CULTURAL HERITAGE | RESEARCH ARTICLE

The application of regional culture in urban public space design
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Abstract: With the pace of urbanization and globalization gradually accelerated. Many urban public Spaces focus on “modern”, “fashion” and “international” while ignoring the important role of traditional history and regional culture in public Spaces, which leads to serious homogeneity in both external form and cultural expression in many urban public Spaces. A good urban public space environment should make people have a sense of historical belonging and show the characteristics of the city. This paper discusses the importance of regional culture in urban construction, and tries to make those excellent regional culture continue and inherit in urban public space design by creatively extracting regional cultural elements and combining them with modern design techniques. Through case analysis, this paper expounds the specific design and expression method of urban regional culture, thus proving that regional culture has very important significance and necessity in creating personalized urban public space.

Subjects: Cultural Heritage; Urban Studies; Urban Cultures; Urban Policy; Urban Research Methods; Landscape and Sustainability; Urban Landscape; Urban Design; Design; Heritage

Keywords: regional culture; urban public space; space design; traditional history; modern design

1. Definition of relevant concepts

1.1. Regional culture
The term “regional culture” refers to the regional culture that has developed over a certain period in different regions as a result of human culture (Sun & Zhu, 2015). It is always integrated with the local natural environment and influenced by local historical tradition and is therefore unique.

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Regional culture is often a traditional culture that is unique to a particular region and still functions today. It is the ecological, folkloric, traditional, and customary expression of the culture of a particular region (Wu, Li, & Sahari, 2009). It usually consists of three dimensions: the natural environment, the human environment, and the social environment, which interact with each other and contribute to the formation of the regional culture of a certain region (Xu & Li, 2019). The culture of a region always survives or dies out over time, so those that survive always have distinctive characteristics of their time and can profoundly influence the political, economic, and cultural aspects of society, often becoming the representative symbol of the cultural content of a region.

1.2. Urban public space

As an important part of urban space, urban public space is narrowly defined as those outdoor spaces that are used by urban residents for their daily and social life (Figure 1). It includes streets, squares, urban tourist attractions, museums, parks, sports grounds, and so on. In a broad sense, urban public space can be expanded to include spaces in public facility sites, such as city centres, commercial areas, urban green spaces, etc. Due to the large scope of urban public space, the interpretation of urban public space varies from one professional discipline to another. The urban public space discussed in this paper is from the perspective of environmental design and focuses on public spaces such as city streets, city squares, city parks, and city exhibition halls that can easily show the characteristics of the city.

2. The role of regional culture in urban development

As regional cultures are distinctly regional, the scope of this regionalism can be very large, such as East Asian culture, Arab culture, European culture, etc. (Yuan & Ch, 2013); or it can be as small as a certain region of a certain country, such as the Jiangnan and Northwest regions of China, the East, and West Malaysia regions of Malaysia, the Nordic region and the Mediterranean region of the EU countries, all of which have distinct regional characteristics. In terms of the temporal dimension, once a regional culture has been formed it does not remain unchanged but changes slowly and with relative stability. Before the industrial revolution, the pace of urbanisation was very slow, so that the regional characteristics of different cities were very distinct. However, in modern society, especially since the second half of the twentieth century, urbanisation has been so rapid that many of the best regional cultures have died out in a short time with the development of cities, and the diversity of cities has been greatly damaged. The relationship between regional culture and the city should have been a natural and smooth one of development or extinction, but the rapid urbanisation has upset the original equilibrium, thus restricting to a certain extent the development of a comfortable and personalised urban life. The loss of regional culture tears the connection between urban modernity and tradition, which will make the diversity of traditional culture not continue, and aggravate the singleness of the city in the process of modernization. Therefore, regional culture plays a very important role in the benign development of cities, which can be reflected in the following three aspects: (See, Table 1).
2.1. Showing the characteristics of the city

A city without characteristics is difficult to highlight the cultural competitiveness of the city. In a sense, regional culture is one of the important factors of the current urban cultural competitiveness. Regional culture can well show the uniqueness of the city, such as yellow rice wine in Shaoxing, China, tulips in the Netherlands, and the Eiffel Tower in Paris, France. These regional cultures have endowed these cities with uniqueness, and these cultural elements have even become synonymous with these cities/regions. Those cities that are impressive often apply regional elements in their urban public space that other cities do not have. For example, in terms of urban colours, architectural shapes, street images, and even local food habits, folklore, dialects, and so on. Regional culture, if applied in a modern city, can contribute to the charm and character of the city (Ma, 2011).

2.2. Continuation of historical lineage

Modern cities are densely populated settlements that, in addition to being the economic and political centre of a place, are often also the cultural centre of the area. Cities are the bearers of regional culture, and regional culture is the spiritual anchor of urban life and the core on which cities develop. The rapid pace of modern urbanisation has led to many cities abandoning or forgetting the application of regional culture in the process of development, which has prevented the normal continuation of regional culture and has led to a cultural discontinuity in urban development. Therefore, a city with a strong culture should pay attention to the inheritance of regional culture in the rapid development of the city, so as to continue the historical culture.

2.3. Protection of the vernacular environment

The city exists in a certain territory and is closely linked to the other components of the region, and it is inseparable from the material characteristics that nature has given it (Guo, 2010). Urban development should be carried out on the basis of taking into account the protection of local environment, and should not excessively pursue “steel and cement”. The so-called vernacular environment refers to the relatively stable dynamic natural and humanistic environment complex formed in a certain geographic region under the leadership of a certain regional culture in the context of traditional agricultural society (Chen, 2003). In the context of globalisation, the rapid urbanisation process has, on the one hand, destroyed the original diversity of the vernacular environment and, on the other hand, the creation of a beautiful and pleasant urban living space cannot be achieved without the vernacular environment (Hong, 2002). The widespread use of regional culture in the urban space avoids to a large extent the homogeneity of the urban environment. It allows the urban environment to coexist in harmony with the natural environment around the city and thus protects the vernacular environment.
2.4. Promote healthy urban development
Regional culture and urban economic development are closely related. In a sense, they are a pair of unities that promote and constrain each other. The development of the urban economy provides the material basis for the inheritance of regional culture, while regional culture either facilitates or constrains the development of the urban economy. The close integration of excellent regional culture into the construction of the city can greatly enhance the attractiveness of the city. In addition, it is also very effective in adjusting urban industrial structure and driving the development of urban tertiary industry. The successful experience of some cities dominated by tourism shows that regional culture is a “good medicine” to promote the positive development of cities.

3. Classification of regional cultures
Regional culture itself has a strong personality, and there are different ways and contents of classifying regional culture in different regions. At present, there is no strict classification of regional culture in academic circles, which can be broadly summarized into the following three types of regional culture. Classification is shown in Table 2.

3.1. Natural environment-based regional culture
The natural environment of a region includes its topography, climate, hydrology, rivers, vegetation, and so on. The natural environment varies from region to region due to the great differences in natural factors. The natural environment provides the material basis for cultural life and the space for human activity. These factors have a long-term influence on the people who live there, but of course people also consciously adapt or modify their natural environment. Those elements of nature that are adapted to people’s productive lives are strongly dependent on them, while those elements of nature that are not adapted to people’s productive lives are changed or forced to be adapted.

3.2. Humanistic regional cultures
Humanistic regional cultures include the dialects, customs, festivals, customs and traditions, and even religious beliefs of a particular region. Humanistic regional culture is a spiritual culture, and these humanistic elements are deeply embedded in the hearts of local people. Wherever people are, the mention of their common customs or dialects can quickly give two people, even if they do not know each other, a common cultural identity.

Table 2. Classification of Regional cultures

![Table 2. Classification of Regional cultures](image)
3.3. Historical regional cultures
The history of the area includes architectural monuments, important historical figures, major historical events, and so on. Although these histories have long since passed away, they have been passed on and are still remembered today, and for the local people, the memory of history does not just remain in the past but has more significance in guiding the future. History and culture often have a great educational value for people today. Whether it is a great man or an architectural monument, it can be an example for future generations to follow or to learn from.

4. Application methods of regional culture in urban public space

4.1. Direct use of vernacular materials
The appropriate use and creative expression of materials in the design of urban public spaces is essential to their chicness and comfort. The direct use of vernacular materials to express the image of urban public space can often be made to feel more approachable and compelling. The use of vernacular materials has an irreplaceable advantage over other materials in terms of low cost, low energy consumption, low technology, and a high degree of integration with the surrounding urban environment. For example, some cities are rich in stone, in the design of urban public space can consider the use of stone to reflect the characteristics of the city, the application of local stone in urban pedestrian streets, urban building facades, and even urban sculpture. Another example is the use of local native plants as the preferred choice of plants for city streets and parks. Native plants are not only highly ornamental but also have a higher survival rate and are more adaptable to the local urban environment.

4.2. Indirect distillation of traditional symbols
In modern urban public space design, new construction techniques and materials are being developed at a rapid pace as traditional construction techniques and materials fail to meet the needs of urban space design. If these new materials and construction techniques can be used to symbolise the local traditional culture, this will undoubtedly be of great benefit to the city. By refining traditional culture through new technologies and materials, on the one hand, urban decorative symbols can be seen in urban public spaces in line with local traditional culture, and on the other hand, local traditional cultural elements can be creatively continued in modern urban public spaces.

Comfortable and urban public space environments should have both artistic and technical characteristics. Indirectly, the distillation of traditional symbols is an appropriate combination of art and technology. The distilled elements are fundamentally different from the original traditional elements, perhaps retaining only the most essential spiritual connotations of the original objects, often giving a sense of resemblance and form. Many traditional cultural elements can be symbolised in the design of urban public spaces. For example, representative local characters, famous buildings, and even popular local foods can be symbolised in the design of urban public spaces. Other abstract cultural elements can also be visualised through new technologies and materials, such as local dialects, which can be presented in urban public spaces through multimedia or music.

4.3. Situational reproduction of historical material
Re-enactment is not a mechanical re-enactment of what happened in the past. On the one hand, historical activities or events should be used as design elements, and the process or scenario of the original event should be applied in the design of urban public spaces; on the other hand, the viewer should be able to relate to the scenario, and although they are in the present, their thoughts and emotions should return to a certain moment in history, thus achieving the effect of empathy. For example, in a certain area of a city square, multimedia technology can be used to restore the causes and consequences of a historical event to the city square in detail. A city square is a place where people gather and is an important window to show the culture of the city. In addition to the use of multimedia technology, AI technology can also be applied to urban public spaces through group sculptures or real-life interpretation. This is a good way to spread the culture of the city and to show the city’s rich history and culture. A city with a historical and cultural atmosphere is very attractive to the majority of people (Miles, 2007).
5. Case study of the application of regional culture in urban public space design
For the design of urban public spaces, the application of regional culture is very important. By cleverly drawing on or applying the representative local culture in the design of urban public spaces, it will give them more cultural connotations. Hangzhou and Shaoxing are two cities in China’s Zhejiang Province. Although they are not far apart, they have their own unique regional cultures, both in terms of the natural environment and traditional culture. The following is an analysis of the application of regional culture in the design of public spaces in each of these cities.

5.1. Case 1: Hangzhou International Expo Centre
The Hangzhou International Expo Centre is a representative project of Hangzhou’s urban development from the West Lake era into the Qianjiang era, especially in the development of the south bank of the Qiantang River, a milestone project towards international development. It is a large-scale urban public facility that fully integrates Hangzhou’s regional culture. The design reflects Hangzhou’s inherent characteristics of the natural environment of the south of the Yangtze River, including the beauty of the mountains, the water, and the history of the area, while at the same time demonstrating the city’s spirit of tolerance, openness, refinement, and harmony. The expo centre is located on the southern bank of the Qiantang River, which is the bank of the river into the sea from the general environment, so the spirit and connotation of the river into the sea should be reflected. Therefore, the two natural elements of Hangzhou, namely the river, the sea and the tide, have become important design elements in this project.
In the design of the interior public space, the theme of “water” is taken as the design theme, fully integrating and drawing on the natural regional elements such as “the West Lake with its lakes and mountains, the Qianjiang River with its thousands of miles of waves, and the rough sea”, and abstracting the different depths of light, colour, texture, and image of these elements. The abstraction of these elements in different depths of light, colour, texture, and image, and the refinement of the design language, and the extension of the design to each functional space, so that the space in the premise of the service function, to rise to the level of spiritual experience (Figure 2).

Figure 2. Indirectly extract symbols of regional cultural elements.
5.2. Case 2: Shaoxing yellow wine tourism town

As one of the birthplaces of Shaoxing yellow wine, Dongpu has a history of hundreds of breweries, and many of them are still very much alive today. The famous Dongpu brewery, Yunji Brewery, won a gold medal at the International Fair in 1915 for its Zhou Qing wine. In recent years, Shaoxing City has been committed to making Dongpu the most representative yellow wine tourism town in the country and has used the history and culture of yellow wine in the design of the public space of the town. For example, the traditional brewing of yellow wine is presented in the form of a sculpture in the Yellow Wine Square. When visitors see the traditional hand-brewing of yellow wine, they not only feel the wisdom of the ancient brewers but also increase their understanding of the history and culture of yellow wine. In addition, many of the public facilities in the town also incorporate the culture of yellow wine in the form of sculptures, signage, and rubbish bins (Figure 3).

Through the above two cases, this paper analyzes the application of regional cultural design methods in modern urban public space in Hangzhou and Shaoxing; Explored the research results with practical value; Deeply understand the application value and significance of regional culture in the design of modern urban public space. On the one hand, we can see that regional culture plays an important role in inheriting urban culture, improving the quality of public environment and highlighting the charm of the city in the design of urban public space. On the other hand, we should also see that the application of regional culture in urban public space has certain difficulties. In design practice, we should pay attention to the following aspects:(1) The innovative application of regional culture should conform to the scientific concept of urban development, with the goal of embodying and carrying forward urban culture. Regional cultural symbols should not be used in the design of urban public space rigidly and mechanically. (2) The combination of regional culture and design should pay attention to humanized design, promote public

Figure 3. Direct application of local cultural materials.
participation and improve public satisfaction. Due to the wide use of urban public space, sharing is an important feature (Liu, 2003), the functionality of design cannot be ignored in the symbolic application of regional culture. (3) The application of regional culture in public space should pay attention to ecology and environmental protection, so that it can develop healthily and healthily for a long time. Regional objects often have historical characteristics (Zhu, 2014). In the specific design practice, we should make full use of the combination of modern technology and methods with local materials, respect historical laws, and protect the local ecological environment.

6. Outlook
This paper explores and studies the application of regional culture in the design of modern urban public space. With the continuous development of the times and society, regional culture is also constantly updated. We can’t stick to the rules and remain unchanged in the treatment of culture. We should look for new dynamic content to give new vitality to culture. In the design of modern urban public space, we should meet the development requirements of the new era and explore new design forms, so as to achieve breakthroughs and innovations in the real significance of modern urban public space design with regional characteristics. In modern urban development, a city can only find its way in the historical process of globalisation if it establishes its own unique and personalised urban culture. In the development of each city, it is important to assimilate foreign cultures to better integrate themselves into the world (Howard & Pinder, 2003). But it is also important to bring out the characteristics of the city and to apply the excellent regional culture innovatively. As a “root” culture (Niemets et al., 2021), the application of regional culture in urban public spaces can better personalise the city and enhance its competitiveness and charm. Modern urban public space with regional characteristics is the trend of the times (Geng & Zhang, 2013). As a carrier of urban cultural connotation, modern urban public space undertakes important tasks. In many current designs, although the embodiment of culture is too simple and rough, the embodiment of regional culture will be presented in the overall layout in the future design, and even a corner or a piece of grass will be endowed with the attribute of culture. It is expected that in the future urban construction, regional culture can be more deeply integrated into the modern urban public space, through the centralized display of urban public space, to highlight the traditional connotation and characteristics of the times of the city.

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The authors confirm contribution to the paper as follows: study conception and design: Ya Li; data collection: Ya Li; analysis and interpretation of results: Faridah Sahari; draft manuscript preparation: Ya Li. All authors reviewed the results and approved the final version of the manuscript.

Contribution to the field
As an important part of the city, urban public space will directly affect the image and experience of the city. At present, many urban public spaces lack characteristics and cultural connotations. This paper studies how regional culture is applied in urban public space design with innovative design techniques to make urban development more distinctive. The application of regional culture can increase the city’s cultural competitiveness and endow the city with regional characteristics. At the same time, excellent regional culture can be continued and developed through the application of urban public space. This paper provides beneficial exploration for the inheritance of regional culture, provides creative ideas for the personalized design of urban public space, and helps the integration of regional culture in the development of modern cities.

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