

Research on Factors Affecting Architectural Style - Shaanxi Provincial History Museum as an Example

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Abstract: As the process of globalization continues to intensify, many cultural elements are being integrated. The architectural design styles of more and more cities tend to be similar, and the original architectural design styles of each region are gradually disappearing or being replaced by homogenized buildings. Therefore, the question of how to restore the diversity of architectural styles in a region and create architectural styles reflecting local characteristics based on the actual city has become a common concern in today's architectural world. This paper uses literature analysis, comparison method, and case study method to analyze the influence of natural environment, social culture, economic technology, and ethnicity on architectural style. The Shaanxi Provincial History Museum is also used as a case study to analyze the historical factors reflected in the layout and interior details of the building.

Keywords: Architectural style, Geographical architecture, Architectural culture, Diversity, Cultural heritage, Factors

1. Introduction

Since the reform and opening-up, many fields in China have undergone dramatic changes. Not only is the global economy deepening, but foreign cultures and ideas are also heavily influencing our country, especially in the field of architecture. Blindly following the trend of the times has led to the architectural styles of different cities becoming similar and lacking in regional characteristics. In order to design architectural styles that show local characteristics, it is inevitable to consider their influences. After a recent study and summary of the literature in this area, three factors were summarized as the most important influencing factors. Namely, natural environmental factors, socio-cultural factors and economic and technological factors [1]. However, factors such as historical development and ethnic integration are also not negligible.

For the factor of the natural environment, much research has been done by previous scholars. However, the main purpose is to meet various basic living needs, such as maintaining sufficient light and ventilation. At present, this aspect has been studied very comprehensively, so we will not repeat it here. What we want to study in this paper is how to achieve the "harmony" with the natural environment, which means the integration of humans, architecture, and nature. The commonality between architecture and landscape is further highlighted and strengthened [2], and the integration between the two is deepened and collaborated on in various aspects such as nature, culture and art.

In general, the influence of natural environmental conditions on architectural style is only reflected at the material level determined by its natural properties, while the regional cultural heritage is closely related to the social properties of architecture [1]. This paper will focus on combining traditional regional culture with the requirements of the times to create a new architectural style based on meeting the functional needs of the city.

Finally, there are the economic and technical aspects. Architecture is material and technology is the means to produce material forms. Technology is the foundation that constitutes all material and spiritual existence in architecture and is one of the original driving forces that propel the development of architecture [3]. At present, the construction technology in China is very advanced and comprehensive, covering all aspects of the construction process. Especially for new first-tier cities like Xi'an, the economy has become very developed. The differences brought about by technology and different designers are not significant and will not be analyzed in detail here. This paper will instead analyze the architectural features and styles brought about by ethnic characteristics, which is also an important factor that is easily overlooked in all kinds of studies.

The main body of the paper adopts a combination of two parts: a theoretical analysis and a case study. The first part is a theoretical analysis, in which the five most important influencing factors are listed and analyzed after research; the second part is a case study, in which a specific building in Xi'an is analyzed in a targeted manner.

2. Factors Affecting Architectural Style

Just as an exquisite oil painting requires a variety of colors to match and contrast with each other, the formation of an architectural style is also influenced by various factors. Just like pigments have three primary colors: red, yellow, and blue, natural environmental factors, socio-cultural factors, and economic and technical factors are also the "three primary colors" that affect the architectural style. These three factors interact with each other and many specific factors are derived on the basis of them. Take China as an example, as a typical multi-ethnic country, ethnicity is an important factor that cannot be ignored. This part will analyze the three important factors separately and add the ethnic factor as a supplement.

2.1. Natural Environmental Factors

In a regional building system, natural environmental factors play a dominant role and determine the nature of the building. One of the basic functions of architecture is to enable human beings to live better in nature. Man seeks and constructs a foothold for his existence in nature, to achieve the so-called "poetic habitat." As Zodegger said, "Architecture offers the earth as a landscape for living, and builds a sense of closeness to one another under the broad bend of the sky at the same time." This is the true meaning of architecture, the fundamental mission of architecture is to serve people and nature [3].

The coexistence of man and nature is essentially the integration of architecture and nature, which includes the sky, earth, climate, topography and natural resources, etc. The architectural style should be based on the adaptation and harmony between architecture and nature, as if the southern mountainous region is a wooden house structure and the northern plain is a brick structure [1]. Take our climate as an example, the western region is dry and cold with little rain, while the eastern region is hot and humid with lots of rain. In order to adapt to the typical local climate, people have created a number of typical local buildings, such as the hanging foot tower in the Yunnan Water Village and the yellow clay kiln in northern Shaanxi. It is this very different natural environment that has created such a colorful architectural image.



Figure 1: Hanging foot tower in the Yunnan water village[4].



Figure 2: Yellow earth kiln in northern Shaanxi[5].

2.2. Socio-cultural Factors

Generally speaking, the natural environmental factors are related to the natural properties of the building, which concerns people's physiological needs. The socio-cultural factors are related to the social attributes of the building, which are about the cultural taste and social characteristics of urban architecture, meeting people's higher-level needs such as psychological and aesthetic.

Throughout the history of architectural development, the needs of human beings for buildings are constantly changing. In the early stage of human society, human capabilities were relatively low and buildings were shelters for humans. Buildings played the role of wind and rain protection, insect repellent and shelter from disasters, showing more natural attributes. With the continuous advancement of globalization and the rapid development of society, people's ability to understand nature and transform it has been increasing. Until today, human beings could get rid of almost any restrictions due to natural conditions. In today's era, architecture reflects more social attributes and regional characteristics. Socio-cultural factors play a leading role in the development of architecture, and they even determine people's attitude towards natural factors themselves. It is the cultural choice of man to be in harmony with nature [3].

Socio-cultural factors are divided into two categories: historical factors and human factors. Historical factors include time periods, geographical factors, and so on. These factors are relatively stable and are infrequently changing. Human factors are the most active and frequently changing social factors, including human customs and habits, religious beliefs, cultural literacy, aesthetic concepts, etc.

2.2.1. Historical Factors

The architectural style must be integrated with regional culture, tradition and other historical factors. Throughout the history of human architectural and cultural development, architectural regional culture has always been a factor that must be considered in architectural design [6]. Without the accumulation and precipitation of history, there would not be any great architecture.

However, regional cultural history is not static, and architectural styles need to be expressed dynamically in parallel with the development of regional culture. With the invasion of foreign cultures, our history and culture are facing the challenge of globalization. Therefore, the architectural style must be integrated with the local culture to build a regional architecture in line with the local history and the concept of contemporary life. The architectural style should enhance the cultural quality of the building and give the regional architecture a sense of cultural identity and place [6].

Looking at all kinds of buildings, the most famous one is the Xiangshan Hotel designed by Mr. I.M. Pei. It inherits the traditional nationalism of Chinese architecture, and at the same time integrates modern cultural elements, making it a classic.



Figure 3: Beijing Xiangshan Hotel[7].

2.2.2. Humanistic Factors

As an old saying goes, "One side of the land raises one side of the people" [8]. For people in different periods and regions, they have different cultures, beliefs, traditions, views, etc. While local climatic conditions and geography are important, the humanistic factor is a necessary factor that cannot be ignored when designing architectural styles for any architect.

As for the humanistic factor, the most crucial one is, of course, the human being. People are gregarious animals, and societies are made up of people [2]. People gather together for various reasons and gradually expand, eventually forming villages and cities. As the time of settlement becomes longer, people's language, customs, educational philosophy and other cultural factors continue to integrate and eventually converge. In the process of production and exchange, people deepen this connection, sublimate the consensus and evolve new cultural characteristics. Because of the geographical limitations of villages or hamlets, the climate, water resources, geographic environment, natural resources and other conditions of their living areas are nearly the same.

Combining all these factors, the architectural image and architectural style of a region are also roughly the same, thus forming a distinctive local architectural style. Therefore, people are the key to human factors, which make buildings reflect the face of the times and have a certain ideological outlook and cultural connotation [3]. In ancient times, the colors and decorations of buildings had to be designed strictly according to the rules of the feudal hierarchy and could not cross the boundary. For example, only buildings that people considered sacred, such as palaces and temples, were allowed to use yellow glazed tile roofs. This kind of architecture, with a strong cultural flavor, undoubtedly reflects the importance of humanistic factors in the architectural style [9].

2.3. Economic and Technological Factors

Architecture is a way of being for technology, a poetic expression of technology. The economy is the material basis of architecture, while technology is the operational skill and means by which

architecture is formed, making it an important medium for linking building materials and architectural styles [4]. Architecture itself is material and needs both economics and technology to move forward.

However, architecture is not just material. The connotation contained in the architectural style is an expression of emotion and spiritual will. In terms of engineering form, architecture is not only the embodiment of technology, but also the display of art. The meaning of architecture is beyond the material level; it is a kind of art appreciation, a cultural anchor. Architecture not only integrates the local society and culture, but also plays a role in the development of the economy. The essence of architecture is the balance between technology and art, but the artistic content is based on the economic foundation. A successful technology is originally a manifestation of art, and the art of architecture also requires a mature technology to build. As a result, this demands a balance between economic technology and architectural art. In order to achieve a balance between the two, which is the main objective of architectural design, exaggeration or neglect of either side will lead to the degradation of architecture [3].

2.4. Ethnic Factors

The pursuit of architectural style characteristics is not necessarily the theme of every building, but it is an important factor that cannot be ignored in every design [10]. However, the ethnic factor is an important factor that constitutes the diversity of architectural styles.

A nation is a group of people who are objectively distinguished from other groups of people in terms of culture, language and history. It's a concept that has been developed in recent times through the study of human evolution and race. There are numerous nationalities in the world, and they are spread throughout the globe. For historical reasons, a country can have many ethnic groups, and the same ethnic group can live in different countries. Since different peoples have their own characteristics in appearance, language, culture, history and religious beliefs, the formation and development of architectural styles can be very different.

Ethnic characteristics often determine the diversity and tendency of architectural styles. Due to a nationality's existing historical reasons and living habits, it frequently leads to its distinctive architectural style and forms its own characteristics [11]. China is a typical multi-ethnic country with 56 ethnic groups, including 55 minority groups. These ethnic groups are distributed throughout the country, bringing with them countless classic architectures. For example, the tile-roofed house of the Bai nationality with high eaves, distinctive arches and hollowed-out squares. The tile houses pay attention to the carving of the gate building and the windows and doors of the walls, as well as the artistic decoration of the painted walls, with the decorative characteristics of "powdered walls and painted walls."



Figure 4: The tile-roofed house of the Bai nationality[12].

3. Case Study

3.1. "New Tang Dynasty Style" Architecture

The "New Tang Dynasty Style" architecture is a new approach to modern architecture by combining tradition and modernity, foreign culture and regional culture, with traditional Chinese culture and Tang Dynasty architecture as the carrier. It not only takes into account historical factors and inherits the ancient city culture of Xi'an, but also addresses the functional needs of modern urban development.

This kind of architecture shows the local characteristics of Xi'an, maintains the diversity of architectural styles and responds to the trend of globalization, which is quite constructive. The "New Tang Dynasty style" architecture originated from the Abe Nakamaro Project, which was built in 1979 in the context of the Sino-Japanese friendship treaty [13]. This style of architecture has matured with the development of the times, and in 1991 the Shaanxi Provincial History Museum, the pinnacle of the "New Tang style" architecture, was built.

3.2. Shaanxi Provincial History Museum

The Shaanxi Provincial History Museum is located northwest of Xi'an, with a square topography and is surrounded by city roads. The buildings around the base are mostly in the form of sloping roofs and gray brick walls due to height control.

The building focuses on "The combination of traditional architectural layout and modern functions" and "The combination of traditional architectural modeling rules and modern design methods" [13], reflecting the elegance of the Tang Dynasty to the fullest. The building is characterized by the following three points:



Figure 5: The main entrance of Shaanxi Provincial History Museum[14].

Firstly, the building uses different roof forms to carry out functional partitioning, while maintaining the harmony and unity of the building;

Secondly, the building pays attention to the creation of the spatial atmosphere of the external environment. By organically combining the courtyard and the building, the courtyards of different scales are interspersed to increase the spatial level and produce the flow of space;



Figure 6: General view of Shaanxi History Museum[14].

Thirdly, the building pays attention to the integration of materials and colors with the surroundings. For example, white brick walls, light gray granite steps and columns, light gray sandblasted eaves and arches, and dark gray glazed tile roofs.

This combination of "diversity" and "unity" enhances the overall spatial composition of the building and achieves a harmonious spatial aesthetic [15].

4. Conclusion

To sum up, the four factors of natural environment, social culture, economic technology and ethnicity all have an impact on the characteristics and architectural style of regional architecture, but they are not invariable. The natural environmental factors are more objective and will not change greatly in a short period of time; the socio-cultural factors are more complicated, and the customs and habits of the inhabitants may change rapidly due to the import of foreign cultures; the economic and technological factors are the most direct factors affecting architecture, and their changes are often the most rapid and complete. However, ethnic factors are also not negligible, especially in some autonomous minority regions in the west of China. In the shaping and innovation of architectural styles, these four factors interact and complement each other to promote the development of diversity in the field of architecture.

Due to the limitation of space, this article only summarizes the main influencing factors and many other factors will not be listed. Overall, this article establishes a framework for future research that will focus on many small factors under the general direction and will conduct in-depth research investigations to justify them.

References

- [1] Wu, Mei. "An analysis of the influencing factors of architectural style locality and its design guidelines." *Architectural Engineering Technology and Design* 000.001(2015):567-567.
- [2] He Auxiao. "Talking about the influence of architectural environment on architectural design style." (2018).
- [3] Yang Shixiong. "Exploration of the influencing factors of architectural style locality and its design guidelines." *Science and Technology Perspectives* 29 (2012): 2.
- [4] Chowder Design, 2020. A border town, a hanging foot tower. <https://sh.news.fang.com/open/37200822.html>
- [5] Shuang Jianwen, 2017. The fading kiln in northern Shaanxi. <https://www.meipian.cn/nad0a5y>
- [6] Ma Xinming. "A brief discussion on the factors affecting the locality of architectural style and its design." *Construction Building Materials Decoration* 000.006(2015):109-109,110.
- [7] True Name, 2020. Beijing Xiangshan Hotel. <https://www.meipian.cn/3bay5vx2>
- [8] Wang Peng. "Influencing factors of urban architectural design style." *China Building Metal Structure* 9X(2013):1.
- [9] Zhang, H. M.. "A novel architectural style with humanistic environment as the starting point." *Urban Construction Theory Research:Electronic Edition* 000.019(2015):5889-5889.
- [10] Hu, Limin, and Li, Xianke. "On the influence of architectural environment on architectural style." *Shanxi Architecture* 33.10(2007):2.
- [11] Hua Jingping. "On the influence of architectural environment on architectural style." *Urban Construction Theory Research:Electronic Edition* 16(2013).
- [12] Wooden Herb Hall, 2021. Architectural art wonders - Bai Dwellings. http://www.360doc.com/content/21/11/03/15/6657566_1002594456.shtml
- [13] Yue Hongji, and Wang Zihao. "The Current Characteristics and Inherited Development of "New Tang Style" Architecture." *Urban Architecture* 16.33(2019):2.
- [14] Light Sets, 2019. Shaanxi History Museum Night Lighting Design. <https://page.om.qq.com/page/OIz6WH7X AdeiAJi3nDGrfCVQ0>
- [15] Zhang Yuan, and Li Shoubang. "Aesthetic study of "New Tang Style" architecture in Xi'an." *Journal of Xi'an Petroleum University: Social Science Edition* 31.3(2022):6.