CHINESE SIHEYUAN ARCHITECTURE:

Transformation of Siheyuan during 20-21st Centuries and Its Sustainability in the Future

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Abstract

The object of the study is Chinese vernacular architecture, represented by *siheyuan* (sìhéyuàn 四合院) – a traditional type of courtyard housing in Beijing, which reflects climatic, socio-cultural, philosophical, spiritual, and aesthetic aspects of Chinese culture. This architecture today is striving for survival, being superseded by rapidly emerging modern architecture.

The thesis considers the cultural and historical phenomenon of the *siheyuan* architecture in its formation, development and present state. The research studies the traditional Chinese courtyard architecture and investigates how and why the traditional *siheyuan* housing is changing under the influence of modern trends, standards and lifestyle today. The thesis scrutinizes the mutual influence of tradition and modernity in Chinese residential architecture, analyzes and systematizes the gained data, and suggests possible ways of achieving sustainability of the built environment.

Keywords

Siheyuan, courtyard, culture, sustainability, Chinese architecture, tradition, modernity, Beijing, the Cultural Revolution, Weigai system, redevelopment, conservation, preservation, modernization.
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Among the family of architecture of the world, Chinese architecture may be considered an independent branch by itself. Its history is as long as the history of Chinese civilization.

Liang Sicheng¹

Table of Contents

INTRODUCTION .................................................................................................................... 7

1. METHODOLOGY .............................................................................................................. 9
   1.1. Aims, issues, research questions ............................................................................. 9
   1.2. Methods .................................................................................................................... 10
   1.3. Literature review ..................................................................................................... 12
   1.4. Limitations ............................................................................................................... 17

2. THE HISTORY OF SIHEYUAN AND HUTONGS ............................................................. 17

3. SUSTAINABILITY PRINCIPLES IN ARCHITECTURE .................................................. 22

4. THE CULTURAL VALUE OF BEIJING HUTONGS AND THE IMPORTANCE OF THEIR PRESERVATION ......................................................................................... 25
   4.1. The internal structure of siheyuan ............................................................................ 25
   4.2. The external structure of siheyuan .......................................................................... 26
   4.3. The social environment of siheyuan ...................................................................... 26
   4.4. Chinese philosophy reflected in the siheyuan architecture ..................................... 28

5. CHALLENGES IN PRESERVATION OF TRADITIONAL COURTYARD ARCHITECTURE IN BEIJING .............................................................................................. 32
   5.1. Space issue ............................................................................................................. 32
   5.2. Changes in ownership situation .............................................................................. 32
   5.3. Facility/comfort issue and deterioration of the buildings ........................................ 34
   5.4. Changes in society and family structures ............................................................... 36

6. PRESERVATION OF SIHEYUAN ...................................................................................... 37
   6.1. Restoration and modernization ............................................................................... 40
       6.1.1. Restoration in the Dongsi hutong ...................................................................... 40
       6.1.2. Restoration of Cai Guoqiang siheyuan ............................................................. 42
       6.1.3. Modernization in Xi rongxian hutong ............................................................... 43
       6.1.4. Modernization in Da shi lan hutong ............................................................... 44
   6.2. Adaptive reuse ........................................................................................................ 46
6.2.1. Micro Yuan’er Hutong Children’s Library and Art Centre .................. 47
6.2.2. Xiezuo Hutong Capsule Hotel ................................................. 48

6.3. Neo-siheyuan/new courtyard housing ........................................ 50
   6.3.1. Ju’er hutong ........................................................................ 51
   6.3.2. Nanchizi hutong ................................................................. 52

6.4. Modern “pseudo-siheyuan” architecture ...................................... 54
   6.4.1. Tangshan Organic Farm ..................................................... 55
   6.4.2. Cathay View Villa Estate ................................................... 56

7. DISCUSSION ................................................................................. 58

8. CONCLUSION ............................................................................... 62

REFERENCES .................................................................................. 64
Introduction

Beijing is a fast-growing dynamic metropolis where numerous elements of past and present coexist side-by-side and where the traditional gets along well with the modern. Despite the rapid development, this city tries to maintain a grip on its rich cultural heritage, which can be traced through its architecture that encompasses a wide range of styles and scales.

One of the most attractive features of the city is definitely hutongs (hútòng 胡同) – alleys formed by lines of siheyuan – traditional courtyard residences, which form the heart of old Beijing (see Figure 1).

The Chinese traditional dwellings are reserved and private, created with a variety of forms and sizes by using uniform building units and varying their compositions. A courtyard house in Beijing can be enclosed by three or four buildings or may come in double, multiple, and side courtyards. The layout of the traditional Beijing siheyuan is rigid and orderly, the courtyard is simple and spacious, and the buildings are independent and well-balanced.²

The unique organization of private and public spaces in the courtyards allows the residents to enjoy their privacy and, whenever needed, indulge in various social activities.

Beijing hutongs are commonly regarded as the most outstanding example of traditional northern Chinese courtyard housing, and they play an important role in the culture and the way of life of Beijingers. The very structure of siheyuan, as a unit of a hutong, is

² According to the materials from History of Chinese Architecture online course, given by Tsinghua University on EDX platform, retrieved 2018-03-27 from <https://courses.edx.org/courses/course-v1:TsinghuaX+80000901x+1T2017/courseware/ee6f49bf517184e7581a879f857bcbe0/245b158241ce6401db71010933c45a564/?activate_block_id=block-v1%3ATsinghuaX%2B80000901x%2B1T2017%2Btype%40sequential%2Bblock%4040245b158241ce6401db71010933c45a564>.
very valuable and informative, for it reflects the relations in a traditional Chinese family and tells a lot about the hierarchy in it.

The human experience and philosophical traditions in the form of signs, symbols and patterns are concealed in various interior and exterior elements. Therefore, preservation and maintenance of *hutongs* are crucial for understanding the Chinese culture and fundamentals of the Chinese philosophy that are reflected in it.

![Diagram](image)

**Figure 1.** Layout of a simple one-courtyard house in Beijing. Source: Jiǎ Jùn 贾珺 (2009), p. 29.

Traditional Chinese courtyard houses have undergone changes over the centuries, however, the most immense transformations and drastic mutations of *siheyuan* happened in the 20th century, when they underwent stages of rapid and uncontrolled construction, followed by deterioration, then – massive demolition, and finally they fell under the governmental protection introduced in an attempt to preserve this aspect of the Chinese cultural history.

Even though preservation of this traditional housing style is today politically endorsed, its future perspectives remain unclear due to the numerous challenges and inconsistent implementation of the conservation plans.
In recent years, there has been a revived interest in this type of traditional courtyard architecture. Various approaches and methods, such as modernization, restoration, remodeling, adaptive reuse and building of so-called “neo-siheyuan” – new courtyard houses – have been introduced in order to preserve this type of architecture.

Traditional siheyuan courtyards are today modernized and upgraded according to the modern forms, standards, and lifestyle of the people. This process indicates the interplay of traditional and modern values, resulting in the enrichment of architectural practices, and furthermore, it illustrates the revival of Chinese architectural and philosophical thoughts.

1. Methodology

1.1. Aims, issues, research questions

Despite the emerging positive tendencies, there are numerous challenges in the preservation of siheyuan. The main questions regarding the future prospects of this type of vernacular architecture are the following: will the siheyuan architecture survive through the days as a living structure, serving as an example of Chinese philosophy and aesthetics and providing guidelines for the future architectural developments, or will it become an outdated symbol of the past that lost its functionality and communication with the present, like a text without a context? If siheyuan is to survive as a functional organism, what measures should be taken to maintain and improve it?

Despite the significant scientific contribution of Chinese and Western scientists to the study of Chinese architecture, it should be noted that there is a certain insufficiency in the complex study of the phenomenon of siheyuan and its value as a cultural artifact. In many cases, the studies are mostly descriptive and somewhat superficial, which can be
explained by the historically established situation of cultural isolation of the country and
the impossibility of a full-scale study of the subject in a certain period, as well as the
ideological issues and limited freedom of speech in modern China. Therefore, the
accumulated knowledge about the *siheyuan* architecture must be susceptible to
systematization and profound critical analysis. My research intends to fill the above-
mentioned gap.

**The aims of my research are:**

1. to investigate and explain the phenomenon of the *siheyuan* architecture and its
cultural value;
2. to describe and analyze different methods of preservation of Chinese courtyard
architecture, such as conservation, restoration, modernization, and adaptive
reuse;
3. to suggest possible ways of its preservation in order to achieve cultural
sustainability.

**1.2. Methods**

My research represents a collective case study, using the method of content analysis,
based on the guidelines of Klaus Krippendorff, outlined in his book *Content Analysis: An Introduction To Its Methodology* (1980)\(^3\) and Florian Kohlbacher in the article *The Use of Qualitative Content Analysis in Case Study Research* (2006).\(^4\) The method of
qualitative content analysis is often used as a tool for investigation and interpretation of
data in a case study research. According to Kohlbacher, qualitative content analysis uses
a methodologically controlled approach in order to filter out the main points, deal with

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the complexity and gradually reduce it through the process of summary, explication and structuring. Therefore, qualitative content analysis perfectly fits the credo of case study research: helping to understand complex social phenomena.

In my research, the method of content analysis implies a study of a wide range of primary and secondary English and Chinese sources: political documents, circulars, Chinese philosophical books, as well as research papers, articles, photo and video materials.

Historical, architectural and anthropological approaches are applied in the study of the phenomenon of the siheyuan architecture and in the investigation of the main preservation challenges. The method of case studies, along with the visual data analysis, are applied in the investigation of different preservation techniques of Chinese courtyard architecture, such as restoration, modernization, adaptive reuse, and the construction of new courtyard houses. I have chosen two distinctive examples of each preservation method, making focus on such aspects as design, functionality, choice of materials and their quality, architects’ stance toward the original architecture, and philosophy behind each project. Among the various preservation projects, I have chosen those solutions, which, in my view, can be successfully applied on a larger scale in the future.

Consequently, my research is an inductive method of estimating the current situation and future perspectives of siheyuan architecture. My final conclusions are only plausible and need further verification on the basis of quantitative analysis.
1.3. Literature review

The data is analyzed and interpreted in light of the works of a number of Chinese and Western scientists, who studied the historical evolution of the siheyuan architecture in the scope of its philosophical and socio-cultural aspects.

The book by Donia Zhang\(^5\) *Courtyard Housing and Cultural Sustainability: Theory, Practice and Product*\(^6\) serves as the starting point of the research. In her book, she investigates the issue of cultural sustainability in classical and new siheyuan buildings and explains how relevant elements of Chinese philosophy are reflected in the Chinese courtyard design. She provides a new angle for a more profound understanding of philosophical aspects of the siheyuan architecture. The author further on discusses structural aspects of the architectural design of the siheyuan by describing typical features of exterior, interior, gates, windows, yard, roof, furniture styles, materials etc. Zhang studies siheyuan architecture from different perspectives and introduces to the reader the concepts of *Yi Jing*, *Feng Shui*, *Daoism*, and postulates of Confucianism,\(^\text{10}^\) \(^5\) Donia Zhang is the Director of the Neoland School of Chinese Culture and an Associate of the City Institute at York University, Canada. She has over 20 years of research experience in courtyard housing, and 12 years of research experience in interdisciplinary studies of architecture, education, humanities, and social sciences.


\(^7\) *Yi Jing*, also known as *I Ching* (Yì Jīng 易经) is the earliest of the *Five Classics* (Wǔ Jīng 五经). It is known as the most influential book in the Chinese culture. It was traditionally ascribed to the Chinese emperor Fúxī 伏羲 (2953–2838 BCE), and later developed and revised by other philosophers including Confucius. *Yi Jing* proposes the idea of interconnection of human actions and the universe. The term literally means “Classic of Changes”.

\(^8\) *Feng Shui* (fēngshuǐ 风水) a geomantic practice, according to which a structure or site is chosen or configured in order to achieve harmony with the spiritual forces that inhabit it; also: orientation, placement, or arrangement according to the precepts of Feng Shui. According to Feng Shui, energy (qì 气) is the life of nature, and it exists in all things. The term *Feng Shui* literally means “wind–water” in English.

\(^9\) *Daoism*, also known as *Taoism* (Dào 道), is a Chinese religious and philosophical tradition, which emphasizes living in harmony with the *Dao*. The term is literally translated as “the Way”.

\(^\text{10}\) Confucianism, also known as *Ruism* (Rúxué 儒学, Rújiā 儒家), is a philosophy, humanistic religion, and a way of living and governing. Confucianism developed from the *Hundred Schools of Thought from the teachings of the Chinese philosopher Confucius* (Kǒngzǐ, 孔子) (551–479 BCE), who considered himself a mediator of the thoughts and values inherited from the Shāng 商 (c. 1600 BCE–1046 BCE) and Zhōu 周 (c. 1046 BCE–256 BCE) dynasties. Confucianism is based on the belief that human beings are fundamentally good, improvable and perfectible through self-cultivation and self-creation. Confucian
on which the *siheyuan* architecture rests upon. The author exquisitely links the forms and functions of *siheyuan* to important themes in Chinese philosophy, as harmony on four different levels: with Heaven, Earth, Humans, and Self, indicating that these elements are crucial for the sustainable architectural development.

The book *Běijīng sìhéyuàn* 北京四合院 (Beijing Quadrangle)\(^\text{11}\) by Jiā Jùn 贾珺 (2009) is a profound study of internal and external structure of *siheyuan*. The author describes various functional elements, their designation, and materials used in the construction. He also explains the aesthetic features of *siheyuan* and the symbolical meaning behind them. The author also provides an insight to the social life conducted in *hutongs*, helping the reader understand the unique character of the local atmosphere.

I have also studied the works of Liang Sicheng (1901-1972) – one of the most prominent Chinese architects. His biggest ambition was to preserve the vernacular architecture of the old Beijing as a symbol of the ancient civilization. In his works, he systematized a significant layer of information on Chinese courtyard architecture, paying much attention to its spiritual aspects. In the book *Chinese Architecture: A Pictorial History*\(^\text{12}\), he discusses how the philosophical content of architecture along with its aesthetic and ethical components form an architectural meaning. Striving to preserve the traditional architecture, Liang fell into disgrace with the authorities. His ideas on preservation were at odds with the ambitions of the Chinese Cultural

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\(^{11}\) Jiā Jùn 贾珺, *Běijīng sìhéyuàn* 北京四合院 (Beijing siheyuan) (Beijing: Qīnghuá dàxué chūbǎn shè, 2009).

Revolution\textsuperscript{13}. As a result, he suffered humiliation and repressions and died three years before the end of the Cultural Revolution, not given a chance to realize his ideas.

In order to understand the reason for dramatic changes in the history of Beijing \textit{hutongs} and evaluate the role of the psychological background, it is important to study the architectural history through the scope of the Chinese Cultural Revolution. In the book \textit{Rhetoric of the Chinese Cultural Revolution: The Impact on Chinese Thought, Culture, and Communication},\textsuperscript{14} Xing Lu explores the effects of the political inclinations and practices during that period. The author introduces her own story and the stories of others who experienced the Cultural Revolution. She investigates the reasons of the fanaticism and mass hysteria during that period and studies the aftermath of the revolution by comparing the rhetoric of the Cultural Revolution with other regimes in the 20\textsuperscript{th} century, as well as by examining the contemporary public discourse in China.

As an additional source, the knowledge obtained during the online course \textit{Vernacular Architecture of Asia}, given by the University of Hong Kong and a course \textit{History of Chinese Architecture}, given by Tsinghua University on the platform of EDX\textsuperscript{15}, is summarized and analyzed.

Finally, my personal findings and impressions, acquired during a year spent in Beijing as a foreign student, are reflected in the research.

From my observation, all the above-mentioned authors, both Western and Chinese, do acknowledge the historical and cultural value of the \textit{siheyuan} architecture; however, there is a specific difference in the discourse on the events of the 20\textsuperscript{th} century. Having

\textsuperscript{13}\textit{The Cultural Revolution/the Great Proletarian Cultural Revolution} (Wūchǎn jiējí wénhuà dàgémìng 无产阶级文化大革命), was a sociopolitical movement in China from 1966 until 1976, launched by Chairman of the CCP Mao Zedong (Máo Zédōng 毛泽东), with its goal to preserve Communist ideology in the country by purging remnants of capitalist and traditional elements from Chinese society.


\textsuperscript{15} Free online courses, available at <https://www.edx.org>. 

14
studied the works of several Chinese authors, I have encountered certain dispassionateness in their views on the demolition of the Old Beijing: none of the authors openly express criticism towards the policies of the Chinese Communist Party (CCP) or question the priorities of the government, mainly focusing on the siheyuan past instead.

The question is whether the authors’ views on urban development coincide with the CCP’s vision or whether the authors do not feel free to express their true opinion. It is unlikely that the Chinese scholars are indifferent to the problem or lacking the ability of critical thinking, thus I believe that the second variant is the case.

One of the examples of such disturbing “neutralism” is the passage from the book *Běijīng de hútòng* 北京的胡同 (Beijing Hutongs), by Wēng Lì 翁立 (2004). In the chapter *Hútòng de fāzhǎn* “胡同的发展” (The Development of Hutongs),\(^\text{16}\) where he describes the changes that the *siheyuan* architecture underwent during the 20th century, he barely mentions the stages of massive demolitions, leaping over decades and focusing on the nowadays’ renovation of the courtyards and improvement of the living conditions. He states, that “... along with the renovation of old and dilapidated houses, a number of tasteful courtyard houses have emerged, which has not only provided residents with a fundamental improvement in their housing conditions, but also maintained the look of old Beijing, facilitated the feelings among residents, as being conducted with the respect to the psychological features of Beijingers”.

Weng Li mentions Ju’er (Jù er 菊儿) hutongs – one of the newly built courtyard houses, and praises their resemblance with the traditional Beijing courtyard architecture. Donia Zhang, in her turn, critically studies the phenomenon of the new courtyard houses, estimating their spatial layout, functionality, quality of materials, and visual

\(^{16}\) Wēng Lì 翁立, *Běijīng de hútòng* 北京的胡同 (Beijing hutongs) (Bēijīng: Bēijīng túshū guǎn chūbǎn shè, 2004), 278-280.
characteristics. According to her, the exterior form of Ju’er hutongs is a fusion of Western and Southern traditional architecture\(^{17}\), but in no terms is it a traditional Beijing siheyuan. Besides, Weng Li often uses the word 发展 “development” in his book (2004), referring to the changes that hutongs underwent during the 20\(^{th}\) century. It is, in my view, a strange choice of words, as the connotation of the Chinese word “发展” is exceptionally positive and is not quite appropriate for characterizing the deterioration and demolition of historical sites.

Due to the lack in objectivity and impartiality of domestic media coverage of the situation regarding the present state and the future of the Beijing hutongs, it is difficult to estimate the actual level of concern and general attitude to the problem. This phenomenon can be easily explained by the limited freedom of expression in today’s China.

However, despite the certain moments mentioned above, the overall input of Chinese scholars in the study of the siheyuan architecture through its entire history is invaluable. It would have never been possible for the Western scholars to study the Chinese architecture in the scope of the history, philosophy and religion, especially in the light of historical isolation of the country.

In my view, it is crucial that Chinese and Western scholars collaborate in the study of traditional Chinese architecture. It could lead to a mutual enrichment of architectural practices and would help to find a practical way of preserving the cultural heritage and achieving a balance between tradition and modernity.

1.4. Limitations

The main limitation of the study is the lack of access to the object of study: the presented research was conducted in Sweden, therefore, I had no opportunity to investigate the architectural objects and gather the data myself. Due to the impossibility of critical and independent study of the further described preservation techniques, I had to turn to different sources of information in order to collect the data. I used the means of comparative and critical analysis in order to select the most objective and relevant information about the current situation of the siheyuan architecture in Beijing.

Another limitation of my study is the difficulty with performing statistical analysis. In order to suggest the applicable preservation solutions for the siheyuan architecture, it is necessary to conduct a quantitative study with extensive statistical analysis, having a good knowledge of architecture and economics, in order to estimate economic viability of the proposed solutions, which was difficult for me to perform, coming from a humanities background.

2. The history of siheyuan and hutongs

The word hutong means a small alleyway or lane. Hutongs are typical for the old part of Beijing and are formed by lines of siheyuan, or quadrangles – building complexes formed by four houses around a quadrangular courtyard.

The term “hutong” (hottog) is of Mongolian origin, meaning “water well”, which is due to the fact that throughout the history people always tended to settle near water, digging out a well and building their houses around it.
Hutongs appeared first during the Yuan Dynasty\(^{18}\) when the Mongols, led by Kublai Khan, occupied Beijing, then the capital of the Jin Dynasty\(^{19}\), and China became a part of the great Mongol Empire, called the Yuan Dynasty. During the takeover by the Mongols, the old city was largely demolished and later rebuilt in a completely different way.

The new capital had nine North-South and nine East-West streets intersecting with each other, dividing the city into rectangular blocks of single-story houses grouped around courtyards, which were known as fangs (方坊). The narrow roads stretching from East to West between fangs were called hutongs.\(^{20}\)

Most of the hutongs, which can be seen today, were built during the Ming\(^{21}\) and Qing\(^{22}\) dynasties which inherited Yuan building traditions.

Hutongs in Beijing tend to run East-West or North-South. This is because most siheyuan were built along such axes according to the rules of Feng Shui and to take in more sunshine and resist cold winds from the North.\(^{23}\)

Enclosing walls helped maximize household privacy and protection from wind, noise, dust, and other threats. The courtyard offered light, air, and views, as well as gave a strong sense of privacy and acted as a family activity space when the weather permitted.\(^{24}\)

The siheyuan architecture in hutongs today differs greatly from the one that could be seen in the past, both in quantity and appearance. The 20th century was a significant

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\(^{18}\) Yuán 元 (1271-1368).

\(^{19}\) Jìn 晋 (265–420).

\(^{20}\) Hé Níng 何宁, Běijīng fēngjǐng míngshèng 北京风景名胜 (In Beijing), (Beijing: China Intercontinental Press, 2010), 143.

\(^{21}\) Míng 明 (1368-1644).

\(^{22}\) Qīng 清 (1644-1911).


turning point in the evolution of this type of architecture. During this period *hutongs* experienced a tremendous rise and fall. After the *Xinhai Revolution*\(^\text{25}\) of 1911 and the founding of the Republic of China\(^\text{26}\), Beijing experienced first significant changes, starting from the opening of the Forbidden City (*Zǐjìnchéng 紫禁城*) to the public and construction of new roads and quarters. Previously an imperial square located within the Forbidden City, Tiananmen was opened to public access, significantly changing the original layout of the city.

Later on, due to the economic development and rapid expansion of the country’s population, which led to a shortage of accommodation, the number of *hutongs* increased significantly between 1950s and 1990s. Rules regulating the size and construction of the buildings were no longer in effect after the fall of the Qing dynasty.

During the Chinese Cultural Revolution, Beijing underwent enormous changes and many of the city’s ancient structures were dreadfully damaged. The CCP considered old buildings to be icons of the previous corrupt society and physical indicators of the ruling classes’ ideological demands and will. Destroying old houses and building new cities was a critical priority for the Communist leaders. Therefore, a considerable conflict emerged between the professional architects and the Communist leaders during the early 1950s. From 1952, the CCP planned to transform Beijing, the ancient Chinese cultural and political center, into an industrial and bureaucratic city with an extended immigrant population. According to this plan, thousands of old houses, gateway structures, and traditional streets were to be demolished.

Liang Sicheng was among those architects who strongly objected to this plan. Liang and other scholars provided alternative design solutions for preserving these old buildings.

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\(^{25}\) Xinhai Revolution (Xīnhài gémìng 辛亥革命) – an uprising in 1911 that ended the reign of the Qīng 清 dynasty.

\(^{26}\) The Republic of China (*Zhōnghuá mínguó 中华民国*) was founded in 1912, after the Qīng dynasty, the last imperial dynasty, which was overthrown during the Xinhai Revolution in 1911.
while promoting economic development.\textsuperscript{27} However, Liang’s ideas were politicized and he was accused of not supporting the Communist Party and later on repressed.

The emphasis on industrialization, including the construction of communal factories within the inner city, led to unforeseen levels of pollution and traffic congestion. During this period, large numbers of people drifted into the city, sowing the seeds of today’s over-population in residential courtyards.\textsuperscript{28} To shelter more people, the architectural plan of \textit{siheyuan} had to be changed. For example, a regular extended family courtyard often had to increase its capacity by building new kitchens, storage spaces and even bedrooms into the courtyard, covering original open space. As a result, the ordered enclosures, created according to the \textit{Feng Shui} principles, turned into disordered quarters.

The Tangshan earthquake\textsuperscript{29} in 1976 made a bad situation worse, resulting in further destruction of the \textit{siheyuan} architecture. It left thousands of residents homeless, and therefore, even more informal extensions were built into the courtyards to increase capacity. All the reasons mentioned above explain why \textit{siheyuan} today are hardly recognizable.

The changes made it difficult for the courtyard houses to maintain their original charm, mystique, tranquility, and coziness. Beijing became almost completely occupied by \textit{siheyuan} of various forms and qualities, and by 1990, many of them were in a state of decay. A total of 4.2 km\textsuperscript{2} of Beijing \textit{siheyuan} were demolished between 1990 and 1999.

\textsuperscript{27} Hu Xiao, \textit{Preserving the Old Beijing: The First Conflict between Chinese Architects and the Communist Government in the 1950s} (University of Nebraska – Lincoln), 1-2.


\textsuperscript{29} The Tángshān唐山 earthquake took place on July 28, 1976. It was one of the most destructive earthquakes of the 20th century. The epicenter of the earthquake was near Tangshan in Hebei, PRC. The number of deaths is stated to be around 240,000 to 255,000.
with its areas shrunk from 17 km$^2$ to 3 km$^2$ between the early 1950s and 2005.\textsuperscript{30} It was clear that a conflict between the modernizing of Beijing and the preservation of its cultural heritage had taken place.

The rapid decline of Beijing’s historic sites soon became both a nationwide and an international concern. In 1991, the State Council approved the “Beijing City Master Plan (1991-2010)”.\textsuperscript{31} The Master plan established Beijing’s status as an aspiring international city. It highlighted the need for balance in integrating cutting edge modern development into Beijing’s unique ancient heritage. Subsequently, the municipal city planning commission adopted “Conservation Planning of 25 Historic Areas in Beijing Old City” in September 2002.\textsuperscript{32} The plan gave detailed guidelines for the protection of the old city of Beijing. The implementation of this conservation plan, however, is not yet fully realized.\textsuperscript{33}


3. Sustainability principles in architecture

“The ability of Chinese system of construction to perpetuate itself for over four thousand years over such a vast area and to retain its principal characteristics in spite of repeated and continuous foreign influences, hostile or friendly, economical, cultural or military, is a phenomenon comparable only to the continuity of the civilization of which it forms an integral part”.34

Liang Sicheng

The noun “sustainability”, according to the Online Etymological Dictionary35 is relatively new in the English language. In appeared first in 1907, in the field of arbitrage practice in reference to a legal objection,36 from sustain “uphold, strengthen, support” + -able) + -ity. By 1972 it entered other fields such as economics, agriculture, ecology, and architecture.

Sustainability is defined in this dictionary as “a requirement of our generation to manage the resource base such that the average quality of life that we ensure ourselves can potentially be shared by all future generations”.

Nowadays, sustainability is often mentioned in architecture, and is considered to be achieved by:

36 In trial practice, for a judge to agree that a question asked of a witness is objectionable. Thus, an attorney asks the witness a question, and the opposing lawyer objects, saying the question is irrelevant, immaterial and incompetent, or some other objection. If the judge agrees he/she will rule "sustained," meaning the objection is sustained (approved) and the question cannot be asked or answered.
1. using environmentally-friendly building materials that can easily be produced and replaced;
2. ensuring energy and resource efficiency, i.e. an ability of a building to take full advantage of seasonal changes, such as withstand heat in summer and cold winds in winter;
3. efficient use of space, providing healthy indoor and outdoor environment.\(^{37}\)

Thus, the emphasis is mostly made on the technological and ecological aspects of architecture. However, according to Donia Zhang, sustainable architecture also implies creating a healthy and comfortable environment for the residents, which establishes a balanced and harmonious life within nature, culture and other people.\(^{38}\)

Amazingly that although there was no such term as *architectural sustainability* at the time of formation of Chinese architecture, *siheyuan* architecture met all the above-mentioned criteria, appearing to be one of the earliest and best examples of sustainable architecture. Whilst the traditional Western architecture was mainly purposed for practical needs, traditional Chinese architecture also encompassed spiritual, philosophical and socio-cultural aspects (as discussed in Chapter 4).

It managed to survive through the centuries without going through significant changes, unlike the Western architecture, which has always been influenced by different styles and concepts throughout the history, as a result of frequent wars and conquests.

Undoubtedly, the reason for the self-sufficient character of Chinese architecture lies in the historical geopolitical isolation of the country, but also – in its adherence to the principles of cultural and social sustainability in the construction practice, making major changes simply unnecessary.


\(^{38}\) Zhang (2016), 288.
One of the greatest examples that illustrates architectural sustainability in traditional courtyard houses, built for one extended family, is the adaptation of the housing form to the cyclical nature of life and death: each house in the siheyuan was designated to a certain family member, in accordance with the patrilocal residence model and the hierarchy principles at that time, namely according to age, gender and marital status. After the death of the older generation, the living space was shifted to the next generation, resulting in the continuity of succession. Thus, in such structures, there was always a living space available for all family members, and there was no need of constructing additional houses or extensions to shelter more people. This aspect of Chinese architecture made me consider a peculiar parallel between the structure of siheyuan and the laws of thermodynamics, according to which the energy in isolated system remains constant despite internal changes.\(^{39}\)

Obviously, the above described inheritance tradition has irretrievably sunk into oblivion and its recovery is very unlikely; however, it illustrates the phenomenal achievement in the architectural sustainability.

In this way, Chinese modern architecture and traditional vernacular architecture require different approaches in achieving sustainability. In the case of the traditional architecture, additional aspects – socio-cultural, philosophical and spiritual – should be taken into account. These important aspects are described by Donia Zhang in her book (2016). According to her, based on traditional Chinese philosophy, the four cornerstones of sustainable architecture are: harmony with Heaven, Earth, Humans and Self. And when there is harmony, the architecture advances people’s behavior and motivates social cohesion. Siheyuan is built in accordance with these four principles.

\(^{39}\) The laws of thermodynamics are important fundamental laws in physics, which define fundamental physical quantities that characterize thermodynamic systems at thermal equilibrium.
The next chapter describes internal and external features of the *siheyuan* architecture, introduces the specifics of social environment in *hutongs* and explains how various aspects of Chinese philosophy are reflected in *siheyuan*.

### 4. The cultural value of Beijing hutongs and the importance of their preservation

Beijing *hutongs* are commonly regarded as the most outstanding examples of traditional northern Chinese courtyard housing, which play an important role in the culture and the way of life of Beijingers. Just like any vernacular architecture in the world, it is particularly valuable and informative, as it encodes important information related to culture, philosophy, and social consciousness.

The Chinese society has long been influenced by Confucianism and Daoism, and there has always been a strong link between the house form and the structure of the family. The construction and layout of *siheyuan* very clearly define the relations in the traditional Chinese family and the division in a classed society.

#### 4.1. The internal structure of siheyuan

The internal structure of *siheyuan*, i.e. the arrangement of the living spaces according to the age, gender, and family status of the inhabitants, reveal the hierarchy in the traditional Chinese family, while the inward organization of the courtyard stresses the blood ties and unity among the family members.

The main house (always situated in the North wing and facing the South), was traditionally inhabited by the head of the family, represented by the older generation. The next generation would live in the West wing, and the East and South wings would
be inhabited by mother with children and nursemaids – the least privileged group, according to the society structure at that time. There was a well-known rule among the residents of Old Beijing, which said: “If money is not an issue, don’t live in the East and South wings: it’s not warm during the winter and not cool during the summer; in the entire siheyuan it’s the North wing that can best provide you with these conditions (warm in the winter and cool in the summer), the West wing comes second, the East wing comes third, and finally the South wing is the worst.”

4.2. The external structure of siheyuan

While the internal structure of the siheyuan reflects the family relations, the external structure explains the organization of the classed society.

During imperial times, siheyuan housing was subjected to strict restrictions on height, design, color, and decoration. The restrictions were graded according to the status of the owner and included such aspects as the style of roof tiles, the color of the outside walls, and the decoration of the main gate. The main restriction that was applied to all residential buildings was the height: no building could be higher than one storey, which clearly indicated the elevated status of the emperor, residing behind the heart of Beijing – the walled Imperial Palace, or Forbidden City, built by the Yong Le Emperor (Yǒnglè dì 永乐帝) in the beginning of the 15th century.

4.3. The social environment of siheyuan

Not only the architectural structure of siheyuan is of a great cultural value, but also the environment of hutongs, which can be characterized as a truly unique way of life with various activities, strong traditions, and close community spirit. According to Donia

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40 Jiǎ Jùn 贾珺, Běijīng sìhéyuàn 北京四合院 (Beijing siheyuan) (Beijing: Qīnghuá dàxué chūbǎn shè, 2009), 231.
Zhang (2016), residents tend to conduct social and cultural activities much more often in traditional courtyards rather than in the outdoor spaces of mid- and high-rise apartment buildings, because traditional courtyards contain a clearly defined hierarchy of spatial transition from public to private that the modern high-rise housing outdoor spaces lack.\footnote{42}

The community spirit is the main condition, which makes 
*huòtòng* a vibrant and healthy place to live. Its safety and peaceful and friendly atmosphere are those features that the local residents cherish most of all.

In the book *Bèijīng de hútòng* 北京的胡同 (Beijing hutongs), Weng Li describes the social life of the people who have been relocated from *huòtongs* to new apartments, mentioning the feeling of loneliness and seclusion that those people experience, despite the improved living conditions and modern facilities. He states that the elderly and children suffer most of all, as “the elderly cannot stop by other people’s home to chat, and children do not that easily find a partner to play with”.\footnote{43}

According to Weng Li, in a courtyard, despite the poor living conditions, people maintained closer relations, helping and caring about one another. When someone was in a trouble, it was always easy to find a neighbor to talk to and seek support from. The author points out that improved living standards is not the only condition for people’s contentment, as they primarily strive for emotional and spiritual exchanges. The author is concerned that in a long-time perspective, people may become alienated and indifferent to each other and the unique community spirit might fade away.

There are a great number of cultural activities, festivities, board games, ceremonies, and celebrations in the classical courtyard houses. Donia Zhang describes many traditional


\footnote{43} Wēng Lì 翁立. *Bèijīng de hútòng* 北京的胡同 (Beijing hutongs) (Bēijīng: Běijīng túshū guǎn chūbǎn shè, 2004), 281-83.
events in her book (2016), such as: Spring festival (Chūnjié 春节), Lantern festival (Shàng yuán jié 上元节), Blue Dragon festival (Lánlóng jié 蓝龙节), Qing Ming festival (Qīngmíng jié 清明节), Dragon Boat festival (Duānwǔ jié 端午节), Night of Sevens (Qīxì jié 七夕节), Summer Lantern festival (Zhōng yuán jié 中元节), Mid-Autumn festival (Zhōngqiū jié 中秋节), Water Lantern festival (Xià yuán jié 下元节), Laba festival (Lábā jié 腊八节), Birthday celebrations, wedding ceremonies, and many more.\textsuperscript{44}

These unique activities define the lifestyle of the local communities, serving as both origins and vessels of Chinese culture and tradition. Throughout its long history, the siheyuan architecture was strongly influenced by religion and politics, science and belief, cosmology and rituals. Ideas of Confucianism, Daoism, and Feng Shui principles are reflected in it. These elements all played a great part in the structural aspects of this type of architecture and made it truly unique and valuable for humanity.

### 4.4. Chinese philosophy reflected in the siheyuan architecture

According to Donia Zhang, siheyuan architecture reflects harmony on four different levels:\textsuperscript{45}

1. **Harmony with Self** (yǔ jǐ hé 与己和): within the individual, referring to time and cultural activities that necessitate the built environment to facilitate self-cultivation;

2. **Harmony with Earth** (yǔ dì hé 与地和): between the individual and natural environment, referring to the space and construction quality that withstand the test of time;

\textsuperscript{44} Donia Zhang (2016), 129-141.  
\textsuperscript{45} Donia Zhang (2016), 39.
3. Harmony with Heaven (yǔ tiān hé 与天和): between the individual and the universe, referring to the form and environmental quality that offer maximum climatic protections, good sunlight, air and view of nature. In order to achieve the harmony with heaven, it is necessary to establish a good balance of Yin Yang by choosing the right time, place and people (tiānshí, dìlì, rén hé 天时，地利，人和);

4. Harmony with Humans (yǔ rén hé 与人和): between the individual and the society – matters of social cohesion that demand nurture from the built environment for good social relations. Harmony with humans refers to the intercourse with other people. In the Chinese culture it is important to maintain neighborly relations for obvious reasons; moreover, it is crucial to be surrounded by those people, who can contribute to one’s personal development. It is recurrently mentioned in the Confucian “Analects” that one has to associate with those who can advantage and put aside those people who cannot do so. It also refers to harmony within the family. In accordance with Confucian views on the family, younger generations should as a rule obey and respect the elderly.

Daoism stresses the use of organic shapes to free people’s imagination and creativity, and Daoist principles of harmony with nature can be seen in interplay with open and

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46 Yin Yang (yīnyáng 阴阳) is translated to English as “shade and light”, with the word yīn 阴 derived from the word “Moon” (月) and yáng 阳 – from “Sun” (日); According to Chinese philosophy, everything in the world is interrelated and interdependent. The dualities are rather complimentary than opposing, as they define each other and cannot exist without each other. The harmony between Yin and Yang is the key to wellbeing; Yang is associated with extraversion, day, brightness, warmth, external, ascend, movement, while Yin – with introversion, night, darkness, cold, internal, obedience, obscurity, descend, and stillness.

47 Tiānshí, dìlì, rén hé “天时、地利、人和” – postulates of Mencius or Mengzi (Mèngzǐ 孟子) (372–289 BCE), a Chinese philosopher and defender of Confucian thought. Information obtained from EDX course “History of Chinese Architecture”, given by Tsinghua University, retrieved 2018-03-27 from <https://courses.edx.org/courses/course-v1:TsinghuaX+80000901x+1T2017/courseware/dce710450b294548883e96c0a9cf23cc/d9f774c6eb1b47d9a92f346b28ad3f7/?child=first>.


49 Ibid, Book 1, Chapter 6, 1-2.
closed spaces in the *siheyuan* architecture. This interplay is one of the prominent examples of *Yin Yang*, which is a fundamental concept in *Daoist* philosophy. It refers to the harmony of the opposites. The emphasis on either of the two opposites is harmful for people’s life and health, while harmony of *Yin* and *Yang* is crucial for good fortune and wellbeing. *Yin* and *Yang* complement each other, forming a complementary world.

Moderate shape in architecture is very important according to *Yin Yang* philosophy: if a house is too large, there will be excess of *Yin*, if a house is too elevated, this will result in an excess of *Yang*. Excessive *Yin* makes people faint, excessive *Yang* makes people dispirited, thus the architectural scale should be moderate.\(^5^0\) If a house is too big and one shares it with many people, it will be too noisy, and if one lives there with few people, it will bring sorrow.\(^5^1\) The *Yin Yang* principles are also crucial in *Feng Shui* philosophy.

*Feng Shui* concepts mostly refer to the placing and orientation of the buildings, in order to give its owners prosperity and harmony. According to the *Feng Shui* principles, major rooms should be located in the North side of *siheyuan* and facing the South; the entrance is located at the Southeast corner of the house, the direction from which, according to *Feng Shui*, the vital Qi\(^5^2\) comes. The yard is a symbol of the open space in the natural landscape and it is enfolded by surrounding buildings, and the balance

\(^{50}\) Dong Zhongshu 董仲舒 (179–104 BC), *Chünqū fán lù, xún tiān zhī dào* 《春秋繁露 · 循天之道》 (Luxuriant Gems of the Spring and Autumn), translations from the Asian Classics, obtained from EDX course “History of Chinese Architecture”, given by Tsinghua University, retrieved 2018-03-27 from <https://courses.edx.org/courses/course-v1:TsinghuaX+80000901x+1T2017/courseware/dce710450b294548883e96c0a9cf23cc/d9f774c6eb1b47d9a92f3346b28ad37/?child=first>.

\(^{51}\) Words by Gong Xuānzi 公宣子. translations from the Asian Classics, obtained from EDX course “History of Chinese Architecture”, given by Tsinghua University, retrieved 2018-03-27 from <https://courses.edx.org/courses/course-v1:TsinghuaX+80000901x+1T2017/courseware/dce710450b294548883e96c0a9cf23cc/d9f774c6eb1b47d9a92f3346b28ad37/?child=first>.

\(^{52}\) Energy (*qì*) is the life of the nature, and it exists in all things, according to the *Feng Shui* doctrine.
between them symbolizes family harmony and invites happiness and prosperity. The main principals of Feng Shui are “the right time, place and people”.

Preservation and maintenance of hutongs are crucial for the understanding of Chinese culture and the fundamentals of Chinese philosophy, reflected in it. Siheyuan is not just architecture, it can be perceived as the quintessence of Chinese culture and lifestyle, a link between the past and the present, and with its disappearance, the uniqueness of the city’s architectural language may be lost forever.

Jia Jun brings a very thoughtful comparison in his book Beijing Quadrangle (2009), saying “… if we compare the city wall with a skin, and the Imperial Palace with a heart, then the courtyards of the Old Beijing are to be its flesh and blood. If Beijing gets to lose most of its siheyuan one day, it will also lose its skin texture and blood vessels along with the ancient pure spirit that circulated through centuries, becoming a dispirited second-rate city. Treasure the siheyuan and protect it. It is the responsibility of every person, who loves Beijing, to ensure that these precious buildings and the traditional culture that they incorporate live on onwards.”

The protection of architectural heritage, therefore, must go along with the protection of the local communities. It is important to perceive the courtyard architecture and the social life of its people as an organic whole, inseparable from one another and dependent on one another, just like Yin and Yang in Feng Shui philosophy that cannot exist on their own. In my view, this understanding is one of the keys to future sustainability of this type of vernacular architecture.

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5. Challenges in preservation of traditional courtyard architecture in Beijing

Preserving vernacular architecture in the modern and densely populated city of Beijing is a difficult task, which requires a thoughtful and competent approach as well as great investments. The main issues today are discussed below.

5.1. Space issue

Currently, with nearly 23 million residents\(^{55}\), Beijing has experienced a tremendous rise in population, which has increased by nearly 14 times over the last 70 years. This development, accordingly, led to an increase of urban land and property values, especially of those in the city center.

According to modern urban standards, hutongs occupy too much space in the center of Beijing, and the density of inhabitants there is too low, compared with the rest of the city. Thereby, despite the great cultural and historical value, the existence of hutongs in the present state is unprofitable for the city from the economic viewpoint. The main question is whether a city the size of Beijing can afford to have courtyard housing in its center and whether it is possible to make it profitable.

5.2. Changes in ownership situation

Shift from private to public ownership since 1950s, under Mao Zedong’s socialist ideology led to confiscation of private courtyards and turning them into public properties. The housing was transferred to the local governments, resulting in many

\(^{55}\) Beijing’s 2018 population is now estimated at 22,838,000. In 1950, the population of Beijing was 1,671,000. Beijing has grown by 2,454,000 since 2015, according to World Population Review, retrieved 2018-04-03 from <http://worldpopulationreview.com/world-cities/beijing-population/>.
working-class families moving into the courtyards, turning original extended-family units into big and mixed multifamily compounds.\footnote{Donia Zhang (2016), 146.}

After the death of Mao Zedong, the role of the State in housing provision was reconsidered. Many residents of siheyuan demanded from the State to return them their house ownership, and Beijing municipal government soon investigated into the issue and approved the return of the houses to the previous owners. However, after the several turbulent decades, most of the houses no longer resembled their original form. A new question stood on the governmental agenda, i.e. what to do with the dilapidated constructions and how to redevelop the land so that it can be beneficial for the economy. Hardly recovered from the distress caused by the Cultural Revolution, the residents of Beijing hutongs soon had to face another shock. In 1998 the State Council implemented the Weigai redevelopment system (Wēifāng gāizào 危房改造), aimed at renovation of old and dilapidated houses.\footnote{Guówùyuàn guānyú jìnyībù shēnhuà chéngzhèn zhùfáng zhìdù gǎiōng jiùkuài zhūfáng jiānshè de tōngzhī 《国务院关于进一步深化城镇住房制度改革加快住房建设的通知》 (“The Circular of the State Council on Further Deepening the Urban Housing System Reform and Accelerating Housing Construction”) retrieved 2018-03-25 from \url{http://www.lawinfochina.com/display.aspx?lib=law&id=3078&CGid>.}

China implemented the Weigai system in order to improve residents’ housing conditions and redevelop the deteriorated built environment. However, the government’s severe financial deficiency resulted in very low-level urban redevelopment. Insufficient funding and inefficient approaches significantly prevented the acceleration of urban redevelopment.\footnote{Shenjing He, Fulong Wu, “Property-Led Redevelopment in Post-Reform China: A Case Study of Xintiandi Redevelopment Project in Shanghai”, \textit{Journal of Urban Affairs} 27:1 (2005), 4.} The biggest flaw in the Weigai redevelopment was it being conducted without any regard to the historical character of Beijing city planning. Property redevelopment companies were given total freedom to redevelop former residential areas, with the only condition being that they re-house the people adequately. To
maximize profit, many companies have chosen to situate relocation housing far from the city center, where land is cheap. Once re-housed and given disproportionately low compensation, most of the residents were unable to afford the inflated prices of their redeveloped neighborhoods and had to remain in the high-rise communities in the outskirts of the city.

The emphasis of the Weigai system has shifted from its original aim to provide safe and modern housing for residents to a drive to re-develop Beijing’s most valuable land in the historic central areas. As a result, between 1990 and 2000 alone, approximately 200,000 families were relocated by the Weigai system, and more than 4 million square meters of hutong neighborhoods have disappeared.

The demolition of these neighborhoods continues today, and the future of these is still uncertain, as there is a weak oversight in regulation and vague management structures as to who is responsible for which tasks.

5.3. Facility/comfort issue and deterioration of the buildings

In their present state, traditional courtyards do not fully correspond to the needs of the inhabitants: limited space and poor conditions of the houses make siheyuan not entirely suitable for modern life. Undeveloped nature of municipal facilities makes life of the residents challenging and inconvenient. For example, due to the lack of adequate sewage facilities, most residents do not have their own bathrooms. As a result, several families have to share one public toilet, which is not connected to any sewage system, but drained by pump trucks. It causes severe hygiene problems, especially during hot summers. Electric wires, installed by the residents against all fire safety regulations, fly

61 Ibid.
across the roofs dangerously, and due to the lack of appropriate wiring, electricity overloads cause frequent short circuits. Because of the lack of maintenance of the traditional timber roofs, water tends to leak into many of the older houses, causing rot and mold.\textsuperscript{62}

During winters, poor insulation and the lack of heating systems forces residents to burn coal for heat, which increases the risk of fire and contributes to already exceedingly high air pollution in the city.

Overcrowding in the city has changed the original look and functions of siheyuan. Some courtyards now contain illegally built structures that serve to shelter people and possessions. In many cases, it is impossible to restore the original structure of the building, making demolition the only possible solution.

Another major issue is the transport. Initially not designed for parking spaces, hutongs today greatly challenge the parking needs of the residents. Where the lanes are wide enough to drive through, the traffic turns initially quiet and peaceful areas into a chaotic and noisy space, uncomfortable and dangerous for pedestrians, especially for the elderly. The lanes, which are too narrow, in turn, make it impossible for ambulances, fire engines and other vehicles to drive through in case of emergency.

Although the residents are willing to improve their living conditions, it becomes very challenging when it comes to the direct exertion, as people of different age groups and educational and occupational backgrounds have different views on how to proceed with the improvement – most of such improvements are done considering rather cost than quality and appropriate materials. Even those residents, who have best intentions and means, often fail to renovate their homes properly due to the lack of knowledge about


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the *siheyuan* construction, maintenance skills and traditional materials. Therefore, it is the government that should play a leading role in solving these issues.  

### 5.4. Changes in society and family structures

Changes in society and family structures are the natural consequences of economic development. One-child policy along with rapid modernization and departure from the traditional values and foundations, introduced by the CCP, led to significant changes in philosophy and lifestyle of the people. These changes, in turn, led to the transformation of a family structure from a complex corporate organization to a relatively simple conjugal unit.

According to the National Health and Family Planning Commission, the family unit in China keeps getting smaller. The average size of a family in 2014 was 3.02 people, compared with 3.10 in 2010, 3.96 in 1990 and 5.3 in the 1950s. Along with the size of a family unit, the changes apply to the shifts in lifestyle, displayed in emergence of a variety of family patterns, such as single-parenting, childless couples and single households.

Traditional layout of *siheyuan*, with its distinctive features such as *patrilocal* residence arrangement, segregation of women, hierarchical designation of the living spaces in a big extended family – do not correspond to nowadays’ lifestyle and family structure anymore. Therefore, it is necessary to study the existing neighborhood patterns in order to evaluate which patterns prevail and in which circumstances the social cohesion is most functional and harmonious. This knowledge is crucial for developing

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63 Donia Zhang (2016), 148;  
64 One-child policy (dú shēng zi nǚ zhèng cè 独生子女政策) was a population planning policy of China, introduced in 1979 and abolished in 2016. The policy was only enforced on Hán 汉 Chinese and allowed exceptions for many groups, including ethnic minorities.  
66 Patrilocal residence arrangement is a pattern of marriage in which a woman settles in the husband's home or community after marriage.
of an elaborate design of new courtyards in the future, as it can provide clear guidelines on how to adopt the best features of the traditional siheyuan and at the same time provide all of the residents with functionality, comfort and privacy, and guarantee good quality of life of the community.

6. Preservation of siheyuan

Historic preservation of Beijing siheyuan started taking steps in 1984, when the Beijing municipal government initiated a protection plan that covered only a small portion of siheyuan in the old city. In 1992, the State Council approved the Beijing Master Plan 1991-2010 that established the status of Beijing as an aspiring international city and highlighted the need for a balance between development and conservation of cultural heritage. However, the promising Master Plan of 1992 was later revised in view of the Olympic Games in 2008. The new Master Plan was marked by an accelerated demolition of historical sites of Beijing in order to make space for the Olympics. “New Olympics, New Beijing” has become the slogan of the reinforced demolition.

Sadly, the Olympic Games were used to justify many unrelated projects, which are now going forward, long after the Olympics are over. This period brings to mind the dark times of the Cultural Revolution, when private property was seized by the government. Only this time, there is no hope that the homes could be returned one day.

In 2002, the Conservation Plan of Historic and Cultural City of Beijing was initiated. It provided guidelines for the conservation of traditional houses, putting emphasis on the

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68 Běijīng shì chéngshì zǒngtǐ guīhuà 《北京市城市总体规划》 (2004-2020), document retrieved 2018-04-29 from <https://baike.baidu.com/item/%E5%8C%97%E4%BA%AC%E5%B8%82%E5%9F%8E%E5%B8%82%E6%80%BB%E4%BD%93(2004-2020)>.
69 “Xīn àoyùn, xīn Běijīng” “新奥运, 新北京”.
original courtyard system – only genuine *hutong* structure was subject to conservation and protection. The plan strictly regulated the renewal methods and much attention was paid to the traditional form, color, and usage of materials in order to save what was considered to be heritage.\textsuperscript{70} The damages in the protected *hutongs* have been repaired and their original appearances have been gradually restored.

According to the Beijing Municipal Administration of Cultural Heritage, today there are over 500 historic courtyards preserved in the Cultural and Historical Conservation Areas as important cultural monuments.\textsuperscript{71}

Conservation methods are successfully applied to cultural relics, yet conserving a vernacular architecture is a very challenging task. *Siheyuan*, like any other residential housing, is a functional organism, which is intended to serve its daily purposes and cannot be displayed in a museum; it changes together with the people who inhabit it, reflecting their personality, customs, and social position.

Preservation of vernacular architecture often raises frictions between the authorities and local residents, as restoration often goes hand-in-hand with street trading restrictions and removal of a variety of informal constructions within courtyards.

All *hutongs* are unique in their formation, and there can be no clear guidelines on what is to be considered cultural heritage. That is why it is important to use individual approach for each case and to listen to people’s voices in order not to harm the socio-cultural environment of *hutongs*.

Donia Zhang mentions in her book (2016) that conservation of the cultural environment must go hand-in-hand with the protection of the natural environment because conservation is an expensive undertaking, and it makes no sense to preserve entire

\textsuperscript{70} Donia Zhang (2016), 149.

neighborhoods only for them to deteriorate under the influence of air and water pollution. The protection of old trees, for example, is important not only to increase green spaces, but also to serve as organic cultural relics, contributing to cultural sustainability.

Therefore, in order to ensure that the *siheyuan* architecture survives through the days as a living structure and not turns into an “empty shell”, the focus should be made not only on the preservation of the original *siheyuan* architecture, but also on the maintaining of its essential functionality and socio-cultural environment.

I have chosen the following approaches that are implemented today on a large scale:

- restoration and modernization, which is aimed at increasing the functionality of the building and improving the living conditions of the residents. Restoration and modernization approaches are described in the same chapter considering the fact that these two methods are often interrelated;

- adaptive reuse, which implies reconstruction with further changing the original designation of the building, most often from residential to non-residential;

- construction of new courtyards, or *neo-siheyuan* – completely new houses, built according to modern technologies and high living standards, yet resembling traditional *siheyuan* in the structure and visual characteristics;

- construction of “*pseudo-siheyuan*” – a fusion of Chinese and Western styles. These buildings imply a variety of forms and scales and can be both residential and non-residential. This phenomenon is included in the research in order to illustrate a tendency of re-emergence of traditional Chinese architecture in a modern interpretation.
6.1. Restoration and modernization

The main purpose of this approach is to modernize a building, without changing its original structure and purpose, and to bring the living conditions to an acceptable level. In such cases when the condition of the building is poor and the original layout of the courtyard is lost, partial demolition might be necessary in order to restore the authentic structure of the building. The main purpose of the approach is to increase the living spaces and to improve their effective usage.

To increase the capacity of the living areas, a second floor is often added within the established height limit of 6 m. Hence, the living space is redoubled and used more efficiently, while, from the outside, the building resembles a one-storey house. Various extensions and storage spaces, constructed by the inhabitants, are usually those elements that are subjected to demolition as they are not a part of the original structure.

Several examples of the described approach are presented further.

6.1.1. Restoration in the Dōngsì hutong

Situated to the east of the Forbidden City, the Dōngsì hutong is one of the oldest alleyways in Beijing. Starting from 2017 and until nowadays this area has been undergoing major restoration, the goal of which is to re-create the traditional atmosphere of tranquility (Figure 2).

According to Zhū Xù – associate professor of the Tsinghua University and a member of the expert consultant team for renovation and repair – the main principles of restoration of such historical sites should be identifiability, reversibility and minimal intervention. He explains that recognizability refers to the place where repairs have been made. For example, if the pillar of a doorpost has rotten, then the pillar must be

72 “Jiānchí kē shíbié xìng, kěnì xìng, zuixiǎo gānyù de yuánzé” “坚持可识别性, 可逆性, 最小干预的原则”.
replaced, but the doorpost should remain preserved. After such replacement, the newly replaced parts must be easily distinguished. For example, if a piece of rake is cracked, one should use metal to hoop it and let it be seen that the metal was added later. Once the metal is removed, the rake can be restored to its original appearance. This is the principle of reversibility and minimal intervention.

During the restoration of the Dongsi hutong, several illegally built structures and walls had to be removed in order to improve both space functionality and appearance of the houses. The facing bricks and cement have been removed from the original wall surface and new bricks, made of traditional materials, have been added where necessary. Residential gateways have been restored according to the original style and color.

The restoration procedures were carried out with the help of experts from Tsinghua University’s School of Architecture, who, in their turn, constantly interacted with the local residents to gather more information on the traditional appearance of the houses. This cooperation has proved itself very successful. At the moment, 74 residential gateways have been restored to their original structure and visual characteristics.

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Figure 2. Dongsi hutong before and after restoration. Source: http://pp.163.com

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73 Qinghuá dàxué jiànzhú xuéyuàn 清华大学建筑学院.
6.1.2. Restoration of Cai Guoqiang siheyuan


The dilapidated siheyuan was restored to its original form, using traditional materials and modern construction technologies. The old architecture was well preserved from the outside, however, the interior was in a rather poor condition, that is why the interior was almost completely restored using the original types of floor tiles and wall surfaces.

According to Zhu Pei, such projects cannot be done cheaply and require a thoughtful approach and the work of skilled craftsmen. He claims that newly restored courtyards may possess both traditional and modern features; yet those features must not oppose, but complement each other. The architect says that the old architecture is like a vessel for memories and it should be respected and protected. He is convinced that, as an architect, he must ensure that new trends can easily engage in a dialogue with traditional forms.

The main concept that the architects adhered to throughout the restoration process was: “Solidify the old and infuse the new”. The project, indeed, managed to preserve the traditional layout of the courtyard and made it functional and suitable for modern lifestyle (Figure 3).

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75 Zhū péi jiànzhuī shé jiānzhé wùshì wùsuǒ 朱锫建筑设计事务所.
76 Nínggù lǎo de, zhùrù xīn de 凝固老的,注入新的.
6.1.3. Modernization in Xi rongxian hutong

In 2016 Chinese studio *OEU-ChaO*, headed by Architect Chéng Zhì 程志, modernized one house in *siheyuan* in one of Beijing’s historic *hutong* neighborhoods Xi róngxiàn 西绒线. The studio characterized the project as “turning a prison cell into a living space”: the houses in the courtyard were dilapidated; the courtyard served as a storage space and looked like a narrow pathway. The *siheyuan* was divided between different neighboring families, and therefore, each family’s living space was very limited. The aim of the project was to renovate and extend the living space for a nuclear family of three, residing in one of the houses.

Regarding a very limited living space – only 30m² – it was of importance to make each square meter functional. In order to increase the capacity, a second unit was lofted onto a mezzanine level to serve as a children’s room. In pursuit for functionality and effective use of space, the architect opted for Scandinavian style, which encompasses features of minimalism, bright illumination, neutral colors, and usage of ecologically-friendly materials.

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The previous interior was dismantled and a new interior was created. Wooden beams and rafters, bigger windows, functional combination of wood, metal and glass turned a dark and poorly ventilated dwelling into a cozy and modern home that still maintains adherence to tradition.

**Figure 4.** A house in Xī róngxiàn hutong before and after modernization. Source: [http://www.gooood.hk](http://www.gooood.hk)

### 6.1.4. Modernization in Da shì lán hutong

It requires much effort, investment, and, most importantly, time to renovate and modernize vernacular architecture. Time always plays against old architecture, and unfortunately it is not always possible to start a renovation project when it is needed.

To help old buildings survive through the days, a temporary solution was introduced in 2014, which is now known as *Plugin system* or *Paneling system*, and implemented in Dà shí lán 大栅栏 hutong.

The system integrates different structures, such as insulation, doors and windows, wires, water pipes, sockets, and indoor and outdoor surfaces. It prevents old buildings from further destruction while providing the residents with better living conditions. *People's*
Architecture Office\textsuperscript{79} has developed this approach in order to give the ageing structures of the city's hutong districts a chance to live on (Figure 5).

A big part of the project was minimal intervention and keeping the existing structure in its original form. No screws or nails were used to adjust the panels – they were simply locked with hooks that pulled the pieces together.\textsuperscript{80} According to the architects, no professional training is required – the paneling can be assembled by a small group of people in just one day, just as well as disassembled when no longer needed.

Light weight of the panels, their quick installation and convenient transportation makes this method applicable in all quarters. Moreover, the panels are mass-produced at a factory, which makes them affordable to most of the residents.

Unfortunately, the Paneling system is only a temporary solution, not qualifying for architectural sustainability, however, it improves the living conditions of the residents and helps to preserve a building in good condition, until the future renovation and modernization projects take over.

\textbf{Figure 5. }Dà shí lán hutong: exterior and interior after modernization. Source: https://www.dezeen.com

\textsuperscript{79} Zhòng jiānzhù 众建筑.

6.2. Adaptive reuse

Adaptive reuse refers to the process of reusing old buildings by changing their original designation. Adaptive reuse creates sustainable and uniquely designed structures with a nod to history, and a current purpose,\(^8\) it breathes new life into an old dilapidated building and makes it functional again.

With a competent approach, the reuse of old buildings has a potential to enhance the cultural life of the citizens. Regardless of the new designation and visual characteristics of the reused building, it will always preserve the structural characteristics of a 
\textit{siheyuan}. Therefore, the method of adaptive reuse is a fusion of tradition and modernity, which grants a second chance to an old structure and by making it look original and appealing, encourages people to get to know more about its history and original designation.

A decent presentation and open nature of a reused object – initially a private living space – is a phenomenon beneficial in many aspects: it can arouse people’s interest in local culture and tradition, as well as it can enlighten, entertain, and accommodate people. Despite all the benefits, this approach implies a substantial change, i.e. making residential architecture nonresidential, and consequently, it cannot be applied on a large scale.

Many 	extit{hutongs} today are reused as:

- libraries
- museums
- tea houses and restaurants
- souvenir shops

Two examples of adaptive reuse are presented below.

6.2.1. Micro Yuan’er Hutong Children’s Library and Art Centre

Not long ago, Chá er 茶儿 hutong was a typical dilapidated courtyard with small add-on kitchens built in the courtyard by the former residents. The attempt to find a new use for the old buildings that would be beneficial to the local residents – both young and elderly – resulted in the idea of creating Micro Yuan’er (Figure 6).

Micro Yuan’er is today a children’s library and exhibition space. Additionally, the center hosts a local handicrafts studio and classes in painting and dance. The idea was introduced and realized by the Zao Standardarchitecture firm in 2014.

The architects applied a rather deviant approach in their projects: instead of dismantling the old informal kitchens, built by the former residents in the center of the courtyard, they chose to redesign and reuse them. As a result, one of the former kitchens was redesigned into a mini art space made from traditional bluish grey brick. By doing so, the architects expressed their progressive view on informal add-on structures. According to them, those structures are often overlooked and disregarded, which doesn’t necessarily has to be so. The architects believe that such elements are important.

82 “Wei zai yuan” huitong er tong tushu guan ji yishu zhidongxin 微杂院胡同儿童图书馆及艺术中心.
84 Biaozhun yingzao 标准营造.
historical layers and integral parts of contemporary urban landscape and must be given a chance to gain a new life.

With this project, the architects tried to bring together residents of the local community, as some of the buildings in the area are still residential. Moreover, the aim of the project was to enrich the social and cultural life of local residents, and this goal was successfully accomplished.

This project has shown that adaptive reuse is an exquisitely creative approach, which goes far beyond pattern thinking and has an ability to create something new without destroying the old.

Figure 6. Courtyard in Cha’er hutong before and after becoming a library and art center. Source: http://www.standardarchitecture.cn

6.2.2. Xiezuo Hutong Capsule Hotel

The project of the Xiezuo Hutong Capsule Hotel\textsuperscript{86} was developed and realized by \textit{B.L.U.E. Architecture Studio}\textsuperscript{87} in 2017 (Figure 7).

The interior of the buildings was influenced by Scandinavian style, and can be characterized as minimalist, ecologically-friendly, and functional. According to my observations, this specific style is favored by modern Chinese architects. Indeed, its

\textsuperscript{86} Běijīng xiézuò hùtòng jiānǎng jiǔdiàn 北京协作胡同胶囊酒店.
\textsuperscript{87} B.L.U.E. Jiànzhú shèjì shìwù suǒ, B.L.U.E.建筑设计事务所.
distinctive features, such as simplicity of forms, pale colors and raw materials – help to bring light into dark and congested rooms, increasing the space – both visually and factually. Furthermore, ecologically-friendly elements of Scandinavian design merge perfectly well with traditional materials used for building of siheyuan.

In this project, all the materials were used in accordance with the classical architectural conventions, and the prevailing elements were wood, metal, and glass. The original roof structure was preserved and the wooden beams were left uncovered to serve an aesthetic purpose.

In this exquisite project, traditional charm and modern simplicity of the design complement one another and function as an organic whole. The emphasis was put on the essential elements of siheyuan – open courtyards, in order to offer the guests a place for recreation and communication. The old tree in the center of the courtyard was protected, and a wooden terrace was carefully built to surround it. This mindful approach reflects the architects’ deep understanding of sustainability principles, as discussed in Chapter 6.

Figure 7. Xiezuo Hutong Capsule Hotel. Source: http://www.gooood.hk
6.3. Neo-siheyuan/new courtyard housing

The term *neo-siheyuan* (新四合院) refers to completely new buildings, constructed according to modern technologies and high living standards, yet resembling traditional *siheyuan* in the structure and visual features.

This type of architecture points out the sentimental feelings for courtyard housing in response to rapid modernization. The phenomenon of *neo-siheyuan* shows how important it is today for the Chinese people to stay in touch with their roots.

It is a very promising tendency, specifically considering the period of the Cultural Revolution, which had a tremendous impact on Chinese culture and way of thinking. It is hard to believe that only several decades ago, many were sincerely willing to literally “Destroy the four olds and establish the four news”.\(^8^8\) This slogan of the Cultural Revolution made the acts of destruction legitimate, though provided no logical guidelines. According to this slogan, traditional courtyard architecture, along with other symbols of “backwardness”, were of no value and had to be destroyed. According to Xing Lu, this proclamation was vague and ambiguous, as there were no clear criteria regarding what was constituting the “Four olds” and what – the “Four news”, which had to be established. Everything could fall under scrutiny: even the indoor plants and pet birds could be considered a threat to the new order.\(^8^9\)

It took decades for the Chinese society to start re-embracing the value of their traditions and history after the collapse of Maoism. This trend is clearly traced through the revival of the Confucian thought, promotion of classical literature and music, a growing interest in *Feng Shui* philosophy and also architecture, which can be illustrated by the

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\(^8^8\) Old ideology, old culture, old customs and old habits (jiù sīxiǎng, jiù wénhuà, jiù fēngsū, jiù xíguàn 旧思想、旧文化、旧风俗、旧习惯).

emergence of new courtyard housing. This tendency undoubtedly deserves great attention and needs further development.

Presented below are the most prominent and successful examples of neo-siheyuan style.

6.3.1. Ju’er hutong

Jú er 菊儿 hutong (‘Chrysanthemum Lane New Courtyard Housing Estate’) was the first experiment with the construction of new courtyard houses in the preservation area of inner Beijing’s Eastern District area Nán luóguǐ xiàng 南锣鼓巷. The project was carried out in the period of 1990-1994 and was supported by the Beijing municipal government.90 The renewal experiment took place in a dilapidated traditional Ju’er hutong neighborhood in Nanluogu Xiang area. The new houses were meant to establish harmony with the old surrounding and at the same introduce the modern living standards.

Ju’er hutong today is a new residential area that incorporates features of traditional Chinese housing exterior with modern interiors and advanced living facilities. The new housing has communal courtyards of different sizes: the big ones are shared by about 15 families in 3-storey apartment buildings, whereas the smaller ones are shared by 4 families in 2-storey apartment buildings.91 The new housing takes on features of traditional Beijing siheyuan and Southern residential characteristics92, i.e. principles of large mansions in vernacular architecture of Suzhou. It implies the construction of 2-3-storey walk-up apartments grouped along the horizontal and vertical circulation lines. Furthermore, the colors, which are common in southern China, were used in order to make the appearance neutral and bright.93

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90 Donia Zhang (2016), 160.
91 Donia Zhang (2016), 196.
92 王艳芝, 秦江涛, 胡同里的老北京 (Old Beijing within hutong) (Běijīng: Xīngqiú dìtú chūbǎn shè, 2013), 17.
93 Donia Zhang (2016), 159.
The living conditions were improved by providing each unit with privacy and spaces for kitchens, bathrooms, terraces, and balconies; the old trees and surrounding buildings that were in good conditions, were preserved.\textsuperscript{94} However, according to Donia Zhang (2016), there are many issues with the quality of construction, such as poor soundproofing and insulation, badly functioning heating system, insufficient power capacity etc.

According to the original plan, the new housing would accommodate one-third of the returning residents in order to maintain the original community. However, only 10\% of the original residents could afford to come back.\textsuperscript{95}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure8.png}
\caption{Ju’er hutong before and after redevelopment. Source: http://edu.163.com}
\end{figure}

6.3.2. Nanchizi hutong

Nánchízi 南池子 hutong (“South Pond New Courtyard Housing Estate”) is a new courtyard housing estate in the east of the Forbidden City, built in 2003. Initially occupied by royal warehouses, the quarter was rebuilt after 1911 with ordinary courtyard houses, which came into desolation by the end of the 20\textsuperscript{th} century.

In her book (2016), Donia Zhang describes the Nanchizi hutong before the redevelopment as being in a very poor condition, practically with no facilities and with

\textsuperscript{94} Ibid, p. 160.
\textsuperscript{95} Ibid, p. 162.
a long list of safety issues. Numerous chaotically built extensions made them practically impassable. The population density in the area was very high, i.e. 480 people/ha, thence, a large number of original residents had to be resettled elsewhere.

According to the plan, the aim of the redevelopment was to construct a new housing estate, according to modern living standards, and at the same time maintain the original architectural characteristics – forms, colors and construction materials (Figure 9).

The results of the Nanchizi redevelopment were the following: nine hutongs were preserved, 31 siheyuan that were in adequate condition were renovated, 17 siheyuan were redeveloped, based on their original layout, and 64 arbor trees were maintained.\footnote{Zhang Donia (2016), 154.}

All apartments were equipped with kitchens and bathrooms, and some of the houses were even equipped with underground garage spaces and swimming pools.\footnote{Nán Xiānghóng 南香红, Huí bù qù de Běijīng hútòng nán chízi 回不去的北京胡同南池子 (Not being able to go back to Beijing Nanichizi) in Èr xián táng 二闲堂 (Two courts) 2008-04-24. Retrieved 2018-04-09 from \url{https://www.edubridge.com/erxiantang/l2/nanchizi.htm}.}

The property value has significantly increased after the redevelopment, and only the wealthiest residents could afford to return back to the area, whereas other families had to be resettled elsewhere.

Despite the improved living standards in the new housing, there was much criticism regarding the quality of construction. Many residents noted the careless execution and saving on construction materials. Donia Zhang (2016) mentions such issues as poor insulation, multiple cracks in facades, and rot on the wooden elements, wall blisters, and overall crude construction. These serious defects have forced several residents to require rebuilding of their houses.
6.4. Modern “pseudo-siheyuan” architecture

During the last decades, the Chinese state has been demonstrating growing interest in the revival of classical Chinese culture, including such aspects as Confucian values and Feng Shui in order to fill a spiritual vacuum. Furthermore, the Feng Shui theory has as well become popular among Western architects, which, according to Ole Bruun, has inspired Chinese architects to take their own cultural heritage more seriously. For instance, elements of Feng Shui are now steadily being integrated in both teaching and research in architectural studies and urban planning as well as implemented in modern architectural practice. He mentions various features, which are recently emerging in a postmodern Chinese architecture, such as curved facades, soft lines, rounded edges, waving rooftops, as well as entire housing complexes with interior gardens designed with explicit reference to Feng Shui.98 One of the examples of such housing complexes is “pseudo-siheyuan” architecture, which has recently emerged in Beijing.

“Pseudo-siheyuan” is a new phenomenon in modern architecture, when Chinese and Western styles are being intertwined. It can be characterized as a tribute to traditional courtyard architecture through the visual resemblance. This architecture is not

necessarily residential, but can serve various purposes. It can vary in forms and scales, and different sorts of materials are used in its construction.

Obviously, the emergence of such structures has nothing to do with the preservation of traditional siheyuan architecture, nevertheless, I have chosen to include it in my research as it indicates a pronounced tendency of the re-emergence of traditional architecture in a new creative interpretation, and therefore deserves appropriate scrutiny.

Two distinctive examples of “pseudo-siheyuan” are presented below.

6.4.1. Tangshan Organic Farm

In 2015-2016, Beijing firm Archstudio,99 led by the principal architect Hánwén Qiáng 韩文强, designed the organic food processing facility as a series of light-filled timber buildings arranged to mimic the traditional Chinese courtyard houses – Tángshān yǒujī nóngchǎng 唐山有机农场. The traditional layout and form, restrained color palette, natural materials, used for construction gives an impression of a typical residential siheyuan complex, however, its designation is not residential, but agricultural (Figure 10).

The farm is made of four enclosed relatively independent houses, including material storage, a mill, oil pressing workshop and packing area. The inner courtyard is the grain-sunning ground, and a convenient work cycle line is formed around the inner courtyard.100

According to the architects, a new idea is never a momentary inspiration; it rather comes from studying the purposes and limitations of each specific project. The process

99 Jiànzhú yíng shè jì gōngzuò shì, 建筑营设计工作室.
represents a creative interplay between internal and external, new and old, and artificial and natural. The ultimate goal of design is to create a new sustainable dwelling and alter space into communication medium for people and the environment.

Figure 10. Tangshan Organic Farm. Source: https://inhabitat.com

6.4.2. Cathay View Villa Estate

“Cathay View Villa Estate” (Guān táng 观唐) – are new houses in the traditional northern siheyuan design in Cháoyáng 朝阳 district in Beijing, built in 2005-2008.

According to Donia Zhang\(^{101}\), the estate has 329 units of 2.5-storey single-family homes classified into five plan-types and three unit-sizes: 300 m\(^2\), 350 m\(^2\), and 450 m\(^2\), with two courtyard-/garden-sizes: 290 m\(^2\) and 320 m\(^2\). All of the houses incorporate traditional Chinese architectural features: enclosing walls, gates, grey-color pitched-tile roofs, and decoration elements in traditional facades. The front yard, central courtyard, and backyard within each property create a gradual privacy and provide a space for social activities as in traditional Chinese houses (Figure 11). However, despite the traditional exterior form, the houses are equipped with modern facilities, such as garages.

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In her article, Donia Zhang refers to Cathay View villas as “... a poetic approach to contemporary Chinese housing design, and a picturesque setting for both visitors and residents”. She states that this project managed to modernize a classical siheyuan by incorporating interior features of Western design, making the housing beneficial and unique.

The buildings establish a balance between privacy and community, harmony with Nature and harmony with Humans, which, according to the author, are one of the main principles of cultural sustainability.

This type of design is gaining popularity among China’s elite, yet it cannot be referred to as a trend, since such estates are built on a very small scale due to the astronomically high prices that go far beyond most people’s budgets.

Figure 11. Cathay View Villa Estate. Source: https://jingdaily.com

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102 Ibid. p. 46.
7. Discussion

The traditional *siheyuan* architecture encompasses many different features and should not be perceived only as a romantic reminder of the distant past, but should rather be seen as a living essence of Chinese culture and philosophy and as medium that cultivates human behavior and establishes harmony between humans and natural surrounding, between humans and the society and harmony within the individual.

The traditional architecture, in contrast to the modern, has passed the test of time. It evolved gradually and refined itself through the centuries, developing in accordance with the Chinese lifestyle, tradition and philosophy, just like a pearl, which forms serenely in a shell.

I have observed that along with the revival of Chinese traditions and Confucian thought, the official discourse on historical preservation of Beijing *hutongs* has also positively changed during the last decade – from regarding *hutongs* as an outdated symbol of backwardness which has to be eliminated, to a cultural heritage that has to be protected. However, massive demolitions of the historical residential sites of Beijing continue to this day, and the domestic media coverage of the current situation is very contrasting to the Western media reports.

I came to this conclusion after having studied a range of works of Chinese authors published in China, and the works published in the Western countries, comparing their coverage of the preservation issues. For example, many of the Chinese authors, whose works are published in the West, touch upon certain sensitive topics, such as negative outcomes of the Cultural Revolution, flaws in *Weigai* redevelopment system, vague implementation of the conservation policies and poor quality of construction in the redevelopment areas. Such issues for obvious reasons are not discussed in the works published in the PRC, resulting in concealment of facts. Therefore, to be able to create a
functioning conservation plan and succeed with its implementation, it is necessary to loosen the control of the media and intellectuals and officially turn to both domestic and foreign experts in preservation of vernacular architecture. Such cooperation would be beneficial to all the participants and would result in the enrichment of architectural practice and strengthening of cultural ties.

In my research I have investigated the architectural and cultural phenomenon of the siheyuan architecture, studying it in the scope of Chinese history, culture and philosophy, analyzing its past and opposing it to the future. I have as well justified the importance of the preservation of Chinese courtyards as a historical and cultural artifact, which reflects society and family structures, values and beliefs of its inhabitants, as well as their perceptions of sustainability and harmony. I have further described and analyzed different methods of siheyuan preservation, on the basis of which I suggest applicable solutions that could contribute to sustainable development of siheyuan.

These solutions are presented below.

- Preservation of the community spirit and social network is as crucial as preservation of architecture alone. The social life in hutongs is the main component, which defines the architecture as a living structure, likewise the preservation of natural environment, which is crucial for the maintaining the link between the past and the present. There can be no uniform guidelines in the preservation of hutongs, as every courtyard is unique; therefore, it is important to develop an individual approach in every case. The emphasis should be made on the maximal preservation and minimal intervention.

- In order to bring the preservation practice on a larger scale, maintenance costs must be affordable for the residents, and the materials used must be accessible and easily replaced. The best solution would be to educate the residents on how
to maintain their homes properly after the renovation in order to improve and not harm the original structures of *siheyuan*.

- Along with the various factors contributing to the continuing decline of the courtyard architecture (as discussed in Chapter 4), one of the main factors is psychological, i.e. population’s uncertainty in the future. The lack of proper awareness regarding relocation and eviction orders presented at short notice make the inhabitants reluctant to invest their money and efforts in renovation or maintenance of their homes. Many residents who have lived in *hutongs* for a long time do not want to leave despite the existing multiple problems. They explain that they will miss the life filled with harmony and communal care, which they enjoyed there for many years. However, there are others who are willing to move out because they are dissatisfied with the living conditions and tired of the growing uncertainty. Obviously, a certain resettlement of the residents is unavoidable in order to solve the problem of overcrowding. However, this problem should be solved with respect to the will of the locals. It is important that the residents are given a choice and not presented with a *fait accompli* in the form of an eviction notice. The residents should be fully informed of the redevelopment plans and aware of the situation particularly regarding their homes, so that they have time to evaluate the perspectives and plan their actions. The residents, who choose to be resettled, must be provided with sufficient compensation and resettled within the city limits.

- For the same reason, it is important to work with the remaining local communities during all stages of reconstruction or redevelopment, receiving their feedback and input and ensuring that the residents approve the plan and feel included in the project. Changes must not be imposed on the local residents,
but achieved through collaboration. Moreover, the whole society should participate in the discourse on preservation of hutongs.

- There should be a balanced division of residential, commercial and mixed land use in hutongs. Commercial use can be economically beneficial to the local residents: it has a potential to attract tourists that would spend their money there, while the rental payments would be beneficial for the state, which, in its turn, would have a direct interest in improving the infrastructure of hutongs in order to ensure its further development. Again, there should be a balance between the residential and commercial use, in order not to harm the local socio-cultural environment.

- The last but not least factor, without which sustainability cannot be achieved, is the governmental regulatory and economic support. Government should play a leading role in the preservation of residential historical sites of Beijing. Auspiciously, the government today recognizes the importance of preserving the Beijing hutongs, and it successfully develops new preservation guidelines and concepts. However, strict implementation of the guidelines is necessary for the successful preservation of hutongs. Unfortunately, in China up to the present day, the inconsistent implementation of the conservation plans has been making the initially good intentions backfire. It concerns unreasonable demolitions, poor construction quality and ignoring the interests of the local residents.

In this way, the conducted research aims to increase the awareness about the current situation of hutongs and suggests possible solutions of improving the implementation of preservation policies.

However, in order to extend and estimate the solutions, proposed above, it is necessary to perform a quantitative study with extensive statistical analysis. Furthermore, it is
crucial that the further studies are conducted in Beijing, since the access to the architectural objects is invaluable for the collection of data and the independent study of the preservation techniques.

Another benefit of conducting the further studies in Beijing is in the ability of establishing a contact with the local people. In my research I have generally investigated the role of communities in *hutongs*, as well as studied certain psychological issues that the residents often face regarding the redevelopment and relocation. Nevertheless, I suppose that these insights can be further refined and developed in the future studies through conducting personal interviews with the local residents, followed by analysis and summarization of the gained information.

8. Conclusion

History has never changed as rapidly as in the last hundred years: the world has become globalized and is now ruled by competitive market economy in almost every sphere, including architecture. In today’s reality, architectural value is first of all determined by the economic profits rather than cultural components, making it difficult for vernacular architecture to compete with the modern housing.

Traditional residential architecture needs time to adapt to these changes, and it is important to ensure that it gets this chance and that at least temporary solutions are offered in order to prevent the historical sites from deterioration. It will be a great loss for the world architecture and the world culture in general if architecture that existed for many centuries and that survived wars and revolutions, the disaster of collective ownership, and successive economic reforms, managing meanwhile to retain its uniqueness, will be extinguished by the processes of globalization and modernization.
Given a chance to survive, siheyuan can be beneficial in many contexts. I am convinced that contemporary architects could potentially adopt the sustainability principles of vernacular architecture and implement them, if adjusted to modern standards. In my view, careful study of the traditional building practices could help modern architects develop new ideas on construction that is both attractive and functional. With its elaborate design, based upon ancient philosophical traditions, and created to serve material and social needs of its inhabitants, siheyuan has much to offer to the Chinese people, especially today, in the 21st century, when China is heading to rehabilitation of its cultural values and making first steps toward the traditions after many decades of its denial.

Winston Churchill famously said “We shape our buildings, thereafter they shape us” – this statement is difficult to disagree with: siheyuan is a vivid example of such mutual influence. Built according to the principles of Chinese philosophy, it has cultivated and advanced the behavior of its inhabitants and brought them closer together throughout the centuries. Unfortunately, nothing similar can be said regarding the characterless tall concrete structures that emerged during the last several decades and made many Chinese cities indistinguishable from one another. What can such architecture give to humanity? Has such architecture a potential to advance the inhabitants and guarantee harmony on different levels? If we now shape our buildings in such way, how will they shape us after a lapse of time?

In the 21st century, when one trend changes another at speed of light, it is crucial to develop building strategies that would not become obsolete within just a few decades. Without deep understanding of traditional architectural practice it can hardly be achievable.
References

English sources:


Hu, Xiao, *Preserving the Old Beijing: The First Conflict between Chinese Architects and the Communist Government in the 1950s* (University of Nebraska – Lincoln).


Chinese sources:

Baidu Baike encyclopedia. “Beijing shi chengshi zongti guihua” 《北京市城市总体规划》 (2004-2020), document retrieved 2018-04-29 from <https://baike.baidu.com/item/%E5%8C%97%E4%BA%AC%E5%B8%82%E5%9F%8E%E5%B8%82%E6%80%BB%E4%BD%93%E8%A7%84%E5%88%92(2004-2020)>.


Dong Zhongshu 董仲舒 (179–104 BC), Chunjiu fan lu, xun tian zhi dao 《春秋繁露 · 遵天之道》 (Luxuriant Gems of the Spring and Autumn), translations from the Asian Classics, obtained from EDX course “History of Chinese Architecture”, given by Tsinghua University, retrieved 2018-03-27 from <https://courses.edx.org/courses/course-v1:TsinghuaX+80000901x+1T2017/courseware/dce710450b294548883e96c0a9cf23cc/d9f774c6eb1b47d9a92f3346b28adf37/?child=first>.


Jia Jun 贾珺, Beijing siheyuan 北京四合院 (Beijing siheyuan) (Beijing: Qingshua daxue chuban she, 2009).

He Ning 何宁, Beijing fengjing mingsheng 北京风景名胜 (In Beijing), (Beijing: China Intercontinental Press, 2010).


Wēng Lì 翁立, *Běijīng de hútòng* 北京的胡同 (Beijing hutongs) (Běijīng: Běijīng túshū guǎn chūbǎn shè, 2004).