

Research on the History and Status of City Wall of Song in Zhaoqing and the Planning and Design of Its Landscape Improvement

Ziwei Meng, Ronghui Zhang*

School of Construction, Guangdong Polytechnic College, Zhaoqing, Guangdong, China

Abstract: City walls are a military defense system in ancient China, buildings built with earth, wood and bricks for military defense, and important historic remains of the continuation of urban context. Built in the third year (1113) of Zhenghe in the Song Dynasty and repaired over 20 times from the Yuan, Ming and Qing Dynasties to the Republic of China, the City Wall of Song in Zhaoqing can be honored as a "Museum of Bricks". With the City Wall of Song in Zhaoqing as the research object, the paper focuses on the history and status quo of the City Wall and its surrounding environment according to a field investigation. Based on the historical, cultural and social values of the City Wall, it focuses on the landscape design for the areas of Songcheng Road I and Nanxi Road, propose a landscape improvement strategy to optimize the urban historical and cultural landscape, enhance the sense of belonging of citizens, and create the urban image of culture.

Keywords: the City Wall of Song in Zhaoqing; historical buildings; environmental status; cultural landscape; planning and design

1. Introduction

City walls are a military defense system in ancient China, buildings built with earth, wood and bricks for military defense, and important historic remains of the continuation of urban context [1]. In the context of the Fucheng Renaissance Project of Zhaoqing, adhering to the principle of protecting the City Wall ruins of Song and maintaining its overall style, the paper, based on the conditions of its protection and renovation and its historical and cultural landscape, focuses on planning and upgrading the current landscape of some parts of the City Wall by combining with the relevant demand of local urban residents and foreign tourists. This research aims to improve the urban landscape around the City Wall, protect the ancient buildings of Song, promote historical culture with characteristics, inherit the cultural landscape with urban historical characteristics of Zhaoqing, efficiently improve the urban ecological environment and increase recreational and cultural venues for urban residents.

2. Analysis on History and Status of the Landscape

2.1. Introduction of Status

As a national-level historical and cultural city, Zhaoqing is an important birthplace of Cantonese culture, and the earliest intersection of Central Plain and Lingnan cultures and of Western and traditional Chinese cultures. With picturesque scenery and rich tourism resources, Zhaoqing is a major hub city connecting the Pearl River Delta with the Southwest China. Built in the third year (1113) of Zhenghe in the Song Dynasty (A.D. 1113) and repaired over 20 times in past dynasties, the City Wall in Zhaoqing is an almost well-preserved brick city wall of the Song Dynasty, being the only one in Guangdong and very rare nationwide. It can be deemed as a "Museum of Bricks" and was named the Fifth Group of National Protection Sites of Key Cultural Relics in 2002.

The ancient black brick city walls and the tenacious weeds in the cracks between the bricks seem to tell people the vicissitudes of a thousand years and the changes of this historical and cultural city. Due to the age, most of the bricks of the City Wall of Song in Zhaoqing were damaged by nature and human, and some bricks are incomplete and have not been well repaired and managed. The eastern part of the City Wall is severely damaged, and the ground of it repaired with concrete is incompatible with the surrounding wall built with black bricks. Part of the collapsed city wall poses safety risks. The steps of the gate stairs to the tower are too modern, which make them lose the ancient charm [2]. The exposed lighting pipelines on the top of the City Wall extremely affect the visual effect. Surrounding trees and shrubs for landscaping are unaesthetic, and lack of daily maintenance and management. In addition, the recreational facilities around the City Wall are inadequate and disharmony with the ambience.

2.1.1. The section of Songcheng Road I

Figure 1 shows road section I of the City Wall. The green belt around the City Wall was constructed from 1987 to 1996. This section is mainly for the convenience of people's passage. Foreign tourists often take pictures in front of Chaotianmen. The road surface of the green belt along this section of the City Wall is in good overall condition, the ground tiles are intact and no obvious damages. The paving in the green belt is neglected to be maintained, and some plants are dead and not replanted in

time. With a lack of plant clusters and most covered by turf mostly, the green belt is short of direction with more beautiful plants, seasonal plants, as well as colorful and flowering plants. In addition, concrete benches for rest are equipped in the pedestrian space, but their surfaces are full of dust and they don't have a backrest, so that fewer people like seat there for rest. Besides, the placement of some benches is unreasonable.



Figure 1. Environmental status of Songcheng Road I.

2.1.2. North ChaoTianMen and the Front Square

The North ChaoTianMen was built in the third year of Zhenghe in Song Dynasty (A.D. 1113). Zheng Dunyi, the county guard, expanded the city, built the brick city wall and four gates, and its north gate is called ChaoTianMen. The current gate was rebuilt in the later period, and its shape is different from that recorded in historical documents. Having been blocked, the north city gate is not connected to the inner city. Stairs built on both sides of the city gate allow residents to climb up to the City Wall to view the landscape, so more tourists choose to visit the north gate of the City Wall. The square in front of the north gate is paved well (Figure 2). The maintenance and management of plants are imperfect and the planting way is not standardized. Some Chinese ixora flowers are planted sparsely. Having been being washed since ancient times, some old bricks on both sides of the city gate fall on the ground. It affects the beauty of the City wall.



Figure 2. The environmental status of Chaotianmen and the front square of the North Gate.

2.1.3. Songcheng Road II

The green belt below the City Wall beautifies the road space and improves the road system of Songcheng Road II. The status of this section is more intact, and greening

is in good condition. There are Chinese ixora flowers, seasonal flowers, osmanthus fragrans, bischofia javanica, magnolia, cuiluli, trimen, poinciana, campanula and large trees like camphor trees. There are many kinds of plants, but the planting lacks gradation, themes and characteristics, but the green coverage rate is higher. The section is equipped with three recreational platforms and seats for pedestrians to rest. The ground paved with black bricks is tidy and clean. The city bricks are in good condition, and most of them are repaired in modern China. In virtue of the terrain, the Piyun Tower standing on the highest part of the City Wall in particular attracts much attention (Figure 3).



Figure 3. Environmental Status of Songcheng Road II.

2.1.4. Kangle South Road section

The western part of the city wall (Figure 4) is in poor condition. Only a small section at the intersection of Songcheng Road II and Nanxi Road is intact. Short of protection and repairs, the battlements of the rest have disappeared, and only one city wall lefts. Part of the outer surface of the City Wall was repaired with cement and fixed with white tiles. Some sections are repaired with red bricks, which are incompatible with the original wall built with black bricks. After repair, the planks for fixing shape of the piers have not been removed. Part of the green belt is still under construction. The greening effect of the west wall section is good. Here plants pennisetum, duranta repens and kapok trees. In spite of fewer plant species and large trees, the clusters of pennisetum create a better landscape. The Kangle South Road is equipped with many platforms for rest and various routes for walking. The benches and lawns attract a large number of residents to come for walking, gathering, and resting and chatting. In addition, due to archaeological excavation, the West Gate, Jingxing Gate, is surrounded and protected by isolation strips.



Figure 4. Environmental Status of Kangle South Road Section.

2.1.5. Qilin section of the East City Wall

Qilin Street is located on the east side of the City Wall, behind Haoju Road, connected to Xinjie and Zhengdong Road to the south, and Songcheng Road to the north. The Qilin Street is about 300 meters long. The houses on both sides of the street are mostly built by imitation during the Republic of China. Mainly composed of black bricks and wooden pillars, they are characterized by antique and simple style and inherit many Lingnan characteristics. Some houses are used for small business in virtue of the attraction of the old streets. Some small stores are founded here, but there are only a few customers. The appearance of the east city wall is severely damaged; the base can no longer be visible; the battlements have been destroyed; iron chains are fixed on the piers for ensuring safety; the ground is a newly paved with concrete (Figure 5). A stone fence is built in the inner side of the City Wall, with colorful paintings for promoting culture of the city in Song Dynasty.

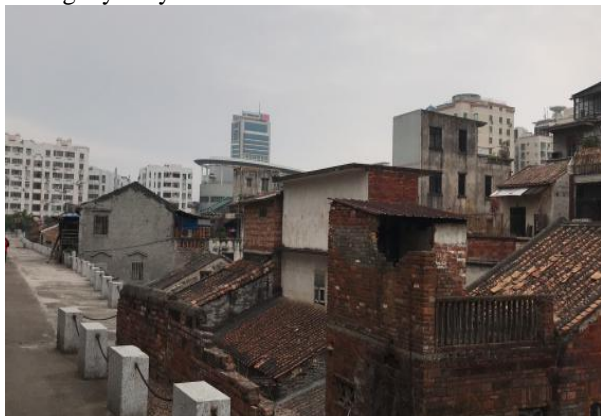


Figure 5. Environmental Status of the Qilin Section of the East City Wall.

2.1.6. Nanxi Road section

The south City Wall in the Nanxi section is in good condition, without the obvious sign of collapse. The destroyed battlement is replaced by a brick wall for protection, which is not too high. A small section of the City Wall is added with a retaining wall built with rubbles to reinforce the base of the City Wall (Figure 6). Another small section is still under repair, surrounded by isolation strips. The green belt is paved with turf and planted with poinciana, pennisetum, red carpenters, olive trees, cuiluli, osmanthus fragrans, large leaf trees and safflower. The surrounding is equipped with recreational facilities such as a square and benches.



Figure 6. Environmental Status of the City Wall in Nanxi Road Section.

3. Improvement Design of Landscape

3.1. Improvement Design for Landscape Greening of the North City Wall in Songcheng Road I

From the perspective of current research and landscape improvement, the paper focuses on the research of the status of the City Wall of Song in Zhaoqing and the planning and design for its landscape improvement. The landscape improvement design mainly focuses on optimizing the green belt in the north City Wall of Songcheng Road I. The greening gradation should be enhanced by optimizing the species of plants and adding tree and shrub clusters [3]. Plants are replanted and clipped in the principle of "Increasing Greenery", and grown in areas where greening is monotonous and there is only turf.

Trees, shrubs and ground cover plants mainly include the Yellow-flowered campanula, Crape myrtle, Osmanthus, Frangipani, Bischofia javanica, Hackberry, Iron holly, Multi-stem bischofia javanica, Chinese ixora flower, Pennisetum, Brazilian wild peony, Cuiluli, Kidney Fern, Cycad, Purple Cloud Vine, Flamboyant Tree, Bomb-bellied Kapok, Laminaria japonicus, Yellow Sophora, Safflower Jimu, Erqiao Magnolia, Palace Pink Bauhinia, Winter Plum, Model Money Banyan, Model Podocarpus, Mahogany, Callistemon, Golden Banyan Ball, Ligustrum lucidum, Le Rhododendron, Coleus, Pansy, Catharanthus roseus, Jade sylvestris, Fendai sage and Purple Sage.

3.2. Planning and Design of the City Wall Park in Nanxi Road

3.2.1. Location analysis

The City Wall Park in Nanxi Road is located at the intersection in Nanxi Road and Renmin South Road, surrounded by urban residential areas and shops and characterized by a large flow of people and fast and convenient transportation (Figure 7).

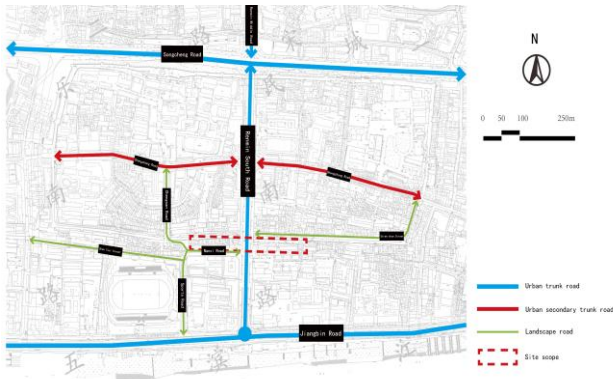


Figure 7. Location analysis graphic of design site.

3.2.2. Design objective

The design should be based on the primary principle of protecting the City Wall of Song in Zhaoqing to provide surrounding urban residents with a place for cultural communication, sports and entertainment, so as to preserve the memory of the site, optimize the strategy for improvement, and promote and protect urban culture of Song in Zhaoqing. The main objective of the design is to display, protect and highlight the City Wall of Song. The City Wall Park exists based on the relics. Moreover, it becomes a new landscape artistic work in the planning and designing the presentation of the relics.

3.2.3. Design content

The main design of the City Wall Park in Nanxi Road (Figure 8) includes the addition of a gate tower and the landscape design on both sides of it.



Figure 8. General plan of the City Wall Park.

The designed functional area (Figure 9) is mainly divided into lawn, a recreational square, a small square with tree arrays, and a square with cultural landscape walls. The design is based on the form of street leisure parks, with adding cultural landscape walls, landscape pillars, benches, to provide a place for citizens to take a walk and rest, thereby enhancing their sense of belonging. The landscape design mainly covers the design of City Wall Park and the construction of the city gate, and also includes greening design and cultural landscape walls for popularizing the culture of Zhaoqing and the City Wall as well as other related historical and cultural landscapes (Figure 10).



Figure 9. Functional zoning of the City Wall Park.



Figure 10. Design Drawing of City Gate Tower in Nanxi Road.

Since there is a city gate on the south of Renmin Road and no one on the north, it is lack of connectivity. Hence, a city gate was added with reference to related cases, but the city gates are not connected. On the basis of the old city wall, a new one connecting the east and the west is constructed and also used as a pedestrian bridge, which also reflects the characteristic cultural landscape of Zhaoqing city.

3.2.4. Cultural landscape design of the City Wall Park

The cultural landscape design of the City Wall Park is mainly based on the cultural landscape wall design and related landscape accessories (cultural sculpture accessories presenting Zhaoqing history, characteristic pavement, landscape chairs, stools, etc.), which not only endow the section with historical and cultural elements, but also help to inherit the history and culture while satisfying the daily needs of urban residents and enhancing the overall style of the city [4].

3.2.5. Lighting design of the City Wall Park

The pedestrian walkway in this design is mainly located along the city wall for daily sightseeing and walks of tourists. Some antique lamps with historical and cultural elements are set up on the road for lighting, including lawn lamps, tree spotlights, reed lamps, courtyard lamps, etc.

In addition, greenbelt lighting is also the focus of night lighting in the park. Greenbelt lighting contains the following two points for highlighting the recreational nature of the sightseeing belt below the city wall and displaying its history and culture. 1. The brightness of

lighting should be moderate, which is conducive to present historical and cultural atmosphere of the City Wall, without affecting the daily life of the surrounding residents; 2. It is best to install warm white lights, which are moderate to make people feel quiet and pleasant, reflects the history and culture of the City Wall, and show the true colors of plants [5].

The greenbelt lighting in the City Wall Park should focus on the following two categories: 1. illuminating beautiful plants and landscape; 2. illuminating the greenbelt with special planting methods mainly including turf and tree arrays.

3.2.6. Vertical design

The vertical design is aimed at explaining the vertical structure and presenting the height relationship between the city wall, the ground and related structures. There are cross-sectional analysis diagrams for important nodes in it, which can demonstrate the elevation design related to landscape in an intuitive and 3D manner (Figure 11).



Figure 11. Section of the City Wall Park in Nanxi Road.



Figure 12. Overall Design Drawing of City Wall Park in Nanxi Road.

3.2.7. Planting design

The planting design of the City Wall Park should preserve the original old and famous trees, whose crowns should be trimmed and rejuvenated. On this basis, new plant landscapes are designed [6]. The planting design should be based on native tree species, especially the city flower of Zhaoqing, Frangipani. Trees and shrubs should be matched with ground cover plant creates clusters with multi-layer plants to ensure diverse plant species and seasonal changes. Secondly, it is necessary to take into account the seasonal changes of plants to ensure that there are landscape and flowers in all seasons. The

overall style is based on green, and gradation and diversity should be reflected in planting. Trees, shrubs and ground cover plants mainly include yellow-flowered campanula, crape myrtle, osmanthus, old plumeria, osmanthus fragrans, hackberry, iron holly, multi-stem osmanthus fragrans, Chinese ixora flower, pennisetum, Brazilian wild peony, Cuiluli, kidney fern, cycad, phoenix tree, olive tree, yellow locust, safflower, safflower magnolia, palace pink bauhinia, modeling money banyan, modeling podocarpus, red car wood, golden banyan ball, privet ball, Le Rhododendron and Purple Sage.

4. Conclusion

In line with the principles of protecting and exhibiting the site, respecting history and culture, and based on the field investigation and analysis on the historical culture and environmental landscape of the City Wall of Song in Zhaoqing, the paper proposes relevant greening improvement suggestions for Songcheng Road I in the Ruins, and expounds design for the construction of the new wall in the Nanxi road section and the landscape along the City Wall (Figure 12). The author hopes to revitalize the ancient City Wall of Song in Zhaoqing based on the concept of heritage protection and the landscape improvement design of the City Wall Relic Park, thereby integrating urban historical and modern landscape.

Acknowledgements

This paper belongs to the Colleges and Universities' Youth Innovative Talents Project of Education Department of Guangdong (Approval Number: 2017WQNCX169), Zhaoqing Philosophy and Social Science Planning Fund Project (Approval Number: 17QN-01) and Science and Technology Innovation Cultivation Special Fund Project of Guangdong University Students (Approval Number: pdjhb0589)

References

- [1] Cai, Q.; Yao, X. Planning and Design of ruins Park--A case study of Nanjing Imperial Palace and City Wall ruins Park in Ming Dynasty. *Technology of Ancient Landscape Architecture*, **2015**, 32: 65-68.
- [2] Liang, W.H. Study on Landscape Design of Shuozhou Ancient City Wall ruins Park. *Xi'an University of Architectural Science and Technology*, **2009**.
- [3] Zhou, X.R. Study on the Landscape Design of City Wall ruins Park under the concept of site Conservation--A case study of Nanjing Moon Lake ruins Park. *Jilin Agricultural University*, **2018**.
- [4] Zhang, K.L.; Zhou, X. Thoughts on the Planning and Design of City Wall site Park-- taking Beijing Ming City Wall site Park as an example. *Architecture and Culture*, **2015**, 11: 106-108.
- [5] Sheng, R.Z. Research on the integrated design strategy of public space around the ancient city wall of Zhaoqing. *South China University of Technology*, **2018**.
- [6] Xie, X. A preliminary study on the Design of City Wall site Park--taking the landscape planning and design of Guyuan City Wall site Park as an example. *Beijing Forestry University*, **2017**.