Influences of Planning Policies on Community Shaping in China: From Past to Present

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Abstract In China, as in other countries of the world, communities, which are often considered as self-governing social organizations, are shaped and influenced by many factors. Different from other studies, this paper approaches the issue of community shaping from a planning perspective and tries to answer the questions of how Chinese communities have been physically shaped throughout history and what influences the planning policies have on communities' scales, forms, and functions. Hereby, the planning policies concern not only the spatial organization, but also the social management of communities. The research is elaborated chronologically, dividing the history of community development in China roughly into four periods according to socio-economic development trends, planning objectives, and community characters. The narration is mainly based on literature work and case studies, with a focus on the social and spatial characters of urban communities. The paper concludes that before the modernization of China, Chinese communities were mainly shaped into a gated *Li-Fang* pattern by traditional city building principles, in accordance with the regulations on social management, in spite of the terminological changes in different dynasties and the opening of gated communities during certain dynasties. In the thirty years of the planned economy, Chinese communities were mainly shaped into inward *Danwei* (or work unit) communities of perimeter blocks by the urban planning institution, which was regarded as a technical tool of the planned socio-economic development to support national industrialization. In the next thirty years of economic transition, Chinese communities were further shaped into gated commodity housing communities of super blocks under the influence of reforms and the guidance of urban planning regulations. In the period of new urbanization, Chinese communities face the challenge of transforming towards a dense grid, with narrow streets and small blocks, and promoting public engagement in community building, in view of the requirements for quality-oriented development.

Keywords community shaping; planning policy; social management; spatial organization; Chinese cities

In China, as in other countries of the world, communities, which are often considered as self-governing social organizations, are shaped and influenced by many factors. Scholars have made analyses on this issue from different perspectives, such as from the perspectives of city history (Davis et al., 1995; Heng, 1999; Wang, 2009), social life (Dutton, 1998; Pow, 2009), urban space (Wang and Murie, 2000; Bray, 2005; Huang, 2005), urban governance (Bray, 2006; Huang, 2006; Wu, 2018), housing policy (Wu, 1996 & 2005; Lu et al., 2001), service production (Salmenkari, 2011), and architectural and urban morphology (Gaubatz, 1999; Hui, 2009; Rowe et al., 2016). Different from all these studies, this paper approaches the issue of community shaping from a planning perspective and tries to answer the questions of how Chinese communities have been physically shaped throughout history and what influences the planning policies have on communities' scales, forms, and functions. Hereby, the planning policies concern not only the spatial organization, but also the social management of communities. The research is elaborated chronologically, dividing the history of community development in China roughly into four periods according to socio-economic development trends, planning objectives, and community characters. They are: hierarchical *Li-Fang* communities shaped by traditional city building principles in the pre-modernization period before the 1900s; various *Danwei* communities shaped by urban planning for industrialization in the planned economy period from the 1950s to the 1970s; commodity housing communities shaped by market-oriented urban planning in the economic transition period from the 1980s to the 2000s; and comprehensive community improvement shaped by quality-oriented urban planning in the era of new urbanization after the 2010s. The narration is mainly based on literature work and case studies, with a focus on the social and spatial characters of urban communities in terms of scale, form, and function.

1. Pre-modernization period before the 1900s: hierarchical *Li-Fang* communities shaped by traditional city building principles

Within China's long history, the community development can be dated back to about 4,000 BC when primitive human settlements appeared. They were mostly built by tribes based on lineage relations. The first recorded settlement in a written document stems from the Shang Dynasty (1600 BC – 1046 BC) and has been verified by archeological findings in today's Henan Province (He, 1996). In the Zhou Dynasty (1046 BC – 221 BC), China's traditional principles of city building were elaborated in *Zhouli,* or *Rites of Zhou*, particularly in the *Kaogongji* chapter which includes a normative descriptions on city form, functional layout, road configuration, building codes, etc. Meanwhile, a hierarchical administrative system was also established in both the urban and rural areas of the country to facilitate the state's regime, within which *Lü* and *Li* were the basic administrative unit of urban and rural areas respectively (Li and Ren, 2014; see Table 1). Since then, this *Lü-Li* system, which

originated from a unified system of social management and spatial organization of rural settlements, became the prototype of Chinese communities until the early 20th century, despite the separation between the urban and rural systems and the variations of terminologies along with their historical evolutions, such as *Li-Fang*, *Bao-Jia*, and *Fang-Xiang*. The traditional city building principles aiming at facilitating and highlighting the regime of the state have been a decisive factor in shaping communities of Chinese cities throughout its feudal history (He, 1996).

According to the *Zhouli*, *Lü* (*Li*) was a walled and gated residential community which was composed of five *Bi* (*Lin*), a grassroots neighborhood of five households, and four *Lü* (*Li)* constituted a clan of *Zu* (*Zan*) which was configured into four wards and equivalent to 100 households (see Figure 1). In the shape of a square, both *Lü* (*Li*) and *Zu* (*Zan*) were a unified unit of social management and spatial organization of different levels, for purposes of organizing tax collection, reinforcing feudal governance, maintaining social order, and facilitating military conscription. The descriptions in the *Zhouli* also regulated the equipment of service facilities in urban communities, such as a day inn for every 10 *Lü* (*Li*), a guesthouse for every 30 *Lü* (*Li*), and a market for every 50 *Lü* (*Li*). Taking into consideration that the average family size at that moment was about 4 to 7 people, *Lü* (*Li*) was a neighborhood of 100 to 180 people, while *Zu* (*Zan*) was a clan of 400 – 700 people. The communities were mainly self-governed in line with Confucian principles, with the practice of compassion and rituals serving as a means of communal activities to foster self-cultivation and establish communal order (Rowe et al., 2016).

Table 1 The hierarchical administrative system of the Zhou Dynasty in both urban and rural areas

Urban area	Administrative unit	*Xiang*	*Zhou*	*Dang*	*Zu*	*Lü*	*Bi*
	Composition	5 *Zhou*	5 *Dang*	5 *Zu*	4 *Lü*	5 *Bi*	5 households
Rural area	Administrative unit	*Sui*	*Xian*	*Bi*	*Zan*	*Li*	*Lin*
	Composition	5 *Xian*	5 *Bi*	5 *Zan*	4 *Li*	5 *Lin*	5 households

Source: Revised based on Li and Ren, 2014.

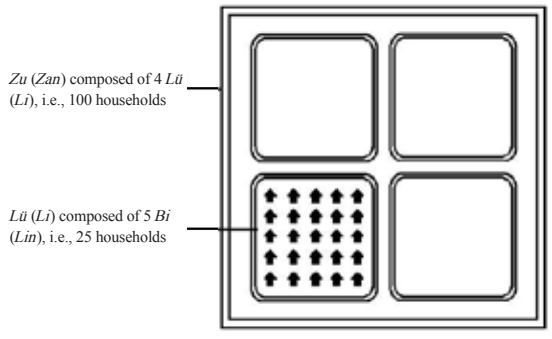

Figure 1 Li-Zu system of the Zhou Dynasty
Source: Drawn by Ong Huay Ying.

The blood and kinship relation of communities started to collapse in the Eastern Zhou Dynasty (770 BC – 221 BC) when pragmatic Legalism arose. Different from Confucianism, it advocated an autocratic state that was governed by impersonal norms and standards, instead of individual morality or blood relations. The practice of compassion or benevolence and rituals were extended from families to neighborhoods and then to a community, so that each individual was always related to others, helping to foster self-cultivation and to establish a communal order. They established a Legalistic administrative bureaucracy which included a system of mandatory population registration and the creation of mutual responsibility groups of five households for each. It meant that the five households might not be from the same clan, but they shall be responsible for each other. This collective compliance of communities was reinforced during the Qin Dynasty (221 BC – 206 BC) when *Li*, as a walled and gated neighborhood, became territorialized, leading to the differentiation between an inclusive and an exclusive community (Rowe et al., 2016).

The social relation-based communities, rather than kindship-based ones, were further developed in the period of Three Kingdoms (220 – 280) when frequent wars forced people to move to remote areas and build new settlements for self-defense. Due to the displacement, these new settlements were usually composed of people from various social hierarchies, including elite clans and non-family elements, such as household staff, soldiers, and commoners. This resulted in the rising of communitarians who believed that the order of communities should be maintained through self-governance for mutual cohesion and consensus. Religions, such as Buddhism and Taoism, became the bonds of collective, and community leaders were elected through recommendation based on reputation as an emblematic of a collective unity.

Although the term *Fang* was used to describe urban communities of ancient Chinese cities since the Eastern Han Dynasty (25 – 220), sometimes even replacing the term *Li*, *Lü-Li* remained the official terminology until it was renamed *Li-Fang* in the Sui Dynasty (581 – 618), which was popularized in the Tang Dynasty (618 – 907). Different from the *Lü-Li* system which guided the social management and spatial organization of the communities in both urban and rural areas, the *Li-Fang* system was mainly used to guide the shaping of urban communities in two aspects: *Li* more as a unit of social

management, while Fang more as unit of spatial organization. Since then, the units of social management were gradually separated from the units of spatial organization in the physical environment. Meanwhile, compared with *Lü* (*Li*), both the size, quantity, and density of *Li-Fang* remarkably increased due to the enlargement of cities, and the functions of *Li-Fang* also changed accordingly. For example, Chang'an City, the capital of the Tang Dynasty, was laid out according to the traditional Chinese city building principles depicted in the *Kaogongji* chapter. It was composed of 108 *Li-Fang* delimited regularly by a chess-board grid, with a *Li* being composed of 100 households, while a *Fang* was composed of 1,000 – 2,000 households, sometimes even over 5,000 households (Li, 2010), and the land areas varied from 26.7 ha to 94.3 ha (He, 1996). Both *Li* and *Fang* were walled and gated communities and were under the administration of a *Li* or *Fang* leader respectively, with *Li* as a uniquely residential community, while *Fang* was a multi-functional community including market *Fang* for instance (see Figure 2). The differentiation between *Li* and *Fang* inadvertently led to the social segregation of housing, separating the commoners from the royals, government officers, official residences, military barracks, and storehouses.

As the *Li-Fang* system was a governance mechanism based on law enforcement and civil control at the grassroots level, and concerned about the two aspects of social management and spatial organization, it had prevailed through the following Dynasties until the Qing Dynasty with different variations. It should be noted that the Song Dynasty (960 – 1279) witnessed remarkable transformations of the physical environment along with the prosperity of commercial activities. Some of the once walled and gated *Li* and *Fang* were opened to have a direct access to the arterial street. This led to the rising of commercial streets and mixed land use within the communities, as depicted by Zhang Zeduan in his famous painting, *Riverside Scene at Qingming Festival* in the city of Dongjing (now Kaifeng), the capital of the Northern Song Dynasty. Consequently, the spatial pattern of an open ward-lane community was invented for pre-modern urban neighborhoods, replacing some of the previous closed and inward *Li* and *Fang*. However, the openness of the *Li-Fang* system was not completed afterwards due to the slow development of market economy, as well as due to strict requirements in city governance.

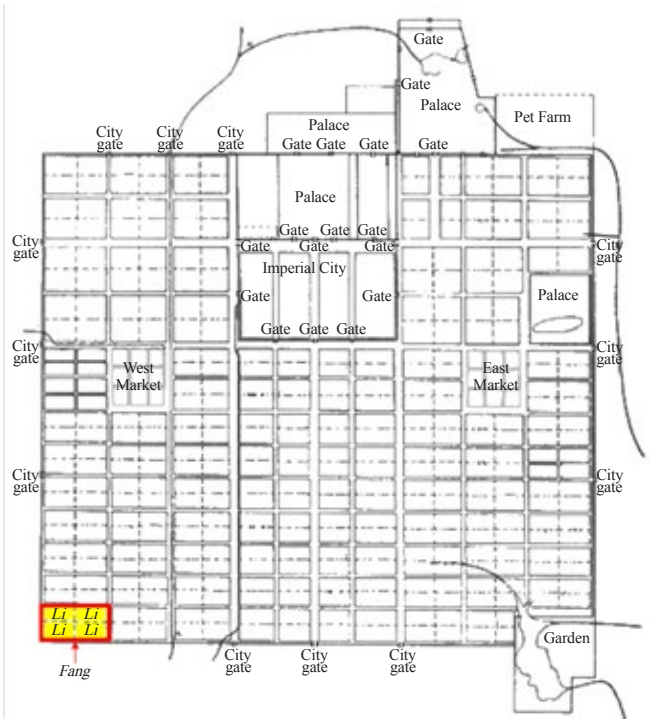

Figure 2 The layout of the *Li-Fang* pattern in Chang'an City of the Tang Dynasty

Source: Drawn by Ong Huay Ying based on He, 1996.

Today, the influences of traditional city building principles on the community shaping of feudalistic Chinese cities are still visible in the layout of the Old City of Beijing. As China's capital city in the Yuan (1267 – 1368), Ming (1368 – 1664), and Qing (1616 – 1911) dynasties, Beijing was planned and built strictly according to traditional Chinese city building principles depicted in the *Kaogongji* chapter, even though the city was shifted and expanded southward in the Ming Dynasty. Being a walled city covering an area of 62 km^2, it was geometrically laid out along a central axis of 7.8 km long and spatially zoned in a concentric way according to social hierarchy, starting from the Forbidden City for the Emperor at the center, followed by the Imperial City for the imperial families, the Inner City for the nobles, and the Outer City for civilians. Its functional layout was based on a hierarchical road grid, with the Palace at the center, the Temple of Ancestors to its left, the Altar of Grains to its right, the Court in its front, and the Market to its back. Apart from the capital functions, neighborhoods and communities were developed simultaneously within the areas delimited by the hierarchical road grid, along with the construction of courtyard houses by individuals according to the building codes for architectural facade, height, style, material, color, etc., which also distinguished the differentiation of social classes. In the physical environment, the social management system was further separated from the spatial organization system. In terms of social management, communities were organized according to the *Pai-Jia* system based on population size, with 10 households for one *Pai,* 10 *Pai* for one *Jia,* and 10 *Jia* for one *Bao*. In terms of spatial organization,

neighborhoods were organized according to the *Fang-Xiang* system based on a hierarchical principle. Several courtyard houses were linked by a Hutong to form one *xiang* (a neighborhood served by a lane), several Hutong neighborhoods linked by streets to form one *Fang* (an urban block or ward served by streets), and several wards linked by avenues to form a city (see Figure 3). In view of the demographic scale of Beijing, the size and density of its communities increased and the hierarchy of its community system became more complicated.

2. Planned economy period from the 1950s to the 1970s: various *Danwei* communities shaped by the planning for industrialization

After China initiated its modernization in the mid-19th century, along with the process of colonization, modern urban planning was introduced to China from the West in the early 20th century (Liu, 2014). The way of community shaping in Chinese cities completely changed. As China adopted a planned economy system and implemented the industrialization strategy since the 1950s, during the Cold War, the *Danwei* became the unit of the country's socio-economic development. It played a decisive role in industrial production and social management, as well as in spatial organization (Bjorklund, 1986; Bray, 2005; Bonino and De Pieri, 2015), in the thirty years of the planned economy until the end of the 1970s. Socially, it was responsible for all the social welfare of employees including public services and housing allocation, acting in some sense as a "micro-government" at the grassroots level. Physically, it often referred to gated compounds in blocks integrating employees' working with living on closed territories. Both then led to the emergence of the *Danwei* community, a new kind of self-contained community. At the same time, for the purpose of turning consummative cities into productive cities, modern urban planning was taken as a technical tool of planned socio-economic development to support industrialization. It was quickly developed in China with the help of the former Soviet Union, being applied to guiding both the construction of industrial cities and *Danwei* communities. Moreover, a new community administration system was set up in 1954 according to the *Ordinance on the Urban Residents' Committee* promulgated by China's State Council. The Urban Residents' Committee became the autonomous organization of local residents for self-management, self-education, and self-service. In line with the principle of facilitating self-governance, it was composed of 100 to 700 households according to the actual situation of habitation, which could be further divided into a maximum of 17 small neighborhoods, each with 15 – 40 households. Its establishment, annulment, and adjustment were to be decided by the local district or city government and its operation was to be under the guidance of the local governmental agency, i.e., sub-district office.

Compared with the traditional *Li-Fang* community, the *Danwei* community was a new spatial system of a residential quarter in blocks with multiple functions, though it maintained gated and closed in spatial form. It was planned and built by either government agencies or state-owned enterprises with public investments, following the theory of Neighborhood Unit which was put forward in the 1920s by Clarence Perry, an American architect. Being housing construction equipped with public services, it was large in scale and mixed in functional composition. In terms of spatial organization, it was either part of a mixed compound with both working and living facilities, or a compound of living facilities neighboring working facilities (see Figure 4). In terms of social management, it could be under the administration of one or several residents' committees according to the quantity of households it hosted, which ran under the direction of a local sub-district offices and enterprises as well (Hamama et al., 2019).

The development of *Danwei* communities in Beijing during the 1950s to the 1970s can be taken as an example to justify the influences of planning, a technical tool serving the socio-economic

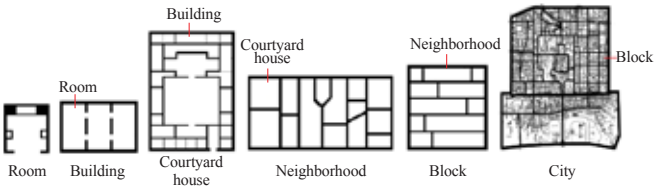

Figure 3 The composition of the Old City of Beijing based on the *Fang-Xiang* system
Source: Drawn by Ong Huay Ying.

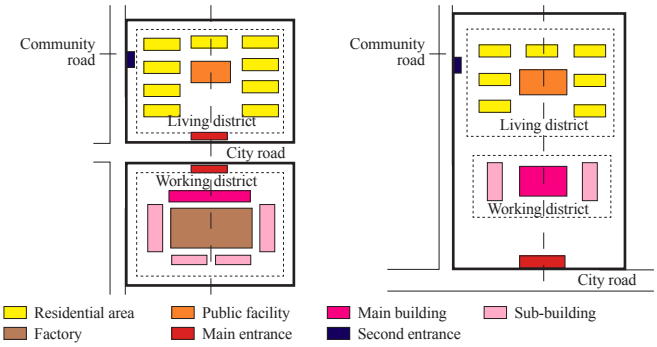

Figure 4 Different spatial patterns of *Danwei* community
Source: Revised by Ong Huay Ying based on Zhang et al., 2009.

development, on community shaping. Till 1949, Beijing was not an industrial city and most of its communities were in the form of the traditional *Fang-Xiang* system. There were only very few industrial enterprises scaled to more than 100 employees and the industrial workers only accounted for a very small part of its urban population, making its industries play an insignificant role in either the socio-economic development or the spatial development of the city. After becoming the capital of the People's Republic of China in 1949 and in line with the national strategy of industrialization, Beijing was declared to be "not only a political center, but also a cultural, scientific, and artistic city, as well as an industrial city." Since then, thanks to a series of city planning schemes issued in the 1950s, industrial development became one of the key goals of Beijing's urban development and the industrial layout became one of the key contents of its urban planning (Liu, 2015). A number of industrial zones were planned and developed on the periphery of the urban center, including Jiuxianqiao in the northeast for electronic engineering industries, Tonghui River North and South in the east for textile and chemical engineering industries, Fatou in the southeast for chemical engineering industries, Dahongmen in the south for leather processing industries, Fengtai and Yamenkou in the southwest for logistics and mechanical engineering industries respectively, and Shijingshan in the west for metallurgy manufacturing industries. By the end of 1957, these industrial zones occupied a land of 14.9 km^2 and hosted 67 industrial enterprises of over 1,000 employees. Meanwhile, in order to facilitate the organization of industrial production, a number of large-scale residential areas, i.e., *Danwei* communities, were built up nearby, following the principle of integrating working with living (Wang and Chai, 2009). These communities include Balizhuang, Shilipu, and Baijiazhuang in the east, Jiuxianqiao in the northeast, Sanlihe and Baiwangzhuang in the west, and North Taipingzhuang and Hepingli in the north (see Figure 5).

These *Danwei* communities were mostly in the form of an inward territory, regardless of being walled and gated or not, in order to facilitate the community management by the enterprises to which they belonged. Implementing the Neighborhood Unit theory, they were delimited by urban arteries and equipped with an internal grid, so as to get rid of the disturbance of by-pass traffic. They were composed of several residential blocks, with multi-leveled apartment buildings on the perimeter of each, surrounded by either a garden or a square as semi-public space, or a kindergarten or a boiler or electricity room as affiliated public utility. There were also blocks at the center of communities dedicated to public facilities, such as parks, a primary or middle school, clinic, post office, bank, and market, whose type and scale were decided by the quantity of local residents. Thus, when communities were walled and gated, they would form quite large-scale multi-functional and self-contained compounds, i.e., the so-called "*Dayuan* (big-yard compound)." The prototype *Danwei* community, including the big-yard compound, was adopted by not only industrial enterprises but also governmental agencies, research institutes, and universities. The campus of Tsinghua University is a typical example of the big-yard compound of the *Danwei* community. Expanding gradually since the 1950s, it now covers an area of about 4 km^2 to accommodate about 80,000 residents, including most of its students, some of its staff and their families, a set of teaching and research facilities, and almost all kinds of public facilities for daily life. Its social management is conducted by eight residents' committees under the direct guidance of one sub-district office and the university authority as well.

3. Economic transition period from the 1980s to the 2000s: commodity housing communities shaped by market-oriented planning

In the following thirty years from 1980 to 2009, thanks to the reform and opening-up initiated in the late 1970s, China had undergone an accelerating process of urbanization supported by a sustained economic growth. On average, the urbanization rate increased annually by one percentage point, implying an annual migration of 14 million people from the countryside to cities. Together with increasing demands for a higher living standard, this resulted in huge urban constructions to provide them with houses

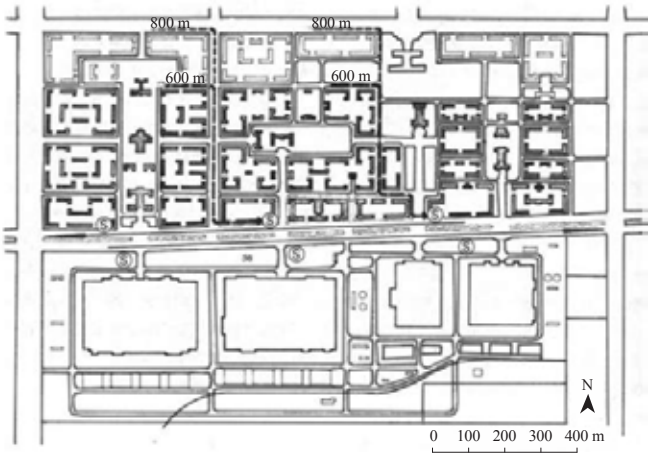

Figure 5 Typical *Danwei* communities neighboring factories in the east of Beijing
Source: Zhang et al., 2009.

and jobs, as well as various services, with the volume of the newly completed floor area doubling or even tripling every five years. For example, in order to tackle the issue of housing shortage due to the slow housing development in the planned economy period, Chinese cities made a huge investment in housing construction in these thirty years. The annual completed housing floor area increased from 172.6 million m^2 in 1982 to 886.4 million m^2 in 2009, with a total of 12.4 billion m^2 and an annual average of 442.7 million m^2 in 28 years. At the same time, the national housing floor area per capita increased from 6.3 m^2 in 1988 to 23.7 m^2 in 2007.

In order to facilitate the transformation from a planned to a market economy, China had simultaneously implemented a series of critical reforms in many aspects of its socio-economic development, some of which played a significant role in the transformation of its urban communities, in terms of both social management and spatial organization. For example, the housing system reform initiated in 1980 characterized by the commercialization of housing changed the mode of housing supply from the free allocation by the government or *Danwei* as social welfare to being available for purchase as a commodity by individuals on the market after 1994 (Wang and Murie, 1999; Deng et al., 2011). In the 15 years from 1995 to 2009, the share of commodity housing as a percentage of newly completed floor area increased from 29.0% to 67.3%, with an annual increase of 2.6 percentage points, from less than one-third to more than two-thirds of the total. The land system reform marked by the promulgation of the *Land Administration Law* in 1986, as well as its amendments and revisions in the following years, changed the mode of construction land utilization from free land use to land use at compensation after 1988. The enterprise system reform conducted in succession since 1978 to establish a modern enterprise system, characterized by the elaboration of property rights, the clarification of rights and responsibilities, the separation of government and enterprise, and the scientific management, changed the role of the *Danwei* from a "micro-government" to an independent market entity, with its responsibility of providing its employees with a full set of social welfare including housing and public services being returned to either the government or the society.

As a consequence, the hierarchical administration system composed of the city government, district government, sub-district office, and residents' committee, which was originally established in the period of the planned economy based on the *Danwei*, gradually showed its inadaptability to the new situation of the market economy, though the *Law of Urban Residents' Committee Organization* promulgated in 1989 reaffirmed the role of the urban residents' committee as the autonomous organization of local residents for self-management, self-education, and self-service. Along with the withdrawal of *Danwei* from the social management of urban communities (Tian and Lu, 2009) and the proceeding of housing privatization, both sub-district offices and local residents' committees appeared incapable of providing urban communities with basic public services, which was once the responsibility of either the *Danwei* or of certain local governmental agencies. Under these circumstances, the *Shequ* (i.e., community) sociological theory was introduced from the West to China in the late 1980s, in the hope of taking the place of the *Danwei* and local governmental agencies in public service supplying and complementing the incapabilities of the existing community administration system (Jiang and Hu, 2002; Tong and Zhao, 2006). In 2000, the *Opinions on Promoting Community Building Nationwide* issued by the Ministry of Civil Affairs clarified the definition of community and its relationship with the residents' committee, as well as the connotation of community building. In 2003, the *Property Management Ordinance* promulgated by the State Council legalized the Proprietors' Committee (also known as Owners' Committee) as a new kind of self-governance organization in commodity housing communities and regulated its rights and responsibilities in the property management of commodity housing communities, as well as its relationship with local residents' committees. This marked the beginning of community management with public participation under the new situation of housing privatization and commercialization.

Meanwhile, in terms of spatial organization, the *Code for Urban Residential Areas Planning & Design* (*Code GB 50180-93* hereinafter) was issued in 1993 and then revised in 2002, based on the *Urban Planning Law* promulgated in 1989, aiming at regulating the large-scale construction of residential areas under the circumstance of housing commercialization. However, in spite of the reform and opening-up, the *Code GB 50180-93* still had a strong planning ideology. It advocated a three-level hierarchical community system composed of the *Juzhu Qu* (residential district), *Juzhu Xiaoqu* (residential quarter), and *Juzhu Zutuan* (residential cluster), which were categorized according to the quantities of both households and residents (see Table 2) corresponding respectively to the service of a middle school, a primary school, and a kindergarten. A set of public facilities was also listed to be equipped in the three-level communities, for the purpose of supporting the development of complete and self-contained communities, and the technical tool of a thousand-residents quota was applied to regulate the capacity of each kind of public facility.

Among the planning and design codes in the *Code GB 50180-93*, two have had a particular strong influence on the physical form of communities, i.e., the quota of sunlight spacing and residential land-use per capita. The quota of sunlight spacing refers to the minimum distance between two neighboring buildings latitudinally laid out, which allows the natural sunshine of certain hours during a certain period through a full window on the ground floor of the back-row building on the day of either Winter Solstice or Great Cold. This rule is represented by the sunlight spacing coefficient which is the proportion of the height of the front-row building to the perpendicular distance between two buildings. As the required minimum natural sunshine time varies from one hour to three hours in different climate zones and according to the population size of cities, the quota of sunshine spacing also varies from one climate zone to another, according to the orientation of buildings (see Table 3). For example, the standard sunlight spacing coefficient of Beijing, i.e., that for south-north oriented housing of new constructions, is 1.7, while that of Shanghai is 1.2 and that of Harbin is 1.8. In spite of the variations, the quota of sunshine spacing results, without exception, in the decrease of east-west oriented buildings and the disappearance of perimeter blocks, as well as the popularization of south-north oriented barracks with quite large open space between them. The quota of residential land use per capita refers to the land use area per capita for residential use, including housing, public facility, road, and green land, which also varies according to climate zones, residential community levels, and the number of housing floors, with the more the housing floors, the smaller the quota. Thus, under the circumstances of land use at compensation and housing commercialization, the quota of residential land use per capita inevitably results in the preference for high-rise buildings, rather than multi-story or low-rise buildings, so as to maximize the floor area on the same land area.

In the case of Beijing, the city went through a rapid process of suburbanization from 1980 to 2009, which was physically characterized by continuous urban expansion under the driving forces of economic restructuring and demographic growth. Statistics show an annual demographic increase of 360,000 and an annual construction land increase of 37.3 km^2 in a mono-centered pattern during this period of time. In order to settle the problems caused by the continuous mono-centered urban expansion, including serious housing shortage, the city master plans of 1993 and 2004 highlighted in succession the policy of decentralization through regional development. As a result, when the Old City of Beijing was undergoing urban renovations in different ways, large-scale urban constructions took place in suburban areas, including commodity housing development projects in the form of "mega-communities" (Lin, 2006) following the suburbanization of industries. Among them, Fangzhuang and Huilongguan, built respectively in the mid-1980s and late 1990s, can be taken as typical examples.

Located to the southeast of the Old City of Beijing, Fangzhuang residential area is the first large-scale and multi-functional community built up through planning with due attention to new requirements for modern facilities, societal life, and commercial management after the reform and opening-up (Wu, 1987). The construction was

Table 2 Category of the three-level community system in terms of household and resident: a comparison between the *Code GB 50180-93* and its revision in 2002

	Household quantity		Resident quantity	
	1993	2002	1993	2002
Residential district	10,000 – 15,000	10,000 – 16,000	30,000 – 50,000	30,000 – 50,000
Residential quarter	2,000 – 4,000	3,000 – 5,000	7,000 – 15,000	10,000 – 15,000
Residential cluster	300 – 700	300 – 1,000	1,000 – 3,000	1,000 – 3,000

Source: The *Code GB 50180-93* and its revision in 2002.

Table 3 Regulations on natural sunlight time

Architectural category of Climate Zones	I, II, III & IV Climate Zones		IV Climate Zone		V & VI Climate Zones
	Big city	Medium- & small-sized cities	Big city	Medium- & small-sized cities	
Standard day	Day of Great Cold			Day of Winter Solstice	
Sunshine time	≥ 2 h	≥ 3 h		≥ 1 h	
Effective sunshine period	From 8 am to 4 pm			From 9 am to 3 pm	
Base point	Lower windowsill				

Source: The *Code GB 50180-93* and its revision in 2002.

initiated in 1985 after the housing commercialization reform was implemented in certain cities and was finished about ten years later before the policy of housing commercialization was implemented all over the country. At the transition period of housing privatization and commercialization, the planning of Fangzhuang abandoned the prototype of Danwei community and adopted the three-level community system of the *Juzhu Qu*, *Juzhu Xiaoqu*, and *Juzhu Zutuan*, though the *Code GB 50180-93* was not officially issued yet. Covering a planned area of 2 km^2 which was delimited by four urban arteries and divided into four parts by two crisscrossing artery roads, this residential district, as a completed mega-community, is composed of four residential quarters, accommodating a total of 76,000 residents. Centering on a park of 6.5 ha, each of the four residential quarters, a self-contained unit served by inward road system to get rid of by-pass traffic, is further divided into several residential clusters which are either centered on a green land or linked by a green belt (see Figure 6). This spatial organization corresponded well to the new management system of the Fangzhuang Management Committee, the predecessor of the Fangzhuang Sub-District Office, which took the responsibility of social management of the community in collaboration with the local residents' committees. Its planned built floor area is 2.66 million m^2, including 1.81 million m^2 for housing and 0.85 million m^2 for public facilities, such as shops and markets, hospitals and clinics, high, middle, and primary schools, kindergartens, and sports centers, as well as hotels and offices (Wu, 1987). Moreover, facing the rising housing market under the circumstance of housing commercialization, it adopted an architectural typology of high density and high-rise buildings, so as to have more floor area. 80% of its buildings were planned to be high-rises, which were interwoven with a number of multi-story and low-rise buildings in barrack style. All these made it distinguished, in physical term, from the prototype of the Danwei community which was physically characterized by perimeter blocks, though both were planned to be gated and self-contained. Nowadays, it is a built-up area of 3.14 km^2 composed of 15 communities (or residents' committees), hosting a population of around 100,000 (Xu, 2013).

Different from Fangzhuang, Huilongguan, officially named as Huilongguan Cultural Residential Area, is an updated mega-community under the circumstance of complete housing commercialization. It was the biggest one of the 19 economically affordable housing projects announced by the Municipal Government of Beijing in 1998, located in Huilongguan Town of Changping District to the northwest of Beijing's urban center, not far away from Zhongguancun Science Park, a national-level High-Tech Industrial Development Zone established in 1988. Covering a construct-

Figure 6 Site plan of Fangzhuang residential area
Source: Revised by the author based on Wu, 1987.

ible land area of 11.23 km^2, it was planned to be a comprehensive urban area with multiple functions including residence, employment, study, and recreation and with a complete set of public and commercial facilities including roads and parks, accommodating a population of 230,000 on a floor area of 8 million m^2, to serve Zhongguancun Science Park. The spatial organization of its residential areas were under the guidance of the *Code GB 50180-93* and its revision in 2002, with a number of gated residential quarters delimited by the road grid (see Figure 7). Its construction was initiated in 1999. By the end of 2007, a floor area of 4.88 million m^2 was completed, accounting for more than 60% of the planned quota. It includes 4.42 million m^2 was for 38,000 apartments and 460,000 m^2 for public and commercial facilities for education, administration, health care, civil utility, community service, etc., all of which were organized into 31 residential quarters (Wang, 2008). Same as Fangzhuang, it adopted the spatial layout of gated community in barrack style. But different from Fangzhuang, it adopted the architectural typology of multi-story buildings in order to be

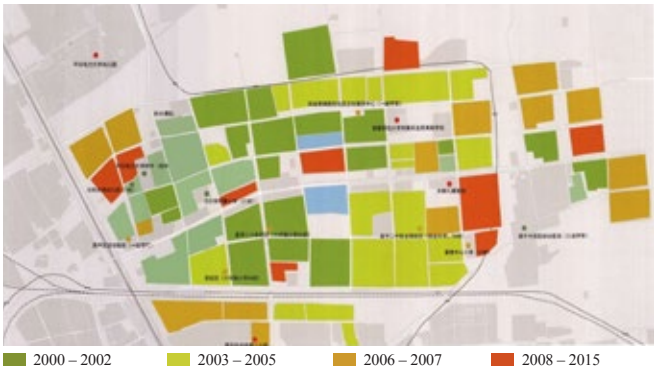

Figure 7 Phasing of completion of Huilongguan Cultural Residential Area
Source: Revised by Ong Huay Ying based on Wang and Wang, 2018.

more competitive in market. Nowadays, it accommodates more than 400,000 people under the administration of two sub-district offices and keeps the identity of the biggest economically affordable housing project of Beijing and a mega-residential community.

4. New urbanization period after the 2010s: comprehensive community improvement shaped by quality-oriented planning

In 2011, after its urbanization rate surpassed 50%, China welcomed the coming of the urban society. In view of problems occurring during the process of urbanization in a traditional mode, the Chinese government issued the policy of new urbanization in 2014, in the hope of improving the quality of urbanization. New urbanization advocates a people-oriented urbanization to ensure equity and sharing, to ensure the synchronous development of informatization, industrialization, urbanization, and agricultural modernization, and to ensure the balance between urban and rural areas and among various regions. It also highlights a reasonable city layout to ensure intensive and efficient land use, the ecological civilization to ensure green development, recycling development, and low-carbon development, and the cultural continuity to ensure local identity. The new policy implies that future trends of urbanization would shift from economy-oriented to human-oriented, from quantity-oriented to quality-oriented, from disregarding the environment to being environment-friendly, and from increment-oriented to inventory-oriented. Its influences on the community building of Chinese cities were then presented in various aspects, including the improvement of the physical environment of residential areas and the rising of public participation in community life.

Considering that large-scale gated or inward communities, including both the *Danwei* communities of big-yard compound and the mega-communities of commodity housing, became a kind of thrombus worsening the traffic jam in cities, in particular the mega and big ones, and hindered land use efficiency on the market because of their enclosure to the surrounding areas, the National City Working Meeting held in Beijing in 2015 proposed the development of a *Jie-qu* (lane-block) system. The concept was reaffirmed in the following year by the *Opinions on Further Strengthening Urban Planning, Construction and Management Works*, which required the opening of existing big-yard compounds and prohibited the construction of new gated communities in the future. Different from the spatial pattern of the traditional *Danwei* and mega-communities characterized by a sparse grid, wide roads, and super blocks, the *Jie-qu* (lane-block) system is a new spatial pattern featuring a dense grid, narrow streets, and small blocks, which is more adaptable to the traffic situation and the land market of modern cities. However, the implementation of this policy brought about wide debates in Chinese society, with concerns on the issues of property right, privacy, and security, especially regarding the opening-up of the existing gated communities. The introduction to the planning practice of Barcelona from small blocks to super blocks for the purpose of making streets more pedestrian-friendly furthered the debates (Liao and Cai, 2018).

Under the new circumstances, the *Code GB 50180-93* was revised again since 2016 and officially announced in 2018. In order to be in line with the requirements of new urbanization for quality-oriented development and to be more adaptable to the market environment, the new *Code GB 50180-93* tries to decrease its sense of planning ideology, with its role being changed from compulsory to guiding. A new four-level hierarchical community system was set up to replace the previous one consisting of the *Juzhu Qu*, *Juzhu Xiaoqu*, and *Juzhu Zutuan*, giving priority to the walking distance to local community service center, rather than only the quantities of households and residents. The new category includes 15-minute, 10-minute, and 5-minute pedestrian-scale neighborhoods and neighborhood block, with correspondence to certain number of households and residents which are comparatively smaller than the previous ones (see Table 4). Moreover, the new *Code GB 50180-93* set higher standards for green lands and public services and concerned the renewal of old housing and the quality of the living environment. All these new guiding standards were soon accepted and then implemented in the master planning of some mega-cities, such as Beijing and Shanghai, which became important references for other Chinese cities. In the same year, comments were invited for the draft version of the *Code for Residential Building*, which set up the

standards for the energy performance, comfort equipment, land use, spatial layout, building code, construction structure, and interior environment of residential buildings. It prescribes the maximum height of 80 meters for residential buildings, which would obviously prohibit the construction of super high-rise residential buildings.

While the spatial organization of China's urban communities were slowly transformed under the guidance of new policies for quality development, the social management of communities also underwent transformations along with the practice of community theory and the awareness of private property ownership (Chen et al., 2019). A remarkable representation was the increase of bottom-up public participation in the efforts of improving the quality of the living environment. On the one hand, when there are more and more people becoming owners of private housing, there appears a strong initiative from the proprietors to participate in either property management or community renovation which concerns their basic interest. For example, in the new commodity housing communities, it is quite popular that the proprietors' committee plays an active role in the negotiation with the property management company and the local residents' committee to protect the value and quality of their properties. While in the old *Danwei* communities that will be renovated, public voting by local residents is also adopted to decide the program of renovations, like the practice of the Jiuxianqiao Neighborhood in Beijing (Zhang et al., 2016). On the other hand, considering that urban renovation becomes a more and more important task under the condition of inventory-oriented urbanization and housing privatization makes it more and more difficult to conduct bull-dozer practice, local governments gradually recognize the necessity of involving the participation and contributions of the grassroots. Experiments of community building were conducted and the mechanism of community planners was implemented in various Chinese cities, including Beijing, Shanghai, Guangzhou, Qingdao, and Hefei.

In recent years in Beijing, different modes of community building within the actual community administration system were experimented at both traditional Hutong neighborhoods in the Old City and in new commodity housing communities in suburban areas (see Table 5). There were remarkable achievements of public participation in community building, concerning both the improvement of the physical environment and the strengthening of the sense of belonging (Liu et al., 2017; Liang and Luo, 2018; Zhao, 2018). The Community Planner system was implemented in succession in East, Haidian, Chaoyang Districts, which designated a professional planner to each sub-district, who would work together with academic partners from universities and colleges to provide the local communities with necessary guidance and consultation on the issues and projects regarding the improvement of living environment. Although it may take time to witness the efficiency of this new system, workshops and competitions with the involvement of local residents have shown the enthusiasm of different parties, which will surely influence the transformation of communities.

5. Conclusions

In summary, from the past to the present, among the factors influencing the community development in China, planning has always

Table 4 Community category proposed by the *Code GB 50180-93*: a comparison between the revisions in 2002 and 2018

Community hierarchy	Radius	Household quantity	Resident quantity
15-minute pedestrian-scale neighborhood	800 – 1,000	17,000 – 32,000	50,000 – 100,000
10-minute pedestrian-scale neighborhood	500	5,000 – 8,000	15,000 – 25,000
5-minute pedestrian-scale neighborhood	300	1,500 – 4,000	5,000 – 12,000
Neighborhood block	– –	300 – 1,000	1,000 – 3,000

Source: The *Code GB 50180-93* revisions in 2002 and 2018.

Table 5 Practice of community building in Beijing

	Initiators	Participants	Objects	Platform
Qinghe, Haidian District	Sub-district office + trans-disciplinary professional team	Residents + property management company + enterprises	Governance innovation + space improvement + service enhancement	New Qinghe Experiment Project
Dashilar, West District	District government	Designers + planners + architects + residents	Heritage preservation + urban revival	Beijing International Design Week
Shijia Hutong, East District	NGO + sub-district office	Residents + agency representatives + planners	Historic preservation + urban renewal	Shijia Hutong Museum + courtyard self-governance

played a critical role in community shaping in terms of scale, form, and function. In the long history before China's modernization, the traditional Chinese city building principles formulated in the West Zhou Dynasty shaped the Chinese communities into the pattern of the gated *Li-Fang* system of residential neighborhoods, in correspondence to the regulations of social management, in spite of the terminological changes in different dynasties and the opening of gated communities during the Song Dynasty. In the thirty years of the planned economy since 1949 when China took industrialization as a national strategy, Chinese communities were shaped by urban planning, as a technical tool of planned socio-economic development, into various inward and self-contained *Danwei* communities of perimeter blocks, with the *Danwei* playing the role of "micro-government" for social management. In the next thirty years of economic transition toward a socialist market economy, the land reform to land use at compensation and the housing reform to commercialization and privatization, together with urban planning becoming oriented to market development, shaped Chinese communities into gated commodity housing communities of super blocks, with the *Shequ* taking the place of the *Danwei* to be in charge of the social management of communities under the instructions of local governments. Since 2011 when China became an urban society and issued the new policy of new urbanization, the quality-oriented urban planning led Chinese communities to new transformations, including the debatable *Jie-qu* system of dense grids, narrow streets, and small blocks, with more public engagement in community building at both old and new communities. In particular, in the past four decades of transition, although Chinese communities witnessed a remarkable transformation from multi-function to mono-function and from low and multiple rise to high rise, the multi-levelled hierarchical community system originally set up in the West Zhou Dynasty never changed. ©

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Editor's note:
Glossary of Chinese titles: *Li-Fang* 里坊; *Bao-Jia* 保甲; *Fang-Xiang* 坊巷; *Lü-Li* 闾里; *Pai-Jia* 牌甲; *Pai* 牌; *Jia* 甲; *Bao* 保; *Xiang* 乡; *Zhou* 州; *Dang* 党; *Zu* 族; *Lü* 闾; *Bi* 比; *Sui* 遂; *Xian* 县; *Bi* 鄙; *Zan* 鄨; *Li* 里; *Lin* 邻; *xiang* 巷.

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