

Research on Space Protection and Renewal of Historic City Wall Landscape Belt in Modern City

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Abstract. Historical blocks play a very important role in the inheritance of a city's context. The ancient city wall has always been a witness of the history and culture of various countries and nationalities, but it still stands despite the weather. For China, after the devastating destruction of the city demolition movement in the last century, there are not many relatively complete ancient city walls left. Ancient city walls played a military role in protecting towns in ancient times. In today's world, ancient buildings bring people more spiritual culture and symbolic culture. It is more important to combine the development of historical blocks with modern cities. The significance of this combination to our contemporary social culture and social development is worth studying.

Taking the design of "Suocheng" ancient town in Yantai City, Shandong Province as an example, this paper analyzes the existing situation, the structure of the ancient city wall and the surrounding environment of the ancient town by means of on-the-spot investigation and literature research. Without destroying its essential spirit, it gives the meaning of the new era, digs more possibilities and functions, forms a complete spatial combination with landscape design, makes full use of new materials, combines new forms with ancient building forms, and makes efforts to repair the old, protect and protect it.

1 Introduction

1.1 Background check

Were published [7]. Chaoyang Street and Suo City, one is the symbol of Yantai modern port culture, the other is the birthplace of Yantai city. The two constitute the two origin of Yantai city development, is the physical carrier of the record of Yantai city development history, is the most valuable historical wealth left for us by the ancestors. "Suocheng" has a long history, and it has been wrapped up with a strong cultural heritage after a hundred years of vicissitudes. Were published [1]. For more than 600 years, the city has been revitalized, and the spirit and soul of Yantai people have been firmly engraved on this land. For Yantai people, "Suocheng" is their root-seeking place, which is not only the cradle of local development, but also a symbolic meaning of Yantai people's home and culture. After renovation and renovation by Yantai local government, the city has been built into an ancient street scenic spot integrating sightseeing, catering, accommodation, culture and so on.

1.2 Investigation and analysis of current situation

Were published [2]. At the beginning of this century, with the comprehensive development of the urbanization process of Yantai, the whole historical district of Yantai is surrounded by high-rise buildings, and the contrast between the old street and the new city is strong and distinct. The city is located in the north of Zhifu District, Yantai City. The city of Qishansuo covers an area of 98,600 square meters, and the city area is 79,600 square meters. There are four gates in the city, namely Baode Gate in the east, Xuanhua Gate in the west, Fulu Gate in the south and Chaochong Gate in the north. The city has a history of more than 600 years. At present, the buildings of Ming and Qing Dynasties are the main ones that have been preserved. It is one of the starting points of the ancient "Silk Road" on the sea. It also has various titles such as the birthplace of modern postal services in China and one of the birthplaces of modern industry in China.

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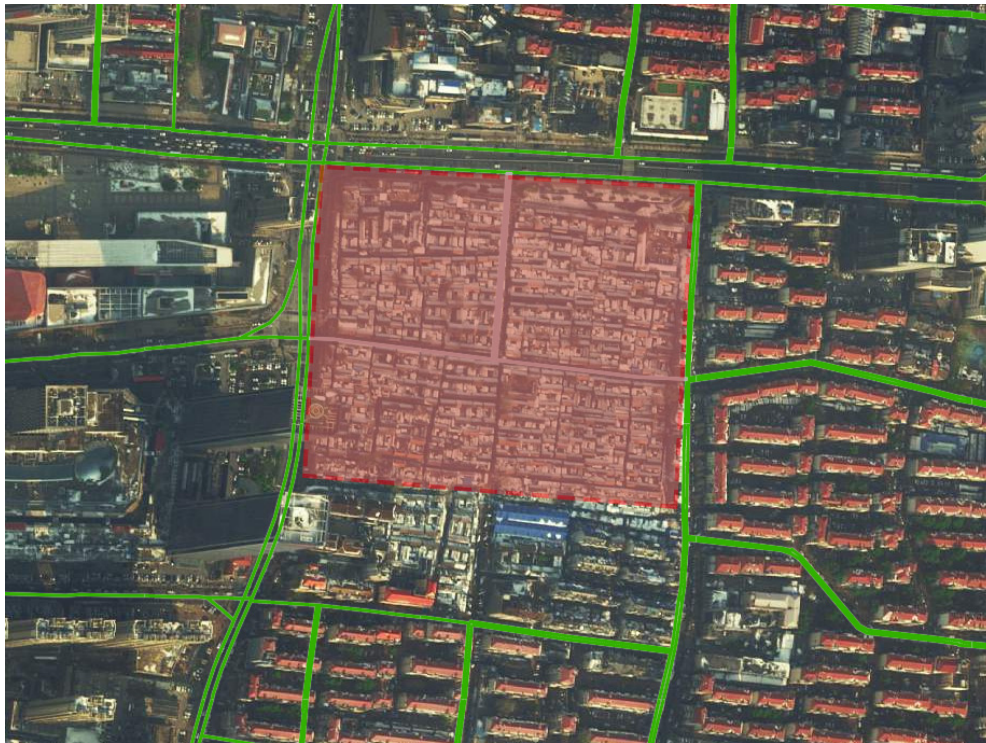


Fig. 1. Plan of historical blocks in the city

1.3 Use crowd analysis

Table 1. Use daytime crowd analysis chart

Use crowd	Main activities
Middle-aged and elderly people living around	Do morning exercises, exercise and rest after meals.
Chinese and foreign tourists who specially come to visit and play.	Watch the city wall and surrounding landscape, and learn about the history of the block.
Passing urban crowds	Commuting section, work needs

Table 2. Use the crowd analysis chart at night.

Use crowd	Main activities
Middle-aged and elderly people living around	Middle-aged and elderly people walk, enjoy the cool and communicate after meals; Young people play, take photos and enjoy the scenery.
Chinese and foreign tourists who specially come to visit and play.	Watch the night scene of the historic district and feel the fireworks in the city.
Passing urban crowds	Commuting section, work needs
Children and infants	Play with your family, play and fight.

1.4 Analysis of surrounding environment

The "Suocheng" historical block is adjacent to Yantai No.1 Street South Street in the north. On the west side, it

is close to Yantai Cultural Center, Yantai Museum, Joy City and yantai hill. It is not only rich in culture, but also a gathering place for young people to play. The lot is located in a busy area and its own planning is a crossroads layout, so the traffic is convenient. And the east side and the south side are close to many residential areas, with a large flow of people.

1.5 Research status at home and abroad

1.5.1 Domestic research status

Were published [4]. There are a lot of memories in the historic district. The implementation of protective planning can not only inherit the urban context, but also make full use of these "historical resources" to develop tourism. This international common sense has not been emphasized enough in our construction. In recent years, China has always attached importance to ideological work such as culture, especially the renewal and inheritance of historical blocks. Were published [3]. To strengthen the protection of historical buildings in the process of urban renewal, we should not only pay attention to the preservation of historical buildings and the improvement of residents' lives, but also pay attention to the enhancement of the function of public space, so as to continuously improve people's sense of gain and happiness. In terms of architecture and gardens, China is more likely to adopt repair and maintenance, retain the original charm to the greatest extent, and make it a historical monument and open it to the people of the whole country. Of course, in the context of modern civilization, some people in China choose to develop commercially in ancient towns and other places to create new significance of the times. However, this involves many factors, and it

is also a difficult thing to do. If it is not handled properly, it will become an embarrassing phenomenon. Young people are reluctant to go, and people with cultural needs will criticize it even more. Therefore, no matter what form is adopted, it is the most important thing to retain culture to update. Were published [5]. In many old city reconstruction which have been practiced in our country, improper reconstruction and renewal measures have resulted in the destruction of city cultural connotation and spirit of place. As far as China is concerned, there is a trend behind the renovation and development of ancient buildings, cultural relics or various historical relics, that is, cultural inheritance and cultural rejuvenation.

1.5.2 Foreign research status

Were published [6]. Research on renewal and protection Strategy of historic District from the perspective of urban regeneration. Internationally, many countries have formed complete protection systems for ancient buildings and historical and cultural buildings. Sha Lining, a world-famous planner, once said, "A city is an open book, from which one can see his ambition." The definition of German city is different from that of many other countries. Instead of deliberately pursuing a modern city with high-rise buildings, Germans pursue the maximum presentation of natural, cultural, historical and environmental comfort while ensuring the complete functions of each city. Dense forests, intact ancient buildings and endless fields can be seen everywhere in Germany. For ancient buildings and historical and cultural buildings, the Germans will not list them as protected cultural relics or seal them up. Not only do we have to preserve these artifacts but also to maximize the use of these antiquities in modern cities and find their place in the cities. In the German education system, specialties such as "Immortal Heritage" appeared, which not only trained outstanding professionals, but also popularized the awareness of protecting historical and cultural buildings. Citizens in western European countries, such as Spain and Italy, have formed a high degree of protection awareness for ancient buildings. Were published [10]. Make the historic district in the continuation of its space context into the modern city at the same time, so as to radiate new vitality. This is what we should learn.

2 The design process of the landscape design project of the ancient town wall in Suocheng

2.1 Project design positioning

The main function of the overall space of this design is to meet the cultural needs of local cities, meet the cultural needs in physical material form and spiritual and cultural aspects, and meet the cultural life needs of local residents and people visiting Yantai, so as to inspire people to inherit and carry forward excellent cultures such as ancient buildings, ancient city walls and historical blocks. The space state of the project focuses on finding balance, satisfying the feelings of all age groups and thinking groups, and endowing its cultural and spiritual significance as much as possible under the primary principle of satisfying functionality. There is also a city library within the design site. Were published [9]. Suocheng community library is the continuation of Zhangjia culture. Since modern times, education and teaching activities have been repeated in this space, and have been inherited and developed. Combined with this library, play the role of guiding and educating young people. Under the background of urban renewal, we should design the public space in line with Yantai culture.

2.2 Source of design idea

Based on the cultural heritage of Yantai, the original historical positioning of the design site and the repositioning of its functions in the new era are fully considered. Firstly, the historical features of the site and the original spatial language of the city are fully combined. The design mainly includes the elements of city walls, blue brick materials, rectangular geometric shapes, functional connection, culture, residential buildings, etc. And the culture inheritance does not mean the continuation of the ordinary. Therefore, in the specific design, some attributes that conflict with the original space language of the city are used, such as the collocation of concrete materials and blue bricks, bold space treatment, etc. The material wealth and spiritual wealth created during the social development of Yantai city will be passed on to the life of our generation. Specific creation of design based on the above basic points.

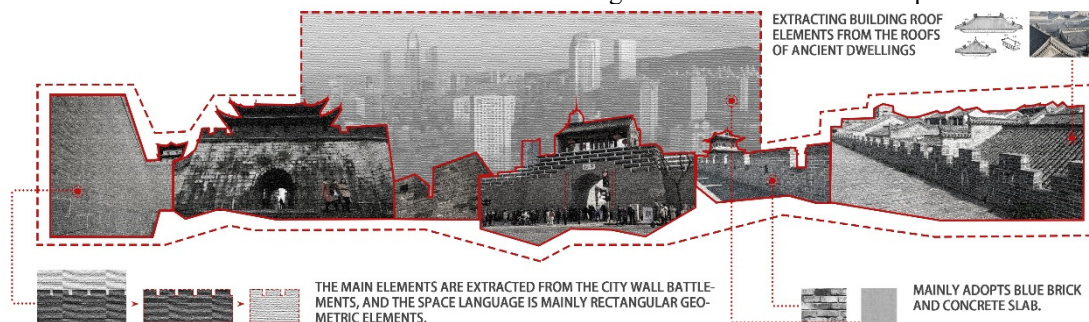


Fig. 2. Element extraction map of city wall

The whole site is located on the right side of Fulu Gate, the south gate of Suocheng City. Were published [8]. The sunken square can be regarded as either a part of the three-dimensional space of the city or an extension of the space

of the city square. The whole space adopts a large-area sinking design. The main building is a service-oriented memorial hall integrating exhibition, display and service. The main building combines the roof of ancient dwellings,

the wall of the city and the growth of Taihu stone. However, the floor plane of the main building is not in the same horizontal line with the topographic plane of surrounding squares, and the whole space is interspersed and freely extended inside and outside. It is both a square and a building, and there is no clear boundary. To reflect the freedom and naturalness of the space state of architecture and natural landscape, the sunken square takes the shape of the city wall as an element, and is distinguished by its height and material, so as to achieve the comparison between ancient and modern times and the meaning of cohesion and inheritance. A giant monument is set up at the corner of the entrance step on the west side of the sunken square, which stands majestically, and is both a sign of the main entrance and a spiritual sculpture. Combined with the above words and patterns, it reflects the main function and appearance of the sunken square.

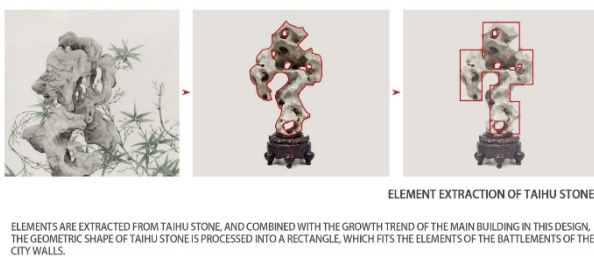


Fig. 3. Extraction diagram of growth elements of Taihu stone

2.3 Design project analysis

2.3.1 Dynamic line analysis

The design space is staggered and complex, and the moving line needs to be considered emphatically. Therefore, two important entrances and exits are designed for the sinking area, the west entrance and exit are located in the south of the city wall, and the east entrance and exit are located in the right side of the main building, which can well connect the moving line needs of the people on the south side and the people on the east side, and connect the landscapes on both sides. The main building is provided with passages from the east, west, north and south, interspersed with each other. Although there are buildings, they walk like nothing to fully meet the needs of pedestrians. Main roads are set at the junction of the north side of the main building and the city wall to meet the needs of a large number of people flowing and the convergence of people from all walks of life.

2.3.2 Planting collocation

There are three large landscape nodes and six small landscape nodes in this space landscape. As far as planting and planting collocation is concerned, the first thing is to meet the local climatic and hydrological conditions. Yantai is a rare temperate monsoon climate zone in China, with a pleasant climate and a wide range of plants.

Therefore, in the big landscape nodes, evergreen trees are the main ones, supplemented by deciduous trees. Large-scale planting mainly includes cedar, Pu Shu, poplar and ginkgo. Satisfy the functions of dustproof and environmental protection while achieving rationality and appreciation.

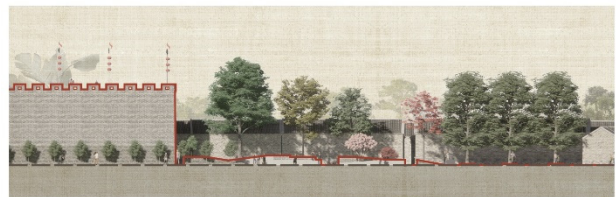


Fig. 4. Analysis diagram of some landscape nodes and planting

Small landscape nodes are mainly planted in small scale, and mainly planted with flowers, such as *Lagerstroemia indica*, cherry blossoms, *Ligustrum lucidum*, Huangyue and Rose. Each landscape node and planting collocation fully meet the sight of the crowd, and meet the demand of sight transparency from the perspective of architecture and roads. In addition to the main landscape areas, there are landscape plans in the corner of the south side of the sunken square and inside and outside the main building, which fully reflects the overall and natural meaning of the building and nature penetrating inside and outside.

2.3.3 Architectural design

The main architectural design inspiration mainly comes from the free growth of Taihu Stone and the combination design of ancient city walls and ancient dwellings. Therefore, there are a large number of irregular windows and holes on the west side of the building to reflect the free growth of Taihu Stone and make it geometric. The second floor of the main east wall of the building adopts hollow design, and the hollow part is made of irregularly broken concrete combined with steel frame structure to reflect the contrast between ancient and modern times, and combined with the design of missing landscape, which echoes the landscape nodes on the east side. The main three-story ceiling of the building is wrapped with steel structure glass on the southeast side and wood material on the northwest side, which not only meets the demand of bearing and beauty, but also can fully supply the indoor natural light. The roof form is the common roof system of ancient dwellings, but it adopts a single slope, and the slope is changed to a straight slope, so as to echo the irregular shape of Taihu stone growth of the architectural form. And the two-story staircase is externally arranged to meet this requirement.

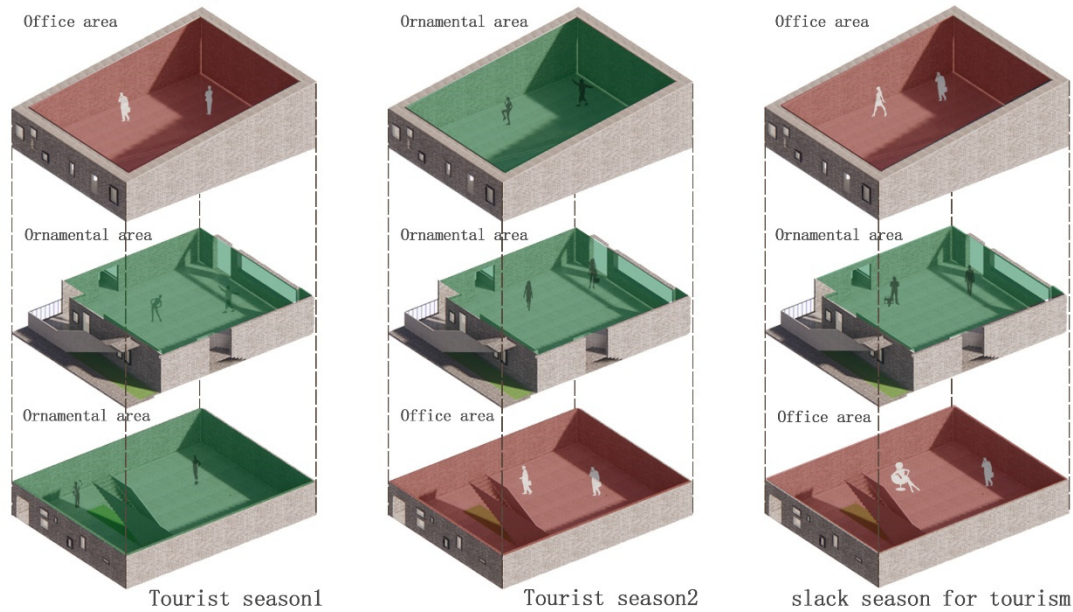


Fig. 5. Design drawing of "quarterly function" of the main building

A small building is designed on the south side of the main building, which mainly meets the crowd buffering design at the entrance of the south side of the main building, and can meet the functional requirements of temperature measurement, registration, security inspection, etc. in the event of COVID-19 epidemic. In normal times, it mainly meets the functions of tourists' consultation, registration, storage and so on. It is widely used and can be used flexibly. The roof is mainly made of steel frame glass, which echoes the roof of the main building and can also fully meet the demand of natural light.

The buildings in the sunken and underground areas are mainly exhibition spaces, and there are many patio windows, which can fully create a feeling of deep thought while meeting the natural light of the main tone, and have a good mental and psychological guiding effect on the crowd from the aspects of space psychology. It also meets the main design concept of free space division.

On the south side of the whole design area, there are two original houses, which will be rebuilt. The main design direction starts with the roof, combining the ancient roof form with modern structure and materials, and combining some traditional tiles with some steel frame glass. Combining some brick walls of the facade with steel frame glass fully reflects the contrast of ancient and modern materials and the connection of structures, and better conforms to the design language and design techniques of the whole design space.



Fig. 6. Design drawing of "Culture function" of the Sinking area

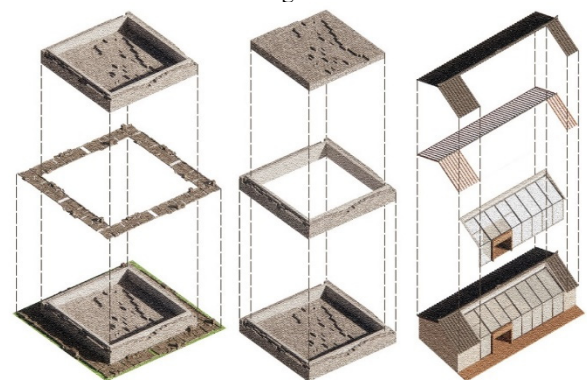


Fig. 7. Renovation design of ruins and original houses

2.3.4 Material analysis

Under the theme of urban renewal and the central element of the ancient city wall zone, the whole area is processed with materials mainly reflecting the principles of comparison between ancient and modern, combination of old and new, and continuation and inheritance. The main materials are blue brick, green slate, concrete slab, carbon structural steel, glass, granite, wood, etc.

In all aspects of architecture, blue brick and concrete slab are mainly used as the main materials, and these two materials are highlighted to achieve the purity of the theme. In the main building, it is mainly reflected in the contrast between stair materials and wall materials, and irregular windows and openings of large and small sizes are also supported by steel frame structures, thus reflecting that a series of commonly used materials after the industrial revolution, such as steel materials and glass materials, can also be fully compared with blue bricks and other materials.

The material design of the sunken square mainly follows the above points. The concrete slab is connected with the blue brick by contrast, and the technique similar to relief is adopted. The blue brick is used as the material, and the city wall is outlined to protrude the sunken plane

by 75mm, so that the ground level is diversified without affecting the crowd walking. The south facade and the load-bearing column of the sunken square are made of concrete slab, while the inner wall of the south wall is made of blue brick, which forms a sharp contrast on the facade. The east side of the sunken square is decorated with a small amount of wood in the overall space. It can also be used for tourists to have a rest. On the east side of the sunken square, steel frame structure, glass and concrete wall with missing scenery are used for partition in the connecting zone of underground area, which not only achieves the contrast of materials, but also satisfies the intake of natural light in underground area, and ensures the transparent sight.

2.3.5 Public facilities design

In terms of public facilities, it is mainly inspired by the form of city walls and roofs of ancient buildings. For street lamps, the base is made of stone, the lamp post is made of wood, the top of one side is the extraction of elements from the roof of ancient buildings, and the top of the other side is the shape of Tenglong, which is extracted from the ancient flag in Suocheng. There are lanterns and long light strips under the dragon as lighting systems.

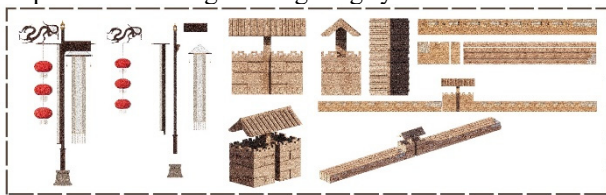


Fig. 8. Design drawings of public facilities

The garbage can is 1010mm long, 560mm wide and 620mm high. The top of the design is also extracted from the roof elements of ancient buildings, and the edge of the barrel is extracted from the wall stack. The pinstripe road of the barrel is used as the guiding effect of the night light environment, forming a flowing grain pattern, and the grain form is also a rectangular geometric element of the city wall. The shape of the public bench seat is more concise and lively, with a length of 4000mm, a width of 670mm and a height of 350mm. The exterior is wrapped in wood, and the interior is made of blue bricks of the city wall, which are partially broken and leak out of the blue bricks. It not only achieves a safe and stable effect, but also reflects the collision of the two materials, and the broken form is the wall buttress element.

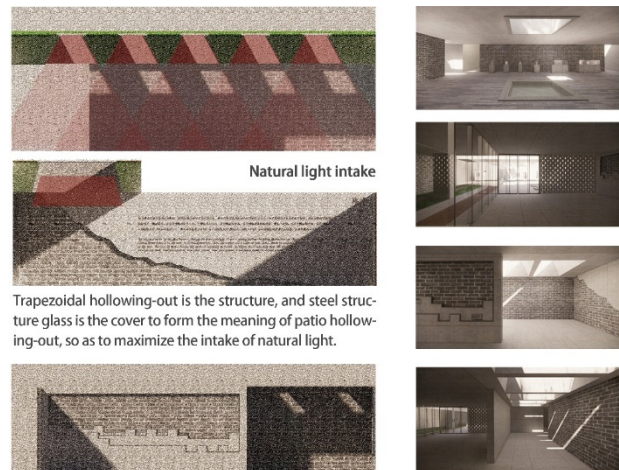


Fig. 9. Natural light intake and material comparison design drawing

3 Conclusion

For today's people, they need more than material and wealth enjoyment. Cultural and spiritual feelings become particularly important. A good phenomenon is that more and more people put forward higher requirements for the construction of spiritual civilization, and the renovation of historical and cultural blocks has aroused widespread concern. In view of the renewal and protection of historical and cultural blocks, it is particularly important to make a good choice and balance between new things and old things. At present, there are many policies in our country to protect historical sites such as historical and cultural blocks. But from the public level, if each of us has a desire to protect these "old objects" and attaches importance to their value, it will be the best and most effective. Speaking of restoring historic districts, we might as well use another word "restoring history". From the perspective of politics and economy, the position of history and culture is becoming more and more important, especially for the development of modern cities. It is more direct and effective to publicize a city's history and culture than its economic strength. What we are talking about here is not the question of cost performance, but how to solve the problem of city's overall appearance renewal from another angle under the background of rapid urbanization. The improvement of cultural importance is the inevitable direction in the future. But this is not a simple matter. We must do a good job of full investigation and reasonable cultural embedding. We can't blindly put all kinds of cultural elements into a place that doesn't belong to them, but we must combine the original and actual local history and culture. This historic district reconstruction design combines urban protection and renewal, and past lives in the city are the case. Do a good job in the integration of modern cities and historical and cultural blocks, and present the original appearance of "Suocheng" in a new form, so as to achieve the main purpose of urban protection and renewal.

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