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Underground space: a view for the conservation of Beijing Old City

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Abstract

Beijing old city is a masterpiece during construction of ancient cities, and the most important urban space with special significance in Beijing. Over years, the old city has been facing a great contradiction between development and conservation, and there are a lot of problems that have restricted the old city from becoming a city with better living environment. After varieties of different urban renewal practice, the Beijing old city is still exploring new directions for conservation. Among these directions, underground space would be a new perspective, with possibilities of providing a good way out for those problems. The paper aims at a discussion on the status quo and developing potential of underground spaces in Beijing old city, and by means of conservation theories of old cities and theories of underground architecture. Firstly, the paper discusses the uneven spatial distribution of underground space in Beijing old city. Then the paper put forward three aspects that underground space might make positive efforts to the preservation of Beijing old city, which are complementing residential and public functions to Beijing old city, solving the problems of traffic and parking in Beijing old city, and improving the spatial quality of urban spaces and buildings in Beijing old city. Finally, the paper makes prospects to the future underground space in Beijing old city.

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1. Introduction

The Beijing old city refers to the areas covering the both “凸”-shaped walls and the surrounding moats built in Ming and Qing dynasties and also the Beijing City before the founding of the new China in 1949, with an area of

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62.5 km². As one of valuable historical and cultural heritages, the Beijing old city was listed in the first batch of national famous historical and cultural cities as early as in 1982. In 2004, it was noted in Beijing Urban Master Plan (2004-2020) that “efforts should be made to improve the protection system of historical and cultural resources and natural landscape resources throughout the downtown Beijing and Beijing old city; the protection of Beijing old city should be prioritized while insisting on the overall protection of the Beijing old city (Beijing Municipal People's Government, 2004.)”. While 33 “Historical and Cultural Protection Areas (Shan, J.X., 2002)” in the old city was demarcated during 1999 to 2004, for the preserving of the remaining spaces with original characteristics, and these areas accounts for about 1/3 of the old city area¹. It's quite a tricky issue to preserve the Beijing old city. Comprehensively speaking, it relates to a contradiction between the conservation and its development of the Beijing old city. On one hand, it's a must-to-do thing to protect the Beijing old city in an integrated manner concluded after years' exploration; on the other hand, it's also the call of the new era for the Beijing old city to improve its urban space by ways of development and construction so as to meet new requirements. Therefore, there exists severe contradiction between the conservation and development of the Beijing old city.

The Beijing old city has gone through different ways of renovation and renewal, but also made some inappropriate development patterns, and take a wrong path (Fang, K. 2000). Today, the old city's historical and cultural protection areas remained the original characteristics of the old city and the traditional style of living. How preserve and to make these spaces better, is an issue for the future needs of the old city of Beijing to explore. Under such a circumstance, this paper holds that it would be a unique and effective view in terms of such a contradiction issue between the conservation and development of the Beijing old city by making use of underground space there beneath (Shang, Q. 2016). Underground space can play a very active role in the rational use of land, expansion of urban space, improvement in space quality and other aspects in the Beijing old city, which can even achieve better effects than that of the space above the ground. While its characteristics of minimum affect to the floor space above the ground just correspond the need of the preserving for the historical and cultural protection areas. In this sense, perhaps the old city is the most appropriate place for the development of underground space.

2. Uneven Spatial Distribution

From 1960s to 1970s, over 12 thousand square meters underground air-raid shelters was constructed in the old city, and these spaces were reused as all kinds of public functions during 1980s and 1990s. Coming to 21 century, underground spaces has developed a lot and several large underground space appeared (Shang, Q., Zhu, W.Y., 2012). Underground space's development in Beijing old city has made great progress both in scale and in type.

In the contemporary Beijing old city, underground space is unevenly distributed¹-- some places are densely crowded with underground space, some are sparsely spotted, while other places are in lack of underground space (Figure 1). From the full-dimension view of the old city, the contemporary Beijing old city shows the following features in terms of the underground space distribution, specifically. Firstly, there are nearly no underground space in the two world cultural heritage sites in Beijing, the Forbidden City and the Temple of Heaven; Secondly, few underground space can be found in northern old city Shichahai, southern old city Taoranting Park, Longtan Lake Park and other open waters within Beijing; large areas of old buildings within historical and cultural protection areas with classic old-city features including Shichahai and Beihai Park are in lack of underground space; Thirdly, areas with underground space consists of densely-distributed areas and sparsely-distributed areas. In general, for one thing, the amount of underground space under newly emerging residential and commercial areas is larger than that of comparatively older residential and commercial ones. For the other thing, the amount of underground space in places with crowded buildings is relatively small, while the amount of underground space in places with fewer buildings is relatively large.

¹ Data from the exhibition in Beijing Planning Exhibition Hall, 2016-03.

² Statistics according to the relevant statistics data of Beijing City Civil Defense Bureau

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