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What Forces that Shape and Retain the Beijing Courtyard Houses?

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Abstract

The type of courtyard house, as found within the Inner City of Beijing, is a well-developed Chinese housing typology. All houses in this area share a homogeneous pattern and texture in form and spatial layout. Particularly, certain distinguishing features can be easily identified across houses. This paper explains: (1) the outstanding features found in almost all courtyard houses in the city of Beijing, as well as in other cities across China, (2) the reasons why these features were preserved for more than two thousand years, (3) the socio-cultural driving forces that have maintained these features historically, and (4) the challenges they now face. It is hoped that this paper will attract some public attention regarding the conservation of this piece of historical and cultural heritage in China.

1. Introduction

The fundamental type of residence in China is courtyard housing. The concept can be traced at least to the Han Dynasty (206 BC to 220 AD), and may have appeared earlier. Archaeological discoveries suggest the courtyard concept may have been developed as early as the Shang Dynasty (1766 BC to 1211 BC) or Zhou Dynasty (1211 BC to 255 BC). The Shang Dynasty is the earliest dynasty for which reliable historical evidence exists. Anything earlier than 1766 BC must necessarily be a matter of some speculation, as there are no physical records from that period. In Shanxi Province, however, artifacts from an ancient courtyard house have been found that date from before the Zhou Dynasty. Thus, it is possible that the courtyard type of housing was created well before 255 BC.

Courtyard housing can be categorized as a building complex with structures on four sides and an open court in the middle. Many forces have shaped the hierarchical arrangement of these houses (described later), including cultural convention, clansmanship, social status, and the art of placement (feng shui). After centuries of mixed influences by these forces, sets of rich symbolic icons have become associated with the form.

Beijing is renowned for the fine craftsmanship of its courtyard houses. Having served as the national capital first during the Jin Dynasty (1115-1234 AD), and later during the Yuan (1271-1368), Ming (1368-1644) and Qing (1644-1911) dynasties as well as today, the city has had the power and resources to recruit the most highly skilled craftsmen and obtain the finest building materials, while also offering the highest standard of living in China. Over the centuries, Beijing has become the cultural, political and economic center of the country.

Now, after nearly eight hundred years of more gradual evolution, the city is challenged by rapid modernization and urbanization. The traditional type of courtyard housing is disappearing in the new, internationalized metropolitan environment. In response, urban planners and scholars are working hard to preserve this important element of China’s cultural heritage. This article explores the inherent forces that have shaped the development of the traditional courtyard building type, and the dilemma it faces now.

2. Examples of courtyard houses

The very first known example of courtyard housing was found in Shanxi Province. According to archaeological data, it may have been built in the Western Zhou Dynasty (1027-771 BC). Figure 1 shows a proposed reconstruction of the house, based on information derived from the Chinese-language version of “Courtyard Houses in Beijing”. This example illustrates three common features— central axis, symmetry, and public/private living zone arrangements—reflected in the architectural form.

The second example is an existing quadrangle courtyard house in Beijing (see Figure 2). Built in the late Qing Dynasty, around 1900 to 1910, it has been well maintained and currently is used as a nursing school. In this example, similar features of strong central axis, symmetry, and public/private living quarters are repeated in the layout. Interestingly, these features can be found in almost all courtyard
houses in Beijing. Thus, they are recognized as the direct, visible factors that shape the courtyard housing type.

Figure 1. Archeological data and isometric view of a courtyard house probably built in Shang/Zhou Dynasty. Diagram by Chiu-Shui Chan, Linli Chen and Ying Xiong.

Figure 2. An existing quadrangle courtyard house in Beijing. Diagrams by Chiu-Shui Chan and Ying Xiong. Isometric drawing reprinted from Lu and Wang, p. 31.

3. Typical layouts and forces that create the layout

Four types of courtyard houses are prevalent in Beijing: single (see Figure 3), double (see Figure 4), triple (see Figure 5) and quadrangle courtyards (see Figure 2). The single courtyard is the most basic pattern. The triple courtyard is the standard courtyard in Beijing, whereas the quadrangle or above are complex composition.

The single courtyard house is the basic type used by lower-income families. In it, the middle room on the north side is the main room used by the owner. Most buildings are wood structures. By convention, there are rarely more than three column bays in the main room.

The character of courtyard housing is clearly visible in the double courtyard. It has an entrance court, a front court, and a back court. Once inside the entrance court, accessed through the main gate, visitors are welcomed by a shadow wall with special figures or ornaments engraved on it. Turning left through a circular gate, one finds the front court or “external court,” which is assigned for public use. The
chambers on the south in the external court, called “DauZuoFang,” (reversed-seat rooms) traditionally were used for study, reception, male servants’ dwelling units, or for sundry purposes. In the middle of the north side is another well-decorated gate that leads to the back court or “inner court.” Without permission, guests are not allowed to enter the inner court.

Figure 3. Single-courtyard housing. Diagrams and drawings by Chiu-Shui Chan and Yulin Wang.

Figure 4. Double courtyard housing. Diagrams and drawings by Chiu-Shui Chan and Linli Chen.

The standard courtyard house in Beijing is the triple courtyard. In a triple-courtyard house, the southern “external court” is the same as other types, located next to the entrance court. Rooms on the south side of the external court are adjacent to the street, used either as housing for male servants, reception area for guests, or classrooms where private tutors taught young members of the owner’s family.

After passing through the well-decorated gate, the middle court or “inner court” is the focal point of the complex. The middle room in the northern wing of the inner court is a prestigious unit occupied by the leader of the family. This middle room has the most beautiful decorations and ornaments made with costly materials. The person of secondary importance in the family uses the rooms in the east wing. By the same token, the rooms in the west wing are for the third-ranking family member.

The northern courtyard of the complex is the back court, which is the least important, private in nature, occupied by daughters, female servants, and/or used as a storage area. Rooms in this court are called HouZhaoFang (back-coop rooms).

In a quadrangle courtyard (see Figure 2), the first court is the same as other types for male servants or guests, the second court is used for the owner’s family meetings or social receptions, the third
court is for private living, and the fourth one is for female servants. The number of courts constructed depends not only on the owner’s budget, but also on his social status. High-ranking officials and wealthy businessmen can afford to own quadrangle courtyard housing, and have the privilege to build five wood column bays for the main room. In the Ming Dynasty, regular citizens were not allowed to construct more than three bays. By the Qing Dynasty, the regulations had been relaxed a bit. The higher number of column bays creates a wider façade, provides larger interior space, and represents the higher social status of the owner. In the Inner City of Beijing, certain good city blocks were once allocated by the emperor to his relatives, high-ranking officials in the regime, or to rich businessmen.

![Figure 5. Triple type of courtyard housing. Diagrams and drawings by Chiu-Shui Chan and Linli Chen.](image)

Although the number of courts built in the house may differ from owner to owner and from place to place, the fundamental concepts and principles that shape the spatial arrangements remain unchanged from the Western Zhou Dynasty to the Qing Dynasty. Particularly, the fundamental concepts and principles—single story, central axis, symmetry, functional zoning with a centralized open courtyard, all buildings sitting on a platform with doors and windows opening on the courtyard—appear in most Beijing courtyard houses. Thus, they are considered the dominant features of courtyard houses.

### 3.1. Central axis and symmetry

All courtyard houses have a very strong spatial layout that comes from the symmetrical design along a central axis. Symmetry, in Chinese philosophy, represents harmony. The axis in the courtyard is established by a symmetrical arrangement of forms, spaces, and steps suggesting linear movement. As a result, a sequence of positive and negative spaces is formed and appears from its integration with surrounding structures.

The longitudinal (north-south) axis is the primary one. The east-west axis is secondary and subordinate. The axial line passes through openings in the walled enclosures under buildings. The whole length of the axis is never revealed at once; it does not present a vista but a succession of varied spaces in a related sequence, each one blocked but visibly leading on to a further stage. Toward the north end is the highest point, where the most important building is located. As Ching indicated, “although imaginary and not visible, an axis is a powerful, dominating, regulating device.” Such a feature dominates the two-dimensional courtyard-housing layout for a fairly long period.

### 3.2. Functional zoning and privacy issues

Chinese culture deeply respects family privacy, and each dwelling is recognized as a guarded territory. Within the territory, there are public and private zones. For example, a courtyard house can be divided into two zones. The public quarter must be placed in the front part, which is the external court; the
private living quarters should be arranged in the inner court to maintain privacy for the family. This arrangement is clearer in the double-, triple-, and quadrangle-courtyard houses. For instance, the front part is the space assigned for conversations, social and public gatherings, tutoring, and male activities, whereas the inner court is for the family's use only and the further north courtyard is for the family's female members.

3.3. Materials and color scheme

Most courtyard houses are a wood structure with a brick wall and tiled roof. The wood structure is regulated by building codes specified in the grammar book “YingZao FaShi,” written by Li Jie in 1100 and presented to the emperor. Ever since, all building construction follows these rules. Thus, the building style remains homogenous.

The wall is made of light gray brick and the roof of dark gray tile, which create a homogeneous and peaceful urban fabric. The use of colors in China is based on their traditional meanings. Colors not only represent abstract ideas but also refer to social class structure. For example, yellow is the color of emperors; black is used occasionally for outlining or background. Red is the predominant color for Chinese public buildings to represent happiness and prosperity. Blue, green and other complementary colors are used in detailed decorations. Each part of the structure has its designated color, especially in palace buildings: for instance, the while and blue color of the platform and terrace, the red color of columns, the blue and green of beam brackets and soffits, the yellow or green of the glazed tiled roof.

3.4. Platforms and terraces

Platforms and terraces are important components of Chinese buildings. Their purposes are to protect the wood structure from rain and moisture on the ground and to enhance the grandeur of the building. This concept can be seen in most palaces, monasteries, and temples.

4. Forces that guide the features

Ancient and modern examples of courtyard housing share similar layouts and arrangements; two to three thousand years have passed without dramatic changes in the form, except the location of the entrance. The shift of the entrance gate location from the center to the southeast corner, reflected in most of the Beijing houses, is influenced by the concept of the art of placement (feng shui), described later in this article.

In terms of urban context, most courtyard houses built in Beijing share the same pattern. Other courtyard houses throughout the rest of China have similar patterns. Given this similarity in features and form across time and geographic region, it is convincing that there are guiding forces to tie these layouts and forms together for so long in a city. In the following sections, forces that maintain the forms in the courtyard houses are elaborated in brief. However, there also are rich sets of ornaments applied in courtyard houses, which are not discussed in this article.

4.1 Belief in cosmology and Taoism influence the two-dimensional shape

The basic unit of a courtyard house has the form of an enclosed square. In ancient Chinese cosmology, people believed heaven to be round and the earth to be square. Heaven was the father of the people while earth was the mother. The father dominated the climate and had tremendous strength that influenced the harvest. The mother grew food and gave life to all creatures. These notions were also reflected in architectural form. The square platform beneath buildings symbolized the square earth that carried the living. This explains why the basic shape is a square.

In architecture, a space generally can be defined either positively or negatively by its elements. In Chinese architecture, a space is a series of unified and integrated squares that represent a sincere longing to anchor a person in his/her universe. Expressed in physical form, it is enclosed and inward-focusing. Both in the covered indoor space and outdoor open courtyard, space has the unique tendency...
4.2 Confucianism, feudalism, and clansmanship in social values influence the central axis

The central axis symbolizes power and is the by-product of feudalism to signify law, order, and rank. In ancient Chinese culture, ethics is the strict organization of clansmanship that originated from Confucianism. Confucianism advised the populace to respect their emperor; in turn, an emperor was supposed to rule his empire with benevolence. This philosophical development occurred in the Han Dynasty (third century BC to third century AD) and became the propaganda of feudalism. Feudalism secures the superlative position of the ruler, the emperor. The empire is the emperor's property and will be the heritage of his son and grandson.

The organization of ethical relationships covered the standards of human behavior, from emperor to official, father to son, and encompassed brothers, friends, and marriages; this dictated the hierarchical order. In a larger sense, this also governed the attitudes toward recognition of differences in social classes as well as respect between generations. Such an ideology was particularly strictly enforced in the capital city where the emperor lived. Therefore, building designs were governed by the axial arrangements. The thoughts and beliefs rooted in the social values underlying the central axis are one of the factors determining the form.

4.3 Confucianism and clansmanship in family values influence the space allocation

The uses of rooms and occupants of spaces were determined by Confucianism and clansmanship of family ranking and order. In Chinese culture, family rank and order are important conventions, which must be obeyed by everyone, including the emperor, to respect family values. Family rank and order are determined by seniority and gender. For example, the first son in a family has the most important role; the grandfather in a family is the leader of the family group. Thus the grandfather or the eldest male in the family will use the best spot in the courtyard house, usually the middle room in the inner court, which is the tallest building in the complex to show its dominance (see Figure 6).

4.4 Feng shui influences the location of the entrance

In ancient times, the courtyard dwellings were built according to the traditional concepts of the five elements of metal, wood, water, fire, and earth, which were believed to compose the universe. The main gate of a house was placed at the southeast corner, which was the "wind" corner, and the house was built to face the south with the main building on the north side, which was believed to belong to "water."
element to prevent fire. Similarly, the east orientation is assigned to metal, which needs fire to be cast. Thus, the kitchen is located on the east end of the external court to utilize the fires in the kitchen. The concept of five elements originated from Taoism.

Similar concepts appear in feng shui, which is an ancient Chinese theory utilized to determine geographical location of a town, village, houses, or buildings. It relates to the correlation between ecology, environment, and the habitants. The theory indicates that the geographical features between mountain and water in nature would yield a certain amount of energy (qi), which benefits habitants. Such energy, if utilized appropriately, could have advantageous results for the dwellers.

One instrument used to measure and evaluate feng shui is the “bagua,” which comes from the book of “Yijing”. Bagua (see Figure 7) has eight diagrams of divination, consisting of an arrangement of single and divided lines in eight groups of three lines. These eight diagrams signify auspicious and wicked orientation that would affect the occupants. In feng shui theory, the southeast corner in the bagua diagram is the top auspicious spot that should be used as the orientation particularly for the entrance gate to allow fortune in (see Figure 7).

![Figure 7. Bagua and the entrance of the courtyard house. Diagrams by Chiu-Shui Chan and Ying Xiong.](image)

The Chinese traditionally also believe that the north-south axis is the best and most fortunate orientation. Therefore, all buildings, which are guided by the central axis spatial layout, would be arranged along the north-south orientation with the main façade facing south. This serves as the design guide. As a result, courtyard houses would have a south orientation with the entrance on the southeast corner. This layout principle dominates the form of a neighborhood, which is called “hutong” in Beijing.

A hutong is an alley that runs east-west. Detailed descriptions of hutong can be found on the Beijingculture.com Web page. All the houses in a hutong are typically arranged according to the same layout principle of southern exposure. For those houses located on the south side of the alley, they would build access path running in between the units from north to south to obtain the benefit of southern exposure and southeastern entrance gate.

From an urban planning perspective, hutong is the cluster of courtyard houses that constitutes the unit of a neighborhood. Each hutong has a unique name representing the occupations of the residents. According to the old sayings, each hutong has its own well, which is the central place for social and public gathering in the neighborhood.

Figure 8 is a satellite image of the inner city of Beijing taken on February 6, 2002. The vertical main street is North Dongdan Street or Dongdan Bei Da Jian. The blocks on the right side are clusters of various courtyard houses. The horizontal secondary streets are “hutong” running east-west. The width of a hutong is around six to seven meters. The urban fabric among these four hutong areas is very homogeneous and uniform, compared to the modern commercial blocks on the left side of the figure.
4.5 Functions and sustainability

The spatial layouts of courtyard houses were governed by the dominant convention of arranging the dwelling components by status, rank, and privacy. The owner or the senior of the house uses the main room located in the middle of the north wing of the inner court facing south. With prevailing winds coming from southeast in the summer and northwest in the winter, this main room is the best spot that gets the most warm sunshine in the winter and cool breezes in the summer. The rooms on the east wing have late afternoon sunshine from the west, which also are good rooms in the complex.

In the inner court, there are gardens with trees, plants, rocks, or fish tanks. Megranate is a popular tree planted to shade the area from the strong, hot summer sunshine. The tree’s red blossoms also mirror the popular building color in Beijing. In terms of sustainability, a courtyard house benefits the most from the environment. This is yet another reason it has remained popular in Beijing for such a long time.

5. Current Challenges

Since 1949, not many typical courtyard houses have been built in Beijing due to the following challenges.

- Cultural changes: The concept of Chinese cosmology is fading. Feudalism was condemned during the Cultural Revolution. However, Chinese people still respect and retain the traditional ethical principles in their family units.

- Family planning and social changes: The one-child policy has changed the family structure. Courtyard housing is not appropriate for a small family. Grandparents now rarely live with their children and grandchildren under the same roof, so there is no demand for a courtyard house in modern Chinese society.

- New technology and changes in building materials: New concrete, brick, and mosaic materials have been used to replace wood and tile. Tiled roofs are rarely used in modern construction.

- Market values: The market value of land in downtown Beijing has increased dramatically due to the high demand for commercial development. Thus, most historical courtyard houses have been torn down for new construction of high-rise buildings to get high volume ratio and high density for good profit. Because of this, it is extremely expensive to build a new courtyard house in the downtown area, and the owner must have special connections to get building permits.
• Beijing planning strategy: From 1949 to 1953, the master plan developed by the city determined all planning strategies. The central concept was to develop Beijing as the political, economic and cultural center of China. For the inner city, where most of the courtyard houses were located, the key strategy was to fully use current facilities and maintain the original street structures to retain the historical appearance. But, due to the past 50 years of rapid population growth, the inner city is being forced to tear down old houses to widen hutongs for increased traffic and put up highrise buildings to increase the building density to improve working, living, and commercial environments.

• Accessibility: All buildings in a courtyard house rest on platforms and terraces. Made from stone, brick, or concrete, the platforms and terraces cause accessibility issues for the physically impaired.

Affected by western architectural education, most architecture schools in China are adopting creative approaches to develop other types of housing. Architectural students learn the concepts of courtyard housing through Chinese history courses. Rarely has courtyard housing been regarded as an exciting project for studio teaching. Architectural design firms have seldom received design commissions for courtyard houses due to the costs involved. (Sources were obtained from conversations with the Beijing Municipal Commission of Urban Planning in Beijing in July 2001.) Therefore, the challenge is to provide incentives to students and firms to pursue the preservation or construction of courtyard housing.

Conclusions

Courtyard housing is the art of architecture in Beijing. It reflects a rich set of imagery appearing in the use of diversified ornaments and details to enrich residents’ lifestyle. For elderly residents of Beijing, it demonstrates their pursuit of the best quality of life in a peaceful way to reach eternity between heaven and earth. It also creates an inward-focused universe that is isolated from the public streets. Spiritual inspiration occurs in the center court of the house, which is located in Beijing, the symbolic center of China, which in Chinese cosmology is the center of the universe. The first word (Jong) of the Chinese name for China means the center of the objects or the world, which represents Chinese ideology.

Facing modern challenges of urbanization, commercialization, technological advances and population pressures, courtyard housing is gradually vanishing in urban areas. In Beijing, most of the courtyard houses are torn down in favor of new construction, and the historical value of hutong is disappearing. It is difficult to keep the courtyard houses in downtown Beijing. But it is vital to Beijing’s and China’s historical and cultural heritage to maintain examples of courtyard housing and hutong. Particularly, courtyard housing is the representative building type in Beijing and the symbol of residential housing in China.

One example of preservation is YingYuTang, which is an old house built around 1800-1835 in Anhui province. This two-story building has symmetrical layouts along a strong central axis with a narrow open court in the middle for sunshine, breeze, and ventilation. Even though it is not an authentic single-story courtyard house with a centered open court, the Peabody Essex Museum in Salem, Massachusetts sponsored a preservation plan to move the entire house from Anhui and re-erected it in the museum. The purpose is to foster global awareness and understanding of Chinese culture. Another example is the preservation strategy for the twenty-five district areas in the northwestern corner of the inner city of Beijing, initiated by the Beijing Municipal Commission of Urban Planning. The authors hope additional efforts to preserve the old city of Beijing will soon be under way.

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The house included in this article was done by a site survey class led by Ying Xiong, an associate professor in the Department of Architecture, Beijing Polytechnic University, in the summer of 2002.

Notes


3 Ibid., p. 152, and p. 172.


6 Information was based on the students’ survey data collected from the owner in the summer of 2002.

7 Nelson Wu, *Chinese and Indian architecture; the city of man, the Mountain of God, and the realm of the immortals* (New York: George Braziller, 1963), 34-35.


17 Chan, *Continuity and Change*, p. 6.


20 Chan, *Continuity and Change*, p. 6.


23 Ibid., 23-25.
24 Ibid., 23-25.

25 Little, *Taoism and the Art of China*, p, 139.


28 The concept of hutong was initiated in the Yuan Dynasty. The Emperor regulated the distance between the centers of two hutongs must be 50 steps, and 24, 12, 6 for the width of main streets, minor streets, and hutong respectively. The scale of one step equals 1.54 meters. Thus the width of a building site between hutong is 50-6=44 steps or 67.76 meters. This information was from a book entitled: Xi Jin Zhi by Xiong MengXiang, published in Ming Dynasty. Later, Ming and Qing dynasties did follow this concept conventionally. Therefore, the neighborhood layout is standardized and uniformed.
