

## URBAN DESIGN METHODS OF SHANGHAI TILANQIAO HISTORIC DISTRICT

### UNDER THE BACKGROUND OF URBAN RENEWAL

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#### **Abstract :**

The Shanghai Tilanqiao Historic District is one of the Shanghai Historical Scenery Reserve area, with Lane as the main building type in this district. Lane is one of the symbolic representations of Shanghai culture, which records the historical information and cultural genes of the city, and is of great significance to the sense of home, identity and belonging of the citizens. With the development of Shanghai city, some Lane buildings in Tilanqiao Historic District have been demolished . In addition, in the lack of public space and living space, residents renovate and expand privately in order to improve living environment. In this condition, the integrity of the community is broken and community life is difficult to maintain. Based on theoretical research and field research, this paper analyzes the spatial characteristics from the aspects of texture, architectural space, street interface and public space, and sorts out the buildings in the Lanes by the typology method. In addition to strengthening the design of streets and public spaces, it attempts to explore the means of achieving functional replacement of old buildings and guiding the form and style of new buildings. Under the premise of protecting the original historical districts as much as possible, it try to reshape the vitality of the area and meet the living requirements of the original residents. The urban design methods explored in this paper are expected to provide useful



information for realizing the regional renewal construction, and play a guiding and indispensable role in urban transformation, maintaining regional vitality, and retaining urban memory.

**Keywords:**

Historic district, Lane, urban memory, Urban renewal, Urban design methods

The scope of this study is located in the Tilanqiao area of Hongkou District, Shanghai. It was once under the jurisdiction of the former US Concession (later renamed the public concession) and was used by Jewish refuge during the Anti-Japanese War. It is also known as “Little Vienna” . The base is east to Baoding Road, west to Fair Road, south to Changyang Road and north to Zhoujiazui Road, with a

total area of about 45.6hm<sup>2</sup> (Figure 1). In the area, there are landmarks such as Xiahai Temple, Tilanqiao Prison and Xin'an Auditorium, and a relatively complete Lilong Building Group. With the development of the city, some of the houses in the Tilanqiao have been demolished, and the



Fig.1 Research area

residents have been privately remodeled and expanded due to the need of improvement of living environment. The integrity of the area is undergoing a broken process.

Tong Ming (2014) proposed that a dynamic city should have appropriate

density and scale, maintain sufficient diversity and mixing, and achieve rational organization of the city through multi-scale analysis of overlapping and effective connection of urban texture; Zhou Jian (2007) proposed to use the typology to analyze and study the urban design of Shanghai Old City to realize the reorganization of the spatial form of the block; Deng Hao et al. (2013) analyzed and interpreted the urban morphology through three basic characteristics: scale level, continuity and publicity, and presented the point that the spatial continuity and historical continuity of urban walking in the urban space is an important way to enhance the publicity and democracy of urban space.; Ding wowo (2000) studied the combination design and the group design of the new and old buildings in several cases to explore the basis and method of symbiosis. Yang Yimeng (2011) investigated the social interaction activities and distribution of Lane residents, and revealed the intrinsic relationship between the residential form and public space and people's social interaction activities.

### **1. Spatial Characteristics**

There are some well-preserved lanes in the research area, and the texture of the street is relatively complete. Many modern architectural textures have been implanted around the city (Fig. 2, 3, Table 1). The roads in the range are roughly grid-like, the road spacing is between 150-300 meters, and the average land area is about 3-4 Hectare. As for the width of the road, the roads inside the study area such as Dongyuhang Road, Tangshan Road, Zhoushan Road and Changzhi Road are

narrow in width, generally 10-15 meters, which is in line with the old Shanghai renting ( about 50 feet). This standard mainly responsible for life functions. The



Fig.2 Lane condition



Fig.3 Figure and ground



		图底关系	
里弄住宅	双排		
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Table1 Texture

Changyang Road and Zhoujiazui Road on the north and south sides are wider, and the width of the red line ranges from 30 to 50 meters, which mainly responsible for the traffic function (Fig. 4). The architectural form is dominated by the old lane, while modern architecture is less. The overall building density is high, and the height of the building is low. Among them, the houses in Lane are relatively short, mostly 2-3 layers, and the building



Fig.4 Road condition

density is large; the height of the newly built buildings are mostly 36-54 meters, and the building density is small (Figure 5). As for the street interface, due to the preservation of old Lane along Tangshan Road, Dongyuhang Road and Zhoushan

Road , the street appearance is more uniform, and the interface continuity is strong on these roads. On the side of the building, different forms of cross-street buildings constitute the characteristics of each Lane, forming a characteristic cultural landscape of old Shanghai. There are fewer public green spaces within the study area, the continuity of the street trees is not



Fig.5 Lane buildings and new buildings

strong, and the greening is seriously insufficient. Due to the high density of buildings and the crowded living environment, there are fewer places for people to interact and communicate, and public spaces are also seriously lacking.

## 2. Feature Analysis

### 2.1 Architectural features

The most important building within the scope of the study is the Lane Building. This kind of building is a product of the collision of Eastern and Western cultures and becomes a typical residence with Shanghai characteristics. The interior of the Lane in this study is basically a “fishbone” structure, with one main handle and few support, and the exterior adopts a continuous interface treatment to ensure the integrity and unity of the street facade. As a transition from public space to semi-private space, the cross-street buildings undertake more functions of communication activities. The small patios in front of the house implement the transition from semi-private space to private space.

## 2.2 The spatial scale and interface

The width of the road within the research area is basically between 10-15 meters. On the streets of Tangshan Road and Yuhang East Road , where the style is well preserved, the street aspect ratio is generally around 1:1, so the continuity and unity of the street are more strong and the space feels good. However, in the section of Anguo Road, the height of new buildings on both sides is more than 36 meters, and the aspect ratio of the streets is between 1:3-1:6 , so the street feels more depressed. On Kunming Road, the south side of the road is the 200-meter gray fence of the Tilanqiao prison, while on the north side is the combination of Lane buildings and 54-meter-high modern buildings. The disordered state and strong contrast of the interface on both sides

make the street space's integrity seriously lacking, and the space experience is poor. (Figure 6).



Fig.6 Both sides of Kunming Road

## 2.3 Height characteristics

The height of the building is generally low in the study area. The high-rise buildings are gathering on the side of Changyang Road, and some of the lane buildings are inserted with high-rise residential buildings. High-rise buildings are mostly located at Baoding Road and Changyang Road, including the Hongkou District Health Building and the Dingli Building. And there are also many high-rise buildings on Anguo Road ,most of which are residential buildings and are more than

40m (Figure 7).

#### 2.4 Building space combination

Some Lane buildings were demolished and new buildings were built in the inner part of the plot, and a combination of two or more different forms of buildings

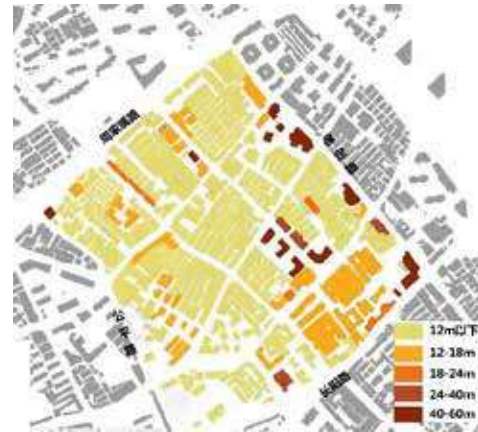


Fig.7 Height partition

appeared in the same plot. In the current situation, there are problems such as poor connection of buildings, huge difference between old and new buildings, and high disparity in height. There is no good coordination and convergence between the old and the new.

#### 2.5 public space

Since the Tilanqiao area is dominated by small-scale neighborhoods, with dense buildings and crowded environments, there is less public space for people to talk and interact. The daily communication space is mainly in the streets and narrow sidewalks, but there is no space for shading and rest on the sidewalks, so the active interactions are difficult to produce here. There is a street green space on the west side of Xiahai Temple. This small area where the elderly are active is already overcrowded, and the space is difficult to meet the needs of the surrounding residents.

### 3. Strategy

#### 3.1 Strengthen the design of the street

On the road facilities, it is proposed to classify the streets in the area, and divide

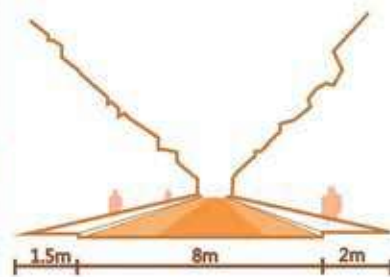
the streets into four categories: living streets, traditional streets, landmark streets and general streets (Figure 8).



Fig. 8 Street classification

Among them, the traditional street is renovating the current situation of the street, through reducing the width of the original road to increase the width of the sidewalk while satisfying the traffic, and strengthening the design of leisure area and walking space on the sidewalk,

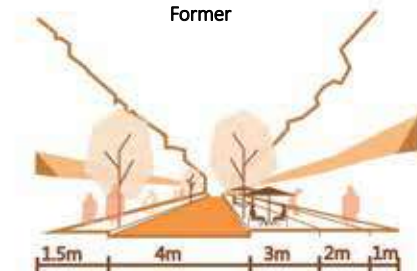
supplemented by greening and street furniture to improve the street style (Figures 9, 10, 11).



Former



Fig.9 (group diagram) Zhoushan Road



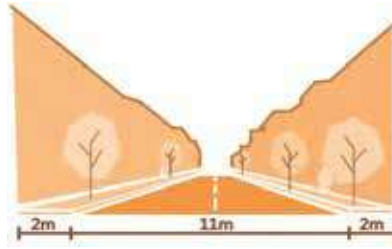
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Living streets are mainly to widen the walkways, provide

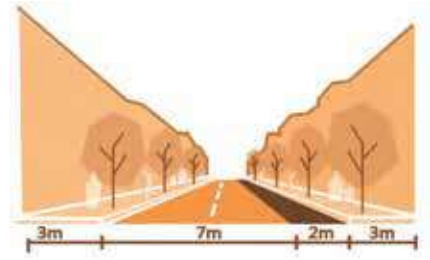
pedestrians with rest facilities, and increase the planting of plants such as street trees, to provide people with the possibility of staying and interacting (Figure 12).



Fig.10 (group diagram) Tangshan Road



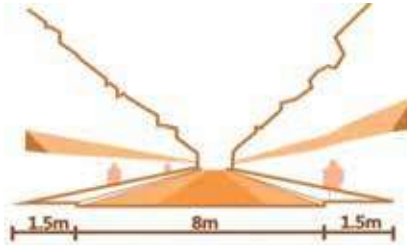
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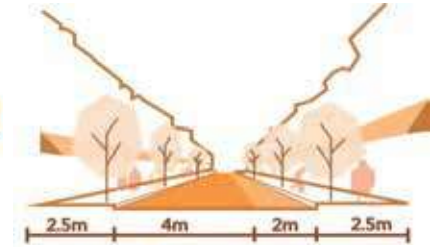
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Fig.11 (group diagram) Yuhangdong Road



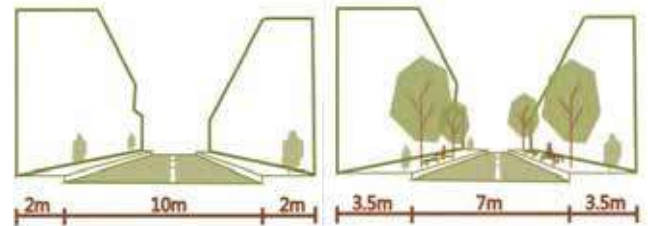
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Later



Fig.12 (group diagram) Baoding Road



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Later

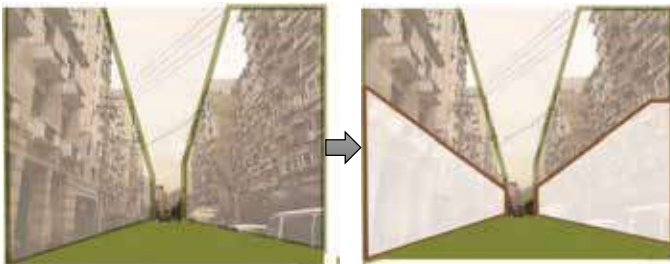
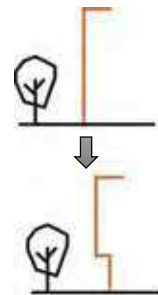


Fig.13 (group diagram) Anguo Road Renovation Proposal



When walking on Anguo Road, due to the over-height buildings of

Rongsheng and Jiulian Community, people feel pressure and tension in walking. Because the street aspect ratio is 1:3-1:6 there, which is far more than the aspect ratio of the comfortable street. It is recommended that the height of the new building be controlled between 10 and 24 meters, supplemented by specific

landscape or architectural design methods to cushion the suppressed space experience (Figure 13).

On the landmark street, as Kunming Road, the road sections are divided into three categories



Fig.14 Classification of Kunming Road Section

for control: perfect appearance section, transitional section, and the open space section (Figure 14). Considering that Xiahai Temple is the landmark building of the region, it is recommended to control the height and style of the building at the junction of Haimen Road and the section of Zhoushan Road when entering Kunming Road. Through different combinations of buildings, space can be retracted and people can be given the hint of entering a special space which can improve the landmark effect of the temple; at the intersection of Tangshan Road and Kunming Road, it is suggested to set up open space and create a landscape to attract people's attention and create a pleasant space experience for people. In front of the Rongsheng Apartment opposite the Tilanjiao Prison, it is recommended to set up public spaces and green spaces, combined with the open rest area set by the bottom floor, to alleviate the heavy and monotonous feeling of the prison wall while buffering the negative feelings brought by the oversized apartment building. On the side of the Tilanjiao prison, it is recommended to add a street tree or change the surface style of the wall to enrich the street landscape and reduce the

depression and heavy feeling of the current street.

### 3.2 Control the height of the building

For building height problems within the plot, it is recommended to take the height control of the streets and plots separately. Increase the height of buildings along both sides of Zhoujiazui Road and Changyang Road; retaining the original building height and control the height of Yuhang East Road, Tangshan Road and Zhoushan Road at 12 meters; limit the height of the remaining sections of the plot to 18 meters considering the width of the street and the coordination of the style.

As for the internal height control, the height of the intact block is basically controlled at the height similar to that of the original. In the six sections on the north and south sides,

considering the landmarks and other factors, the height control of the building is appropriately relaxed at 18 meters, 24 meters and 40 meters (Figure 15).

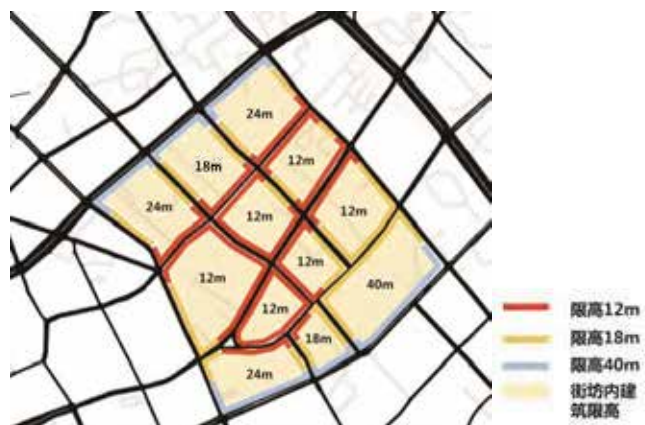


Fig.15 Height Control Advice

### 3.3 Increase public space

Considering the high density of land parcels, multi-node activity space is used instead of large groups, and more nodes are used to make social networks more dense, so as to promote the exchange of neighborhoods. On the street, it is by widening the sidewalks of the streets such as Zhoushan Road on Tangshan Road, and adding street furniture to provide a rest and cool space to improve public space;

considering the particularity of Lane buildings, the original layout of the building is changed, and some of the Lane buildings are enclosed to create public space which make contribution to the communication within the neighborhood (Figure 16).

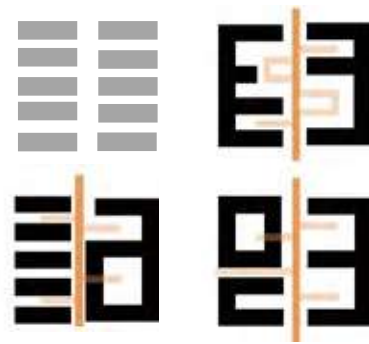


Fig.16 Possibility Renovation of Lane

### 3.4 Coordinate new and old buildings

Currently most of the newly developed buildings in the existing plots are residential buildings. For newly built buildings, efforts should be made to achieve compact and continuous street interfaces, and to ensure the integrity of the streets as much as possible. It is recommended that the newly built buildings should be in harmony with the style of the old buildings, and the transition at the height of the building should be paid attention to,

such as increasing the construction of the podium to visually reduce the impact of the height difference on the

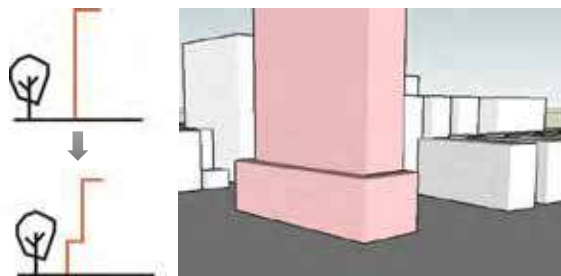


Fig.17 Add Podium

landscape (Figures 17).

### 3.5 small-scale acupuncture-style updates

For residential buildings with better status, the residential function can be extended, for the buildings that are not suitable for living , they are suggested to be reconstructed and replaced. For these buildings, it is encouraged to create various ways of upgrading without destroying the original texture. For example,

designing the variants of the original texture and performing isomorphic changes under the premise of ensuring similarity to realize diversity in unity.

## Summary

This paper starts from the spatial characteristics of the Tilanqiao area, analyzes the problems from the aspects of characteristics of architecture, street interface, height, public space, etc., and then proposes strategies including controlling of building height, increasing public space, street classification design, acupuncture-style updating, etc. These measures are intended to reshape the vitality of the area and meet the needs of the original residents under the premise of protecting the original neighborhood as much as possible. The unique architecture and texture of the Tilanqiao area creates a unique style. Under the inevitable wave of urban renewal, we must consider the particularity of the area, consider the coordination and protection of the style, and preserve the unique memories of the city.

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