

Analysis of Commercial Building Colors in Qianmen Area of Beijing

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Abstract: The Qianmen Area in Beijing is an important symbol of the ancient capital's style, and the colors of its commercial buildings are a crucial component of the city's overall appearance. This article traces the historical evolution, renovation, and restoration of the Qianmen Area, and analyzes the colors of its commercial buildings through practical research. It organizes the architectural colorscape, studies the influencing factors of building colors, and applies the international color standard system, Munsell, to analyze color patterns. The aim is to provide a reference for research on traditional architectural colors in Beijing.

1. Historical Evolution of Qianmen Area

Qianmen, also known as Zhengyang Gate, is the main southern gate of Beijing's inner city during the Ming and Qing dynasties and possesses profound historical significance. It was initially constructed in 1419 during the reign of Emperor Yongle of the Ming Dynasty, originally named Lizheng Gate. In 1436, it was renamed Zhengyang Gate, meaning "the emperor faces the sun, and the sun reaches its zenith." Zhengyang Gate integrates a city gate tower, arrow tower, and barbican, making it an important remnant of the Ming and Qing Beijing city walls and a complete ancient defensive architectural system. [1]

The city gate tower houses the Beijing Folk Custom Exhibition Hall, displaying a wealth of Beijing's historical and cultural treasures. With its advantageous location at the center of the city, Zhengyang Gate defends the imperial palace inwardly and displays its grandeur outwardly, always leading the gates of Beijing. Its city gate tower and arrow tower are magnificent in scale and grandeur, and the Barbican exudes a majestic atmosphere, representing the architecture of the old Beijing city walls. Nowadays, only the city gate tower and arrow tower remain, making them the only relatively intact city gates within Beijing.

Moreover, Qianmen not only refers to the architectural complex of Zhengyang Gate but also generically refers to the traditional commercial district composed of Qianmen Street and its surrounding alleys. Qianmen Street has been a bustling commercial street in Beijing since the Ming Dynasty and flourished even more during the Qing Dynasty. After centuries of vicissitudes, it has become an important symbol of the ancient capital style of old Beijing. [2]

On January 13, 1988, the State Council designated Zhengyang Gate as the third batch of national key cultural relics protection units, fully reflecting its significant status in Chinese history and culture. Nowadays, Qianmen Area attracts tourists from all over the country every day, who come to experience the charm of the ancient capital, immerse in the traditional commercial atmosphere, and admire the allure of this ancient city.

Qianmen Street in Beijing is located on the central axis of the city, specifically stretching from Qianmen Moon Bay in the north to Tianqiao Intersection in the south, connecting with Tianqiao South Street. The entire street is 1,600 meters long, with a 20-meter-wide roadway. However, the pedestrian area, which is usually visited by tourists, starts from outside the Zhengyang Gate Arrow Tower in the north and ends at Zhushikou East Street in the south, covering approximately 800 meters. Qianmen Street is Beijing's most famous characteristic commercial street, boasting a long history and a rich commercial atmosphere (Figure 1).



Fig. 1. Qianmen Street in Beijing

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2. Renovation and Restoration of Qianmen Area

The renovation of the Qianmen Area has undergone several stages, each with its specific goals and achievements.

In the early days of New China, Qianmen Street underwent its first major renovation, primarily focusing on the demolition and reconstruction or integration of wooden-structured stores to adapt to new commercial needs. In the 1990s, Qianmen Area entered its second renovation phase, during which several old shops were demolished to meet the needs of urban development. Although the disappearance of these old shops caused some controversy, the renovated Qianmen Area exuded new vitality. In 2007, the restoration and renovation project of Qianmen Street was launched, marking the third large-scale renovation. This renovation focused on transforming dangerous buildings and restoring historical features, allowing Qianmen Street to regain its ancient and elegant charm.

Recently, the renovation works in the Qianmen Area are still ongoing. For instance, to create "beautiful and civilized" streets and alleys, Beijing has carried out an environmental improvement campaign for the backstreets and alleys in the capital's core areas, with corresponding renovations conducted in some streets of Qianmen Area. Additionally, the renovation of Qianmen East Area, including the transformation of "Qianmen New Courtyard" from Caochang San Tiao to Shi Tiao, aims to improve the living environment for residents while preserving the overall style and texture of the hutong courtyards.

These renovation projects have not only enhanced the overall environmental quality and commercial atmosphere of the Qianmen Area but also better preserved and inherited its status as a cultural landmark of Beijing. Through continuous renovations and restorations, the Qianmen Area is gradually regaining new vitality and becoming an important window for displaying Beijing's historical culture and modern features.

3. Analysis of Architectural Color and Style

The commercial buildings in Qianmen Area exhibit a unique and diverse color palette, fully reflecting the historical and cultural heritage as well as commercial characteristics of old Beijing.^[3] These commercial buildings have a unique style that combines traditional and rustic tones with modern and vivid colors in their color application, forming both traditional and modern styles. For instance, the architectural colors of traditional, well-known stores are mostly dark red, gray, and other sedate tones, embodying their long history and profound cultural foundation. On the other hand, some modern commercial buildings adopt brighter and livelier colors like bright yellow and blue, adding a sense of modernity and vitality to the Qianmen Area (Figure 2).



Fig. 2. Color Style of Commercial Buildings in Qianmen

Meanwhile, the commercial buildings in Qianmen also emphasize coordination with the surrounding environment. In terms of color application, they not only consider the harmonious unity with the ancient hutongs and quadrangle courtyards but also consider the mutual contrast with modern high-rise buildings, making the architectural color style of the entire area both integral and diverse. Some commercial buildings in Qianmen also create a unique atmosphere through lighting decoration and other means. At night, these buildings appear even more dazzling under the illumination of lights, adding beautiful scenery to the night view of Qianmen. The color style of commercial buildings in Qianmen reflects both the traditional simplicity and charm and the modern vitality and innovation.^[4] Together with the harmonious unity of the surrounding environment, they constitute the unique urban style of Qianmen.

4. Influencing Factors of Architectural Color

The influencing factors of traditional architectural color in the Qianmen area of Beijing are diverse, deeply influenced by the natural environment, and historical culture, and reflecting people's aesthetic concepts and cultural connotations.

Firstly, the natural environment is an important basis for the choice of traditional architectural color in the Qianmen area of Beijing. Located in the North China Plain with distinct seasons and climatic characteristics, the selection and application of architectural color are influenced accordingly. For example, to cope with the cold winters and hot summers, traditional buildings often use red brackets and yellow glazed tiles, which can not only protect the buildings from wind and rain erosion but also provide insulation in winter and heat insulation in summer.

Secondly, historical culture is an important influencing factor for the traditional architectural color in the Qianmen area of Beijing. As an ancient capital and imperial city, Beijing has a long history and profound cultural

accumulation. In terms of ideology, the Yin-Yang and Five Elements theory formed in the Han Dynasty had a profound influence on the architectural color of the Qianmen area. The Five Elements and Five Colors theory regards green, red, yellow, white, and black as the main colors, corresponding to the five elements of wood, fire, earth, metal, and water. This correspondence, coupled with the theory of "mutual promotion and restraint," forms a complete set of Yin-Yang and Five Elements theory, which affects the color matching and aesthetic concepts of traditional buildings in the Qianmen area.^[5]

In addition, the Qianmen area, as a historical and cultural street in Beijing, preserves many traditional Chinese shops, cultural relics, and quadrangle courtyard buildings with Beijing characteristics. These historical relics inherit the precious traditional color architectural style in the area, making the architectural color of the Qianmen area have distinct characteristics. For example, the facade plaque of "Quanjudu" embodies the folkloric metaphor of rolling wealth and prosperity in its color application, with the overall tone dominated by grayish red, reflecting the philosophical thought of "metal generates water" in the Five Elements and Five Colors theory.^[6]

Finally, social psychology is also an important factor affecting the traditional architectural color in the Qianmen area. The red, green, yellow, white, and other colors in the traditional architectural color system of Beijing not only have their respective symbolic meanings, such as red symbolizing jubilation, green symbolizing vitality, yellow symbolizing dignity, and white symbolizing purity but also reflect people's aesthetic concepts and cultural connotations. The use of these colors not only embodies the aesthetic concepts of ancient buildings but also satisfies people's psychological needs.

In summary, the influencing factors of traditional architectural color in the Qianmen area of Beijing are diverse and complex, including both objective factors such as the natural environment and historical culture, and subjective factors such as people's aesthetic concepts and cultural connotations. These factors interact with each other to shape the unique charm of traditional architectural color in the Qianmen area.

5. Analysis of Architectural Color Contrast Rules

5.1. Composition of Architectural Color

In the composition of architectural color, the main color, auxiliary color, and accent color play different roles and jointly create the color atmosphere and visual effect of the building.^[7]

The main color is the representative color of the architectural characteristics, usually the most prominent and conspicuous color in the exterior or interior space of the building. It determines the overall color tone of the building, such as the main color of resplendence may convey the charm of the ancient capital.^[8]

The auxiliary color is used to complement the main

color, and its color should be coordinated with the main color in hue, brightness, and saturation while allowing for some variation. The auxiliary color plays a role in balancing and enriching the color hierarchy in the building, helping to create a more harmonious and unified spatial atmosphere. The colors used for other wall matching are generally auxiliary.

The accent color is a small-area color used to enhance the architectural color atmosphere, usually appearing in details such as the entrance, signs, and decorative roofs of the building. The accent color can have a larger variation in hue, brightness, and saturation compared to the main color and auxiliary color, creating a visual impact and enhancing the vitality of the space. However, the use of accent colors needs to be moderate to avoid making the space appear messy and disordered.^[9]

5.2. Munsell Color System

This article conducts a color analysis of the commercial buildings in the Qianmen area of Beijing based on the Munsell color system, aiming to scientifically and intuitively digitize the colors. The Munsell Color System, created by American artist Albert H. Munsell in 1898, is a system that represents colors through three dimensions: value, hue, and chroma. This color description system can represent any color, with the characteristics of high scientific precision and ease of management.^[10]

In the Munsell color system, value, hue, and chroma are used as the three basic attributes to describe color. Among them, value describes the brightness or darkness of a color, hue describes the basic attribute of a color, such as red, yellow, green, etc., while chroma describes the purity or saturation of a color. Color names are statistically categorized as red (R), yellow (Y), green (G), blue (B), purple (P), yellow-red (YR), green-yellow (GY), blue-green (BG), purple-blue (PB), and red-purple (RP). Value is divided into three levels, with 0-3 representing low value, 4-6 representing medium value, and 7-9 representing high value. Chroma is divided into five levels, with 1-2 representing low chroma, 3-4 representing low-to-medium chroma, 5-6 representing medium chroma, 7-8 representing medium-to-high chroma, and ≥ 9 representing high chroma.

5.3. Analysis of Architectural Color Patterns

Main color (200 samples): 51.3% non-color, 14.5% red, 9.3% green, 6.3% blue, 4.2% yellow, and 14.4% others. The value is 28% low, 58% medium, and 14% high. Chroma is 24% low, 42% low-to-medium, 19% medium, 10% medium-to-high, and 5% high (Figure 3).

Auxiliary color (200 samples): 43.5% red, 17.5% non-color, 9.2% green, 6.7% yellow, 5.5% yellow-red, and 17.6% others. The value is 56% low, 35% medium, and 10% high. Chroma is 13% low, 25% low-to-medium, 40% medium, 14% medium-to-high, and 8% high (Figure 3).

The main color is dominated by medium-value non-color tones, while the auxiliary color is dominated by low-value and low-to-medium chroma tones. Among them, the red color series appears frequently, reflecting the

widespread application of red in traditional Chinese architectural culture and creating a prosperous and active commercial atmosphere.

artworks adopt similar color combinations as buildings, reflecting the inheritance and development of folk culture.

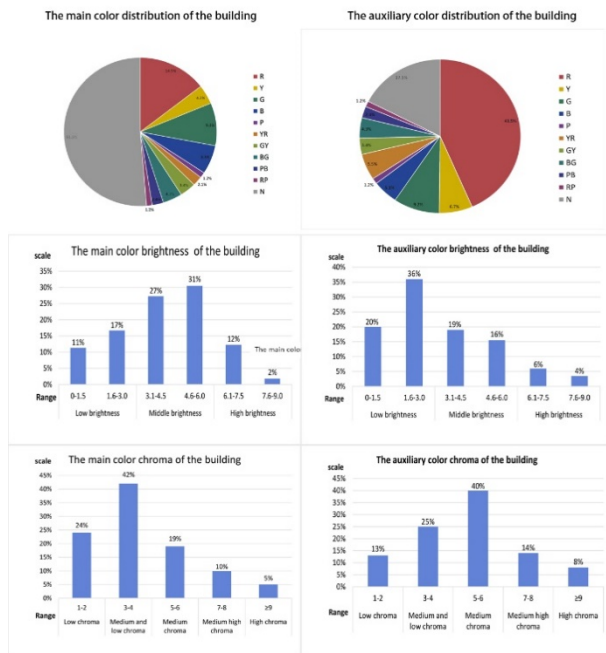


Fig. 3. Color Analysis of Commercial Buildings in Qianmen

5.4 Analysis of the Integration of Architecture and Color

1) Connection between Color and Building Materials
In the Qianmen area, the choice of architectural colors is often closely related to the building materials used. For example, red walls often use red bricks or red clay materials, while yellow roofs commonly employ glazed tiles or yellow paint. These materials not only have specific colors but also carry certain cultural symbolic meanings, such as red bricks representing tradition and solidity, and glazed tiles representing nobility and grandeur.

2) Integration of Color and Architectural Style

The architectural styles in the Qianmen area are diverse, including traditional quadrangle courtyards, palace-style buildings, and modern buildings. These buildings of different styles also have unique characteristics in the application of colors. For instance, traditional quadrangle courtyards and palace-style buildings often adopt the color combination of red walls and yellow tiles, reflecting the nobility and stability of imperial power. Modern buildings, on the other hand, pay more attention to color diversity and personalized expression to meet modern aesthetic and consumer demands.

3) Inheritance of Color and Folk Culture

As an important representative of Beijing's historical culture, the architectural colors in the Qianmen area also carry rich folk culture. For instance, during traditional festivals or celebratory events, people hang colorful flags, lanterns, and other decorations on buildings, adding to the festive atmosphere and enriching the architectural colors. At the same time, some traditional handicrafts and folk

6. Conclusion

Qianmen area in Beijing, located on the central axis of the city, is an important component of Beijing's historical and cultural heritage. The architectural colors of this area are the carriers and transmitters of the ancient capital's style. Through research and analysis, it is concluded that the commercial buildings in the Qianmen area of Beijing are dominated by antique tones, with bright colors added to highlight the active commercial atmosphere. The main color of the buildings is dominated by medium-value non-color, while the auxiliary color is dominated by low-value and low-to-medium chroma, which can better inherit the traditional color tone of Chinese architecture. In the subsequent renovation and reconstruction, we should better protect and inherit the color style and promote traditional architectural culture.

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