ABSTRACT
Among all urban components, institutional plots reflect most of the political control of urban plan and construction. And its spatial pattern reveals the changes of spatial order and political meaning throughout urban history. As the capital city of China with 800-year history, Beijing has evolved with series of spatial patterns responding to the changes in political meaning. This research identifies the transformation of the institutional plot pattern in Beijing by analyzing historical maps, urban plans and typical districts. During the Republic of China, the imperial city of Beijing was gradually opened to the public. After the founding of the People’s Republic of China, the old spatial pattern was partly retained while a new spatial order was established with the replacement and expansion of industrial plots. Rapid urban development and modernization construction after 1990s successively resulted in more commercial, educational and recreational plots, which shifted the spatial pattern and symbolic focus of Beijing. The research provides a dynamic perspective to understand the political meaning of the built environment and analyze the adaptation of historic cities in different social development phases.

Keywords: institutional plots, political meaning of the built environment, urban morphology, Beijing

INTRODUCTION: POLITICAL MEANING OF THE BUILT ENVIRONMENT
As the creation of human reproduction, the built environment is endowed with social attributes. Since 1980, scholars have paid attention to the historical significance of static geographical space. A number of researchers have emphasized that history is now regarded not just as a linear process defined by time order, but space occupies an increasingly important position in the historical process.

According to David Harvey, societies define the necessary organizations of space and time appropriate to their own reproduction, thus continue to dominate material practice (David Harvey, 1989). Lefebvre noted that space is not a scientific object removed from ideology or politics, it has always been political and strategic (Lefebvre, 2015). It can be seen that political form, as a superstructure, is often built on a certain socio-economic basis. The nature of the ruling class and the upper ruling management policies play decisive roles in the construction of time and space.

In China, political and cultural attributes have profoundly affected the unification of territories and regional concepts. For example, Jiuzhou (nine regions inhabited by Han ancestors) and Wuyue (five famous mountains representing traditional Chinese culture, including Taishan, Hengshan, Huashan, Hengshan and Songshan) have marked the scope of the orthodox territory of early ancient China.
From the perspective of urban settlement construction, political form as superstructure causes changes in social form of the city, and then distinct changes in urban space are shown. In this research, political form refers to the rulers or ruling class, also the management policies directly related. Social form is observed through changes in urban functions and orientations. And characteristics of urban space is analyzed by the transformation of institutional plots, so as to better reflect changes in political meanings.

CHANGES IN POLITICAL MEANING: THE TRANSFORMATION OF INSTITUTIONAL PLOTS

Scholars have pointed out that public land use and buildings bear decisive characteristics in urban constructions. Vitruvius discussed city-state constructions in two categories in On Architecture, one is public buildings within city walls or public areas, bearing functions of military, religion and public facilities, and the other is residential buildings (Vitruvius, 1960). Aldo Rossi, in his book The Architecture of the City, distinguished ‘monuments’ with symbolic public functions from residential housing, and define them as ‘primary elements’ in cities which are persistent and characteristic urban artifacts. Monuments with public functions are dialectically related to city’s growth, and can both retard and accelerate the process of urbanization of a city (Rossi, 1982).

Researchers in urban morphology also analyze urban space from two perspectives as institutional and residential. The Muratorian architectural school typically defines buildings into basic building and specialized building, focusing public institutions and residential housing in the building typology context. As the other center of morphological research, the Conzenian geographical school classifies urban constructions as residential and non-residential. Non-residential construction usually consists of commercial and industrial buildings, and institutional buildings with public functions. J.W.R Whitehand argued that the institutional and residential categories of land use are two major land use components in urban growth. Ignoring for the moment all other possible locational factors, the result in the landscape is a zone of residential land surrounded by a zone of institutions (Whitehand, 1972).

Apart from transportation factors, institutional plots have dominating attributes to urban dynamic development. With public functions, institutions are likely to be more resilient than personal housing, and typically reflect characteristics of urban settlements. Affected by political, historical and social factors, opinions regard of the built environment have always been changing with times, most evidently result in the spatial layout of institutional land use. In turn, analysis of changes in institutional plots provides key information in urban development.

INSTITUTIONAL PLOTS: IDENTIFICATION AND CLASSIFICATION

The definition and classification of institutional plots are vague. Based on the understanding in the introduction part, institutional plots are opposite to residential plots and always occupied by special buildings. In Whitehand’s study of spatial pattern, institutional plots include educational, medical, military, central and local government, research, recreational (including clubs and public open spaces) and religious (including burial grounds). Besides, since the paper focuses on Chinese cities, Classification and standards for urban land in China (standard criteria in urban planning <GB50137-2011>) should also be considered. There are 8 classifications with 5 concerning institutional plots. They are land of administration and public services, commercial and business facilities, industrial and manufacturing, logistics and warehouse, green space and square. And traced back to the historical background of political, social and economic development in China, industrial development in the planned economy period, commercial and business, cultural and
educational in the market economy period, international communication, political function in the 21st century are the most representative development features.

With the criteria of representativeness and feasibility, the study defines the institutional plots as functional plots which represent political, social and economic development in China with large scale (urban centers, functional zones, buildings in groups, etc.). There are 4 types of plots: (1) administration and public services (including central and local government, educational and research, cultural and exhibition, sports and training, medical, foreign affairs); (2) commercial and business (including commercial, business); (3) industrial and warehousing (including industrial, manufacturing, warehousing); (4) public open space (including green space, public square).

The case of this paper is Beijing. As the capital city of China, it has its own specific goal of development and urban pattern. Historical master plans of Beijing represent a few urban development features.

<table>
<thead>
<tr>
<th>Master plan</th>
<th>Characteristic</th>
<th>Features of urban development</th>
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<tbody>
<tr>
<td>1953-1954</td>
<td>Political, economic, cultural, industrial center</td>
<td>Industrial areas in suburbs, political center in old city</td>
</tr>
<tr>
<td>1957-1958</td>
<td>Political, economic, cultural, industrial center</td>
<td>More industrial areas</td>
</tr>
<tr>
<td>1982</td>
<td>Political and cultural center</td>
<td>Commodity economy, commercial and sports centers</td>
</tr>
<tr>
<td>1993</td>
<td>Political and cultural center, international city</td>
<td>More commercial and cultural areas, business districts</td>
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<tr>
<td>2004</td>
<td>Capital and international cultural city</td>
<td>Education, technology innovation, international communication, Olympics</td>
</tr>
<tr>
<td>2016</td>
<td>Political and cultural center, international city</td>
<td>Capital functions, technology innovation, international communication</td>
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Figure 1 Features of historical master plans of Beijing

Moreover, Beijing nowadays serves as the political center of China. Its spatial pattern is composed of administration and public services zones including embassy district, Olympics area, Zhongguancun and Wangjing technology areas, commercial and business plots like CBD and financial street, upgraded industrial and manufacturing areas in suburbs, and open space in Sanshanwuyuan area and Olympics parks.

Therefore, the classification system of institutional plots used in this paper includes the plots of: (1) administration and government; (2) public services (including educational and research, cultural and exhibition, sports and training, foreign affairs); (3) commercial and business (including commercial, business); (4) industrial and warehousing (including industrial, upgraded industry, warehousing); (5) public open space.

METHODOLOGY

The aforementioned parts dismantle the relationship between political meaning and built environment represented by institutional plots. And it identifies the definition and classification of institutional plots. In urban morphology, time is always considered as an important factor. Therefore, the relationship between changes in political meaning shown in historical development and the transformation of the institutional plots is established. By studying the change of types and
pattern of institutional plots in Beijing, the study demonstrates the change in political meaning of the built environment in China.

According to the modern history of China and the urban development of Beijing, the study defines 4 morphological phases (including totally 7 sub-phases): (1) 1912-1949: Republic of China; (2) 1949-1981: socialist planned economy (including the beginning of industrialization from 1953 to 1956, and the expansion of industrialization from 1957 to 1972); (3) 1982-2003: socialist market economy (including adjustment of industrial and economic functions from 1982 to 1992, and rapid development of the socialist market economy from 1993 to 2003); (4) After 2004: internationalization and capitalization (including modernization and internationalization from 2004 to 2015, and capitalization and regional synergy after 2016.)

FINDINGS: THE TRANSFORMATION OF BEIJING

The study analyzes historical maps and master plans of Beijing in the above 4 morphological phases. It turns out that the change in historical background influences deeply on the transformation of institutional plots.

In the period of Republic of China (1912-1949), the semi-colonial and semi-feudal society ended. It represents the establishment of a modern and democratic nation-state. In ancient Beijing, institutional plots were centralized to the imperial city, symbolizing the feudal imperial power. During the Republic of China, old city walls were torn down. The imperial city was gradually opened to the public. Temple of Heaven, altar of the god of agriculture, Tiananmen Square and the Forbidden City were successively opened. The number of all kinds of educational institutions increased. The railway passed through the old city, establishing the morphological framework of Beijing to some extent. However, overall, due to internal disturbances, political corruption, and backward technology, the urban spatial layout and structure are still incomplete.

In 1949, the People’s Republic of China was founded and stuck to the policy of socialist planned economy. From 1953 to 1957, China achieved the First Five-Year Plan in social and economic development and established an independent industrial system. Industry was the main focus of the urban construction. Industrial districts were built in eastern, northeastern, southern and western suburbs. And with the goal of becoming the political and cultural center, Beijing lied the educational area in the northwest and retained political function inside the old city. And the imperial gardens were transformed to recreational parks and open space.
From 1957 to 1972, the scale of industrialization in Beijing extended. Southeast chemical industrial district was constructed. More industrial districts were arranged even inside residential areas. Industrial plots became the principal component of institutional plots in Beijing.

However, according to the policy adjustment in 1980s, Beijing was no longer taken as the core of national economy. The focus of industrial development shifted to the tertiary industry, instead of manufacturing. Large number of severe polluting factories were moved to the suburbs, and the vacated land was then transformed into cultural, commercial, educational land or other public facilities. Taking the work and residence balance into consideration, constructions of accommodations and other service facilities were strengthened. In the late 1980s, the northern part of the axis space sequence in Beijing was extended for the first time, providing lands for the 1990 Asian Games. Besides, environmental protection was included in the master plan as a main subject for the first time. Green space expanded and sports facilities were built in large numbers, which turned out to notably promote the urban constructions, especially in the northern part of Beijing.

In 1990s, the establishment of the socialist market economic system drove rapid development of economy, as well as the urban constructions in Beijing. According to the municipal government, Beijing was oriented to a world famous ancient capital, the national political and cultural center, and also a modernized international city. The focus of urban spatial development changed in two main aspects. Firstly, large number of new constructions shifted from city center to suburbs. And secondly, renovations are encouraged in the central city rather than spatial expansions. Reflected in the layout of institutional plots, commercial and business land enlarged in scale significantly. Municipal commercial centers increased from 3 to 8, and community commercial centers had reached more than 70. ‘Commercial and financial’ land use was first brought up in the 1992 master plan, and the CBD (Central Business District) was set in Chaoyang District to attract business investment and international trade. On the other hand, substantial amount of educational and research institutes and large number of high-tech enterprises accumulated around the Zhongguancun Science Park, and turned out to accelerate the development of innovation high-tech industry.

Coming to the 21st century, following the entrance into WTO, China accomplished an unprecedented development in economy. The main goal for Beijing is to highlight the international function and strengthen the economy development. A great deal of transnational corporations and financial headquarters moved in, and the tertiary industry scaled up. Different from the previous periods, the urban space tended to be polycentric with various functional orientations. The political core and historical districts remains in the central area, while the central business area and diplomatic embassies located in the eastern part. In the northeast, universities and institutes accumulated around the Zhongguancun High-tech Park. Due to the Olympic Games in 2008, green space and public infrastructures were much accounted of, which turned out to notably thrive the northern part of Beijing.

In 2016, the new version of municipal master plan (2016-2035) responded to the government’s aim to construct Jing-jin-ji urban agglomeration, and focused on selecting the central industrial functions that fits the capital orientation. National administrations, historico-cultural districts, international trading area and innovation technology institutes are notably supported in urban constructions and renovations, while traditional manufacturing enterprises and specific wholesale markets will be gradually moved to the surrounding regions.
CONCLUSIONS

Based on the analysis of urban construction development in different periods, the main transformation types of the institutional plots in Beijing are summarized (Figure 4). Before 1949, since the political system of feudal society had been overturned by the republic of China, open spaces and public facilities began to develop rapidly to ensure the people’s right for better living conditions. After the founding of PRC, keen eagerness to strengthen political administration and social production for the newly established county impelled the government to expand enough land for industrial constructions. While due to the Reform and Opening Policy in 1980s, the modification of economic development pattern drove great effort in constructing commercial and business plots. Coming to the 21st century, new orientations of international and capitalization accelerates commercial and high-tech industrial constructions, renovation of public facilities is also seriously supported.

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<tbody>
<tr>
<td>administration and government</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>public services</td>
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<tr>
<td>educational and research</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>cultural and exhibition</td>
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<td>✓</td>
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<tr>
<td>sports and training</td>
<td>✓</td>
<td></td>
<td>✓ (in large scale)</td>
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<tr>
<td>foreign affairs</td>
<td>✓</td>
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Exemplified by Beijing, social development status in different periods is proved to largely effect the layout of institutional plots. As social superstructure, political forms always lead to changes in social conditions, and notably transformations in urban space accompany. Since societies develop dynamically, spatial layout of institutional plots experience constant changes. Analysis on types, locations, scales and general patterns of institutional plots demonstrates political tendencies and social demands in different periods of time. Regarding to morphological researches, spatial characters of institutional plots share high consistency with social organization structure, and play a leading role in the morphological framework of urban settlements. With attributes of publicity, institutional plots turns out to be more stable and resilient compared to personal land use. Generally speaking, characters and changes of institutional plots deserve comprehensive considerations in urban morphological researches.

REFERENCES


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