

Micro-renewal and Landscape Improvement of Public Space in Old City Streets Based on Humanistic Concept

--Taking the first Middle School East Road of Weishi County in Henan Province as an Example

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Abstract

The purpose of old city renovation is to restore the functions of the old city by means of renovation, so that the functions of the old city can meet the needs of the residents, and at the same time improve the public landscape and enhance the visual and residential experience. This paper takes the renovation of the first middle school east road in Weishi County, Henan Province, as an example, to analyse the problems of the project site, and through questionnaires and surveys, to understand the needs and ideas of the local residents. This paper will focus on the renovation of the public activity space and open space, using landscape design techniques to renovate and restore the existing foundation. This paper will focus on the transformation of public activity spaces and open spaces, using landscape design techniques to transform and restore existing foundations, and to integrate the urban landscape into the public landscape as much as possible, while meeting the needs of the residents for infrastructure and landscape.

Keywords

Street Reconstruction; Residents Demand; Public Landscape.

1. Introduction

As the historical witness of the city, the old city represents the of the cultural characteristics of the city [1]. With the rapid progress of urbanization in China, one new building after another, similar buildings, similar streets, make the urban landscape tend to be consistent, lost each city's own unique urban style and cultural heritage you. Many things left in the old urban areas are of historical value, and their existence is representative. The preservation, transformation or renewal of these resources is a necessary means to achieve the simultaneous protection and development of the city.

At present, the four methods commonly used in the reconstruction of old cities are complete demolition and reconstruction, the establishment of satellite cities nearby, the old and organic renewal. Different reconstruction methods are suitable for different environmental [2]. The most used method for the reconstruction of old cities in China is to completely push down and rebuild. Bringing down the old city and replacing the old with the new on the basis of the old city may be the most economical [3]. But this way will also bring some bad effects, such as the loss of urban characteristics, the reduction of urban cohesion, the reduction of the sense of belonging to the city identity, therefore, The preservation of the city's character and the protection of the urban landscape is also an increasingly important part of the current and future upgrading of the old city landscape [4,5].

2. Background Overview and Design Approach

2.1 Project environment

There are more than 160 households living in the old city of the first middle school east road of Weishi County, with buildings mostly built in the 1980s, seriously backward infrastructure, extremely poor sanitary conditions and low greenery coverage. The existing living environment and some infrastructure can hardly meet the basic needs of urban residents. The first middle school east road runs north-south, with a total length of 435.86m, and is named after the first middle east road of Weishi County. At the same time, the area is often congested because of the large number of schools in the vicinity and the large flow of people, which causes great problems for local residents to travel (Fig.1)

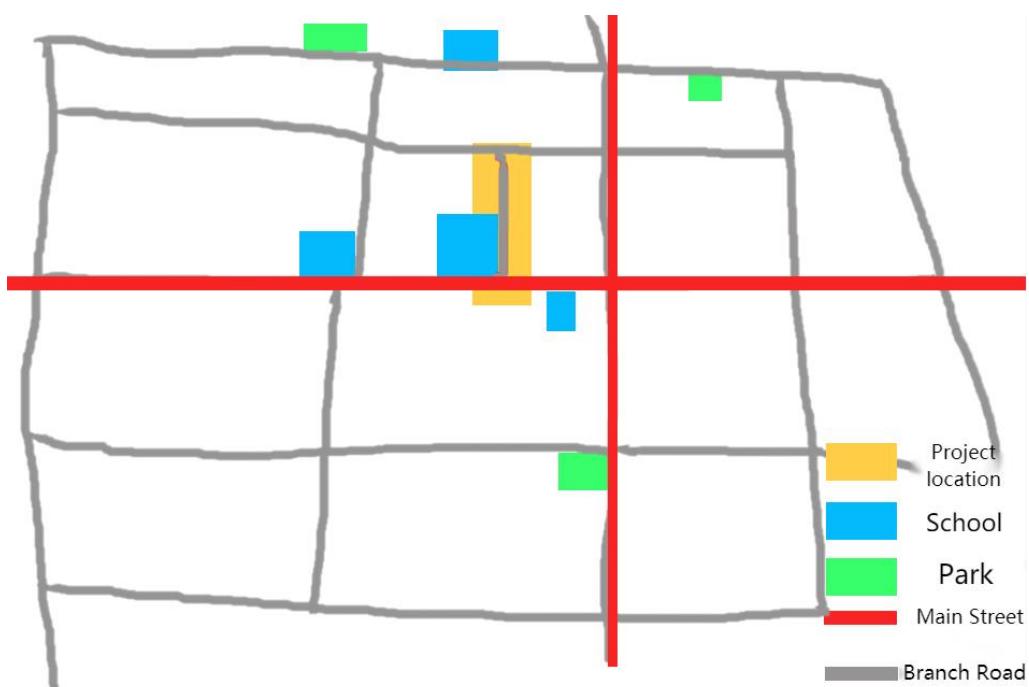


Fig. 1 location of the first middle school east road

The old town is mostly residential land, with little green area and public space for activities. There is a local senior secondary school and a drainage ditch in the area of the site. As the site is adjacent to the secondary school, it inevitably causes some noise disturbance to the surrounding residents. The river is a collection point for rainwater from several surrounding streets, but it has been used for a long time and has never been cleaned of silt, resulting in a pungent air and a large number of mosquitoes. Large green areas and public spaces are relatively distant from the neighbourhood, leaving residents with a serious lack of space. The greenery in the area is dominated by a few isolated trees, mostly planted by the local residents themselves, which are in indeterminate locations and do not form a landscape.

The county government began to transform the first middle school east road in the second half of 2019. Demolition of a row of buildings on the east side of the street, To widen the road, On the basis of this thesis, the reconstruction design is carried out according to other environmental factors and residents' opinions.

2.2 Design ideas

Due to the old urban area, There is no public space available for residents in the original urban planning, The nearby activity squares are far away. According to the survey, The most urgent and expected of the residents in the renovation plan is to increase the activity space, Therefore, the transformation of public activity space is one of the key points in this design.

In the scope of transformation, there are two zonal areas suitable for transformation into public space (Fig.2), One is the east side of the road, It's a road widening and demolition area, The remaining 11.5m wide, 213m long blank area on the basis of road widening; The second, the north side of the project area, It is between the building and the river. Targeted design will be carried out according to the surrounding environment and residents' needs. The transformation is divided into three areas by region: The road main body reconstruction, the design of public activity space, the rest space renovation design.



Fig. 2 Scope of transformation

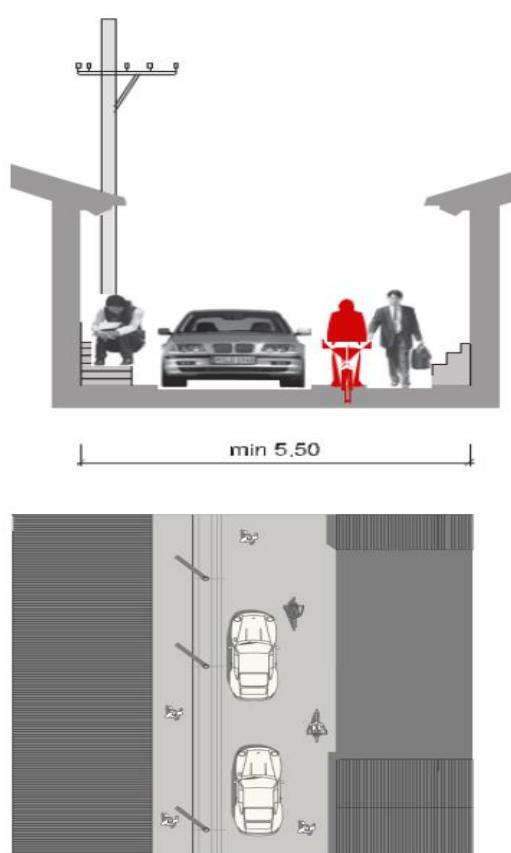


Fig. 3 Status of the first middle school east road

2.2.1 Road rehabilitation design

The road is an urban branch, it is one way single lane, people share one lane, not only road congestion, but also security risks (Fig.3). In response to this problem, the county government demolished a row of buildings on the east side of the street (Fig.4), and change the original single lane to two lanes, and considering that there are more schools around, the safety needs of the separation of people and cars, Therefore, add 2m wide footpaths on both sides of the road. In addition, on-site sewage disposal facilities are dilapidated and seriously silted up. On rainy days, street-level sewage flows across the street. It is not only smelly, but also easy to breed bacteria and mosquitoes, which have a greater impact on the surrounding residents. The strong and weak electric cables and distribution boxes are arranged randomly on the roadside piles and walls, which are ugly and unsafe. In the road reconstruction design, the traffic problem is solved by widening the road and shunting the traffic flow, and the underground pipe network and road surface cable are rearranged and re-laid.



Fig. 4 Scene photo of the first middle school east road

2.2.2 Reconstruction design of street public activity area

When the street public activity area is renovated, the main consideration is the residents' activity demand. In the 213m space, because it is divided into 9 independent and interconnected small spaces by 9 lanes, it makes the already long and narrow space that is difficult to deal with become more fragmentary. Although space is fragmented, each space has a size of more than 100 square meters and can be transformed into a small activity space. In the design of the transformation, different areas such as fitness equipment areas and children's activity areas can be divided according to the needs of different groups, maximize the use efficiency and transformation value.

2.2.3 Renovation design of open space

The river area, because of its quiet environment, mainly for the vegetation landscape, hard landscape and rest places for the surrounding residents to rest. The community in the old city has been built for a long time, the infrastructure is relatively scarce, and the green space is small, so it is difficult to meet the daily requirements of the residents. The plant landscape in the public landscape is one of the important components, and it is also an important way to improve the urban environment [6]. Plants can conserve water, absorb the pollution in the air, while rich landscape plants can also decorate the streets, enhance the visual enjoyment of people.

In addition to plant landscape, hard landscape in the preservation of local culture, enhance the humanistic atmosphere is more important. In the investigation, there are some characteristics of architectural decoration in local buildings that can be used for reference in landscape reconstruction. These architectural ornaments reflect the living environment and cultural environment of people at that time. They can be preserved and displayed as a kind of urban culture in landscape transformation.

3. Planning Transformation Strategy

3.1 Road rehabilitation design

About 5.5m wide of the original road, after the demolition of the east residential building, the red line expanded to 23.5m wide. The layout starts from the west as follows: 2 m (sidewalk)+8m (mixed lane)+2m (sidewalk)+11.5 (active space) (Fig.5). The contents of the project include road, pipe, lighting, virescence and water supply engineering, which makes it more safe for the underground of wires and cables originally erected on the road surface to make the pavement space clean and tidy. In the completion of road infrastructure construction at the same time, landscape upgrading.

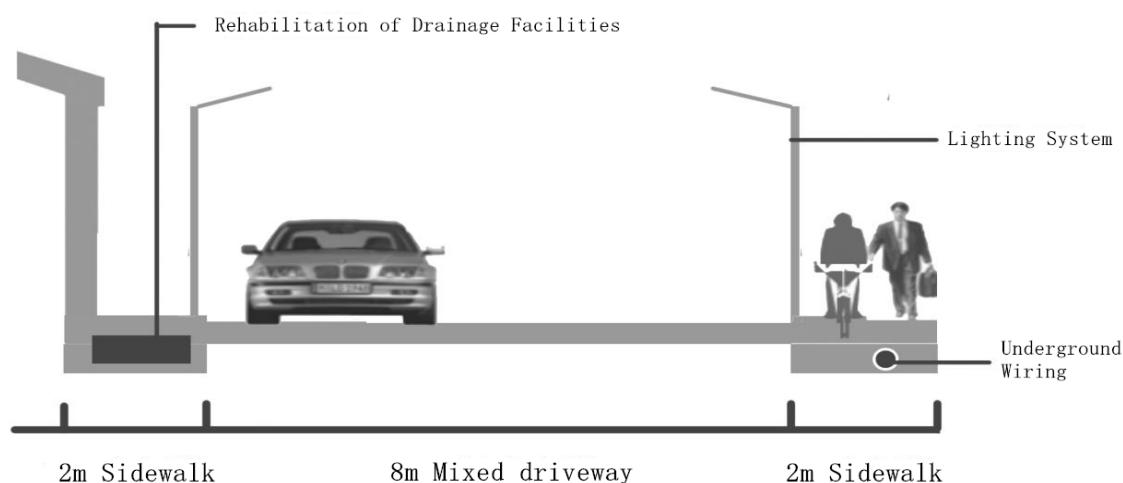


Fig.5 Road reconstruction design facade

In the road reconstruction, the east side of the road is demolished, but the west side of the building has not been greatly demolished, basically retaining the original style. In the reconstruction of the old city in China, the application of landscape wall sketch is very extensive, and there are many fine works, such as Chengdu wide narrow alley, Dujiangyan South Bridge old lane. In this reconstruction plan, some local cultural elements will be combined to transform the wall along the west street, such as the old, while maintaining its original style, improve the visual effect.

3.2 Renovation design of public activities area

Nine small areas, both ends of the north and south planted into green plants. In the remaining space, the five spaces on the north side are placed in different small areas according to the of outdoor fitness

equipment. Residents can choose suitable activity space according to their own needs. The remaining two places were transformed into children's playgrounds (Fig.6), To meet the old urban areas of different living residents of the activities and entertainment needs.

Each small space is composed of three parts: vegetation, active space and open space. The "glass + steel" geometric pavilion is considered (Fig.7,8), And make full use of the location of trees and the characteristics of tree species --In summer, even if the pavilion is a glass roof, the crown can shade the residents; In winter, after the trees have fallen, residents can enjoy the sunlight from the gap between the top of the glass and the branch. In the street public activity area and the east side building wall, select some old photos with commemorative significance to copy according to the actual size, local use sculpture form three-dimensional, this can not only retain the old city once sound appearance, More interesting (Fig.9).

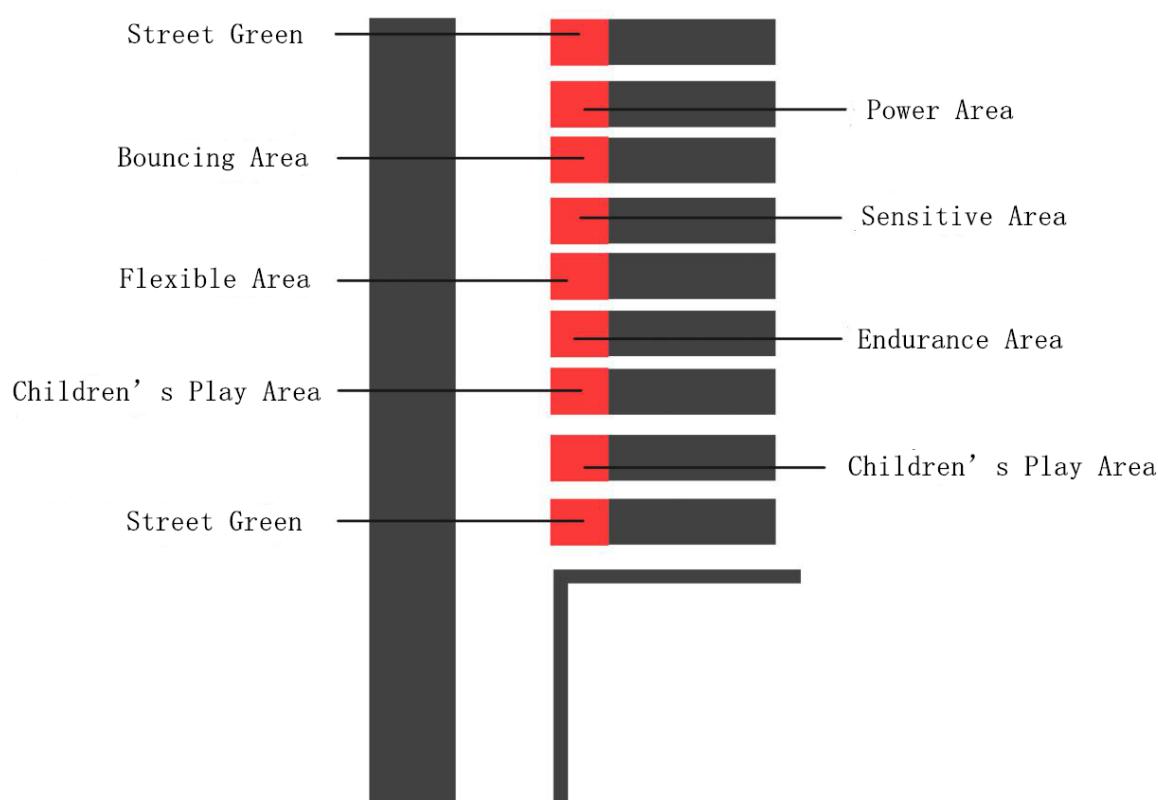


Fig. 7 Street public area partition

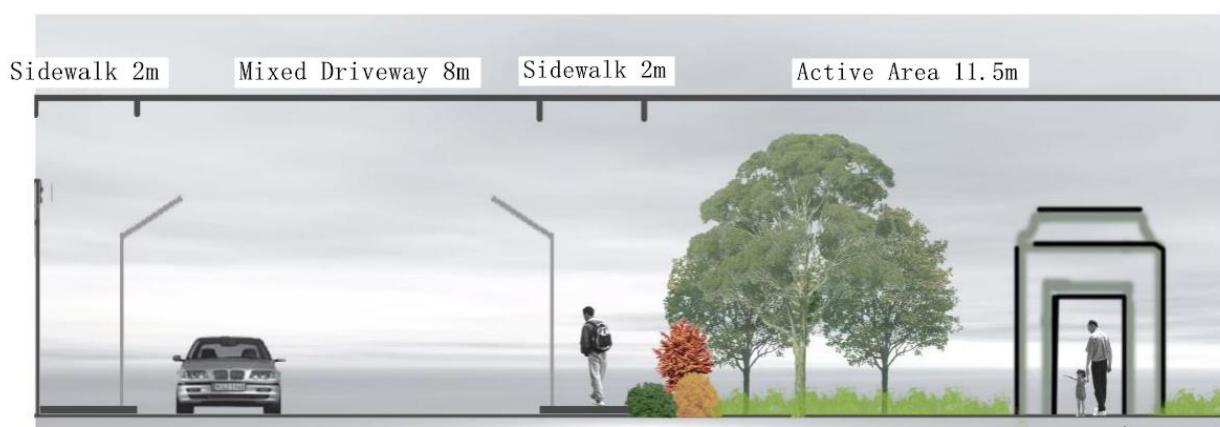


Fig. 7 Elevation of street public activity area

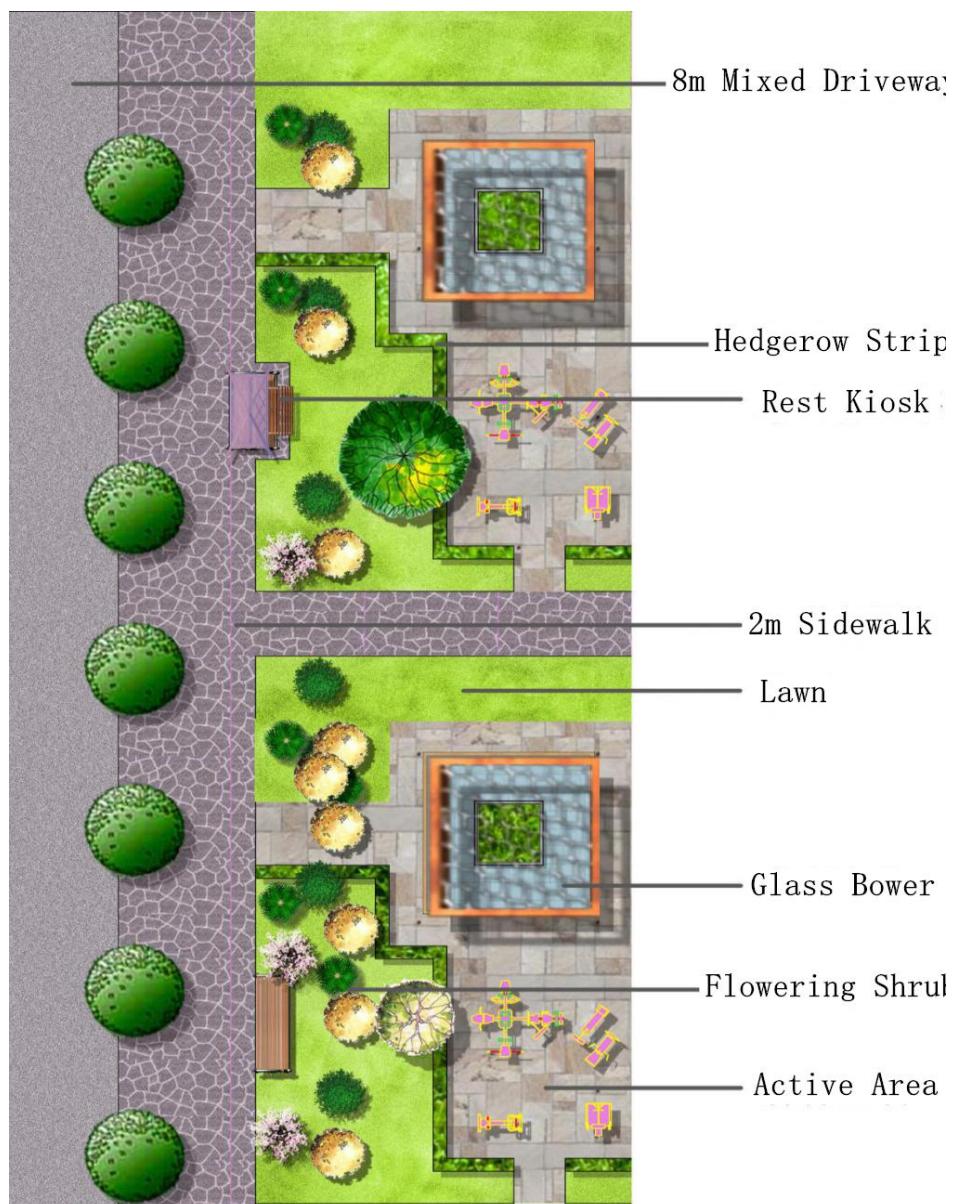


Fig. 8 Colour Plan of street public activity area



Fig. 9 Effect map of street public activity area

3.3 Landscape reconstruction design of open space

There is a large idle public space next to the north river of the project site, but the lack of management, vegetation degradation, overgrown weeds and garbage accumulation, it is not only a waste of space, but also a breeding ground for mosquitoes. The river is not a sewage river, and the nearby Rain Water is concentrated here, the pollution is not serious, but because of the long-term lack of management and maintenance, resulting in silt deposition, water quality is getting worse and worse. It is planned to purify the water system using native submerged plants with high survival rates, *Hydrilla verticillata* Royle var. *rosburghii* Casp. and *Vallisneria natans* (Lour.) H. Hara have a very good purification effect, It is suitable for in situ remediation of water body [7]. Near the side of the building, large landscape plants can not be planted, but the walls of different styles lack aesthetic sense, so the three-dimensional planting method is used to build 2.5 meters high fixed frame, and planted *Parthenocissus tricuspidata* (S.Et Z.) Planch. *Rosa multiflora* Thunb under it, Three-dimensional planting to isolate the line of sight to form a “green wall” (Fig.10,11).

Hard landscape areas choose to remove some materials from old buildings for reuse. The brickwork above the old building is made by hand by the old craftsman and can be used as of the hard landscape. This is not only a recycling of resources, but also a reservation to the style of the city.



Fig. 10 Elevation of open space beside river

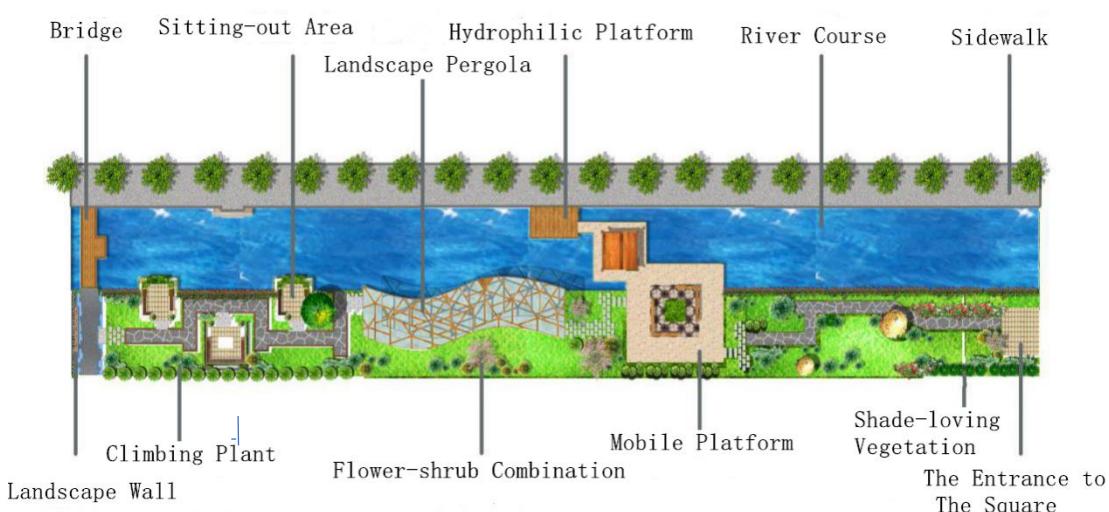


Fig. 11 River side open space plan

4. Conclusion

The landscape is humanized and intended for human use, especially in the context of urban renewal, where the ideas of local residents should be considered. The first is to find the problems in the old city through the experience of the local residents, to understand the real needs of the local residents, and to work out more reasonable and scientific solutions. On the basis of the reasonable plan, the landscape is upgraded, and some local culture is integrated into it.

The old city is not a synonym for squalor, it's a city where the people, the legacy of time, represent the local people. On the basis of the existing landscape design, so that it retains the original cultural atmosphere at the same time, more suitable for the needs of modern life.

Acknowledgments

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