Nanjing City Wall: Embodied Heritage in Wallscape

By

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Thesis
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ABSTRACT

Nanjing City Wall is one of the largest city walls in China. As the capital of Ming Dynasty between 1368-1420 CE, the wall was built to protect the city. A four-wall system separated the royal palace in the city from the countryside. After approximately six hundred years of damage by humans and nature, the importance of this ancient heritage was realized. However, as the wall has been nominated to be a UNESCO World Heritage Site, the government is implementing its preservation policy to sanitize the surrounding neighborhoods which are in poor condition. The preservation plan puts too much emphasis on picturesque landscapes. As such, by reviewing the history and representations of the City Wall, the thesis studies the important relationship between the wall, adjacent landscape and the entire city. Mapping and analysis of city wall is done to critique the current conservation policy. Design strategy is proposed to envision potential of the wall as heritagescape.
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CHAPTER 1: INTRODUCTION

Objectives

The objective of my thesis is to rethink the conservation policy of Nanjing City Wall, which is on the tentative list of the UNESCO World Heritage Site, by making it part of the city life instead of an isolated historical remain. The city wall is 650 years old, and faces numerous problems, such as physical destruction, lack of authenticity in reconstruction, and lack of connection with urban neighborhoods. The design research method includes developing the timeline of Nanjing City Wall, mapping the wall and the adjoining urban landscape, critiquing the conservation policy, and developing design strategies for heritage conservation and revitalization. This thesis critiques the current conservation thinking in China that aims at creating picturesque scenery. It proposes that heritage should be a public good involving local communities.

Background

City wall, which is built to protect city and defend enemy, is never only about security and separation. As Oles (2014) points out, a wall could become the main stage of human activities. Built in 14th century, Nanjing City Wall, that protected the capital of the Ming Dynasty, meanders along the natural landscape, so that it can utilize lakes and mountains for the purpose of protection from attacking invaders. Hence, the city wall adjusts to mountains and lakes in its shape. Nanjing Wall is distinguished from other city walls in China, since most of them are square, while this wall is irregular. However, during a long period of time, the wall endured much damage caused by wars, especially from artillery. Natural erosions also accelerated the decay of the wall, which had
no maintenance for hundreds of years. After being ignored for a long time, the ancient structure was left only with internal walls, which define the old city of Nanjing.

The reparation and protection of the city wall began in 1980s, when Nanjing began to modernize. The city wall, as the boundary of the old city, is now swallowed by urban sprawl and becoming a part of the modern Nanjing. It is also the largest historic structure which is a remnant of the past during massive urbanization in the 20th century.

The wall is transformed from a military fortress to a linear public space for leisure as it meanders through mountains and lakes. It provides beautiful scenery. As planners and historians realize the importance of the wall, it is the subject of many studies. Lu and Deng (2014) compiled the journeys to and impression of Nanjing by foreigners from 1840 to 1949. Yang and Wang (2008) documented the important history of Nanjing City Wall, including the planning concept, construction details, damage and repair records. Chen and Gazzola (2013) compared the history and protection of Nanjing City Wall and Aurelian Walls. Yao (2006) studied the relations between the morphology of the city, geography and landscape. Fei (2009) discussed the cultural impetus of the urbanization in Negotiating Urban Space: Urbanization and Late Ming Nanjing. Zhou, Tong, Su and Cheng (2004) discussed the protection of the old city in the context of rapid urbanization of Nanjing.

The city wall is now on the tentative list of UNESCO World Heritage Sites, as the state tries to preserve the wall for tourism and public space improvement. For the sake of protection and development, 15 meters on each side of the wall are cleared, creating a sanitized landscape. This process impacts the residential area which is close to the wall, dismantling and influencing the living conditions of the poor. Therefore, the contradiction between local communities and preserving city wall emerges.
Approach

The current conservation policy needs to be reconsidered, as each section of the wall has unique problems. And also, since the state puts too much emphasis on maintaining a picturesque landscape, it is important to know how the ancient people think of the wall and the natural landscape. Therefore, this thesis will first review the history of Nanjing City Wall, especially using the ancient paintings of the city wall as a source for interpreting the relationship between wall, city, and nature, and explore the idea of picturesque. Then, land use is mapped to critique the feasibility of the current state conservation policy. Based on this, a site of a low-income residential community is selected for study. A design intervention is made to enable tourists to interpret the site history and to improve the living quality of local residents at the same time.
CHAPTER 2: HISTORY OF NANJING CITY WALL

This chapter reviews the history of the wall and of the city itself, which can be dated back to 229 CE. The changing geopolitical situation, local environment and traditional idea of planning determined the morphology of the city. Historic paintings and photos are analyzed to understand how the wall was represented in the past. Due to destruction by humans and nature, and lack of maintenance, only two thirds of internal wall has remained.

Brief History of Nanjing before Ming Dynasty

Located in south east of the country, Nanjing is nurtured by the Yangtze River, the largest river in China. The region is famous for the cultivation of fish and convenient waterways, like Qinhuai River, a branch of Yangtze River and the mother river of Nanjing. Apart from the waterways, Nanjing is also surrounded by hills and mountains, which are natural borders for the city. This geography allows the city to become capital of several regimes and center of politics, economics and culture in ancient south China (Figure 1 and 2)(Yao, 2006).

The earliest city was built around 571 BCE, which was called the period of ‘Spring and Autumn’. Between 229 CE and 589 CE, Nanjing was the capital in south China for many dynasties, including the Wu Kingdom (Figure 3) (222-280 CE) in period of Three Kingdoms (222-280 CE), the East Jin Dynasty (317-420 CE), and the Southern Dynasty (420-589 CE) consisting of Song (420-479 CE), Qi (479-502 CE), Liang (502-557 CE) and Chen (557-589 CE) dynasties (Yang, 2008). This whole time period was called Six Dynasties, which witnessed the radical transformation of China, especially after the demise of West Jin Dynasty (266-316 CE), caused by invasion of northern nomadic tribes (Yang, 2008).
During this time, the Han nationality was the dominant group with its advanced technology and culture. So, as royal family was chased from the north to south, Nanjing, the capital of East Jin Dynasty (Figure 4), was recognized as the legitimate authority of West Jin Dynasty. Therefore, traditional planning knowledge was applied in building Jiankang, the old name of Nanjing, including “north palace - south city” structure and central axis (Yang, 2008). In the north, the emperor began to build square cities for royal family and central government. The city was built on the central axis which was not exactly on the north-south orientation, but behind the Qinhua River and in front of the small hills, and was a perfect example of geomancy. Based upon the central axis, the city developed chessboard grid system for main streets (Yang, 2008). In the south part, the area near Qinhua River became the important commercial center as well as residential neighborhoods, which were not protected by the wall but the fence (Yang, 2008).

There were a number of winding paths beside the Qinhua River which adjusted to the curving bank. Apart from Jiankang city, the rulers also established satellite cities or castles to protect the capital (Yang, 2008). It is also important to note that water system evolved at this time. In order to prevent flood, transport materials and protect the city, several emperors built canals around the north, west and east of the wall, and connected the moat with Qinhua River and Xuan Wu Lake (Yang, 2008).

Beside transportation and protection, the rulers also took advantage of water system to make royal villas and gardens. Noblemen, kings and intellectuals began to appreciate the beauty of nature, which set the stage for the development of Chinese landscape painting, poem, and literature. Later, the Sui Dynasty (Figure 5)(581-618 CE) in northern China defeated the Chen Dynasty and united the country, and Nanjing was no more a capital until the South Tang (Figure 6) (937-975 CE) period. In this period, the emperor built new palace and expanded the city to the
south to enclose two sides of Qinhua River. Therefore, the city consisted of not only the palace, but also markets and neighborhoods. Some rivers from previous dynasty were abandoned, but some were still used, and the distribution of the canals was actually the framework of Nanjing contemporary water system (Yao, 2006). Unfortunately, the planning was not thoughtful enough about protection. The city wall did not include the surrounding hills, which became fatal drawback of the defense system. Thus in 973 CE, when soldiers from North Song kingdom (960-1127 CE) occupied high place around the city, the ruler had to surrender to his enemy (Yang, 2008).

**History of Nanjing City Wall**

In 1368 CE, Nanjing became the capital of a united nation, Ming Dynasty, for the first time. In order to protect the capital, the first emperor of the dynasty, Zhu, Yuanzhang (1328-1398 CE), established a series of defense system including External wall, Internal wall, Imperial Wall and Capital Wall. Today, there are few remains above ground except the Internal Wall. The planning and design of the city was based on utilization of natural features and Chinese numerology (Figure 7) (Yang, 2008).

Learning from South Tang Kingdom, the emperor took advantage of natural topography and built the Internal Wall wrapping the mountains or filling the gaps between the hills to defend enemies. Thus, an irregular shape of the wall was created. In the south part of city wall from previous kingdom, every high point in this region was covered in the Internal and External wall. This is different from any other city in China (Figure 8). The length of the Internal Wall was 35.267 kilometers, the height varied from 14 to 24 meters, and the internal city covered 42.24 square kilometers of land. The length of External Wall was 60 kilometers, and the whole area covered was 222.8 square kilometers (Yang, 2008).
From the master plan, Nanjing City inside the Internal Wall can be divided into three parts (Figure 9). The south part was the place of markets and neighborhood, most of which were gathered on the two sides of Qin Huai River. At that time, as the economic center of South China, Nanjing was famous for its handicraft industry, such as silk production, woodcraft, copper coin, book printing and so on. Also, Nanjing was the Buddhism center of the country at that time. The pagoda of Giant Bao En Temple built by the third emperor of Ming Dynasty was juxtaposed near the south city gate, and documented by Italian missionary Matteo Ricci (1552-1610 CE). Royal center and government area were in the eastern part, which was considered as the heart of spoon, the core part of the symbol Great Dipper in Fengshui (Yang, 2008).

The north and west part were military area, and some sites were cultivated as agriculture area for military use. Zhenghe's voyage to the Atlantic actually started from Yangtze River in northwestern port of Nanjing. The material of the wall should also be mentioned. The Internal Wall was mainly built with processed stones and bricks, which could resist firepower. Also, the strong and high wall prevented enemies to come inside using ladders. In the area between Internal and External wall, Mingxiaolìng, the tomb of Zhu Yuanzhang, the first emperor of Ming Dynasty and his family were in the east. The south part had temples and farms, and included menagerie of large animals like elephants and tigers; and the west part was a commercial area (Yang, 2008). In Ming and Qing Dynasty, the city was the seat for national examinations.

The traffic system remained the chessboard grid form, which complied with strict formality except the zigzag in southern part. The streets had three levels: Guanjie (official street), Xiaojie (small street) and Xiangdao (alley). It was said that the road could accommodate nine lanes of carriages at the same time, so the width of the streets was up to 30 meters with shoulders on two sides (Yang, 2008).
In Ming dynasty, the rulers built water net from moat to canals for transportation and military use. The main rivers in Nanjing included Qinhua River and Jinchuan River. Qinhua River flowed from south of Nanjing. As it came to Dongshuiquan, a gate of the Internal Wall, it split in two branches, one flowed inside the city in old channel, the other flowed outside around south and west city wall until Yangtze River. The branch of Qinhua River inside the city was famous for bringing economic and cultural prosperity. Jinchuan River was in north of Nanjing, it originated from Xuanwu Lake (Figure 10), and Gulou Hill, and flowed on the north side of the wall to the Yangtze River. Dams and culverts were built to control the water in case of flood or drought (Yang, 2008).

High quality bricks, massive block and dressed stones were used to build the wall at this time. It was rare to see this kind of technique before Ming Dynasty, and there were two main factors contributing to that. The first one was the requirement of effective defense. Due to the advanced development of ancient firearms in China, the height and thickness of the wall was increased. Secondly, the wall could be higher with bricks and stones than with rammed earth (Figure 11 and 12) (Yang, 2008).

The height of the wall ranged from 8 to 26 meters, and the width of the wall ranged from 2.6 to 18 meters. On top of the wall, the surface was often oblique, and open sewer ditch was placed on lower side of the surface. Parapets were placed on inner side of the top surface facing internal city while crenellations were placed on the other side which were used to attack enemies (Yang, 2008). The internal wall had 13 gates with ramps and wooden watchtowers which decayed due to the lack of maintenance. Some gates had jar-shape forms, which was an enclosure of series of walls and rooms for hiding soldiers (Yang, 2008). Figures 13 and 14 show the map and the photo of the wall. Figure 15 shows the timeline of Nanjing City Wall.
**Representation of the City Wall**

Nanjing was originally the capital of Ming Dynasty. However, the second emperor was overthrown by his uncle Yongle, who moved the capital to his base in Beijing. Therefore, Nanjing remained as the old capital and was ignored. The royal palace and the city wall gradually deteriorated by natural process including fires caused by lightening or water erosion by heavy rain.

Although Nanjing was no longer the capital of the country, the city was still distinguished by its prosperous culture, especially after middle Ming Dynasty. The scholar Qi Chen (1469-1538 CE) discussed the morphology of Nanjing City in his book, *Jin Ling Gu Jin Tu Kao*. Since then, scholars began to investigate the historic sites of old cities. In the late Ming Dynasty, as European geology was introduced to China, scholars began to advocate for empirical knowledge such as geography and hydrology instead of stereotyped writing of the imperial examination. With the rise of interest in geography, scholars began to search and document conditions of famous sites all over the country. Written by Erzeng Yang, who lived around 1612 CE, *Hai Nei Qi Guan*, the Wonder of the World described well-known mountains, rivers and cultural sites of China. The book had the only drawing which documented all the places of Nanjing, including the relationship between walls, rivers and surrounding hills. What is more, the interest in drawing the entire city on scroll emerged, and *Nan Du Fan Hui Tu*, made by Ying Qiu (Figure 16) (1494-1552 CE), was one of the most famous paintings of that time. The drawing showed scenes of ordinary life of Nanjing, including busy stores and restaurants, elegant royal palace, and remote countryside. The city wall was on the boundary of these different sceneries, so it actually distinguished between different kinds of life styles. The painting showed noisy crowds and entertainment activities of Nanjing, indicating prosperity. The scenery of central government and rural landscape were imagined as paradise. Outside the city wall, an ideal farming land was portrayed vividly, displaying the
difference between city and countryside. This kind of drawing was different from other similar paintings, since most paintings only showed magnificent mansions and landscape. Therefore, Nanjing as a cityscape appeared in this painting, and it was represented as having a busy urban life instead of wonderful natural scenery (Li, 2006).

During Ming and Qing Dynasty, the development of Nanjing culture reached its peak. Poems, painters and scholars sang the praise for Nanjing’s beauty and selected the most famous sites of the city to paint and write about. In some paintings (Figure 17) of Maojin Song (?-1620), the city wall became an essential part of the landscape. The wall was bleak and desolated in his drawing, and it was almost lost into the surrounding environment, which provided a harsh and wild atmosphere. For instance, in *Mo Chou Lake* Painting, the scenery outside the city wall was marshland, an ideal landscape for traditional scholars, representing the peaceful life of hermits. In his another painting, *Qing Liang Platform Painting*, there was a lonely pavilion on a small hill enclosed by the city wall, expressing a scholarly life.

In Qing Dynasty, Nanjing was only a regional capital. In 1840s, the British defeated China in the First Opium War, and the British navy broke the defense at Yangtze River and entered into the Nanjing City, which marked the beginning of its colonization. From this point, the technique of modern cartography came to China, and Nanjing was surveyed and mapped accurately. Figure 18 shows that most people lived in the south part of the city, and there were only wetlands and farms in the north of the city.

During the Taiping Rebellion Movement (1851-1864 CE), a peasant uprising against Qing and British Government, which almost covered half of China, Nanjing again became the capital of the revolutionary army. Figure 19 shows the battle between Taiping and Qing Army on hills outside the wall. The painting actually demonstrated the importance of taking advantage of
topography, which was significant for both aggression and defense. In the drawing, soldiers of Qing Government utilized firearms to blow open enemy’s defense system, which left serious gaps on the wall, making the structure suffered from terrible damage. Later, after the long-term war, the nested walls were all wiped out except the internal wall.

**City Wall after 1912**

In 1912, Nanjing was identified as the capital of Republic of China (Figure 20) (1912-1949). Some officials in the state proposed to tear down the wall for transportation and use its material for new construction, which was strongly opposed by intellectuals and other politicians (Yang, 2008). In 1927, the city started to implement *The City Plan of Nanking*, made by American architects Henry Killam Murphy and Ernest P. Goodrich, who applied the model of Washington D.C. to Nanjing. Murphy and Goodrich advocated to retain the city wall and build boulevards and roads alongside the wall and Qinhuai River (Yao, 2006). They also proposed Baroque style streets and traditional architecture for the new capital, which built the framework for contemporary street system of Nanjing (Yao, 2006). Unfortunately, the wall was again damaged by Japanese invaders during the World War II, and thousands of bomb craters are still visible on the surface of the city wall.

In 1949, Peoples Republic of China was founded. Some people did not understand the value of Nanjing City Wall at that time. In 1956, some parts of the wall collapsed in heavy rain, which led to death of people (Yang, 2008). Also, the government had no capacity to repair the wall, so it started to tear down the wall in an organized way. From 1956 to 1959, the wall was split into several segments by the government, almost 31.49% of the whole wall, approximately 11699 meters, was removed (Yang, 2008). The workers dismantled the wall and
used the material to build new factory or infrastructure (Yang, 2008). Apart from human activity, the wall also suffered from the problem of vegetation, sinking of foundation, expansion and cracking of the building materials, erosion of the brick and stone, and water seepage.

During the Culture Revolution, the removal project was totally out of control. Many people stole bricks from the wall, and large section of the wall disappeared. A few made efforts to preserve the wall, including Zhu, Xie (1907-1968), a famous economist and historian, who strongly opposed the destruction project and tried everything to protect the wall (Yang, 2008). He was criticized and framed by the Red Guards. According to a damage situation investigation in 1983, the Nanjing Wall was beset by illegal buildings, bomb shelter, water seepage, farming and vegetation in its proximity (Yang, 2008).

**Heritage of the City Wall**

Beginning as the boundary of the city, the wall now is merged into the urban fabric. Separating the old city from the new one, the wall is no longer a division but an important monument of the city. As a large monument full of memories and legends, the wall witnesses changes in Nanjing and itself. The spatial location and reciprocity between the wall and the surrounding landscape are both essential part of the city wall. The hills and moats are not only the bases and barriers, but also the logic of the layout of the wall, providing impressive visual experiences. The construction techniques, structures and material of the wall, such as the watchtower, ramp, castle, gates, crenel and parapet are also important. Apart from physical aspect, the city wall is a good example of ancient planning concepts, including ideas of military defense and symbolism of supreme imperial power. The city wall also offers a platform for social activities, like the mid-autumn and the lantern festivals. There are thousands of poems, legends, articles and
paintings related to the wall, attracting visitors from all over the country and beyond. Therefore, the relationship between the wall, the moat, nature and the surrounding urban fabric needs to be considered.
FIGURES

Figure 1: Satellite image of Nanjing with highlighted natural features and map indicating the location

Figure 2: Model showing relationship between topography and Nanjing City Wall (Image taken in the museum of Nanjing City Wall)
Figure 3: Map of Nanjing in Wu Kingdom (Source: Chen, 1516)

Figure 4: Map of Nanjing in East Jin Dynasty (Source: Chen, 1516)
Figure 5: Map of Nanjing in South Dynasty (Source: Chen, 1516)

Figure 6: Map of Nanjing in South Tang Dynasty (Source: Chen, 1516)
Figure 7: Map of Nanjing in Ming Dynasty (Source: Chen, 1516)

Figure 8: Left-Map of Nanjing in Ming Dynasty (Yang, 2006); Right-Map of Xi'an in Tang Dynasty and enlargement (Heng, 1999)
Figure 9: Map of Nanjing in Ming Dynasty (Zhu, 1936)

Figure 10: City Wall adjacent to Xuan Wu Lake
Figure 11: Structure of the Wall

Figure 12: Materiality of the Wall
Figure 13: The Gate, City Wall, and Great Dipper (Yang, 2008)

Figure 14: Juxtaposition of the City Wall and modern architecture
Time Line

In order to protect the capital, the Ming emperor launched the building of the Great Wall, one of the largest military constructions among all the cities of that time.

Ming dynasty was finally broken by Qing dynasty in 1644. People in the north still resisted the north uprising, and the established South Ming anymore, which was destroyed in 1655.

In 1629-1653, the Ming regime was in difficulty struggling with various internal troubles. The rebellion of the Great Banner Manchus also added to the difficulties.

The painting contains a feeling of nostalgia, reminding that people cherish the memory of previous political power.

Figure 15: Time Line of the City Wall
Figure 15: Time Line of the City Wall (cont.)
Figure 16: Nan Du Fan Hui Tu (South Capital Prosperous Drawing), made by Ying Qiu (1498 – 1552) (Source: http://www.chnmuseum.cn/tabid/212/Default.aspx?AntiqueLanguageID=220)

Figure 17: Both images made by Maojin Song (?-1620), showing the landmark at the end of Ming Dynasty (Mao, n.d.)
Figure 18: Map of Nanjing at the very end of Qing Dynasty, made by Chengxun Yu and Cengqing Qiu (Source: http://www.njghj.gov.cn/PortalIPS/Library/PRIVATE/ww-lnj/9a098ba2-20e2-455b-83fb-7677409101ea.jpg)

Figure 19: Qing Army Attacking Jinling (Taiping Rebellion, 1850-1864) (Wu, 1887)
Figure 20: Map of the Capital City (Nanjing as capital of Republic of China) (Source: http://www.njghj.gov.cn/PortalIPS/Library/PRIVATE/ww-lhnj/28835180-dae3-4a3b-85ea-bf286fd26286.jpg)
CHAPTER 3: CONSERVATION OF THE NANJING CITY WALL

As mentioned before, Nanjing was the capital of Republic of China (1927-1949), and for the purpose of development, the state invited American architect Henry Killam Murphy and Ernest P. Goodrich for new planning of Nanjing. A graduate of Yale University, Murphy designed several buildings for Jin Ling Women School and Tsinghua University, funded by the Presbyterian Church in the United States of America and other organizations. The projects were successful as he adopted traditional Chinese architecture form for modern institutions. For the master planning of Nanjing, he tried to persuade the leaders that the capital of China should be a symbol of Chinese identity.

In 1928, the state wanted to demolish some parts of the ancient wall for construction, which was common at that time, as heritage value of the wall was not recognized. According to Yao (2006), Murphy strongly opposed the plan, and he argued that the wall was the symbol of China, and removing it would be a big mistake. He proposed measures necessary to protect the wall. He designed a beltway surrounding the wall, and even let the car go on top of the wall. Also, since the city was terribly damaged from the previous war, the city was bleak with no green space at all. So Murphy proposed boulevards and parks for the city, including the road alongside the city wall and Qinhuai River, which were not implemented. Apart from green ways, he also made a plan for the discharge of the floodwater inside the city. This was the first time that city in China had its own plan for heritage and landscape in modern period (Figure 21). Later, in the Cultural Revolution, the city wall was seen as the symbol of feudalism, and was proposed to be totally removed. Only after 1980s, the Chinese government took measure to preserve and protect the wall.

In 1982, Nanjing government initiated the renovation of Ming Dynasty Wall. Since 1998,
the government built many parks adjacent to the city wall and improved the surrounding environment. In 2001, the protection of the city wall was made part of the urban planning proposal of the whole city (Yang, 2008). In 2008, the city wall began its application journey for being designated as a UNESCO World Heritage Site. In order to succeed, the state initiated new planning policy, including confining the height of surrounding buildings, taking the moat and outer wall into the scope of protection, and cleaning space within 15 meters on two sides of wall for building a public park. Both sides of the wall could thus to be free of encroachment (Nanjing Chengqiang Baohu Tiaoli, 2015).

Critiquing the Current Conservation Approach

Undeniably, some sections of the wall are seriously damaged, and may collapse during rainy days. Therefore, for the sake of safety, it is necessary to remove some surrounding houses to prevent property losses and personal casualties from fires or other disasters. Also, clearing some surrounding areas makes it more easy for people to see and approach the wall. However, the 15 meters open space plan should not be uniformly implemented on all the sections along the wall as it neglects specific condition of each site. The latest protection plan puts too much effort on beautification, and tries to create a picturesque landscape, but ignores development of local community and economy. People in poor conditions are close to the wall, and have no chance to buy a new apartment since the price of land is very high inside the city. Especially, the elderly have a strong connection to the wall. They have to move to the margins of the city, which will disturbs their daily life and dismantles the local community. As a matter of fact, if the state can renovate old housing in vernacular building style, the local community will benefit from preservation of the wall. Local residents can become guides for tourists and assist in the
maintenance of the wall. The neighborhood can ensure strong social surveillance, which will increase local safety.

In addition, the whole project’s main emphasis is the visual aspect of the city wall, and the relationship between the wall and city seems limited to only beautification. The hills add green space inside the city and the river is an important corridor for fish and birds. Rapid urban development, particularly the real estate and commercial buildings, has taken over the natural areas and changed the topography. Since the wall was partly built upon hills, the plan should highlight the relationship between the wall and natural topography.

Authenticity is an important issue. For the purpose of building on empty sections of the wall, the government built new gates and walls to connect the entire wall. Pseudo-classic architecture is taking over the part where historic relics have been demolished. The state believes that the construction will attract investment, and benefit local economy. However, this kind of restoration lacks authenticity, as the new construction with modern civil technology seems similar to old ones. What is more, since the construction does not follow the principle of authenticity, it actually becomes an obstacle for applying for the designation of the future world heritage site. Figure 23 shows the main problems in conservation of the city wall.

**Design Studies**

Many design firms and academic institutions have proposed design projects for the protection of the city wall. In 2014, the architecture department of Southeast University in Nanjing and of an Italian university, Dipartimento di Architetttura e Progetto Sapienza Universita di Roma, proposed the book *Comparative Study on the City Walls of Nanjing and Rome* (2014). In the book, the similarities and differences of two city walls are studied. However, there are not enough
discussions about communities adjacent to the wall. As Thomas Oles discussed in his book *Walls* (2015), “walls were not ‘tools’ designed to solve a problem, but complex and enduring parts of the symbolic system of the culture where they arose” (p.24). Oles pointed out that instead of just being a military defense system, walls were actually dwellings and landscapes. Examples include the wall which contains household refuse and ancestor’s bone, and its symbolic value of glorious history of Uruk city. The Nanjing City Wall also has the potential to offer information in the fields of politics, religion, culture, and buildings techniques of medieval period. However, in the recent conservation plan, the planners make the wall a stand-alone heritage structure.
FIGURES

Figure 21: Bird View of the boulevard project in the City Plan of Nanking (1929)

Slum alongside the City Wall

Large infrastructure affecting the City Wall

Pseudo-Heritage

Figure 22: Problems of the conservation of the City Wall
CHAPTER 4: MAPPING THE NANJING CITY WALL

The City Wall from 1950s to 1970s

In the 1950s, most of the population concentrated in the south of the city, so there were many old neighborhoods along the city wall (Figure 23). In contrast, there were still undeveloped areas in other parts. For instance, from Jinchuan Gate to Shuixi Gate, continuous hills with scattered temples and villas were spread adjacent to the wall. However, in 1960s, a growing number of institutions such as schools, hospitals and factories began to occupy the place where there were forests and meadows (Figure 24). According to Yao (2006), Nanjing transformed from a city of consumption to production at this time. He stated that Nanjing did not have 10,000 workers in 1949, but 8 years later, 31 industry companies with thousands of workers appeared. After 1969, when Nanjing Yangtze River Bridge was built, Nanjing received huge investments for chemical and mechanical manufacturing from the central government. In 1970s, urban planning was disturbed by the Cultural Revolution, and the city fell into chaos with unregulated construction and numerous demolitions. A great number of holes were punched in the wall as shelters for living and for avoiding air-raid attacks (Figure 25).

In the 1980s, China began its economic reformation. The housing condition was relatively poor, and large numbers of people moved into the city (Figure 26). In order to resolve the problem of housing deficiency, the government built many new apartments in old city, and some of them were constructed just beside the wall, since people were not aware of the importance of the heritage. The layout of the new apartment were distributed like a military camp, which altered the traditional urban context (Yao, 2006). In 1990s, in order to overcome the deficiency in infrastructure, large-scale transportation system were built, so that the city can quickly expand to
suburban area. To improve the environmental quality, large factories were gradually moved outside the old city (Yao, 2006). At the same time, commercial buildings also appeared. For the sake of high profits, real estate companies bought land whose value increased over time. In this situation, the price of the land next to the wall and moat increased. Therefore, more and more space near the city wall, especially outside the city wall and moat were developed as commercial centers and residences. As such, residential and commercial land uses have appeared along the historic wall (Yao, 2006) (Figure 27).

**Typical Area Adjacent to the City Wall**

The land use adjacent to the wall is quite complex. Yao (2006) pointed out that it is really hard to protect the historic sites in old city, given the increasing density of population and buildings. The continuous hills surrounding the city wall are breached by modern construction. In mapping the wall, five typical areas were selected which represent land uses at present. The first selected section is in the eastern part from Zhangyang Gate to Tongji Gate, where city wall was demolished intentionally and no historical remains were kept. There is no sign of the wall in this section. New commercial apartment rise from the ground in the north of the river while old housing is still retained to south of the river. The difference between old and new actually represent the large gap between high and low-income classes (Figure 28).

The second section is from Shuixi Gate to Qingliang Gate in the west of the city. The combination of small hill and moat provides an impressive natural landscape, which becomes one of the most expensive places in the city. Hence, new residential towers which attract millions in investment were constructed. In contrast, there is an old slum at the foot of small hills which is a blind spot in the development of the city (Figure 29).
The third section is in the south part from Tongji Gate to Jubao Gate, which is one of the oldest part of the city. Inside the city wall, new housing flats are mixed with old apartments and slums. Outside the city wall, a highway is built to embrace the old city wall and moat, and new residential towers are erected on the peripheral area of the highway. The highway obstructs approach to the city wall (Figure 30).

The fourth section is near Xuanwu Lake, where visitors and residents can gain splendid views from the wall and the lake. Wealthy villas are scattered in the place with good viewpoints. However, on the other side of the wall, slums with factories and storage line up against the wall (Figure 31).

The fifth selected section is in the very north of the city wall, where development lags behind other areas. Depressed factories, storage and housing are located at the foot of Lion Hills. As a cargo distribution area, highway, railroad and other transportation infrastructure block people’s route to the moat. Pockets of new residences take over the field of vision while low-income housing is the main urban feature here (Figure 32).

These five sections show that new commercial buildings are usually constructed on the outer side of the city wall and moat, where people can appreciate the classic landscape view. By locating in these areas, they can attract a great deal of investment, which brings large profits to the real state agencies and more tax revenues to the government, especially in view of housing shortage inside the city. Old housing usually is located inside the city, sometimes mixed with the new one. Accordingly, we can conclude that it is more important and urgent to bring about social and environmental justice in these areas than just making a picturesque landscape. Instead of completely wiping out poor residences, the old neighborhood should be renovated, so that its residents can also enjoy the progress of economic development and heritage conservation. What
is more, low-income housing has many social functions. Therefore, the state plan for replacing low-income neighborhoods with a simple buffer zone for the heritage structure is unjustified and not sustainable.
Figure 23: Land use adjacent to the wall in 1960s, based on Nanjing Chengqiang Baohu Guihua (2008-2005) Guihua Wenben
Figure 24: Land use adjacent to the wall in 1970s, based on Nanjing Chengjiang Baohu Guihua (2008-2005) Guihua Wenben
Figure 25: Land use adjacent to the wall in 1980s, based on Nanjing Chengqiang Baohu Guihua (2008-2005) Guihua Wenben
Figure 26: Land use adjacent to the wall in 1990s, based on *Nanjing Chengqiang Baohu Guihua (2008-2005)*
*Guihua Wenben*
Figure 27: Land use adjacent to the wall at present, based on Nanjing Chengqiang Baohu Guihua (2008-2005) Guihua Wenben
Figure 28: Community without Wall, based on Nanjing Chengqiang Baohu Guihua (2008-2005) Guihua Wenben
Figure 29: Community with Wall, based on *Nanjing Chengqiang Baohu Guihua (2008-2005)*
*Guihua Wenben*
Figure 30: Historic area and Wall, based on Nanjing Chengjiang Baohu Guihua (2008-2005)
Guihua Wenben
Figure 31: Lake and Wall, based on *Nanjing Chengqiang Baohu Guihua (2008-2005)*
*Guihua Wenben*
Figure 32: Industry area and Wall, based on Nanjing Chengqiang Baohu Guihua (2008-2005) 
Guihua Wenben
CHAPTER 5: ENVISIONING THE FUTURE

Design Strategy

Heritage conservation should be for the public good. The historic wall should be interpreted and become part of everyday life. I develop several strategies for wall and moat landscape conservation, including:

1. Treating the wall as a seam, not as a boundary, by connecting the old and new city through the wall;
2. Enlarging the public space adjacent to the wall to connect surrounding open space, which will enhance the accessibility and connectivity of the historic site;
3. Changing the perception of the wall from a stand-alone monument for tourists to part of everyday life of communities, which strengthens the relationship between different social groups (Figure 33).

To implement my strategy, I choose southeast corner of the city for interpretive design. The whole area is one of the oldest parts of the city with Confucian Temple, traditional market, and Lao Mendong, the oldest community of the city. Inside the city wall, high-income and low-income residential neighborhoods are coexisting. Outside the wall, large freeway is built alongside the moat. The residential area shown in red is going to be removed to sanitize the surroundings of the wall. However, as the price of land is extremely high, poor people cannot afford new houses, and they have to move to remote locations. Beside the low-income houses, a large parking lot now has replaced previous factories. The parking lot blocks the way between different communities and decreases the visual appeal of the city wall (Figure 34).
Streetscape Redesign

With the hope of realizing social justice, I propose a green network which can link the wall with the surrounding open space. The new green network will strengthen the relationship between each historic site, and provide more accessibility for both local communities and tourists to the wall. People from famous landmarks like Confucius Temple can get access to the wall through streets with trees and rain gardens, which will stimulate the economic energy and social life of urban neighborhoods. Also, the green network will connect different neighborhoods. Currently, vehicles dominate the streets, and the traffic is unfriendly to pedestrians. The proposed streetscape redesign will offer more space for pedestrian and bicycles (Figure 35).

Interpretive Plaza

The site for the interpretive plaza is in between the high and low-income residential neighborhoods. In the north of the site, a food truck place is introduced to provide food and souvenirs, which can profit local poor people. Since this area does not have enough convenient dining service, the food truck can offer cheap but clean food for all social classes. On the west side, a trail shaded with trees indicates the rail track which was once part of the site. The railway was once a significant transportation line for custom service and military goods 70 years ago, and the plaza was filled with factories after 1949. This interpretation of the past can help people understand the history of the city. On the east side, an open performance stage is built to celebrate the festivals. It can also provide a platform for everyday activities such as Tai-chi or Yoga. A brick timeline is embedded into the pavement in the middle of the plaza to show the history of the site (Figure 36). Because many old slums here were made of bricks from the wall, so the design intervention will symbolize the story of destruction of the wall. A children’s game area is proposed
in the south of the plaza, which can serve children from surrounding communities, since there is no safe zone in this area to play.

In the north side of the plaza, the slum is encircled by high-rise building on the north and west side (Figure 37). Several fences, storage and parking lots separate the low-income community from the surrounding environment (Figure 38). So as to upgrade the neighborhood, organic urban renewal should be undertaken to ensure only necessary construction (Figure 39-44). The first step is to remove the fences, storages and parking lots to reconnect the community with the surrounding neighborhood. Thus, the community can become a member of larger neighborhood. Then, circulation inside the community is organized, which will ensure necessary width for pedestrian and cargo vehicles, for freight transportation and ambulances in case of fires and other emergencies. The next step is to replace old warehouses facing the south public plaza with pavilions, where people can play chess and card, have tea, and are sheltered from rain. Since this area was originally enclosed by walls and fence, the place will be activated, and the relationship between shelter and food truck place will be enhanced. This design can encourage the social life of the communities and provide space for elderly. Furthermore, the buildings facing the wall and the plaza are renovated for adaptive reuse, including teahouse, bookstore, hotel, store, and traditional Chinese craft training class. Hence, the negative space which faced the wall will be activated. People will also have opportunities to learn about traditional culture. Buildings are renovated with traditional Chinese architecture language in their facades and roofs. Finally, the parking lot on the second floor between high-rise buildings is replaced with community garden for the elderly and children, which can enhance the relationship between different age groups (Figure 45-46).
Conclusion

The goal of the design is to increase connectivity and accessibility to the historic wall, integrate the wall with surrounding neighborhoods, and make it part of everyday life. More importantly, heritage is for everybody, not only for the wealthy residents and tourists. The purge of the poor repeats the mistakes of urban renewal in the US, which destroyed large neighborhoods and built high-rise towers. Now, we understand that all the social classes should benefit from the heritage landscape, as they all contribute to the protection and promotion of the city wall. The wall should no longer be a distant picturesque scenery but become a heritage landscape that is a setting for festival, market and community life.

For further protection, it is important to understand the process of surrounding landscape, including the morphology of the moat, the flora and fauna of the mountains and the lakes. The issues of flooding, air and water pollution and erosion of the city wall should also be addressed.
FIGURES

Strategy

- Treat the wall as a seam not as a boundary
- Enlarge the buffer zone to connect surrounding open space
- Change the perception of the wall from a stand-alone monument for tourists to part of everyday life of communities

Figure 33: Design Strategies
Site Mapping

Figure 34: Site Mapping
Streetscape Redesign

Figure 35: Streetscape Redesign
Figure 36: Interpretive Plaza
Figure 37: Site Mapping

Figure 38: Photos of Slum adjacent to the Wall
Step 1

Figure 39: Design Operation 1

Remove fence and storage

Step 2

Expand current path, enhance the connection between high rise and low income building, ensure enough space for fire truck and emergency staff, and make the pavement permeable.

Figure 40: Design Operation 2
Step 3

Renovate current house in terms of facade, roof with traditional Chinese architecture language.

Figure 41: Design Operation 3

Step 4

Add new function to the house facing the wall and the plaza, including tea house, book store, hotel, store, and traditional Chinese craft training class.

Figure 42: Design Operation 4
Step 5

Renovate original storage to a public place with shelter, where people can play chess and cards, have tea and get out of rain. Enhance the relationship between shelter and food truck place.

Figure 43: Design Operation 5

Step 6

Replace the parking lot on the second floor with community garden for the elderly and children. Enhance the relationship between different communities.

Figure 44: Design Operation 6
Figure 45: Design Interventions
Figure 46: Design Interventions
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