

The Trend of “wan gu yi ren” Road in the Process of Making Protection Plan of Tieweng Castle Relics

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Abstract. Tieweng Castle is found to be the earliest and well-preserved building with brick wall from three kingdoms periods until now. Therefore, Tieweng Castle is of great archaeological, academic, cultural and social values. With the rapid development of Zhenjiang city, the activity of the urban construction is growing, the contradiction between New town construction and the old castle protection is increasingly prominent. How to solve the contradiction between the two is a major problem for the development of Zhenjiang City. This paper puts forward four solutions to the problem of "castle and road", and comparative analysis of the best, to provide ideas for urban construction and heritage protection.

1. Introduction

Tieweng Castle is located in the top of Beigu Shan front belt in Zhenjiang, Jiangsu province (Figure 1). It covers about 10.68 hectares, and is first built in the early years of Han Jian'an (195 AD). In the thirteen years of Jian'an (208 AD), Sun Quan moved the power center into Jing Kou (it is named to be Zhen Jiang) and lived in the four years [1]. During these periods, the three tripartite situation was formed. Sun Quan took Jing Kou as the spreading center, and gradually occupied the whole Jiangdong. It laid the foundation for the prosperity of Dong Wu [2]. The importance of protecting and utilizing Tieweng Castle is of practical significance to Zhen Jiang.

With the rapid development of Zhenjiang city, the activity of the urban construction is growing. The urban area of Zhenjiang city is spreading to the east. Thus, the transportation problem from east to west is significantly influencing and restricting urban construction of Zhen Jiang. Some roads, such as Daxi Road and Changjiang Road, have been built, while “Wan gu yi ren” road has not been completed because of Tieweng Castle. The conflicts between extension of road and heritage preservation affect the construction of “wan gu yi ren” road. These debates last for nearly twenty years and have no final conclusion.

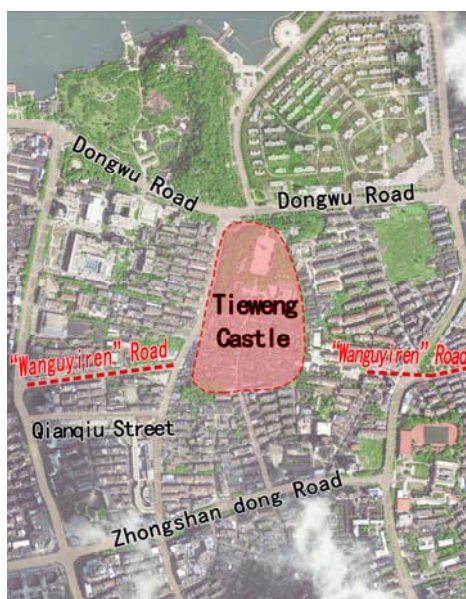


Fig.1. The location of Tieweng Castle

2. The debate between Tieweng Castle and “wan gu yi ren” Road

“Wan gu yi ren” Road at both sides of Tieweng Castle has been completed, so the problem that the road goes across Tieweng Castle or around from the south side of castle become the focus of controversy. Somebody, who support wan gu yi ren road should go across the Tieweng Castle, thinks Zhen Jiang has the large amount of construction, wide surface and urgent requirement of development. Otherwise, it need to take long time to study underground relics of Tieweng Castle. Rather than waiting to study the situation of cultural relics clearly, it is better for “wan gu yi ren” Road to go across Tieweng Castle. Therefore, it can save much time and improve the live environment of residents beside Tieweng Castle at the short time. Other people, who support to go around the Tieweng Castle, think it is of large intrinsic value. And it is rare to keep the shape and integrity well in the world. Although it need to take long time for archaeological work, we should not destroy the intrinsic value of Tieweng Castle because of road construction. So “wangu yi ren” Road should go around the Tieweng Castle at the south side.

In 2000, Tieweng Castle was identified as the provincial relics. Thus, it is very important to preserve Tieweng Castle well. Most experts put forward to combine road construction with the protection of Tieweng Castle. Finally, they think to adapt the plan of “Going around”.

3. The plan of “Going around”

During current road planning, “wan gu yi ren” Road at the site of Tieweng Castle, about 690 meters long and 30 meters of red line wide, begins with its west from the street of first floor, ends at M.X. Road to its east and goes around Tieweng Castle at the south side. The site is located in urban trunk road of the old partition in Zhen Jiang. In the planning, main crosses need banks broadening (Figure 2). Although the plan of “going around” protects Tieweng Castle with a greater degree, its disadvantages exists all times. Firstly, line selection in the plan of “going around” cuts on the edge of Yuehua mountain. Yuehua mountain is located in the southwest of Tieweng Castle, combined

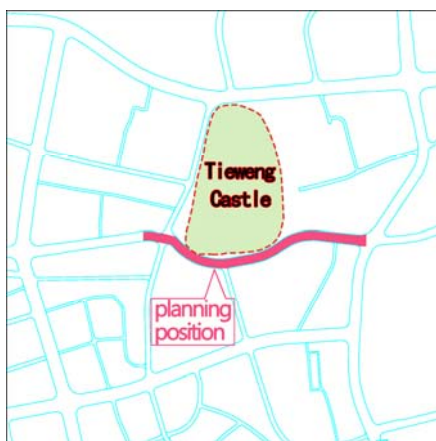


Fig.2. the plan of “going around”



Fig.3. the relationship between Yuehua mountain and Tieweng Castle

with west and south slopes of Tieweng Castle (Figure 3). According to archaeological discoveries, many cities (Zhen Jiang Tieweng Castle, Nan Jing Stone City, Hu Bei Wuwang City), were built on the hills by Sun Wu. The unique environment became natural barrier for many cities. Therefore, Yuehua mountain is speculated to be part of Tieweng Castle. The cutting line along Yuehua mountain during the plan is used to protect cultural relics. Secondly, the large height difference between south park and Road can be up to 10 meters in the local places. For security, many measures need to be adapted, such as revetment and enclosure. However, it is a pity that these measures destroy the authenticity and integrity of relics. Again, road construction and demolition cost much. The plan of “going around” lead to extend the length of road, and increase the construction cost. Simultaneously, demolition cost of some departments are up to tens of millions, such as the 2nd plastic factory, the 359th hospital, xuefu xin cun and Qingyun community.

Otherwise, as collector streets, the plan of “going around” is not reasonable and successful during road construction.

It is because of these disadvantages above that the plan of “going around” has not been carried out. In May 2013, Tieweng Castle was conformed as 7th batch of national key cultural relics unit by state council. The protection plan of Tieweng Castle began to work out. Thus, the problem of wan gu yi ren road was increasingly recognized as a top priority issue.

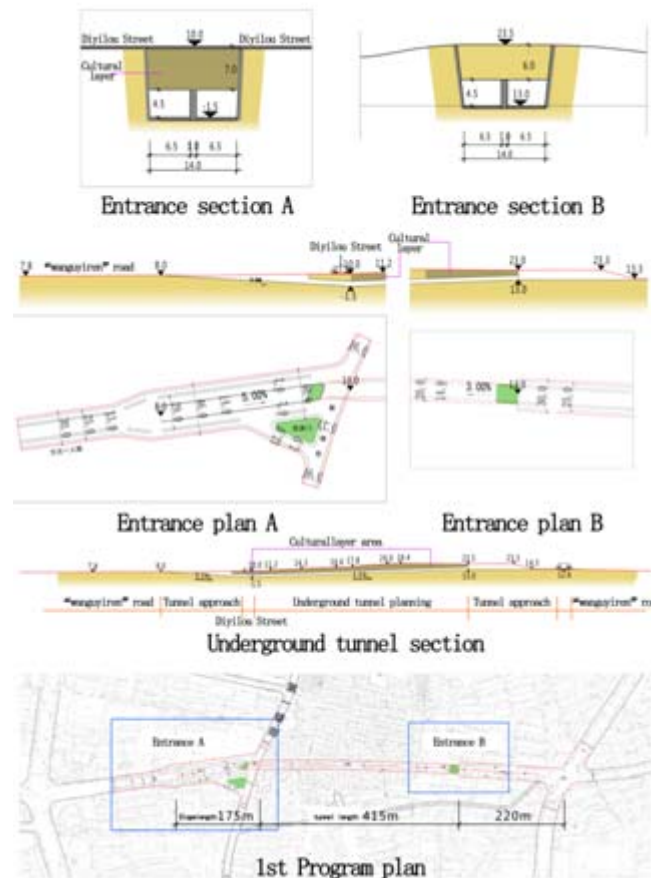


Figure 5 going across from underground tunnel

4. Research program in conservation plan

In the process of making conservation plan, the problem, how to combine construction of “wan gu yi ren” road at the site of Tieweng Castle with the protection of cultural relics well, has been studied in depth. And four research programs was proposed, such as going across from underground tunnel, underground tunnel of “going around Tieweng Castle”, the “going around” road to the south, and move zhongshan east road to the east.

1) Program 1: going across from underground tunnel

It is namely that “wan gu yi ren” will go across Tieweng Castle through underground tunnel. This program, about 635 meters long, begins with its west of the cross between “wan gu yi ren” road and the street of first floor, and ends at the cross between Meng Xi road and Huashan Road to the east (as shown in figure 5). During this site, underground tunnel with 3.5% slope is 415 meters long, and the ground part with 0.6% slope is 220 meters long. Current archaeological report of Tieweng Castle west walls inside and outside had shown that cultural layer of the cross between “wan gu yi ren” road and the street of first floor is about 6 meters thick. The design of reserved protection layer is 7 meters thick. Therefore, the channel at the west side of tunnel need to be built, and it is 175 meters long. The entrance of tunnel at the east side is located inside 359 hospital. Because there are steep at the entrance and the height different is 10 meters, it is easy to enter into tunnel with the help of no more than channels.

The program of going across form underground tunnel can protect cultural relics to a maximum

extent than that before. In addition of less demolition and short length of road, this program can basically solve the contradiction between urban traffic and relics protection. However, we can not ignore another question: Zhen Jiang is a famous, historical and cultural city, and Tieweng Castle belongs to old urban area rich in underground cultural relics. In the process of building channels, some underground relics may be destroyed. It goes against protection plan of relics. Therefore, if you want to take this plan, the archaeological research must be done firstly. Under the condition of no underground relics, this program can be implemented.

2)Program 2: underground tunnel of “going around Tieweng Castle”.

During this program, “wan gu yi ren” road goes around Tieweng Castle though underground tunnel (figure 6). The total length of road is 650 meters. Among them, underground part with 3% slope is 450 meters long, and ground part with 5.5% slope is 200 meters long. The reserved protection layer is 7 meters thick, and the channel with 5.5% slope is 180 meters long.

This program can basically ensure the truth and integrity of “Tieweng Castle” relic, and reduce the size of demolition. But the disadvantages of path selection have not been solved.

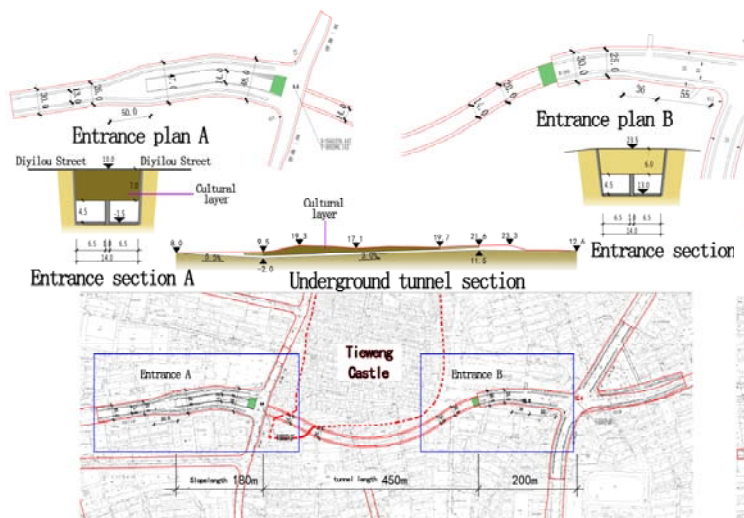


Fig.6. underground tunnel of “going around Castle”



Fig.7. the “going around” road to the south

3)Program 3 :the “going around” road to the south.

This program transfers “wan gu yi ren” road at the right side of Tieweng Castle to Qianqiu street at the south side, extends to the east, and join the original plan at the southeastern corner of Tieweng Castle. The length of road is 685 meters (figure 7).

With the method of local changes of lines, the height difference between yuehua mountain and the south side of Tieweng Castle in the original plan can be solved. However, there are a big size of demolition in this program. In addition, Qianqiu Street is a walking street with narrow roadway. If changing the line to this point, we need to extend the original site. But there are many residents near to Qianqiu street. It can lead to the increase of demolition cost. Therefore, it is so notable for this problem not to be ignored.

4)Program 4 :zhongshan dong road to the east.

Zhongshan east road is about 270 meters far away from the south side of Tieweng Castle. Zhongshan east road extend to the east, combines with Mengxi road, and ends with T-shaped road at this point. Program 4 extends zhongshan road to the east, and can solve the traffic problem from east to west. This program avoids the contradiction between road and Tieweng Castle. Therefore, not only Tieweng Castle relic can be protected well, but urban road network is also improved. Of course, there are some disadvantages. Because the parts at the east side of Mengxi road belong to new city region, demolition is not easy to be complemented. Otherwise, this lines need to cross zhenjiang foreign language school. And some unsafe factors can enter into the school.

5. The comparison of four programs.

Some advantages and disadvantages exist in four programs, and the comparison of four programs is listed below Table 1.

Table 1: comparison of four schemes :

item	road length		Width of red line		Land area /m ²	demolition			Total demolition /m ²	note
	ground	Under-ground	ground	Under-ground		layer	Number of floor	Area/m ²		
Program 1	220	415	30	20	25530	1	4	1120	4360	
						2	4	360		
						6	1	2880		
Program 2	380	450	30	20	28150	1	3	1820	4480	
						2	4	360		
						3	1	60		
						6	1	2880		
Program 3	685	-	20	-	13915	1	52	2900	31960	
						2	7	3420		
						3	5	7110		
						6	3	9780		
						7	3	8750		
Program 4	773	-	40	-	31858	1	108	4820	38015	
						2	21	4070		
						3	2	2955		
						4	13	12320		
						5	3	2390		
						6	5	11460		

In program1 and 2, there are parts of underground tunnel. They can both keep the Tieweng Castle relics secure, but road length, land area and total demolition in program 1 are less than that in Program 2. There are less land area in program 3, but the red line of road is allowed to be 20 meters wide. And demolition in program 3 is larger than that of program 1 and 2. Land area, and demolition in program 4 are biggest than others, so its cost is biggest.

From the above, program 1 is best choice. It can not only protect Tieweng Castle relics, but the traffic problem is improved. By comparison with other program, program 1 is also the most economical solution. If no cultural relic is detected by archaeological research, program 1 should be regards as the best choice.

Conclusion

In the process of urbanization and modernization, it is expected that more city site will be found. The contradiction between urban construction and relic protection will come up. Therefore, it is priority to protect city site and cultural relics effectively. Simultaneously, we should actively explore the harmony of modern city construction and cultural relic protection. That is a major project.

Acknowledgment

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