Research Article

Study on Diversified Evaluation of Residential-Type Historical and Cultural Blocks in Guangzhou

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Historical and cultural blocks contribute to urban cultural construction in a very significant way. Regardless of their specific types, historical and cultural blocks not only add brilliance to the cultural heritage of cities but also take on more urban responsibilities through actively expanding their use values. This perfectly embodies the diversified protection and development of traditional blocks. In discussing the diversified development achievements of a block, its users usually have the most since their behaviors are closely related and mutually interactive with block environments. In this sense, collecting user evaluations helps to identify the diversified development status of a block from the inside and explore more values. Considering that the residential-type historical and cultural blocks in Guangzhou have realized diversified development in terms of location values, function expansion, and user integration, this paper takes two typical blocks in the city for a case study and performs user evaluation analysis. Evaluation data are collected through traditional questionnaire surveys and text mining to expand the scale of access to information and enhance data flexibility. An evaluation index set is established for residential-type blocks by discussing the achievements of the diversified block developments and extracting the key factors of block environments based on data analysis. The research results of this paper provide a basic framework for the in-depth analysis of blocks and evaluation models building and offer suggestions of protection and design for other blocks.

1. Introduction

In 1962, France promulgated the Malraux law, which was the first national law to stipulate the conservation of historical blocks. Following the example of France, countries such as the UK, Japan, and the USA also introduced their own conservation laws to extend the existing conservation of individual historical architecture. In 1972, the UN adopted the World Heritage Convention, which reached a worldwide consensus on the conservation of heritage (including historical blocks). The promulgation of laws in this field, including the subsequent Recommendation concerning the Safeguarding and Contemporary Role of Historic Areas (or the Nairobi Recommendation) and The Washington Charter: Charter on the Conservation of Historic Towns and Urban Areas, fully testifies to the importance attached by countries across the world to the conservation of historical areas. China promulgated its Cultural Relics Protection Law of the People’s Republic of China (2017 Amendment) in 1982 and later incorporated historical and cultural blocks into the legal protection system in subsequent amendments. Supporting the spirit of this law, various provinces and cities in China have also introduced policies suitable to local realities, including policies that adopt the conservation and utilization of historical and cultural blocks as a vital part of urban development [1].

No discussion can be held about the values of historical and cultural blocks without considering urban development. China’s urbanization process started later than in developed countries. It began gradually in the second half of the 19th century and did not enter a stage of rapid development until the 21st century. By the end of 2021, China’s urbanization rate also referred to as the “urbanization ratio” had reached 64.72% (Data source: The fourth session of the
Interministerial Joint Conference for Promoting Urbanization and Integrated Urban-Rural Development, held by China’s National Development and Reform Commission (NDRC)). Driven by such rapid development, large-scale urban construction has never stopped. However, problems arise from time-to-time during urban development, including the unreasonableness of overall planning; the weakening of urban characteristics; the dispelling of cultural connotations; the collapsing of historical architecture; the rupturing of street texture; and the change of community relations. What is more troubling is how meaningful talks are to be held about cultural confidence when all that is left in the minds and eyes of urban dwellers are identical skyscrapers, uniform gated communities, and rigorously designed parks. What is comforting, however, is that the presence of historical and cultural blocks plays a crucial role in defining individuality, describing the appearance, and forming the context of the city in the course of urban development [2].

2. Diversity and Subjective Evaluation

When we emphasize the differences between cities and individualized construction of cities, the logical starting point must be rooted in the history and culture of cities themselves. Historical architecture, historical figures, historical events, and lifestyles handed down from generation to generation are directions in which we can explore the connotations and individuality of the city. As carriers of all kinds of tangible and intangible cultural heritages, historical and cultural blocks have never separated themselves from urban development since they have always carried important urban functions.

There are more than 1,200 historical and cultural blocks in China (Data source: Press Conference of the State Council Information Office on February 24, 2022). Guided by the national recognition framework, different provinces and cities have established their own recognition principles based on local characteristics. In this regard, the regional diversity of historical and cultural blocks reflects differences in urban scenes under the influence of geography and climate. Different historical and cultural blocks have different characteristics and functional diversity, even when located in the same region. This diversity may have come from differences between blocks in historical origin, functional type, street texture, architectural form, community culture, and industrial structure. The same block usually has a unified scene and temperament, and historical and cultural elements can largely be traced to the same origin. The diversity of a block is often embodied in the styles of individual buildings and the functions of the streets.

The diversity discussed above is direct and tangible and refers to the attributes of blocks themselves. However, the most notable charm of traditional blocks in relation to scattered historical architecture lies in their sociality [3]. Indeed, these blocks have always accommodated the lives, work, and entertainment of numerous people. These people are referred to as “block users.” Ultimately, architectures and artificial environments are constructed to meet human needs. Even religious architectures with spiritual and symbolic significance, such as temples and churches, aims to satisfy the secular need for belief. In this sense, any discussion of the built-up environment must consider the users of the environment. In fact, the subjective evaluation of the block by its users can serve as a good indicator of the human-environment relationships in the block.

The situation is even more complex when it comes to the users of historical and cultural blocks, because historical and cultural blocks have multiple urban functions. In the final analysis, the diversity of blocks can be traced to the different needs of different users [4]. In this case, the users’ subjective evaluation can be collected to see whether a block’s diversity can balance its users’ greatly different needs and whether such needs can be satisfied. This way is indirect, but more social and people-oriented to discuss the continuation and optimization of blocks.

3. Basic Information about the Historical and Cultural Blocks

Guangzhou is a historical city with a rich historical and cultural heritage. A total of 26 blocks in Guangzhou, distributed in the downtown and along the Pearl River, have been selected as a priority protection block (Figure 1). Many individual historical buildings have unique historical origins and cultural connotations in these blocks. Many elements can lead to the emergence of historical and cultural blocks, such as the gathering of business people in developed commerce (Baoyuan Road, Duobao Road, Baohua Road, Beijing Road, and Shangxiajiu); dwellings combining Chinese and Western styles (Xinhepu and Overseas Chinese New Village); residential and commercial areas formed around religious architectures (Hualin Temple, Wuxian Temple–Huaisheng Temple–Six Banyan Temple, and HongDe Lane); military and customs architecture (Changzhou Island); education (Southern Wende); and embassies and consulates in concession areas (Shamian) [5]. The 26 blocks were basically formed in the early 20th century. They are very similar to each other in regional and historical conditions, including geography, climate, and historical background. In particular, blocks #1–#20 are geographically adjacent to each other. In addition, they still present a great variety of scenes and characteristics, which fully testify to the diversity of historical and cultural blocks.

Most blocks have combined multiple urban functions, especially residential and commercial. As far as the residential function alone is concerned, there are still many architectural forms, such as Western-style architecture, tube-shaped apartments, and arcades. Even if the same block is distributed among several types of businesses. This fact reflects the visual diversity within the blocks. On the other hand, block users differ from each other in physiological characteristics (such as age and gender); social backgrounds (such as education, work, and experiences); spiritual levels (such as aesthetics and insight); and human-block relationships (such as types and durations of activities). The differences in these aspects interact with the diversity of the blocks themselves.
4. Diversified Changes of Residential-Type Historical and Cultural Blocks

In 26 priority protected blocks, block #24 and #25 are far away from other blocks, outside the scope of historical districts (Figure 1) and are relatively independent. In terms of block functions, blocks #24 and #25 have similar origins; that is, both emerged as residential areas. Block 24# retains numerous luxury villas, which were built around the 1920s. Block #25 was built as a residential area for overseas Chinese returnees around the 1950s (Figure 2). As can be seen from architectural forms, buildings in Block #24 are mostly red brick villas, with some Western architectural elements. Buildings in Block #25 are mainly garden villas and multi-story apartments with modern architecture style, with strong regional characteristics. People who once lived in the two blocks were mainly officials, tycoons, artists, writers, and so on. The two blocks have similar main architectural functions and users in history, but they show different faces in the subsequent development [6, 7].

As a result of historical changes and urban development, these two blocks no longer exclusively serve any specific group but are gradually bearing more urban functions. According to the national and local strategies for the conservation of historical and cultural blocks and the needs of the urban planning development of Guangzhou (planning for the conservation and utilization of Xinhepu historical and cultural block (a collection of texts and images), issued by the Guangzhou Municipal Planning and Natural Resources Bureau), the main orientations of the conservation and utilization of these two blocks are set as partially retaining the residential function; developing culture, tourism, education, and commerce, enriching existing types of business; and elevating cultural and artistic atmosphere. It is clear that, as far as Blocks #24 and #25 are concerned, the intention is to take them towards a more diversified and open direction.

By the end of 2021, these two blocks will have completed most of the conservation and renovation measures. These conservation and renovation measures included repairing historical architectures, building exhibition and memorial halls, adding and renewing public service facilities and equipment, improving landscape quality, creating a cultural and artistic atmosphere, and injecting new types of business.

The current status of these two blocks can be examined hierarchically. The first level refers to the diversification of location values brought about by urban development. Before the founding of the new China, these two blocks were located in the peripheral part of the city, and their geographical values were largely embodied in the echo of the downtown in the west. Nowadays, they are already included in downtown Guangzhou, with two metro lines passing by and arterial roads running through on each side. Within three kilometers to the east of these two blocks is the new urban axis, which is the urban core of business, science, and technology, highlighting the international and modern development of the city. Also, the old urban axis is located three kilometers to the west, which is a political and cultural core area with profound historical and cultural accumulation. In other words, these two blocks are located in the corridor that connects the old and new downtowns.

The second level involves the urban functions borne, which characterize diversity in the most significant way. In addition to the original residential function, many other functions, such as leisure tourism, business, education, and historical and cultural inheritance, have been added to both the blocks. Block #24 is home to the site of the Third National Congress of the Communist Party of China. The site was converted into memorial and exhibition halls to undertake important patriotic propaganda and education functions. Block #25 introduced many creative and cultural entrepreneurship, scientific and technological companies, and many business office functions. Besides, the former residences of celebrities, street names, and landscape trees in Block #25, which contain the imprints and spirit of overseas Chinese celebrities in the early days of the founding of the new China, carry important memory functions.
The third level concerns functional expansion. As their numbers increased, the identities of block users have changed as well, from predominantly residents and service workers to a variety of groups, including residents, business people, artists, office workers, block managers, and visitors. Different identities further lead to diversified activities on the part of block users, as well as different needs and human-block relationships. In particular, when it comes to the spiritual expression of the block, users with different experiences have various degrees of empathy.

5. Development Achievements of These Two Blocks under Subjective Evaluation

Sampling was conducted according to the differences in user identities in order to ensure that at least 15 users of each identity category participated in the interviews. A total of 112 evaluation subjects were selected from five groups (i.e., residents, visitors, commercial tenants, teachers/students, and street management and service workers) for Block #24. A total of 95 evaluation subjects were selected from six groups (i.e., residents, visitors, company staff, shop attendants, service workers, and students) for Block #25. The opinions of these block users about the conservation and development of these two blocks were collected through interviews and questionnaire surveys. As seen from the evaluation results, most of the evaluation subjects recognized the status quo of these two blocks, were full of expectations for their future development, and understood the importance of the conservation and revitalization of historical and cultural blocks for the construction of urban context. Their concerns could be described on two levels, i.e., the material level and the spiritual level. On the material level, they expected further optimization and upgrading of old houses and narrow streets; optimization of traffic and parking facilities; increase of activity spaces and supporting commercial facilities; optimization of road navigation and guidance; and improvement of environmental and facility safety. On the spiritual level, they worried that the renovation and utilization of architecture might ruin original block scenes and that the mixing of different groups would impact block safety and management. The evaluation subjects also pointed out the problems of insufficient propaganda, small pedestrian volume, and economic plight. Based on summarizing the key points mentioned by the evaluation subjects, we calculated the occurrence frequency of similar information and drew the information graphs (Figures 3 and 4).

As can be seen from the results of interviews, different evaluation subjects have very different understandings of these blocks. Such a difference is, first of all, attributable to their different focus points and ultimately to their various identities, which further correspond to the diverse physical environments of these blocks. Material element indices available for establishing an evaluation system can be extracted in this regard. Notably, the differences in different users’ striking of history and culture are also very striking. Residents whose families have lived here for generations (elderly people who have lived here for 40 or even 60 years) know very well the history and original appearance of these blocks. Every plant and tree here has integrated into their lives and intertwined with their memories. They often miss the old block scenes and talk about architecture and roads with great familiarity. They feel sorry about the past, but they also rejoice in the present. A careful reading of their opinions reveals that the nostalgia is about their lost youth; the regret is in the powerlessness they feel in keeping up with the times; and that they rejoice in the present because they know that their descendants will have a happier life. These elderly people, like historical architecture, are witnesses to history and the embodiments of culture. Considering that their numbers are declining with each passing day, we should take care of them while conserving the physical environments of historical and cultural blocks. To preserve their memories, lifestyles, and emotional needs means saving these blocks’ traditional culture and historical context.

Users who have lived in the block for a long time (people who have lived here for 5–40 years) are familiar with it but may not have a profound feeling of its history due to a lack of personal experiences. Relatively speaking, most users are more concerned with the improvement of their current living environment so that the development of the block can keep pace with the modernization of the city. Most people are not that obsessed with history and culture and are willing to accept the renovation of their blocks. They are stable block users who are the backbone that supports the normal running of their blocks. As for the conservation and revitalization of blocks, these stable users are the main objects to be won over. By improving their understanding of history and enhancing their appreciation of the importance of cultural inheritance, we can deeply involve them in block management and development.

Short-term users (people who have lived here for less than five years, as well as corporate employees, shop workers, and visitors), on the other hand, are polarized. Some of them know little about the block’s history and care less about block conservation and utilization. They care more about whether there are sound public and traffic facilities. According to the interviews, they chose to stay here because of the convenience of work or their children’s education. Others, who are mostly visitors or entrepreneurs, live here because they appreciate the blocks’ historical inheritance and cultural expression. In brief, some are attracted to Lingnan culture, while others intend to transform Lingnan culture into productivity. These users are essential to the construction and development of the urban context, as they are the supervisors of block conservation and the practitioners of block revitalization and utilization.

One advantage of the on-site sampling survey lies in the fact that different users can be classified for the convenience of the interviews, so they can offer more detailed descriptions and evaluations of these blocks with the help of researchers. However, limited by manpower, time, and sample size, the richness of the evaluation is slightly insufficient. Moreover, guided by the researchers, the evaluation subjects showed limited opinions and the information provided by them, which was only intended to answer the questions raised by the researchers, was not sufficiently expandable. In
In this context, the text mining technique can quickly collect rich evaluation information from network platforms on a large scale, thus greatly facilitating evaluation analysis [8].

The Chinese network evaluation information for these two blocks is collected in the R language. In general, the network evaluation of a block spans over a long period in which the block may have been renovated and upgraded. For the purposes of contrast with the on-site sampling survey and the evaluation analysis of present block status, the Chinese evaluation information from January 2020 to December 2021 is excerpted as data support. Data sources include social networking platforms, review websites, and real estate websites. 1,017 and 701 entries of Chinese evaluation information were collected for blocks #24 and #25, respectively. In view of the disorderliness of the information, the R language is used for Chinese word segmentation and cleaning. That is, one sentence is divided into meaningful Chinese words and conjunctions, function words, and special symbols are eliminated. The evaluation information after cleaning generally consists of content words. The frequency of each word is calculated. Words with high frequency are usually common, words expressing block elements of concern or words shared by users. Common words, such as “I,” “go,” and “here,” make up the vast majority. They play only minor roles in studies on block evaluation. To obtain valuable evaluation words, the TF-IDF weighting (TF means term frequency and IDF means inverse document frequency. The TF-IDF weighting method is used to reduce the interference of common words and increase the importance of words that have more research value) method is adopted in word frequency calculation, and the importance of words is considered in screening [9]. In this way, the most common words can be removed. The words screened out through weighting have a high word frequency and recognition degree and can reflect evaluation characteristics.

The high-frequency words screened out are mainly emotional or words that express block elements. Among them, words expressing block elements can show aspects of concern for block users and offer substantial support for establishing an evaluation index set. Therefore, high-frequency words expressing block elements (i.e., words ranked among the top 500 by TF-IDF, with a word frequency of above 10) are selected for Block #24 (307 words) and Block #25 (226 words). Based on this, words with low relevance to the architectural environment and historical and cultural research of these blocks, such as shop and commodity names, are deleted. Ultimately, 127 and 81 words expressing environmental elements are obtained for Blocks #24 and #25, respectively. These words have rich connotations and represent block elements on many levels. Depending on their meaning and directivity, they can be classified as follows in Tables 1 and 2.

As can be seen from the keywords sorted out, many words are shared by these two blocks, which suggests that the focus points of the users of these two blocks are largely similar. As seen from the number of keywords in each category, block resources, and protection design are
frequently discussed, similar to the finding in the case of traditional evaluation. By summarizing and refining the evaluation information obtained by these two methods from a professional point of view, we can establish a block evaluation index set for in-depth, systematic evaluation, as shown in Figure 5. The index set must not only cover specific

![Evaluation Index Set of Historical and Cultural Blocks](image-url)

**Table 1:** Classification of words expressing environmental elements for Block #24.

<table>
<thead>
<tr>
<th>Category</th>
<th>Keyword</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental atmosphere</td>
<td>History, atmosphere, artistic atmosphere, literature and art, scene, tradition, lingering charm, feelings, memory, customs, reminiscence, quality, impression, style, characteristics, mood, style, artistic conception, popularity, humanity, environment, walk, night, marketplace</td>
<td>24</td>
</tr>
<tr>
<td>Block resources</td>
<td>Spring garden, delicacies, villas, gardens, dwellings, western-style houses, green paths, Xuguyuan road, architectures, site of the third national congress of theunist party of China, online celebrities, tick-off, the Republic of China, Dongshan, wealth, banyan trees, legends, Xiguan, “young master of Dongshan,” overseas Chinese, teahouses, trees, heritages, memorial halls, small western-style houses, Kui garden, Miss Xiguan, official residences, shops, primary schools, tourism, revitalization, exhibition, Peizheng, academic degree, green mountains and rivers, mansions, homestay, Western-style, commerce, old Guangzhou, modern, literary youth, coffee, former site, cultural relics, old houses</td>
<td>47</td>
</tr>
<tr>
<td>Protection design</td>
<td>Location, spot, traffic, red bricks, position, streets, lanes, ruins, riverway, landscape, ecology, parks, river branches, slab stones, granitic plasters, avenues, balconies, signboards, enclosures, paths, water environment, red bricks and green tiles, design, repair, yard, water quality, scenery, waterborne platforms, walkway, morphology, roads, streetscape, routes, appearance, walk, height, architectural complexes</td>
<td>37</td>
</tr>
<tr>
<td>Facility service</td>
<td>Metro, parent-child, activities, drainage, construction, construction site, stations, community, health, motor vehicles, street lamps, bathrooms, parking</td>
<td>13</td>
</tr>
<tr>
<td>Others</td>
<td>Xinhepu, Dongshankou, Guangzhou, blocks, Pandemic, Photo taking</td>
<td>6</td>
</tr>
</tbody>
</table>

**Table 2:** Classification of words expressing environmental elements for Block #25.

<table>
<thead>
<tr>
<th>Category</th>
<th>Keyword</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental atmosphere</td>
<td>Fictitious land of peace, breath, sense of time, environment, history, scene, culture, downtown, art, Chinese and Western culture, customs, walk, style, shady trees</td>
<td>14</td>
</tr>
<tr>
<td>Block resources</td>
<td>Memorial archway, “red-thread girl,” villas, overseas Chinese, Western-style houses, dwellings, the Republic of China, enterprises, vegetation, gardens, small storied houses, mansions, neighborhood, academic degree, bars, former residences, yard, Western-style buildings, propaganda, gathering places, old homes, schools, cafes, Cantonese opera, Youai road, operas, masters, exhibition, activities, detached houses, house number, restaurants</td>
<td>32</td>
</tr>
<tr>
<td>Protective design</td>
<td>Shade, murals, roads, SOHO, wall paintings, locations, decorations, greening, interior, exterior, pavement, trees, staircase, landscape, walkway, entrance, conservation, architectures</td>
<td>19</td>
</tr>
<tr>
<td>Facility service</td>
<td>Parking, mutual aid associations, vehicles, street lamps, street signs, supporting facilities, buses, garbage, accidents, community</td>
<td>10</td>
</tr>
<tr>
<td>Others</td>
<td>Overseas Chinese new village, COVID-19, Guangzhou, seasons, photo taking</td>
<td>5</td>
</tr>
</tbody>
</table>

**Figure 5:** Subjective evaluation index set for Blocks #24 and #25.
6. Conclusion

Historical and cultural blocks have always been an important cultural heritage. Moreover, blocks are key fields for the inheritance and elevation of the urban context. The importance of blocks is shown in the fact that their use functions have never been annihilated by history. Furthermore, they have long witnessed the history of urban development through close integration with cities. Meanwhile, historical and cultural blocks, especially residential-type blocks, have a lot of users. In the process of regular and long-term activities, users have infiltrated all aspects of blocks with their behavioral patterns, spiritual activities, aesthetic interests, experiences, and backgrounds. Thus, the blocks’ users give birth to block environments with profound humanistic connotations. In some cases, residential-type historical and cultural blocks may need to be changed in order to adapt to current urban development. Still, they have always been a product of interactions between users and environments[10]. In this sense, the study of historical and cultural blocks cannot be separated from the involvement of their users.

To explore the diversity of historical and cultural blocks means excavating their modern values, which constitute an essential link in the revitalization of cultural heritage. The urban construction of Guangzhou also starts in the old urban districts and then gradually expands to peripheral areas. Most of its major historical and cultural blocks are distributed in the old urban districts. This means that to support the city’s modern development, historical and cultural blocks must transform their aged appearance, and deeply explore their values beyond culture, especially in regard to economic values. Fortunately, as artificial environments, historical and cultural blocks have sufficient inclusiveness and flexibility. In particular, residential-type historical and cultural blocks, with their large scale and complete supporting service facilities, can undertake all kinds of new urban functions and meet a variety of functional needs such as residence, employment, trade and commerce, education, culture, tourism, science and technology, and healthcare. As a result, the diversity of development of historical and cultural blocks is stimulated by these new functions.

Diversified development attracts more diversified users, further adding to the complexity of historical and cultural blocks. Evaluating blocks from users’ points of view is a reflection of diversified development. It helps to identify problems and advantages in a more specific and targeted way. By extracting the environmental elements of the block based on the evaluation content, we can better understand the needs of its users, analyze the details of its diversified development from the inside out, and build a systematic evaluation model in order to further examine its development achievements. The evaluation of Blocks #24 and #25 and the extraction of their elements represents a concrete application of this strategy. Methodologically, text mining is used to supplement the shortcomings of traditional evaluation, and a large sample size is used to summarize the characteristics of environmental elements. The index set established in this way can deepen our evaluation of these two blocks and help us find the direction of block optimization. The adopted evaluation model can be extended to evaluate other residential-type blocks. The research path can also be used to study other types of historical and cultural blocks.

Data Availability

The data of this paper can be obtained through the e-mail to the authors.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this work.

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