Research on the Protection and Renewal of Urban Historic Districts Based on Visual Methods—Taking the Reconstruction of Nanjing East Zhonghua Gate as an Example

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Abstract: Urban renewal is a redevelopment process experienced after a city has reached an inevitable stage, and it is also a metabolic process. The preservation of historical blocks is an important issue in urban design. In recent years, with the continuous renewal of the concept of the old city and the promotion of urban renewal, historic districts are facing crises and challenges, and their protection results have been continuously disputed. Nanjing East Zhonghua Gate is a historical district with profound Qinhuai culture. Based on visual methods and content analysis, this article explores the impact of micro-renewal and tries to demonstrate the multi-line mode of historic district protection in view of the perception construction of its micro-renovation. Research shows that micro-renewal has the greatest visual perception, so the method of protection should be changed according to visual renewal. Urban renewal meets the law of urban development. Increasing the protection of historic blocks can enhance the perception of the blocks, convey the details of history and culture, and promote emotional resonance.

Keywords: Micro renewal; Urban renewal; Historical block; Nanjing East Zhonghua Gate

1 Introduction

As the carrier of historical culture, historical district inherits the independent cultural spirit and triggers the perceptual experience with creative connotation renewal. With the deepening of urban renewal and planning, cultural change is considered as the main soft power of urban renewal. More and more people pay attention to the cultural protection of historical blocks. Therefore, the renovation and repair of historical districts focusing on preservation has begun to be respected. However, most of the research on the renovation of Chinese historical districts focuses on the restoration, protection, industrial allocation, resource planning, and neighborhood experience, while the cultural perception and architectural research on micro-renewal are relatively rare. The process of rebuilding historical blocks involves multiple groups, which often influence each other. The historical block uses the color and craftsmanship of architectural art to plan the space to stimulate and immerse the viewer's vision. Through the perception of emotions, cultural transmission is carried out in urban renewal.
With the development trend of urban connotation, the cycle of urban renewal (Figure 1) is more certain. In recent years, the definition of urban renewal has been continuously expanded to include cultural heritage and continuity. In 1980, Chen Zhanxiang's definition of "urban renewal" emphasized the process of urban "metabolism" and highlighted the role of economic development in urban renewal. The ways of urban renewal include reconstruction, protection and building maintenance. The "organic renewal" proposed by Wu Liangyong in 1994 refers to the internal protection and development of the city as the starting point and "sustainable development" as the core idea. In 2004, Zhang Pingyu proposed that "urban regeneration" should start with urban issues and thoroughly study the crisis brought about by urbanization. In 2005, Wu Chen mentioned "urban revival", emphasizing the holistic view and the continuity of improvement results. In 2007, Yu Jin proposed "urban renewal", and he focused on the overall renewal of backward areas. Due to the change in the concept of urban renewal, various elements have been given different attributes, which have become a unique brand of the times, and spread into a good internal perception experience.

In summary, the visual method is of great significance to the change space of the micro-renewal of historical blocks. At present, the research on Chinese historical districts mostly adopts map cognition, semantic difference method, in-depth interviews, and field investigation methods. The micro-renewal of historical districts based on visual senses will have important research significance for cultural inheritance.

2 Research Design

2.1 Research Object

Nanjing East Zhonghua Gate (Figure 2) is located in the southern of Nanjing Old City. Together with West Gate, it forms the largest historical district in the southern part of the Old City. The block is adjacent to the Zhonghua Gate on the west side, and surrounded by the Ming City Wall ruins and the Qinhuai River on the south side. Not far away is the famous Confucian Temple. Many historical sites reflect the profound cultural heritage of the southern part of the city. Residential buildings developed and constructed in recent decades are distributed around the East Zhonghua Gate. In addition, many historical buildings and sites, such as the Jiang Shoushan former residence, the residence of Empress Xiaolie of Ming Dynasty, the Fu Shanxiang former residence are also in the east area of Zhonghua Gate. The buildings in East Zhonghua Gate mostly take the form of courtyard houses, but illegally constructed buildings expand inside the block and continue to destroy the courtyard texture and overall style.
2.2 Problem Analysis

Due to the large amount of trade, the handicraft industry showed an obvious trend of gathering, which made East Zhonghua Gate in the Ming Dynasty become the most important economic and cultural center of the city, and gradually became the main residence after the end of the Qing Dynasty. Due to the frequent occurrence of dilapidated houses in modern times, the local government proposed a renovation plan in 2011.

2.3 Research Methods

Due to the large span of time development of the historic district, and the strong perception and artistry of the landscape, it is necessary to divide the space from the unplanned area, and classify each block with the help of the change of visual perception state. On the one hand, in order to ensure the accuracy of the research object, on the other hand, in order to achieve the research purpose more efficiently, this paper makes a spatial analysis, screening and comparison of East Zhonghua Gate in Nanjing through photos. Based on data screening and quantitative processing of photos, we combine analysis methods to explore the significance of micro-renewal of historic districts, and then build a complete research system.
Table 1 Research ideas

<table>
<thead>
<tr>
<th>Research method</th>
<th>Research design</th>
<th>Research purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent photography</td>
<td>Material collection and content analysis</td>
<td>Public perception construction</td>
</tr>
<tr>
<td>Content analysis</td>
<td>Statistical analysis</td>
<td>Perception tendency</td>
</tr>
<tr>
<td>Photo assessment</td>
<td>Visual analysis</td>
<td>Visual differences</td>
</tr>
</tbody>
</table>

2.4 Data Acquisition

The selected photos can more effectively reflect the visual perception of the photographer. Therefore, we choose the high-definition multi-threaded website as the source of material collection to improve the accuracy of the research results. In this study, about 200 self-service photography photos were collected, excluding blurry photos with no obvious visual intent, and a total of 184 chapters can be used as research samples. We encode photos according to spatial content, and can divide Nanjing East Zhonghua Gate historic district into 17 categories.

Table 2 Quantity and proportion of space

<table>
<thead>
<tr>
<th>Primary coding</th>
<th>Secondary coding</th>
<th>number</th>
<th>Proportion</th>
<th>Primary coding</th>
<th>Secondary coding</th>
<th>number</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural landscape</td>
<td>shops</td>
<td>2</td>
<td>1%</td>
<td>window</td>
<td>window</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>archway</td>
<td>8</td>
<td>4%</td>
<td>door</td>
<td>door</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>overlooking the roof</td>
<td>3</td>
<td>1%</td>
<td>ornament</td>
<td>ornament</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>exterior wall building</td>
<td>7</td>
<td>3%</td>
<td>brick and tile</td>
<td>brick and tile</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>top wood building</td>
<td>3</td>
<td>1%</td>
<td>pavement</td>
<td>pavement</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>building looking up</td>
<td>1</td>
<td>0.5%</td>
<td>signboard</td>
<td>signboard</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Activity scene</td>
<td>festival setting</td>
<td>53</td>
<td>28%</td>
<td>interior setting</td>
<td>interior setting</td>
<td>31</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>market activities</td>
<td>1</td>
<td>0.5%</td>
<td>corridor</td>
<td>corridor</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>evening party</td>
<td>20</td>
<td>10%</td>
<td>inner street</td>
<td>inner street</td>
<td>26</td>
<td>14%</td>
</tr>
</tbody>
</table>

3 The Spatial Perception Construction of Nanjing East Zhonghua Gate

In this study, intuitive coding is used, and coding categories are divided into first and second
levels. The first-level coding is divided into four categories based on the scene: architectural landscape, street and lane landscape, space details, and activity scene; the second-level coding is different types of buildings, streets, details, and activities. We included the architectural space and the scope of crowd activities into the research category, focusing on the visual display of historical blocks under the interactive visual experience. Through the statistics of the coded photos, we found that the most concerned about the first-level coding is the activity scene, followed by the spatial details, street and lane landscape, and architectural landscape, accounting for 38.5%, 29%, 14%, and 10.5% of the total respectively (Table 2). This shows that event scenes and spatial details are an important part of Nanjing East Zhonghua Gate Historic District. In the secondary coding, the number of photos of festivals, indoors, inner streets and alleys, and evening party scenes is relatively large, which are 53, 31, 26 and 20 respectively.

From the above data, we know that non-functional facilities are captured into the lens as space dividing points or space auxiliary decorations. The exterior wall structure plays a role in rendering cultural heritage in the architectural landscape. On the one hand, the festival scenery is the main entry point for the "micro-renewal" of the Nanjing East Zhonghua Gate historical district. It has rich cultural forms and many festival celebrations, and emphasizes the embodiment of humanistic feelings in the process of renewing the district. On the other hand, the shooting time can also be used as the research scope of visual perception. We clearly see that there are more daytime shooting than nighttime shooting, and at night everyone tends to shoot in a well-lit location. Under the conditions of light, vision and aesthetics, the historical districts are more visually impactful. The above results show that the visual impact of the micro-updated humanities area is the greatest, and the audience loves the space more deeply than other areas. After the renewal, the physical building space of the block has been optimized, the infrastructure has been improved, the cultural heritage has become clearer, and the humanistic care is more obvious. At the same time, on the basis of meeting the needs of the masses, it has achieved a space for giving full play to individual uniqueness.

4 Conclusion

Based on the visual method, this research analyzes the spatial perception composition and construction mechanism of Nanjing East Zhonghua Gate district, and discusses the perception influence formed by the micro-reconstruction mode. The results show that the satisfaction of space requirements is the prerequisite for perceptual exploration. The perceptual effect on the material level is more prominent through the renewal approach of maintaining the texture. The cultural element of the block is an important inducement that triggers deep perception. Node and detail shaping can get good feedback in the experience of nostalgia, and festival activities can also stimulate space participation. From the perspective of spatial perception, the use of modern building materials and the transformation of block functions have been involved in the structure of block cultural codes, weakening the nostalgia of the block, destroying the overall perception experience, and causing the public to catch up with cultural symbols. Visual methods can present the implicit attitudes of individuals, while traditional methods such as interviews and questionnaires are straightforward expressions of attitudes. We explore the effect by interpreting the perception construction of micro

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renovation land. Instead of the standardized professional evaluation perspective, we use the public's intuitive feelings as the starting point to study the spatial impact of the transformation, and reveal the spatial perception structure of historical blocks in a multi angle verification way, so as to help the cultural continuity of the blocks.

For urban renewal, revitalization is an important goal. The micro-modification of Nanjing East Zhonghua Gate takes the creative industry as the driving force, uses the collective memory brand to attract the gentry group for space activation, and realizes "organic renewal" on the basis of cultural conservation. The empirical results show that the improvement of the infrastructure after the renewal of the block can attract new people to settle in, but the loss of culture is accompanied by the change of groups and space. As the main body of the city, people continue to participate in the construction of urban space. The cognition of builders may change the spatial perception elements through visual transmission, and even reverse the original spatial experience relationship. Their emotional experience also shows the need and desire for some kind of urban space. The renewal of the cultural code formed after the transformation will enable the city to be re-interpreted by the new generation in its development. After that, the city will continue to renew and construct itself, and the perception and memory of generations will also change. The micro-reconstruction model puts forward the attention to the preservation of texture and cultural symbols, but in terms of function selection, we still need to consider how to get close to the attributes of the block and to play the positive role of block activities, especially the activation of the social and cultural significance of festival activities in urban renewal. In addition, how to combine abstract tools with perceptual understanding to maintain the spatial texture of historical blocks, and how to achieve a balance between urban regeneration and cultural conservation are also issues worthy of follow-up discussion.

References


