

# Exploration of the Protection and Development of Zhongshan Road Historic Block in Qingdao from the Perspective of Urban Spatial Structure Renewal

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**Abstract.** Under the new historical conditions, China has entered a "new era". Urban development has gradually changed from an incremental mode to an inventory mode, and urban renewal is becoming the main mode of urban development. Based on the investigation of the basic status quo of crowd structure, public space and human behavior, this paper analyzes the existing problems of Zhongshan Road Historical Block in Qingdao, Qingdao Zhongshan Road Historical Block renovation planning is by building "one-axis-one-belt " core pedestrian space system, creating the "one axis, two lengths, three breadths, six zones, five nodes" planning structure, to adjust the nature of land use and recover the culture of the Historical Block. Also, by building greening system, square system, slow-traffic systems, and cultural tourism system, building Qingdao Historical Culture Blocks and Tourism and Leisure Commercial Block, we can recover and enhance urban memory, and make the Zhongshan Road Historical Block prosperous at the same time.

**Keywords:** Urban spatial structure, Zhongshan Road Historical Block, protection and development.

## 1. Introduction

In recent years, some domestic and foreign research experts have also put forward suggestions and discussions on the revitalization strategy of Zhongshan Road Historic Block, mainly focusing on the problems of the setting of Zhongshan Road pedestrian street, the problem of economic reset and maintenance of Liyuan in Tapautau, and The planning of Qingdao Bay square in the south. The common problems of multiple rounds of planning are: oriented by economic interests, ignoring history and culture, large demolition and large construction, and the historical features of the blocks are seriously damaged. Zhongshan Road after many times of transformation and exploration, still look forward to revitalizing.

## 2. Present Situation Investigation

### 2.1 Population Structure.

Population structure includes age, gender, education degree, consumption level, occupation and family number. Changes in population structure involve behavioral changes in different periods. The purpose of the research on the population structure is to understand the resident groups and grasp the basic living conditions and population composition of the existing residents in the area; Understand residents' economic level and consumption characteristics in detail, and prepare economic data for solving housing conflicts and designing new communities in the next step; To understand the outdoor activities habits of different groups in the area, the types and proportions of residents' outdoor activities; To judge the influence of existing outdoor environmental conditions on outdoor activities; Direct planning for new public environments that increase outdoor activities.

Based on the results of previous censuses, field visits and questionnaires in Shinan District, Our general understanding of the masses and contradictions in the area is: Aging, Generally low income, Weak consumption ability, General dissatisfaction with the living environment, Single lack of public places, Low quality of public environment lead to group manager self-publishing activities are very few, etc.

## **2.2 Public Space.**

Street public space is the carrier of human outdoor action, which depends on public space of different quality. Outdoor activities in public space can be divided into three types: necessity activities, spontaneous activities and social activities. Necessity activities have little to do with external environment and participants have no choice. Spontaneous activities occur only if people are willing to participate and if external conditions are appropriate, the weather and the site are attractive; Spontaneous, recreational outdoor activities and most social activities are particularly dependent on the quality of outdoor space: when the quality of public space is not good, only necessary activities can take place; When the public space is of high quality, although the frequency of necessary activities is basically unchanged, they obviously have a tendency to extend the time due to better material conditions. Therefore, it is necessary to evaluate the quality of public space before studying human behavior.

We divide the public space into two directions: street pedestrian space and street open and enclosed public space.

### **2.2.1 Street Pedestrian Space.**

For street pedestrian space, we divide the space encountered in the process of walking into sections to feel the degree of repression and smoothness of walking in the process of walking. The aspect ratio of street has the most direct influence on people's spatial scale; Greening is an important factor to optimize the degree of pedestrian space repression, because the shade of tree canopy on the line of sight can effectively improve the urban skyline destroyed by high-rise buildings; Parking and roadblocks directly affect the smoothness of walking.

According to the survey and statistics of pedestrian space, Zhongshan Road Historical and Cultural Block is a relatively comfortable pedestrian space with clear vision, appropriate scale and weak sense of oppression. The feeling of walking around Sifang Road and Liyuan Cultural Block is poor. During walking, the pedestrian space is constantly interrupted. According to the survey, the occupation of pedestrian space is: vendors occupation; Occupancy of restaurant breakfast stall and evening barbecue; Prominent occupation at the construction exit ;Sidewalk narrow down or Barricades facilities occupation; Garbage stacking; Occupancy of car washing customers; Delivery truck occupancy.

In the above cases, the first two have a positive effect on human communication, while the last five have a negative effect. The occupation of pedestrian space reflects the problem that the street is a little narrow and cannot meet the space required by the function. People have to detour to the roadway, increasing the walking distance and reducing the safety, which is not conducive to the walking of slow elderly people and active children and the passage of vehicles. However, when the pedestrian space is occupied, the width of the street which is not rich is further compressed, and vehicles are forced to slow down, making the street more suitable for human walking. The presence of stalls increases the possibility of human communication.

For the occupation that is not conducive to people gathering, stopping and communication, it can move the business form and the pre-construction space to clear up and broaden the width of the street. To promote the occupation of people gathering, stopping and communicating, public space can be set nearby to improve the quality of space and attract more people to participate in activities.

### **2.2.2 Open and Enclosed Public Spaces in the Street.**

For these public spaces as urban block nodes, the significance of its existence is to gather different people, regardless of their race, age, class and hobby, gathered together and break through their original common ground, and thus have the publicity. Such studies can not only focus on material properties, can from the publicity of public space, the evaluation of its function of accessibility, inclusive, visibility, and evaluation of public Spaces and streets adjacent to open and closed.

**Inclusiveness:** all public Spaces open to the public free of charge in this area except the government's ownership, so only the source of users of this public space is indicated to judge the current tolerance degree of public space.

**Accessibility:** there is no restriction on the opening time of the public space in the area except for the government ownership, so only the location condition of the public space is judged and expressed by the accessibility degree.

**Functional visibility:** rating the greening and infrastructure of the public space.

In connection with the current frequency of public space use and their quality, the reasons for the low frequency of public space use can be analyzed. For the use of the general frequency of the following public space governance, improve its publicity

## **2.3 Human Behavior.**

### **2.3.1 Classification and Analysis of Human Behavior.**

High-level activities in specific areas depend on two aspects: one is to ensure that more people use public space, and the other is to encourage everyone to stay longer. To evaluate the level of activity in an area, both the actual activity and the life in the outdoor space are also questions of the length of time spent outdoors. When studying the frequency of public space use, the first item has actually been classified and rated. Therefore, We need to focus on the stopping behavior of people.

We conducted statistics on different types of crowd activities in and around Zhongshan Road area, classified them as necessary behavior, spontaneous behavior and social behavior, it can be divided into passing behavior and stopping behavior. Among these behaviors, necessary behaviors are mostly passing behaviors, while spontaneous and social behaviors are mostly stopping behaviors.

### **2.3.2 Population Behavior Distribution in the District.**

The behavior of people in and around the historical area of Zhongshan road was observed, the traffic flow of people on each road was classified, and the distribution of three behaviors, the location of crowd aggregation and the length of stay were counted. According to the survey, Zhongshan road, Taiping road, Guangxi road and Zhejiang road have the largest flow of passers-by and the most abundant social and spontaneous activities. Sifang road, Henan road and Beijing road are next. Followed by Jimo road, Boshan road, Yizhou road; Huangdao road, Tianjin road, Hebei road, Jiaozhou road, Haibo road and other traffic flow is the smallest, social and spontaneous activities are the least. It can be seen that in the roads of this area, except Sifang road and Liyuan Cultural Block, which are almost deserted along the street, there are few activities of people on the lower roads. People's gathering activities are mainly concentrated on Taiping road, Guangxi road and Zhejiang road, and most of them are gathered at the entrances or vending point of building groups, while their staying time is often extended with the improvement of visibility of public space functions on both sides of the road.

The increase in the frequency of necessary and spontaneous behaviors will also lead to the increase in the frequency of social behaviors. With the increase of accidental behavior, the possibility of social behavior also increases. As the perspective of proportion, the proportion of

residents' spontaneous behaviors is high, but the proportion of social behaviors is very low. This suggests that residents may lack the means to communicate with each other. In order to explore this condition, it is necessary to further explore the crowd communication mode in the area.

### 2.3.3 Crowd Classification and Communication Mode.

Whether there are economic, political, ideological, common interests and common problems among residents is the prerequisite for the emergence of communication mode. The communication mode of the base is mostly the internal communication between groups of people living in the same building complex, and there is not much communication with people in other areas. Old neighbors have common emotional memories, have more common topics, often buy vegetables together, fitness and chat, often hear more in the survey is often to live in bungalow period old neighbors mutual contact memories, and now rarely contact with new neighbors sigh; The resettlement of returnees with the government, in some political issues and housing opinions can be more resonant, the survey of the interviews of returnees tend to attract more returnees to reflect the problem; Non-local office workers buy houses in the base, go out early and come back late, rarely interact with neighbors in the base, and most people in their groups do not know each other; Tenants have low requirements on the quality of life and interpersonal communication, and seldom communicate with people in other areas. Only those who live in the same courtyard can get to know each other, and most people have little communication activities.

## 3. Problem Analysis

(1) Vague positioning of protection and development:

Zhongshan road, as an important carrier of Qingdao history and culture, has maintained relatively intact modern Qingdao characteristics. However, it has been under the attack of protection and development for a long time and the functional orientation is fuzzy. Its commercial status has been lost in the urban business circle, and its commercial decline is serious, industrial characteristics have disappeared, and its attractiveness is insufficient.

(2) Prominent social and livelihood issues:

The average population density of residents is large and the distribution is unbalanced. Sifang road and Liyuan Cultural Blocks are larger than the historical culture of Zhongshan road. After the end of 1990s, with the eastward migration of the city and the decline of commerce, a large number of residents (about 80%) moved out and the floating population poured in. At present, the aging and vulnerable population structure is serious, and the social organization structure has been damaged.

(3) Low construction quality and safety:

According to the evaluation of architectural value and architectural quality grade, the building quality of Zhongshan road historical and cultural block is good, but in Sifang Road Liyuan Cultural Block the infrastructure and buildings are extremely poor quality, poorly maintained, constructed and very little or no maintainance. So it is difficult to meet the requirements of safety, supporting services and hygiene, and the building is no longer suitable for living.

(4) Insufficient road traffic service capacity:

The current situation of illegal road parking phenomenon is serious. The regional road system is mainly composed of secondary trunk roads and branch roads. The road network density is large, but the road section size is small, the intersection is numerous, and the passing capacity is small.

## 4. Analysis of the Overall Planning Scheme

### 4.1 Planning Structure.

After the planning of Zhongshan road historical block formed to Jimo road Haibo road Yizhou road Boshan road as the main axis of walking, And two horizontal, two vertical and three core planning structures composed of three core business districts supported by the walking spindle. Relying on the establishment of pedestrian street, the commercial atmosphere of the whole region is driven, and the functions within the region are adjusted to form a good echo with the pedestrian street. The three core business districts are closely related to each other and complementary functions through the series of pedestrian axes.

### 4.2 Industrial layout Adjustment.

According to the renewal mode of block function renewal, the district is roughly divided into three core areas and a commercial zone. The three core areas take the pedestrian street as a link for common development and drive the development of the surrounding economy. The commercial zone is close to the main pedestrian road -- Zhongshan road, and it is also the main street that attracts people in the region. The three regions have creative industries, characteristic bars and hotels, and religious culture as their main functions. At the same time, commercial, residential, recreational and other functions are mixed in the block, so that there is no lack of people flow at all times of the day in the street. Although the movement and movement of each functional partition are separated, they are connected by the skeleton pedestrian street and capillary commercial inner street, making the functions integrate with each other. In this way, the diversity of the blocks can be improved and the vitality can be promoted.

### 4.3 Regional Tourism Planning.

According to the conclusion of tourism development mode, Through the station square, north commercial and underground traffic and other aspects of the transformation and adjustment. The basic idea of " One axis, two districts, three groups and five lines " is put forward. "One axis", the tourism development of the cultural axis blocks in Zhongshan historical city will form the tourism routes with Zhongshan road and Zhejiang road as the main axis. At the same time, the newly opened walking blocks also well connect the originally separated scenic spots. The Catholic church, Huangdao road bar street, Urban Hall, Guangxingli, Axe Firewood Court, Chunhe building are almost all connected by walking streets. There is no longer the division of car traffic, which deepens the relationship between several scenic spots.

### 4.4 Landscape and Space Adjustment.

It is planned to build a green and square system structure composed of "five horizontal, three vertical, three core and multiple patches". Among them, "five horizontal" is Jiaozhou road, Dexian road - Baoding road, Hubei road, Hunan road and Taiping road five horizontal avenue; "Three vertical" for Zhongshan road, Anhui road - Dexian road - Boshan road, Hebei road - planning station front business district pedestrian street three longitudinal avenue; The "three cores" are coastal leisure green space with trestle as the core, church square with church as the core and Lao she park with culture as the theme. "Multi-patch" is the patch landscape leisure park beside 16 streets. The total area of the planned leisure square is 25100m<sup>2</sup>, and the total area of the park green space and the square is 72480m<sup>2</sup>. Compared with the pre-planning, the newly added green space is about 3.7 hm<sup>2</sup>.

## 5. Summary

Urban organic renewal should improve urban physical space environment, improve urban environmental quality, reflect the people-oriented design concept, and meet people's growing demand for a better life. First of all, architectural creation in urban renewal should reflect the inheritance and innovation of urban culture. In terms of design, the authenticity of historic buildings, the integrity of historical location features and the extension of traditional civilization of new buildings should be preserved. Secondly, urban renewal should also promote the economic and social development of cities and regions, and integrate the comprehensive rehabilitation of society, economy and environment. Finally, architectural creation in urban renewal should reflect the harmony and unity of regionalism, culture and times. The region is the foundation for the existence of architecture, culture is the connotation and taste of architecture, and the era reflects the spirit and development of architecture.

The renewal of the spatial structure of Qingdao historic blocks has unprecedented practical significance for the promotion of urban secondary restoration, integration of existing resources, improvement of urban functions, improvement of people's livelihood, promotion of regional coordinated development and integration and transformation of old and new drivers. Moreover, it is of far-reaching, lasting and extraordinary significance to adapt to the strategic transformation of spatial planning, optimize the stock, be inclusive and open, enhance resilience, promote high-quality and sustainable development, accelerate the construction of modern international cities, and realize the overall and comprehensive improvement of resource value and urban status.

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