

P- 0800

Landscape Regeneration of Urban Cultural Heritage: Case Study of the Nanjing Ming City Wall Greenway

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Abstract

Landscape regeneration of urban cultural heritage is an effective way to protect and reuse urban cultural heritage as an element of urban landscape, which makes cultural heritage not only exist in the world, but also back into the world. Landscape regeneration of historical heritages is feasible and inevitable. On the one hand, historical heritages are valuable elements of urban landscape, with its memory-carrier function, aesthetic value and ecological potential. On the other hand, as a part of the built environment, cultural heritage is an inevitable part of urban landscape due to its predictable long-term existence in the past and future. The paper further discusses the landscape regeneration of the Ming City Wall, which is the largest ancient wall around the world, based on the exploration of the Ming City Wall Greenway in Nanjing (China). The paper summarizes the construction and development process of the greenway at first. Design strategies of the landscape regeneration of the Ming City Wall are discussed from two sides: protection of cultural heritage as urban landscape and contribution to urban landscape as cultural heritage. The problems and outlook of landscape regeneration of urban cultural heritage are given at last.

Keywords: Landscape regeneration; urban cultural heritage; greenway; the Ming City Wall

1. Introduction

After about 30 years of protection practice, China has formed a relatively complete system of the protection of urban cultural heritage, but the contradiction between protection and development is still grim (Tang, 2013). Some of the cultural heritage is managed by the Department of Cultural Relics as a cultural relic unit, which has long been caught in the state of "more protection and less utilization", making heritage protection a burden. This kind of heritage often become a forgotten island in the city, with worrying construction situation. Other cultural heritage is commercialized. In order to pursue profits and cater to tourists, the demolition and reconstruction of the original heritage can cause irreparable damage to the

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heritage. Besides, over exploitation of cultural heritage has led to overcrowding and widespread use of tourists, leading to inevitable damage to the heritage. None use and excessive use are both adverse to the protection and regeneration of urban cultural heritage. The regeneration of urban cultural heritage is not isolated treatment, nor the simple change of function, but the rehabilitation treatment on the body and regain of ability to go back into the society, like the rehabilitation center, emphasizing "integrating into the world" more than "existing in the world" (Lu, 2013). This is the sustainable way of heritage regeneration in current cities. In view of this goal, this paper puts forward the method of landscape regeneration, expounds its theoretical basis, and takes the Nanjing Ming City Wall Greenway as an example to explain the operation method of landscape regeneration.

2. Landscape regeneration of urban cultural heritage

Urban cultural heritage

Convention Concerning the Protection of the World Cultural and Natural Heritage was adopted by UNESCO in November 1972. The first article of the convention put forward the concept of "cultural heritage", which was the first time that the "cultural heritage" is clearly defined in the international documents of heritage protection (UNESCO, 1972). With the continuous development of human understanding of the protection of cultural heritage, the category has also been greatly expanded. Based on the former material cultural heritage, the concept of intangible cultural heritage is further put forward. In 2003, the adoption of *the Convention for the Safeguarding of Intangible Cultural Heritage* by UNESCO marked the climax of the worldwide attention to the intangible cultural heritage.

Urban cultural heritage refers to the cultural heritage located in the urban area. The urban area studied in this paper is especially the urban central area, which is the urban core area with high concentration of urban function and urban public life (Wang, 2006), not including the urban suburbs. The World Heritage in China can be taken as an example. China has 35 of the world's cultural heritage included in the "World Heritage List" by July 2016. Sixteen of them are located or partly located in the urban area.

Landscape regeneration

Landscape regeneration refers to the proper protection of urban cultural heritage, so that it can exist in the world, and regeneration of urban cultural heritage, so that it can integrate into the world in the form of urban landscape. The theoretical basis of landscape regeneration includes: 1. *City sustainable development theory*: In 1980, the concept of sustainable development was first put forward by the IUCN. In 1987, the concept was formally defined in the report of *Our Common Future*, which meant to satisfy the needs of contemporary people without damage to the ability of future generations to meet their development needs. As an important part of the city, cultural heritage needs the guidance of the concept of sustainable development in the process of protection and utilization, so that the cultural heritage can not only become sustainable development sites, but also promote the development of the city's ecological environment, economy and culture, and improve the quality of the city. 2. *Landscape design theory*: Through the design of outdoor public areas, landmarks and structures, landscape design achieves environmental, social behavioral or aesthetic effects. Landscape regeneration is the core of this study. The key point is to protect and regenerate the heritage with the perspective and theory of landscape design. 3. *Ecology theory*: The essence of ecology is "the study of the relationship between organisms and their environment" (Cui, 2016). The protection of urban cultural heritage includes not only the heritage itself, but also the natural environment of the heritage. This is a rare opportunity to the city, which is originally lack of natural resources. Protection of cultural heritage from the ecological perspective is conducive to the promotion of city ecological environment. 4. *Site-spirit theory*: Christian Norberg Schulz, Norway scholar of urban cultural heritage, puts forward two kinds of site spirit: orientation and identification. The former refers to people's ability to recognize space and know where they are. The latter refers to the sense of identity and security in a site, and all the cultural systems



develop their own spatial position and meaning system (Ding, 2008). Urban cultural heritage brings more the latter one.

The feasibility and necessity of landscape regeneration

Landscape regeneration of urban cultural heritage is feasible and necessary. On the one hand, cultural heritage has the advantage of being an element of urban landscape. Cultural heritage often has historical significance, created by the memory it carries and site spirit it brings, forming the atmosphere that cannot be created by the present landscape. After historical screening and baptism, urban cultural heritage often has outstanding aesthetic value, and can become the highlight of urban landscape design. The natural environment of urban cultural heritage can form ecological patches or corridors, which is irreplaceable for urban ecological system. On the other hand, urban cultural heritage will inevitably become an important part of urban landscape. As a part of the city for a long time, cultural heritage always exist in citizens' sight. As the object of protection and reuse, cultural heritage will be more prominent in the city, and become an important part of city landscape of the future.

3. Case Study of the Nanjing Ming City Wall Greenway

General situation

Nanjing, the capital city of Jiangsu Province, is located on the southeast side of the Yangtze River. The building of the Nanjing Ming City Wall was started in the late Yuan Dynasty (AD 1366), and finished in the Ming Dynasty (AD 1386). According to the study of the history of the Ming Dynasty, its total length is 35.267 kilometers, with a total area of 41.07 square kilometers (Wang, 2016). The height of the walls is generally between 14m and 21m. The width of the city base is about 14m, and the width of the top is between 4m and 9m (Zhang, 2008).

In 1998, *the Landscape Planning of the Nanjing Ming City Wall Environs* was proposed to implement a full range of control and protection of the Ming city wall and its surrounding: conservation and utilization of gates, walls and moat; protection of the city wall and the landscape resources attached to it; the forming of a continuous green necklace along the city wall. According to *the Planning of Nanjing greenway and the Three Year Action Plan*, about 200km-long greenway has been built along both inner and outer sides of the city wall by 2014. The Nanjing Ming City Wall Greenway, located in the main city of Nanjing, is a continuous ecological landscape belt connecting all kinds of green open spaces along the Ming City wall. The greenway system is composed of walls, natural systems and artificial systems (Zhao and Zhang, 2015).

Protection of cultural heritage as urban landscape

As urban landscape, the protection of cultural heritage in the Nanjing Ming City Wall Greenway can be summarized as the segmentation protection at the macro-level, the management and control of the sight at the meso-level, and the regulation and improvement at the micro-level.

At the macro-level, the protection design and path planning of greenway system is divided into 5 sections according to the preservation status of the city wall (Fig. 1). R1 section is the ruins of walls, so the planning of this part is mainly the combination of experiential trails and ruins parks. The majority of R2 section is the remaining walls, so the greenway is set 15 meters away from the walls. R3 section is around the Zhongshan scenic area and the protection is combined with environment promotion in this area. R4 section is mainly the remaining walls with urban branch network around, so the protection pays close attention to the relationship with the urban roads. There are many open spaces around the R5 section so the establishment of the urban greenway mainly depends on the surrounding open space.



Fig.1. Segmentation Planning of Greenway. (source: UAL Studio)

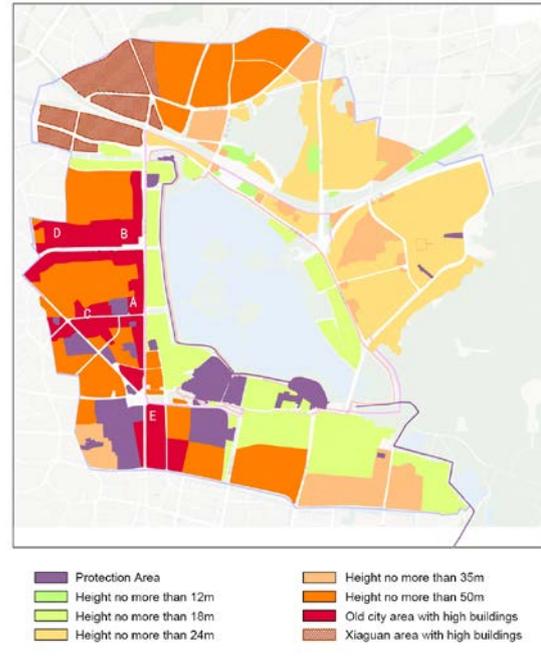


Fig.2. Height Control in the Xuanwu Lake area. (source: UAL Studio)

At the meso-level, in order to protect the overall environment and control the view from the wall, the greenway system controls the building height around the wall. According to a field survey of Zhang Chen in 2006, most of the city wall can be seen from the vicinity (such as a nearby road), accounting for about 75.7% of the total length of the existing area. However, most of them are outside the main city area (accounting for 59.1% of total length). The second large part is in the main city but outside the old city (accounting for 13.1% of the total length). In the old city only 3.5% of the total length can be seen (Zhang, 2008). In order to protect the skyline of the city wall, the Department of Urban Planning in Nanjing publishes the regulation: no buildings on both sides of the city wall within 15 meters area, no new buildings within 50 meters area in principle, no new buildings higher than the city wall within the 50-200 meters area (Fig. 2).

At the micro level, greenway system pays attention to managing vegetation and renovating the end of city wall. The big trees close to the wall may have an influence on the wall and the dense vegetation may affect the display of the contour of the city wall. The Management Measures of Protection of the Nanjing Ming City Wall amended in 2004 also clearly stipulates that the 15 meters area around the city wall is the restricted area. Only grass is allowed, and any other plants are prohibited. As for the moat, tall and dense tree species are not allowed on the side of the city wall, so that the view of the landscape could be protected. The existing Nanjing Ming wall is in the form of a number of discontinuous sections, and each section has the problem of the end of the city wall. Some of the ends were covered and imperceptible, which were cleared and renovated latter. The surrounding clutter was removed and the city wall was exposed to the city. This helps people mentally perceive the city walls.

Contribution to urban landscape as cultural heritage

As cultural heritage, the contribution to urban landscape in the Nanjing Ming City Wall Greenway can be summarized as combination with the urban mountains and rivers' patterns at the macro-level, formation of natural and human open space at the meso-level and composing of landscape elements at the micro level.

At the macro-level, the Nanjing Ming City Wall is combined closely with the landscape pattern of Nanjing and takes part in the restriction of urban landscape on the urban scale, forming a recognizable urban form as



a result. In the existing city wall, 14.5% directly coexist with the Zijing Mountain, which is about 3650 meters long. The part directly coexisting with the Xuanwu Lake is about 5300 meters long, accounting for 21.1% of the total length. The part directly coexisting with rivers is about 10700 meters long, accounting for 42.6% (Zhang, 2008). The data show the degree of combination of the Nanjing Ming City Wall and the natural landscape of Nanjing. It can be said that the outline of the old city of Nanjing is limited by the water system around the city and the purple mountain, and also by the Ming City Wall.

At the meso-level, the greenway system forms the natural and human open space in the urban landscape. Greenway system is a green corridor from the ecological view, and become an important part of the ecological system of Nanjing. There are numbers of famous rivers, lakes and mountains along the Ming city wall, such as the Qinhuai River, the Xuanwu Lake, the Qian Lake, the Zijing Mountain, the Lion Mountain and the Stone City. They are connected with independent green parks, green lands, related ecological regions and green corridors, and along with some landscape elements such as hills, woodland and water, forming a complete landscape network (Wang, 2005). Besides, Ming city wall greenway provides a series of public open space to the people along the route. The idea of setting open space along the city wall was put forward by *Capital Plan* in the period of the Republic of China. Now the open space system includes the Yueyahu Park, the Zhongshan Gate Park, the Small Peach Garden, the Qingliang Mountain Park, the Jiuhua Mountain Park, the Zhonghua Gate Castle, etc.

At the micro-level, the Ming city wall becomes a component element of the urban landscape. Most of the time, the walls, as the background of the urban landscape, form an atmosphere of quiet and primitive ancient capital (Fig.3). But there are also some walls participate in the urban landscape as important landscape elements. The shape of the city wall in the Lion Mountain Park varies with the twists and turns of the mountain. At the same time, the city wall also works as a walking trail, interacting with the Yuejiang Pavilion. Near the Jiefang Gate, the city wall has a small half-underground gate. When people walk down the stairs, through the city wall to the Xuanwu Lake, with space changing from dark and narrow to open and bright, the city wall plays a big role in the rich experiences (Fig.4).



Fig.3. the City Wall as the background of urban landscape. (source: the author)



Fig.4. the City Wall as an important element of urban landscape. (source: the author)

4. Conclusion

Urban cultural heritage is an important part of cultural heritage and also an integral part of urban landscape. The regeneration of urban cultural heritage is not only the protection of the heritage to make it exist in the world, but to endow the heritage with the ability to reintegrate into the present society, so as to make it into the world. Greenway is an effective way of landscape regeneration of urban cultural heritage. Fabos divides greenway into three categories based on the function: ecological greenways formed from rivers and other natural elements, recreational greenways artificially constructed for recreational activities, heritage greenways for the protection of historical heritage and cultural value (Zhao and Zhang, 2015). Among them, the heritage greenway is a combination of heritage and landscape, regenerating the heritage as a part of urban landscape, on the basis of the protection of heritage. Greenway is suitable for landscape regeneration

of linear cultural heritage, such as walls, canals and so on. For point heritage, landscape regeneration can be combined with the design of heritage parks and public open spaces. For scattered heritage, Heritage corridor is a suitable form. For large-scale cultural heritage, the cultural route can be used for landscape regeneration. Urban cultural heritage varies from each other, so it needs further research to develop targeted and diverse methods for regeneration. It will be conducive to the protection of urban cultural heritage, and also the construction and promotion of urban landscape.

Acknowledgement

This paper is subsidized by the National Natural Science Foundation of China (No. 51678412).

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