Appearance Design of Public Buildings Based on the Perspective of Cognitive Psychology

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Abstract: In today's era, with the rapid development of science and technology, people's thinking has become more and more imaginative. The phenomenon of cross-border integration and mutual exchange and reference of various disciplines is booming, and the appearance of public buildings has also appeared in many different forms. Important elements of the city. This paper takes cognitive psychology as the starting point, after in-depth understanding of the current conditions of public building exterior design and its influencing factors, from building exterior cognition to various stages of psychological processing, and then analyzes the methodology of public building design.

Keywords: Cognitive Psychology; Public Building; Appearance Design

Constant exposure to familiar situations allows us to build patterns in our minds, mental frameworks that allow people to respond quickly to the world they are in, but also allow people to see things that are not there. People build mental frameworks for physical environments such as schools, streets, offices, etc. The same people build mental frameworks for websites and applications.Therefore, people's cognitive and psychological characteristics should also be considered in the design of public building appearances, so as to design a very comfortable building appearance.

1. The Current Situation of the Appearance Design of Public Buildings

A public building is a building place for public use, and it is also a public space used by residents of a certain area. In ancient times, public space was determined by factors such as rituals and hierarchical norms, while the appearance of modern public buildings reflects the common psychological demands of people. In today's rapid urbanization process, creating urban landmarks with unique images is regarded as a quick way to shape a city's image. In some places, there is even a misunderstanding of chasing peculiar and spectacular buildings. In fact, the aesthetic tendency of the public is also a very important factor in order for the building to be recognizable and can largely influence the aesthetic characteristics of public buildings.

From the proportions of the human body in the architecture of the Parthenon to the "round sky and place" mentioned in the Shanghai Art Museum's concept, a critical observation of the formal composition of contemporary architectural facades shows the lack of meaningful expression in our current urban architecture, It does not take into account the particularity of the environment where the building is located and the people it faces, let alone the cognitive and psychological characteristics of people of different ages. Many things we see around are still disorderly accumulation of architectural symbols, neither architectural features that conform to local cultural characteristics, nor comfort that conforms to people's cognitive and psychological characteristics.

2. Theoretical Basis of Cognitive Psychology

Cognitive psychology as a scientific discipline has its origins in philosophical considerations in the time of Plato. It was not until the 1950s that Donald Broad bent proposed the basic theoretical framework of cognitive psychology, and from then on, cognitive psychology began to take on a scientific character. Cognitive psychology is the process of expressing the feelings that people have when they see the appearance of buildings, and then expressing them in a certain way. Regulation, giving meaning to short-term memories or stimuli, to form the whole process of cognition.Nasser's book "Cognition and Reality" mentioned that perception is real-time, and the behavior that occurs in a specific environment is closely related to the situation. Situational analysis is a real-time, specific analysis of the cognitive environment, including internal and external analysis and analysis of social factors.

"Cognition" is simply the acquisition and use of knowledge, which involves two issues: one is how knowledge is stored in our memory, and the memory content of what is stored; the other is how knowledge is stored in our memory. Process issues used or handled. The former emphasizes "mental structure", while the latter emphasizes "mental process". The above two issues are the two major directions of cognitive psychology research. Therefore, cognitive psychology can be defined as: scientific analysis of human mental process and structure in order to understand human behavior. The main theoretical framework of cognitive psychology is the "information processing model".

3. Appearance Design Strategy of Public Buildings Based on Cognitive Psychology

Psychologists have conducted many studies and found that we tend to seek stability when looking at things, prefer very stable

architectural forms, and this characteristic is reflected in the element of architectural aesthetics, which is visual balance. There is a symmetrical balance and an asymmetrical balance. Repetition is what architecture and music have in common. For example, the form of windows, doors, pilasters and window headers is a continuous and simple repetition that creates a sense of rhythm. Windows and doors etc. fulfill their function but also provide a flexible and dynamic rhythmic aesthetic through the repetition of many different forms.Situational analysis is the study of cognitive perceptions and perceptions of the environment. Combined with the physical attributes of the body in embodied cognition, the way and steps of the cognitive process are determined. There is a limit and scope of human perception. Therefore, the scope of human perception should be considered in the design of public buildings. Completely communicate information about the environment.

The overall length, width, height and proportions of each part of the building should give people a visual aesthetic. The Greeks discovered the golden ratio of length and width of 1:1.618, and the great Renaissance architect Palladio proposed the beautiful ratios of 1:2, 1:3, 1:4 and 1:5. Therefore, the architect or painter should follow these proportions while understanding the big picture of the building and perfecting the details. Some buildings do not pay attention to the proportions of their components, creating an abrupt and discordant visual impression. The combined effects of unity and change, contrast and tension interplay, resulting in a rich aesthetic. Variation in unity, in addition to reducing the possibility of monotony and boredom, often evokes attention and pleasure, and is not limited by the nature of the building. Contrast and intensity, on the other hand, are applied more to public buildings.

Through the analysis of the concept and working principle of long-term memory, it can be seen that when people conduct perceptual analysis of the color of public buildings, even if they have never visited the place, the color of public buildings is not a completely unfamiliar element. The knowledge and experience he possesses are affecting his perception, not to mention that for the aboriginal people who grew up nearby and even in these neighborhoods, the memory of the past living here affects his perception of color elements at every moment. perception. The preference for architectural color and texture varies from person to person, but the beauty of architecture is mainly based on a set of harmonious order. Under this general principle, the use of color is also based on the principle of achieving a certain harmonious order, which can be changed if necessary. , for interesting contrast and tension. Comes in different thicknesses and textures. This is also an important factor in the richness of architectural aesthetics. For example, the contrast between the roughness and heaviness of the stone and the lightness of the glass frame creates a rich aesthetic, as does the contrast between the transparent concrete walls and the wooden windows, creating a deep and restrained through the roughness of the concrete harmonious.

References:

[1] Li Zhiping. On the Facade Design of Public Buildings from the Perspective of Visual Psychology - Models [J]. Low Carbon World, 2017(13):115-116.

[2] Zeng Tingting. The application of humanized design ideas in the design of public buildings [J]. Smart City, 2021,7(19):32-33.

[3] Zheng Li. Research on Indoor Interaction Design Based on Cognitive Psychology [J]. China Building Decoration, 2021(12):48-49.

[4] Zheng Haoyuan, Ye Haosheng, Su Dequan's Three Theoretical Models of Embodied Cognition [J], Psychological Exploration, 2017, 37(3): 195-199.

[5] Zhen Zhen. Research on UI interface design from the perspective of cognitive psychology [J]. Science and Technology Innovation and Application, 2021(06):102-104.

[6] Jiang Yanhua. Research on the application of cognitive psychology theory in the cultivation of modern design creativity [J]. Yihai, 2018(12):156-158.