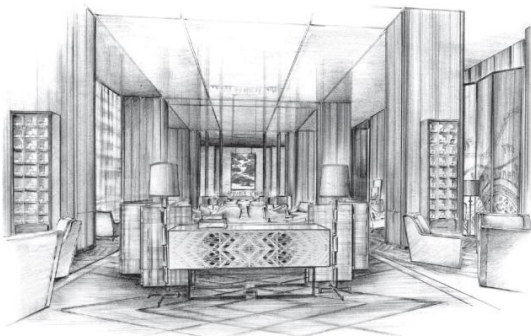


Fig. 2. The Chinese restaurant of Waldorf Astoria Hotel Beijing (angle-1).

^a Picture source: <http://www.mt-bbs.com>, 2013

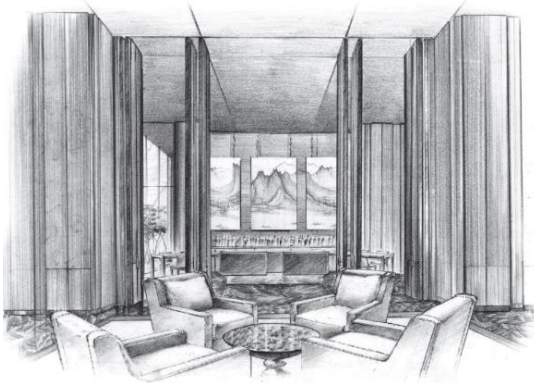


Fig. 3. The Chinese restaurant of Waldorf Astoria Hotel Beijing (angle-2).

^a Picture source: <http://www.mt-bbs.com>, 2013

The column point is the skeleton, the base of the datum and the alignment of the datum line starts with it. The column point limits the light and the field of vision, and man is born to be attracted to light, which is both instinct and nature, thus limiting the direction of the plane. The column point limits the opening and closing of the space, and the

functional partition of the space is based on this. The column point provides the square pattern, which determines the basic geometry of the space, and also one aspect of this "fundamental feature" of space. Depending on the square pattern determined by the column point, the layout is the correction within the pattern. Furniture placement is based on the midpoint and end point of the pattern. The model selection presents mirror symmetry based on the datum line. And the whole spreads to the four directions with the intersection point of the datum line as the center. The modelling line of the wall is divided into equal parts within the range of the datum line, and symmetrical treatment is used in modeling materials. The effects of integrity, unity and harmony are produced due to the constraints of these geometric elements. (See "Fig. 4", "Fig. 5" and "Fig. 6")

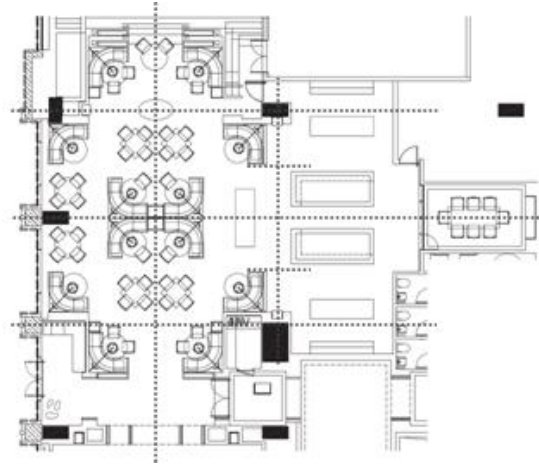


Fig. 4. The layout plan of French restaurant.



Fig. 5. The French restaurant (angle-3).

^a Picture source: <http://www.mt-bbs.com>, 2013

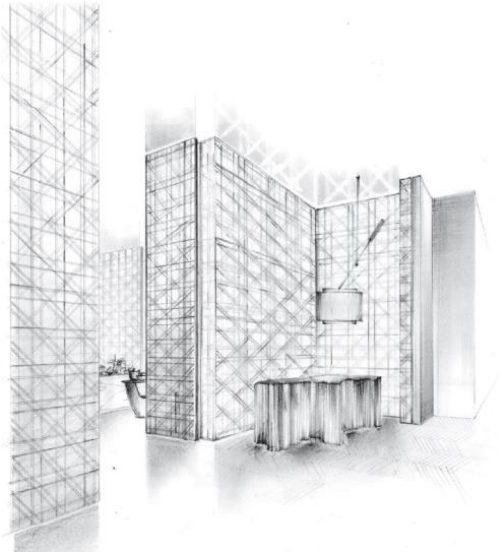


Fig. 6. The French restaurant (angle-4).

^{a.} Picture source: <http://www.mt-bbs.com>, 2013

The Waldorf Astoria Beijing, as can be seen in above picture, is designed by Yabu Pushelberg.²

The datum lines that are similar to those shown above are in a different order and rhythm. Within the framework of pattern construction, when pursuing the relationship between proportion and harmony, only by satisfying its "personality" and not violating its "attribute" can people have a reliable perception of order and a rhythmic spiritual understanding. The determination of datum line has nothing to do with the flowers for decoration, as adornment is the redundant thing beyond must which is just primary satisfaction, but the mathematical "line" is the must in must which creates advanced aesthetic appreciation. Decoration arouses pleasant sensation, too. Pleasant sensation comes from two distinct things: one is the abstractness of formal beauty, and the other, as is known to all, the pathetic, clumsy labor of man. Therefore, decoration should be the accessory component of datum line. They can be changeable but must be abstract reflect of the "datum line" criterion and follow the organic unity of essence. Aristotle emphasized the concept of an organic whole, saying, "A whole is something that has a head, a tail, and middle. The head itself does not necessarily come from anything, and it is followed naturally by another. The middle comes following something and is followed by another. Therefore, a well-structured plot is not a random beginning or ending, but follows the principles stated here." This kind of organic whole fills the corner of the nature, and is widely recognized by people. There are wonderful, regular inner relationships in the appearances of plants, living things and even inanimate individuals in nature. (See "Fig. 7" and "Fig. 8")

² (Canada) Yabu & Pushelberg: Atlas of Design Concepts of Waldorf Astoria Beijing [DB]. <http://www.mt-bbs.com>, 2013.



Fig. 7. The corridor of the Waldorf Astoria Hotel Beijing.

^{a.} Picture source: <http://www.mt-bbs.com>, 2013



Fig. 8. The lobby of the Waldorf Astoria Hotel Beijing.

^{a.} Picture source: <http://www.mt-bbs.com>, 2013

People take inspiration from nature and then make creation by the mind, which comes from nature and is different from nature. "Coming from nature" reflects the unity of the datum lines, while "is different from nature" shows the difference between each other within the datum line. Their differences create diversity and change; their connection breeds harmony and order. The relationship between the datum line and its accessory components is like that between music and notes. There are many different notes, which are the smallest unit of music in music. Different notes are combined to form music. Music works only if the notes are on the music score, and they're just graphics without the music score. Nothing exists independently. To create order and harmony, it is necessary not to be confined to the form itself, but to connect with the

content, search for the essence through the phenomenon, and dig out the internal "datum line", which conforms to the organic view of the universal connection of all things in the universe. Only by attaching the components to the datum line, and limiting the components within the datum line, can the "lines" compose a poem. "In terms of the external concept, each individual line or form of drawing is an element. In terms of the inner concept, the element is not the form itself, but the inner tension that is active in it."³ [3]. The tension created by this datum line not only gives people sense of rhythm, but also stimulates their emotional experience and exploration of space. It is easy to find all kinds of lines in nature and experience the emotions they bring. Horizontal line, which comes from sea level and horizon line, often expresses a free feeling of quietness and relax. When the sun rises from the open sea, where it meets the surface of the sea, the wide view creates a horizontal line of considerable length, which conveys even greater peace and tranquility. Shorter unconnected horizontal lines, like ships floating on the sea, become a series of short lines. They are either adjacent or far apart, and these distances give them a sense of stretch and rhythm, intensely or at ease. Vertical line, which is the tree that grows upward and the mountain that crust movement accumulates, contains a kind of horizontal and stable resistance. The mountain with considerable height is awe-inspiring, and the lush abundance of trees is mysterious and majestic. The curve, often soft and intimate, is leaf surface slightly curled and slight breeze. People are often described as slim or stocky, which represents the images of "line" into life. At this time, the concept of human is no longer a biological organism, but a form of the "line" in mathematical concept, with the length and width being generalized. These depictions of male and female characteristics depend on factors such as length, width, direction, angle or the degree of integration with the curve. As far as interior design is concerned, the natural and rich emotional experience of space endowed by the form of line can be explained by summarizing "line" into mathematical concepts. A line is an extension of a point and moves in a certain direction. All the "lines" in the room can be basically drawn in two directions, namely the x and y axes in the mathematical concept. A line moving along the X-axis forms a horizontal line, while a line moving along the Y-axis is a vertical line. Only with lines and directions can a path be formed, straight and smooth or winding and obscure. In "Fig. 7", for example, the line on the X-axis is single and short while the line on the Y-axis is extended upward and repeated many times. Walking in such a space is like walking in a poplar lane, along which similar long shade tree makes one feel elegant and relaxed. With contrast to the path with proper width (not being too wide), the perspective of the space is more compact, adding a sense of mystery. In "Fig. 8", the length of the X-axis is obviously larger than the height of the Y-axis, thus forming a spatial appearance with the X-axis as the main direction. Although the combination of line segments on the Y-axis is diverse and complex, the overall space is not crowded and cumbersome, which is due to the openness and purity of the X-axis. The overall space

presents a stable, orderly and well-focused vision. In the midst of it, people get a sense of peace and tranquility, and the mental experiences that time seems to have quieted down. The beauty of interior design is to grasp the essence of natural beauty and abstract generalization and transcendence of the surface of phenomenon. The origin of each line essentially converges. They starts from one point, are then given motion and direction, and form tension in confrontation. Tension endows decoration with vitality, makes it beautiful and let it become beauty itself. As for this tension, it is the will of beauty.

IV. CONCLUSION

By dividing a three-dimensional space with two dimensions, two faces in the x-direction and four faces in the y-direction can be obtained. So if these six faces are sliced they are just six lines in different directions. It is exactly the selection of these lines, which make them contend against each other, that creates the desired spatial effect. The plane function of the datum line provides the order of space and creates the sense of rhythm and notes, which is the most essential beauty criterion of architectural space. The elevation form of the datum line brings people a variety of emotional feelings and spiritual satisfaction. "Datum line" is mathematics as well as perception, and is an important law that makes space the foundation of art.

REFERENCES

- [1] [Russia] Kandinsky. "Concerning the Spiritual in Art" [M]. China Social Sciences Press, 1987.
- [2] (UK) Gombrich, E. H. The Sense of order: A study in the psychology of decorative art [M]. Guangxi Art Publishing House, 1987.
- [3] (Germany) Ernst Grosse. The Beginnings of Art [M]. The Commercial Press, 1984.
- [4] Peng Yigang. On Combination of Architectural Space [M]. China Architecture & Building Press, 1998. (in Chinese)

³ (Russia) Kandinsky. "Point and Line to Plane" [M]. China Renmin University Press, 2003.