A Study on the Block Formation and Its Subdivision into the Housing Lots in the Inner City of Beijing

An Analysis of Qianlong Jingcheng Quantu, Map of the Capital City of Qianlong Period (1750)

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Abstract

Qianlong Jingcheng Quantu, the oldest map of Beijing drawn in the Qianlong period (1750), depicts various institutional facilities and Beijing courtyard houses known as siheyuan in the inner city of Beijing. The city is composed of innumerable siheyuans and facilities built in siheyuan type architecture. This siheyuan type is related to the pattern of block division and its subdivision in the larger scheme of the city plan. Firstly, this paper, making an analysis of maps and literature, identifies a chronological order in the development of the street patterns, and then considers the connection of the siheyuan type with respect to the size of residential plots. The research then discusses the transformation process of the Beijing courtyard residences that occurred through the subsequent subdivision of the initial dwelling plots. This paper, thus, aims to illustrate the historical formation and transformation of physical environment of the Inner City of Beijing that may serve as an important basis to develop guidelines to the conservation of the historic environment of Beijing.

Keywords: Qianlong Jingcheng Quantu; Siheyuan; Inner City of Beijing; grid pattern; block division; distribution of facilities

1. Introduction

1-1. Objective of the Research

This paper makes a study of a city map known as Qianlong Jingcheng Quantu, a map of the capital city, drawn in 1750 during Qianlong period (1736-1796) of the Qing dynasty. It makes an analysis of the neighbourhood structure and patterns of division of the residential plots in the Inner City of Beijing. The objective of the analysis is to make clear the initial planning dimensions and the process of divisions of urban blocks formed within the planned grid structure. Elsewhere, we discussed the basic model of the neighbourhood structure developed through the analysis of the street dimensions, and proposed a hypothesis that a neighbourhood unit consisted of 10 households within a quarter block, each having a standard plot size of 44 bu x 44 bu (8 mu). This hypothesis will be further examined through all the quarters of the Inner City that might be taken as instances of typical units in the divisions of the residential blocks.

Before proceeding to the detail analysis of the city map, the paper will provide a brief overview of the residential quarters as can be read from Quantu, and their features as is known from the existing literatures on the history of the city. When comparing the data on major streets and other minor streets derived from Quantu with those of ‘Street and Lanes of Beijing City’ published in 1996, it is known that there had not been substantial change in the basic framework of the street system. Further it has also verified the entry of data on the Quantu, such as the distributions of large courtyard structures of palatial establishments (wang fu), temples and Buddhist monasteries, security offices, and the relationships of their locations with the residential quarter blocks. Although such entities are larger in their scale, it has been found that the standard residential quarter block constitutes the basic module in their layout. It was thus possible to derive a unit of typical residential block and analyse the patterns of its division.

The siheyuan type courtyard houses of Beijing were gradually demolished in later periods, which are gradually being replaced by high rise buildings and dwelling apartments. Today, there are 133 si-he-yuan courtyards, 42 administrative courts, and 114 garden-courtyard houses classified and preserved as cultural property by the state, city and local districts. The work of preservation and development of the tradition constitutes an important task as well as a problem in the future development of Beijing. It is hoped that this research will serve as basic groundwork to the
understanding of the urban dwelling forms of siheyuan courtyards, on which the planning and construction of urban services in future will develop.

1-2. Review of Existing Research Works

The documentary records and research works on Beijing constitutes a thick bibliography, one of which is that of Wang Can Zhi.6 One of the earliest documents of Qing dynasty that give comprehensive accounts of Beijing is *ri xia ji wu wen kao* compiled by Yu Min Zhong. It is the most voluminous work so far done up to the time to give information on the history of the city, its geography, city quarters, palaces and famous historical sites. In addition, there is a work—zhao shi cong shu,8 of Li Hong Ruo that provides information on city life such as social customs and fashion, security, markets, and gathering places of monasteries and temples. Further valuable references are the works of Wu Zhang Yuan, Zhen Jun, Chen Zeng Fan, Tang Yong Shan, Peng Yi, Chen Sheng Cong, Zhang Zeng Ping, and others.9 A recent publication entitled *Beijing lishi jinian* 10 gives detailed account on the events of Beijing during the Qing dynasty period.

One of the important references to the wards (fang)11 and hutong12 of Ming period Beijing is to be found in the work *Jing shi wu cheng fang kang hu tong ji* (The wards and residential quarters of 5 divisions of Beijing)13 compiled by Zhang Jue where locations and names of each quarter of the 36 wards of the 5 divisions14 of the city are recorded. Likewise *Jing shi fang kang zhi gao*15 a work compiled by Zhu Yi Xin of Qing dynasty is an anthology of stories and legends related to the wards and residential quarters of the city. Modern publications recording the place names of Beijing are *Beijing shi jie tong zhi gao* (Place names of quarters and streets of Beijing)16, and *Dong cheng di ming zhi* (Place names of the East City) and *Xi cheng di ming zhi* (Place names of the West City)17 by the Editorial Committee for the Compilation of Place names of Beijing. Records on the place names of Beijing in Japanese are those of Tada Tokuichiro,21 Peking (Eng: Juliet Bredon)22 and others.

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In addition, works related to the planning of the city and ward divisions are *Yuan dadi cheng fang kao* (Wang Bi Wen),20 Mei sei ji dai toshi kii kou (Jap: Kuramochi Tokuchihiro),22 Peking (Eng: Juliet Bredon)23 and others. It is evident that *Quantu* is an invaluable reference as a historical source material on the study of Beijing, which has been utilized by numerous authors. The most immediate relevant research to this paper is *Qing nei fu zang jingcheng quantu niandai kao*24 which is a work by Cao Zeng Lei who made the discovery of the Beijing *Quantu*. Following it, Imanishi Shunju published 3 serial papers entitled 'Qianlong kyoujyou Zenzu kai setsu' (Japanese)24 adding further depth on the study of the *Quantu*. But both of the above works have not been clear on the authorship of *Quantu*. It was only in 1984 that Yang Ji Ji in his 'Qianlong jingcheng quantu kao lue'25 made clear that *Quantu* was completed by a team that included the artist of the palace court Shen Yuan, and Italian Christian missionary, F. G. Castiglione, as technical advisor under the general supervision of the then interior minister, Hai Wang working for a period of 5 years. According to *Beijing lishi jianian* and other works, the map was worked out for the following purposes:26

1) The central administration of the city that was divided into five divisions,
2) To guarantee lands for palaces and residential plots for court officials,
3) Tax administration of city land and dwelling plots, and
4) Management of the large quantity of court records and various documents of the city.

In the early years of 1960’s, under the supervision of Xu Ping Fang, the city area was surveyed and drawn in a scale of 1/12,000 referring the map of *Quantu* and was then compared with the *Quantu* itself resulting *Qianlong Beijing cheng quantu*, 1/12,000, which is a reconstruction of the original map.27 This reconstruction however, does not show individual buildings and plots.

This paper particularly takes the detail features of the drawings of *Quantu* that shows the locations and patterns of hutong and buildings as important data for the analysis of the city map, and thus intends to make specific contribution on the relationship of street grid, siheyuan courthouses and the division patterns of residential plots.

1-3 Method of Analysis

In *Quantu*, all the buildings are drawn in a manner giving frontal elevation at their respective direction with the courtyard as the centre. Further, the main entry and gates can be distinguished in the map, which also delineates the boundary walls with double lines thus making clear to read and identify the size of the buildings, courtyards, and plot boundaries. In addition, the drawing uses bolder lines to delineate the palace courts, palatial residences and government offices distinguishing them with other structures.

The present study follows the following sequence in the analysis of *Quantu*.

1) Computer scanning of the 17 sheets and joining of the map into a single sheet file;
2) Tracing and categorization of individual data entities such as streets, streams, canals, walls, hills, bridges, etc.;
3) Identifying the text records on various utilities, palace
courts, government offices, palatial residences, temples and monasteries and other elements noted in the map.
(4) Correction of errors on Xu Ping Yuan’s reconstructed map was made by comparing it with the original Quantu. A minor adjustment on the scale of the reconstructed map led to a finer overlapping with the original map.
(5) Reconstruction of the extant structures of Ming period through a verification of the place names of main avenues, streets and hutong recorded in the historical documents.28
(6) The map thus verified, and unified into single sheet was again compared with Beijing shi jie gang tu (1996) showing changes in the street system of the city. It also showed that the main avenues and the secondary streets basically have preserved the pattern found in Quantu.

2. The Pattern of Urban Blocks and the Characteristics of Localities

2-1. The Basic Residential Neighbourhood

The model of the typical neighbourhood that we have proposed in an earlier paper is illustrated in Fig. 2.2 This model consists of 10 standard units of residential plots of size 44b x 44b (8 mu) thus making 10 households in a typical residential quarter block. This pattern corresponded to aristocratic families who could hold plots of size up to 8 mu that could accommodate a large complex of si-he-yuan court. On the other hand, according to the regulations of Yuan dynasty period, common peoples were allotted plots of 8 fen. As 10 fen makes 1 mu, a plot of 8 mu could be divided to accommodate10 households. Thus when a standard plot is divided into northern and southern halves, there would be 50 households in one hutong.

2-2. The Pattern of Residential Quarter

When Sun Zhi Di of Qing decided to make Beijing as the capital, He undertook a policy of settlement segregation, and bagizhi system to administer the inner city. According to this policy, Han peoples were settled in the outer city while the Manchus settled within the inner city, which was divided into eight districts that followed a military structure known as Eight Banner System—the bagizhi (Fig. 3).29 However, the management system of the settlement quarters, known as fangzhi, of the districts continued the way of Ming period.30 This organization of the quarters may be compared with the earlier Ming structure of major and minor streets, and hutongs that still could be found in the Quantu (Fig. 4).

The urban blocks and the settlement quarters, as Quantu shows, are not divided in strict gridiron pattern. Certain features may be identified through the study of some of the urban blocks of the Inner City.

(1) In general, a residential block is bounded by hutongs or major avenues running east-west and major north-south avenues or by other minor streets. This block, which is of 50 bu (77m approx.) wide, can be identified as the basic unit of the residential quarter. There are other blocks whose widths are multiples of this basic unit. The larger blocks are to be found in a number of varying widths, such as those of 100 bu, 150 bu and 200 bu (Fig. 5).

(2) There are some hutongs, which are not orthogonal and run obliquely in between the two north-south streets. Such hutongs are to be seen at the southern part of the
Inner City. The area with such *hutongs* that lies at the south of Changan Avenue was initially outside the limits of Yuan Dadu, the inner city of Yuan period. It was with the Ming period extension that the area became part of the Inner city. It thus appears that the area was not planned in the manner of Inner city during the period of Yuan dynasty. Further a quarter (Nanjujian fang) at the northeastern of the city was where *Xinda can* storehouse during Ming period was located, which later became the residential quarter of small *si-he-yuan* courts (Fig. 4-A).

3) At the western sector of the Inner City there is one particular locality—*Xianyi fang*, with north-south *hutongs* and bounded by minor streets. This locality was the entertainment area during Ming and Qing periods and stands out as a special quarter in the city where almost all of the *hutongs* have east-west orientation (Fig. 4-B).

4) Unlike the normal pattern of longitudinal division of the urban blocks by the *hutongs* that run east-west, there are also blocks that have internal divisions like a mesh. These are probably the areas where, in the earlier periods, the government institutions were located, and later were developed for other purposes.

While separate studies are necessary to shed light on the rationale of the development of different types of urban quarters as identified above, this paper will primarily focus on the type (1), which is the most prevalent pattern of block divisions of the inner city.

2-3. The Community Characteristics of Urban Districts

The historical documents and literatures are of great help in reading the particular features of different localities of the city.

One of the features on the settlement is that communities belonging to various nationalities were separated settling them at different quarters of the Inner and Outer city. Among them, Manchus were separated with Han by settling them in the Inner and the Outer City respectively. Within the Inner City itself, there was a segregation according to the social status of the Manchu residents, who were settled into two sectors, known as the upper three districts and the lower five districts. The Uighurs, Mongolians, Tibetans, and Miaoas were also settled at different designated quarters within the Inner and outer city. Fig. 6 shows the quarters of these communities within the area of the inner city.

There was also a kind of division between the eastern and western sections of the city, as is indicated by the term *dong fu xi gui* meaning *the rich east and the noble west*. In other words, the eastern section was settled with the merchant community, while the west was occupied by the aristocratic families. The historical documents show the extant structures at the western sector belonging to Ming dynasty official residences, which in the subsequent period of Qing dynasty were converted to government offices and residences. In the eastern section, in the district of Cao Yang Men and others, there were more market related structures showing more economic activities along with newly built residential buildings.

The third feature of the settlement that relates the common residents is that there was a tendency of like occupations to concentrate within one locality. It also can be seen that within Han people, residents coming from the same region tended to live together. Common people lived in the quarters near the city gates, at the corners of the city wall and near the production factories. For instance, the neighbourhoods near the North Gate, An ding men, were known to be the poorest quarters of the city. In this area there are place names such as *kang hutong* (low lying neighbourhood) or *xia wa hutong* (water-logging neighbourhood). The residences located at the north eastern part of the Inner City at the south of Dong zhi men avenue was known as *ping min zhu zhai* (the dwellings of the poor people) who worked in gun powder factories and storehouses. The common residents of the city were working in weaving of cloths, making of wheel carts, production of sauce, vinegar and tofu, and printing of religious texts and other classics (*jing dian*). The eastwest quarter lying between Dong zhi men
and Cao yang men continued to be occupied by storehouses from the Ming period onward. The dwellings of this area were of simple built with residents who engaged in the physical labour. The distribution pattern of different settlement areas, commercial and other utility sectors, as is known from the existing literatures, were as shown in Fig. 6.

3. Distribution of Utilities

3-1. Palatial establishments (Wang fu), Government Offices (Wei shu) and Religious Centres

In Quantu, there are utilities delineated in bold lines, which are differentiated from common si-he-yuan courtyards. Qianlong jing cheng quantu jie shuo—suo yin draws separate lists of Palace courts, government offices, palatial residences, temples and monasteries, hutong, bridges and other entities. Following is the brief introduction of elaborated siheyuan courts, palatial establishments, government offices, and temples and monasteries.

Wang fu is the residence built by the emperor to the princes and princesses of the imperial family. Such palatial residences were not built within the Inner City during the time of Yuan Da Du. It was by Ming dynasty that there were built 10 such palaces in the Inner City. It was by the beginning of Qing dynasty that all the residences related to the imperial family began to be built within the limits of the Inner City. 42 such palatial residences can be identified in the Quantu as shown in Fig. 7. Among them 26 residences belong to the courts of the princes while one belongs to the princess. The rest 15 are those of aristocratic families. The courts of the princes were classified into four ranks, namely qin wang fu, qun wang fu, ju dong fu and ju zi fu. The land allocation to these different courts was not categorically differentiated, but all occupied an area larger than 8 mu. The records given in Da qing hui dian gives the plot size of a typical qin wang fu—tai qin wang fu, to be 12 (3 x 4) times the standard plot size of 8 mu.

As a capital city Beijing housed varieties of government bodies. Under the government institutions, there were head quarters, ministries, academies, monasteries, departments, supervisory, directory, and bureaus (chu, fu, yuan, si, bu, jian, si, ju). Besides, a system of one fu (palace court), two county head quarters and five divisions of cavalries administered the city of Beijing. The city belonged to Sun tian fu, and the city was divided into two county divisions, known as Da dian xian and Wa ping xian, by the central avenue running through the city gates Zhen yang men at the south to Dian men at the north. In addition to the eight divisions that were devised for the military governance, the city was also grouped into five sectors—the four directional divisions plus one central division, which were also known as cavalries.

Beginning from Yuan dynasty, the food and grain from Zhejiang at the south of China was brought to Beijing through the Grand Canal. Most of the granaries to keep storage of the grains were built in the neighbourhoods near the city gates of Dong Zhi Men and Cao Yang Men within the city wall. These storehouses called Capital Granaries were 22 in number during Yuan dynasty period, while this number was 56 by the Ming period. In the Qing dynasty, only 7 granaries were identified within the area of the inner city.

The Qing dynasty Beijing did have religious institutions for diverse religious faiths such as Buddhism, Lamaism, Taoism, Islam and Christianity as well as those of popular beliefs. In Quantu, 1276 such institutions that include 867 within the inner city can be identified. Beijing shi zhi gao (zongjiao zhi, vol 1-9) gives records of temples and monasteries of the Qing period along with their religious affiliations, historical link, and locations. According to this document, there were 12 Lamaist monasteries, 3 Islamic mosques, and 4 Christian churches within the inner city.

3-2. The Basic Residential Plot and Other Structures

The scales of the large si-he-yuan structures of the above institutions and structures are varied, but an overlay of these units in a grid of 44b x 44b = 8 mu as modular unit, shows that their sizes are related with the standard residential plot size. If one excludes the plots smaller than the basic unit size, the size distribution of palatial courts, government offices, temples and monasteries is as illustrated in Fig. 8. It can be seen that the distribution...
is more clustered along the multiples of the basic unit size of 44b x 44b suggesting the employment of the 44b x 44b as the module in the division of the plots.

4. Types of Siheyuan Courtyard Houses and the Basic Urban Block

In addition to the above of larger scale entities, Beijing Jingcheng Quantu is filled with countless number of siheyuan courtyard houses. Although these courts appear very much regular in their layout, there is a considerable variations in their sizes. In addition there are not few courts with their approach from east or west, a deviation from the convention of southward orientation of the entrance. But as there was the basic framework of grid to regulate the planning layout, it is but natural to assume that there should have been a basic layout pattern of the residential plots. Such standard layout is thought to have been the pattern as shown in Fig. 2.

If we consider the block of width of 440b (667.60m) bounded by main avenues and other streets, a considerable number of urban blocks, as is found in Quantu, confirm to this size. Among them, the number of blocks of the residential quarter with size of 50b width between the northern and southern hutong are 23. Within these blocks, 17 can be identified to follow a clear division pattern in the map, while there are certain difficulties to discern the division in the rest of the plots due to the possible obliteration or alteration of the initial division patterns. Fig. 9 shows the division patterns of these 17 residential blocks into various types of individual dwelling plots of siheyuan courthouses. Because of the complexity in the layout of siheyuan courts, the types are classified according to the depth of the siheyuan complex as shown by the number of open courtyards. This classification gives courtyard houses of types of one to five court depth. The number distribution of these five types is 1 court—28.83%, 2 courts—38.14%, 3 courts—23.72%, 4 courts—7.79% and 5 courts—1.52%

If the residential blocks are divided into 10 units by the standard basic unit (44b x 44b = 8 mu), the north-south line of division is found to better coincide with the existing divisions of the plot shown in the map. This shows that the residential block was divided in accordance with this basic planning module into units of dwelling plots.

The above analytical result gives us 17 x 10 = 170 basic standard units of residential plots some of which, however, are in the blocks without hutong. The internal division patterns of these units are shown in Fig. 10. The central column in the figure gives the plot divisions found at the western end (I) and the eastern end (X) of the typical residential blocks. The plots in the column of II-IX are arranged according to their location order from west to east in the residential blocks. The rows show plots arranged in order of their number of divisions, i.e., from plots with no further partition to plots of more than 11 partitions. In the group where there is no hutong (103 plots), there are 4 plots without further divisions, 6 with two divisions, and likewise six of 10 divisions.

The internal division pattern of the above residential plots indicates to a certain extent the development process and the manner of the redivision of the plots. In the figure the north-south line of division is shown by longitudinal line while those of east-west by horizontal line. It can be seen that the plots, which have only two divisions, have no horizontal division. This preference to the longitudinal division is due to the possibility of entry approach from the south or north. The greater number of plots with longitudinal divisions in other plots as well emphasizes this division. One of the advantage of such division is that at least more plots will have direct access to hutong. The plots of 3 divisions have either 3 longitudinal plots or one of the half is divided into two by a horizontal division. Likewise, the plots of 4 divisions show combination of various division patterns such as 4

Fig. 9. Pattern of Divisions of the Plots in Basic Residential Blocks

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Fig. 10. Patterns of Division of the Basic Residential Plots

Fig. 11. A model of the Patterns of Division

Longitudinal divisions, horizontal division of one of the 3 longitudinally divided plots, longitudinal division of one of the horizontally divided plot, and horizontal division of two longitudinal plots. Incidentally, four longitudinally divided plots have not been found in Quantu, however, as to other

Conclusion

The findings of the present paper on the analysis of Quantu may be summed up as follows:

A comparison of Quantu (1750) and Beijing shi jie gang tu (1996) shows that there is not substantial change in the pattern of main avenues and other streets, which consequently suggests that there is not significant change in the size and configuration of residential blocks surrounded by these streets either.

There are distinct group of residential blocks of 50 bu (77m) width bounded by Main Avenue and minor streets. Further, there are also additional groups with width of around 100 bu, 150 bu and 200 bu.

The plot size of larger entities such as palatial residences, temples and monasteries, government courts are in general multiples of 44b x 44b = 8 mu unit plot showing that a basic modular unit was employed in determining their size.

The residential blocks which are of 440b long shows that the block was divided by north-south lines into 10 equal units as is shown by the coincidence of the boundaries of the residential plots delineated in Quantu. It demonstrates that 44b x 44b = 8 mu was the standard size employed as planning module of the residential plots. Thus it strengthens the hypothesis that 10 households with plots of 44b x 44b = 8 mu each constituted a basic residential neighbourhood.

The later redivisions, in the instance of the block without hutong and other access streets, led to the formation of upto 10 small dwelling plots within one standard plot. The process of division is simple which
shows preference to longitudinal division that give north south orientation compared to the horizontal division. It suggests that the division of the standard residential plot into 5 units each at the north and the south might not have been included in the original planning concept of the *si-he-yuan* plots.

The divisions in the plots with *hutong* are more than in those without *hutong*. It appears that new *hutongs* appeared with the later necessity of the repartition of the plots.

**Acknowledgments**

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**Notes**

1. Quantu is now under the custody of Zhongguo guojia Di yi ziliao guan (The First National Archives of China). Its scale is 1/600 and is filed in 51 volumes. When piled, it needs a height of 14.01 m and a width of 13.13 m. In 1940, the map was compiled by Gugong bu wu guan (The Palace Museum) in a reduced scale of 1/2600 (208 p., 22.5 cm x 27.5 cm) with the title 'Qing nei wu fu zang jing cheng quantu'. On the same year, Diaanya yuan huabei lianlu bu zhenwuji diaocha suo published *Qianlong jingchen quantu* in 17 volumes along with a volume entitled *Qianlong jingchen quantu jieshuo—suoyin* (scale—1/2600, Showa 15, July). The present paper utilized the publication of Diaanya yuan huabei lianlu bu zhenwuji diaocha suo.


3. 1 bu is a unit of measure used in Yuan dynasty period, which is 1.54 m. A mu was 100 bu from ancient times, but its value changed to 240 bu from the times of emperor Wu of early Han period. The bu of this period is the areal measure, where 240 bu = 240 x 1.54 m x 1.54 m = 569.18 m². The corresponding value for 8 mu is 4553.47 m², which gives a value close to 44 bu on one side when squared. The standard plot size is suggested by the Yuan dynasty documents which mention the allocation of 8 mu plot for the nobles and the officials and 8 fen (10 fen = 1 mu) for the commoners. Further, instance of a block with 80 mu that can be divided to 10 families with 8 mu each has been given by Hou Renzhi (Yuan Da Chengxiong Mingjinge Beijing Tu, Gugong Bu Wu Yuan kan, No. 3, 1979). This has been verified by our own field survey and analysis (note: 2, op. cit.)


6. Ref. 19. It is a catalogue listing the publications on the local history of Beijing. It classifies the materials into history, geography, and social custom and gives a record of 6300 volumes available in various libraries of Beijing.

7. Ref. 21.

8. Ref. 12.

9. Ref. 20, 24, 7, 17, 22.

10. Ref. 3.

11. A recommended reading on *li zhi, fang zhi, fangqiang zhi* is *li zhi, fang zhi, fangqiang zhi no kanketsu*, toshii no bunka to sekikata, namboku sasquatang shi to kihon mondai, Kyuko Shoin, 1997, April. It shows differences of *li zhi* and *fang zhi* with the enclosed residential wards of *fanganqiang zhi* in the administration system of the city. Following the Song dynasty, *fang* and residential block in the Chinese cities are not the same.

12. *Hutong* means a lane. There are others such as *huo gang, wei tong, huo long, huo we, huo tong, ye tong, wen tong*, and *hu tong* of different chinese character.

13. Ref. 23.

14. In the administration of Beijing of Ming period the city was first divided into Inner City and the Outer City. Then the whole city that included the inner and outer both was divided into 5 administrative divisions, which were known as dongcheng, xicheng, nancheng, wancheng, beicheng and zhongcheng (The east city, west city, south city, outer city, north city and central city respectively). The residential districts were known as fang, and there were 28 fangs within the inner city and 8 in the outer city.


16. Ref. 2.

17. Ref. 1, 4.

18. Ref. 16.


20. Ref. 18.

21. Ref. 11.

22. Ref. 6.


24. *Qianlong jingchen quantu jieshuo—suoyin* and *Qianlong jingcheng quantu*. Diaanya yuan huabei lianlu bu zhenwuji diaocha suo published *Qianlong jingchen quantu* in 17 volumes along with a volume entitled *Qianlong jingchen quantu jieshuo—suoyin* (scale—1/2600, Showa 15, July). The present paper utilized the publication of Diaanya yuan huabei lianlu bu zhenwuji diaocha suo.

25. *Ming Beijing tu—wenzi shuoiming*, pp. 9-110. See also *Ming Beijing cheng jinyuan tu fang kung hutong di ming biao*, Ref. 25.


30. Ref. 21, p 803.


32. Ref. 20.

33. Ref. 11, p 803.

34. Ref. 1, pp 222-238, Ref. 4, pp 49-288.

35. Ref. 9, pp 11-13.


37. It is a document regarding the regulations on the building of residences of imperial families. Vol 58 of *Daqing huidian* has regulations on the building of palatial courts of government offices.

38. Ref. 10, pp 31-32, pp 41-42.


40. In the previous article, we have adapted the model types of *si-he-yuan* given in *Beijing si-he-yuan* of Lu Shan and Wang Ji Ming. In the present paper, the types are categorized according to the number of courts lying in one series; the types thus differentiated are *si-he-yuan* of one, two, three, four or five, court depth.

**References**


