

**Housing Vernacularism in Gaozhuang Village, Henan Prov. China,
Towards a Promising Future**

A report submitted to McGill University in partial fulfillment
of the requirements of the degree of
Master of Architecture

Jianing Gao

School of Architecture
McGill University
Montreal, QC
September 2016

Name: Jianing Gao

Student ID: 260665339

Program: UDH Program

Supervisor: Prof. Robert Mellin

Date: Wed. September 26th, 2016

Contents

Abstract

Acknowledgements

Chapter 1

Literature Review

1.1 Cultural Landscapes

1.2 Vernacular Architecture

1.3 Everyday Life

Methodology

Qualitative Study & Quantitative Study

Chapter 2 Gaozhuang Village, Henan Province, China

2.1 Background

2.1.1 A Brief Introduction to Henan Province

2.1.2 A Brief Introduction to Gaozhuang Village and the Gao Family

2.2 The vernacular architecture of Henan and Gaozhuang Village

2.2.1 The development of Henan vernacular architecture

2.2.2 Vernacular architecture in Gaozhuang Village

Chapter 3 Courtyard Houses in Gaozhuang Village

3.1 10 old courtyard houses——plans, sections, elevations, onsite drawings & sketches & interviews

3.2 8 semi-old courtyard houses——plans, sections, elevations, onsite drawings & sketches & interviews

3.3 12 new courtyard houses——plans, sections, elevations, onsite drawings & sketches & interviews

Chapter 4 Cultural Landscape in Gaozhuang Village

4.1 Along the Yellow River... ...

4.2 The field and the working people

4.3 Fairs and markets

4.4 Everyday life---Food

4.5 Everyday life---Friendship

4.6 Everyday life---Clothing

4.7 Everyday life---Wedding ceremony

4.8 Everyday life---Entertainment

Conclusion

References

Abstract

As in many contexts, thousands of years of building houses have shaped the local features of rural houses in China in their long adaptation to nature to meet the demands of living. However, unlike historic houses in cities which are protected by government, institutions and scholars, houses in rural China are victims of the lack of professional guidance and of the dramatic change of life style as a result of the continuing storm of modernisation and urbanisation. The courtyard housing in Gaozhuang Village in Henan Prov. China is among such houses beyond the attention of any level of scholars, despite their local features shaped and adapted by customs, habits and time. Thereby the vernacular residential buildings in Gaozhuang Village are brought into focus in the project and used as an illustration in this paper which is designed to document reasons villagers replace their old houses with new higher ones and the ways the traditional courtyards satisfy the farmers' daily needs. In addition, the economic, political and cultural influences in shaping the typology of vernacular architecture, the interrelationships among families and neighbourhood and the absorption of modern elements into the new replacements are identified. On-the-spot measurement and examination of the layout of the houses, in-depth interviews with the villagers about the changes of people's daily life and household patterns are conducted. To be comprehensive, contrast and comparison are made between the old houses and the new in terms of space arrangement, structure, materials, cultural and religious life. Through documenting vernacular architecture, landscapes, and everyday life in Gaozhuang Village this paper is an attempt to raise the awareness of housing vernacularism in Henan and to provide sound approaches to maintaining vernacular architecture in rural China without rejecting the modern world.

Key Words vernacular architecture, courtyard house, landscape, everyday life, rural China

Abtrait

Comme dans beaucoup de cas, des bâtiments construits depuis des milliers d'années ont façonné les caractéristiques locales des maisons rurales de la Chine avec leurs ajustements continuels à la nature pour se conformer aux conditions de vie. Cependant, contrairement aux maisons historiques qui se trouvent dans les villes protégées par le gouvernement, des institutions et des savants, les maisons se trouvant dans les zones rurales de la Chine sont négligées par leurs manque de structuration professionnel et sont victimes de changements dramatiques suite aux tempêtes continues de la modernisation et de l'urbanisation. Les bâtiments d'habitation traditionnels dans le village Gaozhuang, qui se situe dans la province de Henan en Chine, sont parmi ces villages comme les zones rurales qui n'ont pas l'attention de divers niveaux d'érudits, en dépit du fait que leurs caractéristiques prennent la forme d'architecture traditionnelle et sont façonnés par les coutumes, les habitudes et par le temps. Ainsi, les résidences de style typique du pays le village Gaozhuang sont le point central dans ce projet et sont utilisées comme une illustration dans cette thèse qui cherche à documenter les raisons pour lesquelles les villageois ont remplacé leurs vieilles maisons par de nouvelles, plus hautes, ainsi que les manières dont les maisons avec des cours traditionnelles comblaient les besoins quotidiens des agriculteurs. De plus, on y identifie les facteurs économiques, politiques et culturels qui ont influencé le type d'architecture typique ainsi que les interconnections entre les familles et leur voisinage dans le quartier, et l'assimilation d'éléments de la modernisation qui sont intégrés dans les nouvelles constructions. J'ai pris des mesures et examiné la structure des maisons sur place, mené des entrevues plus approfondies avec des villageois quant aux changements de la vie de tous les jours du peuple et de l'évolution des ménages. Pour être plus englobant, les anciennes maisons et les nouvelles sont mises en comparaisons en termes de gestion d'espace, structure, matériaux, pratiques culturelles et religieuses. La présente thèse tente de sensibiliser à l'importance de l'architecture traditionnelle des habitations dans la province de Henan et de fournir des approches judicieuses à la préservation de ces traditions d'architecture en Chine rurale, sans toutefois rejeter le monde contemporain.

Mots Clés Architecture Traditionnelle, Bâtiment d'habitation traditionnel, paysage, vie quotidienne, Chine rurale

Acknowledgments

This project took me five months to finish. During the time of preparing materials, writing and editing the paper, many people readily lent a hand to me both materially and spiritually. First of all, I would like to extend my deep and sincere gratitude to my supervisor, Prof. Robert Mellin, who has been engaged in cultural landscapes and vernacular architecture for decades and is well-known and knowledgeable in the field. His expertise is admirable, and his instructions have inspired and enhanced my curiosity and interest in the field and opened a new world for me, reminding me that my attention should be paid not only to the physical environment in which an architecture stands but also to the cultural or even psychological landscape consisting of people, their life style, their religions or beliefs etc. in which an architecture is invisibly steeped. Prof. Robert Mellin's books *Winter in Tilting*, *Tilting and City of Towns*, etc. provide me with new methods to conduct my research and to present the results in this paper. I feel lucky to have an opportunity to learn the ways from him in terms of analyzing places, investigating landscapes, interviewing people, documenting materials and describing relevant natural environment. All of these will help me in my further research and will certainly be instructive for me in my future career. Besides my supervisor, other learned scholars at UDH such as Prof. Friedman, Prof. Luka and Prof. Vikram who have taught me in the field or in relevant fields certainly deserve my deepest gratitude. Their interesting instruction, academic achievements and novelty in perceiving architecture have left a deep impression on me, have greatly influenced me and will help me in my future career. My thanks should also go to my classmates in UDH group, who shared with me their ideas, thoughts, and comments on my research, giving me their valuable suggestions and help. From them I know how to manage the research properly and how to better communicate with people in the research. Prof. Manchang Zuo, one of the few scholars in Henan Province, China, who has studied Henan architecture for years and has published several monographs on vernacular architecture, is another respectable person whom I will never forget because during my trip back to China, he accepted my request for an interview---a long one, gave me a lot valuable advice about vernacular architecture in Henan Province in specific ways from space to structure, from material to architectural layout, from furniture to traditional Chinese religious beliefs. I must say that from him I have come to understand the vernacular architecture in Gaozhuang Village in a more comprehensive way and have come to know more about the academic status quo in the field in mainland China. With more practical knowledge, Yuhai Du should never be neglected in my thank list. Although more than 70 years old, he still has enthusiasm in construction and architectural designs. He, as the local farmer architect, has passed down a lot of rituals of construction, procedures of making adobe walls, theory of Fengshui as well as the new development of lifestyle of villagers in the village. His useful and practical methods guided me in my drawings and sketching. With the abstract part of this paper, Joanna Wang, also a student at McGill University, majoring in translation and

interpretation, helped me a lot with translation and merits my thanks. And I would like to give my thanks to Marcia King, the secretary of School of Architecture, for her consistent help and kind advice without which I would have spent more time struggling to solve problems arising in the process of my research and composition of this paper.

Last but not least, I thank my parents, Gongshe Gao and Huifang Nie who accompanied me during my stay in rural China, and my uncle Shehui Gao who helped me with all of the measurement of 30 houses, consistently provided me with advice and new point of views. I also thank my grandma who made efforts to serve different dishes on different days during my stay with her doing my research. Their support and love are what I treasure particularly when I am away from my homeland, writing my paper in Canada.

During the past months when I made my on-the-spot research and wrote this paper, many other people silently and warm-heartedly supported me, devoting their time and energy to my work, made me understand Gaozhuang Village and its surrounding area more precisely and most important, helped me genuinely involve myself in the villagers' daily life as one of them rather than as an outsider. I am lucky to get to know them, and here I thank them all with all my heart.

Chapter 1 Literature Review & Methodology

Literature Review

Cultural Landscape| Definition

This paper is mainly focusing on the vernacular housing in Gaozhuang Village which is situated in Henan, a central province in China. Through the study of daily routine of inhabitants in this village, researcher is endeavouring to uncover the interrelationships between national and regional policies, economy, local culture and courtyard housing, and the evolvement of courtyard housing in this village in the past 30 years particularly since China's Reform and Opening-up to the Outside World Policy in the year 1978. Thus understanding the development of the study of vernacular architecture globally and locally is essential to this research, also the landscape, or rather the cultural landscape continues nurturing, influencing, and even guiding vernacular architecture is worthwhile exploring and learning.

Though landscape has many forms and layers such as public landscape, social landscape, political landscape, and cultural landscape, and has evolved and stretched into several categories like townscape and cityscape, etc. *cultural landscape* more often appears in the word *landscape* alone referring to ecological places that possesses close interplay with human activities.

According to Carl Sauer, who probed into cultural landscape in both split and integrated approaches and published his essay in 1925, *The Morphology of Landscape*, "The cultural landscape is fashioned from the natural landscape by a cultural group. Cultural is the agent, the natural area is the medium, the cultural landscape the result." Paul Groth defined cultural landscape in his book *Understanding Ordinary Landscapes* in a broader sense and mainly focused on the interrelationships between man and place. According to him "Landscape denotes the interaction of people and place: a social group and its spaces, particularly the spaces to which the group of belongs and from which its members derive some part of their shared identity and meaning. All human intervention with nature can be considered as cultural landscape: the high-style cathedral or office tower, as well as the Depression-era Hooverville hut, a farmer's barbed-wire fence, or a kitchen garden." By spaces he means "everyday space" that are commonly used in everyday life such as streets, rooms, gardens, and he cares more about how these everyday spaces could influence men and help them find their identity and meaning. Definition of cultural landscape around man and place, or rather, social and environment can also be found in some of J.B. Jackson's essays where he describes cultural landscape a lot about the wild, rough, lonely American landscape and he regards the American landscape beautiful as it denotes "a social order which was free and egalitarian," and "even the smallest hamlet, the most remote farm, was seen as a sort of social institution." (Jackson & Zube, 1970)

In *Everyday America: Cultural Landscape Studies after J. B. Jackson*, Paul Groth and

Chris Wilson expound the definition of the word *landscape* and its evolution of its meanings through a lexicological way. According to their study, *landscape* in Old English is *landskipe* and *landscaef*. From the lexicological view, these two words have already contained several meanings. The word *land* means a portion of the earth ranging from the plowed field to the whole kingdom. While *-skipe*, *-scipe*, and *-scape* was closely related with *scrape* and *shape*. And the suffix *-ship* indicates a quality, condition, or a collection. Therefore, “the definition of *landskipe* is a collection or system of human-defined spaces, particularly in a rural or small-town setting.” The Old English sense of landscape as social and spatial was gradually discarded and switched to the Dutch word *landschap* by 1600 which denoted a painting of rural, agricultural settings and by 1700, as it prevailed in England that rich landowners began to employ picturesque landscape painters to paint the landscape, landscape became a pleasing view or wild and untouched nature. By the nineteenth century, landscape was not restricted within the artistic field, but evokes people’s imaginary of nature, and more specifically of natural gardens and vernacular architecture and so forth.

In the United State, landscape develops within literature, populism in the early-twentieth-century and regionalism in the 1930s. In Europe, influenced by the colonialism, scholars in universities supported the notion of everyday surroundings that “could provide importance of social life and cultural values.” In Germany, landscape was regarded as a discrete area defined by physical elements. In France, the study of landscape mainly focused on the relationship between people, place and everyday life as well. In the Great Britain, scholars focused on historical approaches and emphasized on field observation and map interpretation. Later the study of landscape accumulated in Europe was transported to the United State as “the basis of the present-day complexity of landscape study.” And owing to Carl Sauer’s dedication, who is the representative of the German stream that revised the German *landschaft* idea, updated its definition as cited above and started using the term *landscape*, that “Landscape, in this sense, was not a painting, a vista, or a garden but rather a particular area shaped by a cultural group and strongly influenced by the limits of soil, climate, and plant life.” (Wilson & Groth, 2003) And also Paul argues that the definition of the landscape various between countries and universities and gives example in Britain that, landscape has little relation with cultural space but a scene to some writers while for others it is useful for spatial study (Groth & Bressi, 1997).

Cultural Landscape| Development

Actually *Landscape* had been developed for centuries since people formed the word which denotes the terrain of such study. And cultural landscape study has gradually become a multidisciplinary subject attracting professionals from all walks of life, journalists, psychologists, geographers, architects, landscape designers, travel agents, novelists, socialists, philosophers, and so forth. However, cultural landscape has not been fully discovered, broadened or continuously and systematically developed until the twentieth century.

John Brinckerhoff Jackson, the writer, philosopher and publisher formed his first comprehensive concept of cultural landscape from the aerial photographs, guidebooks and regional geography studies during his years serving in the army in France. His experience in France became a trigger in his later years to establish *Landscape* magazine and made him a catalyst for cultural landscape studies. In the year 1951, led by John Brinckerhoff Jackson, the study of the American cultural environment got started seriously. J. B. Jackson and his magazine *Landscape* became the center of cultural landscape study and due to his diverse network *Landscape* received papers from various fields and Jackson widened his magazine to different areas that covered all manner of human environment. During the mid-twentieth century the studies of conservation and preservation touched more of urban districts, small towns and rural landscapes and got related with cultural landscape. Gradually they gained the support from scholars of cultural landscape. However, J. B. Jackson and other cultural landscape scholars such as Kevin Lynch and David Lowenthal did not vote for some ideas raised by prevention and environmentalism such as frozen a park or landscape. Debates within cultural landscape are around the relationship between agency and structure. Under such debate, between 1960s and 1970s, study of "Place-making" developed that shows its emphasis on phenomenology and on "sense of place." Scholars such as Yi-Fu Tuan and Anne Buttimer are representatives in this regard. Yi-Fu Tuan raised people's awareness of psychological aspect of the environmental settings. He declared the connection between space and place that "Place is security, space is freedom: we are attached to the one and long for the other." For his part, experiencing space and place never ends at seeing it or the textual worlds but is always through several subtle sensations, say, gustatory, olfactory, kinesthesia, and the sense of hearing. And he divided human space in three categories, namely the mythical, the pragmatic, and the abstract or theoretical human space, and clearly stated that each category probably overlaps with the other two on a large scale. When talking about architectural space, he regards it not only as the result from human beings' discernment of geometric patterns in nature, their creativeness of abstract spaces in mind but also as the result from their emotion, feelings and thoughts embodied in those spaces (Tuan, 1977).

In 1975, cultural landscape study was broadened by Henry Glassie who suggested that at the deepest level of all environmental change and management was the inherent opposition between chaos and control. Again his study supports the notion of Structuralism. In the 1980 and 1990, landscape study embraced Marxist and post-Marxist. Both Henri Lefebvre and David Harvey have stated their conceptions of social space, and many of Henri Lefebvre studies also touch everyday life and everydayness.

Though J. B. Jackson is central of cultural landscape study, no single paradigm controls cultural landscape studies and until today, the terrain of this study is still expanding absorbing other disciplines. In Paul Groth's *Understanding Ordinary*

Landscapes, he listed six tenets of cultural landscape studies in the 1990s.

Firstly, ordinary, everyday landscapes are important and worthy of study. The study of ordinary landscapes is of vital importance to a better comprehension of social experience and cultural meaning. In Paul Groth's definition, the scope of landscape contains everyday spaces such as buildings, gardens, streets, etc. Steven Harris gives the definition to everyday: "The everyday is that which remains after one has eliminated all specialized activities. It is anonymous, its anonymity derived from its undated and apparently insignificant quality." Lefebvre regards everyday life as "a means of countering the 'Mystified consciousness' that encoded alienation in all spheres of existence." And "All such systems have in common a general law of functionalism. The everyday can therefore be defined as a set of functions which connect and join together systems that might seem to be distinct." (Harris & Berke, 1997)

Secondly, present research subject in landscape studies are likely to be urban as well as rural, focused on production as well as consumption. The domain of cultural landscape has been gradually shifted from rural landscape such as farmsteads, small towns, mill, etc. to a larger area. Some scholars regard city, parking lot, highways as cultural landscape. Both the rural landscape and "cityscape" are all that human constructs and evolve with human activities.

Thirdly, contrasts of diversity and uniformity frame essential and continuing debates within cultural landscape interpretation. In *The Many Guises of Suburbia*, J. B. Jackson describes a village that whatever the architectural form, the daily routine of the inhabitants, the dress, the manner, the occupation fall into overall uniformity. He shows his interest in studying the evolution of such village, socially as well as physically but gives little explanation to the form of such uniformity and reasons inhabitants live that way. Answers are found in Lefebvre's study and he explains the form of uniformity in his essay *The everyday and everydayness*. Uniformity and rationality are, according to him, now dominating the world and the form, function, and structures once connected with each other have become a whole and the values linking to the integrity are mutable according to history, economy, society and other elements and easily fall into some "styles". He raises an example that under urbanization, architectures of various styles and forms have given way to "architectural urbanism" and finally becomes uniform.

Fourthly, landscape studies call for popular as well as academic writing, to influence the actions as many people as possible. Mainly two types of writing have appeared in the study of cultural landscape, one is academic writing, the other is literary writing. However the style of writing in cultural landscape study should achieve the ultimate objective of it, which is to inform the public as much as possible. And J. B. Jackson commented on writing style that "totally academic style-dry, without color or detail, stifled by footnotes—written only for a small public of scholars who may (or likely

may not) see the work's landscape potential." Jackson in his own writing often uses literary style which his magazine *Landscape* also prefers.

Fifthly, the multiple choices of theory and method in landscape studies stem from the subject's interdisciplinary nature. Cultural landscape does not relate with one or two subjects but with numerous disciplines and theories. Thus it gets influenced by different studies and methods from different domains and gains its qualities from outside.

Lastly, within cultural landscape methods, the primacy of visual and spatial information is a central theme, even though not all landscape interpretation is based on visual and spatial data. Dell Upton holds that both the seen and the unseen are important. Paul Groth states that in the study of cultural landscape both text writing and visual information are important and these two parts should intertwine to better present writer's ideas and theory. Mainly there are two sources of criticism of visual and spatial information. Visual inspiration lead to neglecting deep investigations of structures and too much concentration on visual and spatial information result in the superficial fieldwork. Deryck Holdsworth questions the reliability of visual information.

Vernacular Architecture

In his article *Several American Landscapes*, J. B. Jackson states the blurred relationship between landscape and human identity that: "A beautiful landscape came to mean a natural landscape, one which man had altered little or not at all. Contact, however brief, with such a landscape led to an awareness of eternal values and to a questioning of one's ultimate identity." And by using an anonymous writer's article *American Scenery*, the same writer puts forward a twofold question: "What was American scenery, and how did it influence the character of Americans?" Jackson again discusses the interrelationship between landscape and individual characteristics as well as human identity and draws the conclusion that American landscape affects a lot in forming the identity of Americans (Jackson & Zube, 1970). From J. B. Jackson's words we can infer that landscape shapes the people living within it and thus further shapes the form, the style, the quality of the local architecture which is a product and an important part of human activity.

Henry Glassie also articulates the connection between human and landscape, or rather, between architects and architectural environment in *Vernacular Architecture*: "All architects are born into architectural environments that condition their notions of beauty and bodily comfort and social property. Before they have been burdened with knowledge about architecture, their eyes have seen, their fingers have touched, their minds have inquired into the wholeness of their scenes." By comparing their ideas, it can be found out that what concerns Glassie is the mutual influence from both the environment and architects other than one side.

According to Henry Glassie, the study of vernacular architecture is to document it little by little. Following is the way he defines vernacular architecture: "The term, I repeat, marks the transition from the unknown to the known: we call buildings 'vernacular' because they embody values alien to those cherished in the academy."

With the development of cultural landscape, the study of vernacular architecture is an approach to the whole of the built world. It is not within the domain of architecture, but has spread to other fields and relates vernacular architecture with not only cultural landscape but with other landscapes, attaching class, gender, ethnicity, race, etc.

The ultimate goal of vernacular Architecture studies is not to reconstructs a physical landscape but to interpret it (Adams & McMurry, 1997). Scholars study cultural landscape from various perspectives, universally and personally. Typological study is commonly used to grasp the basic architectural form. In his *A City of Towns*, Robert Mellin uses several methods to document and analyse the housing typology in St. John's, Newfoundland by which houses are studied not only individually but also perceived as integrity and the process of the research is demonstrated by computer-aided drawings and models. Also typologies of houses in different districts or streets are compared with each other in terms of forms, scales and shapes. Prof. Mellin also makes several analytical drawings to illustrate the relationship between architecture and streets in regard of their scale and ratio.

And in *Rural and Urban Building Types in North America*, Steven Holl examines each house from its location, plan, facade, axonometric models of both exterior and interior structure, and other aspects. Though some of the methods are purely geographical during the typological analysis, they assist well in the whole study and eventually take the lead in the field with a convincing conclusions and pioneering and sparkling assumptions. As scholars in the vernacular architecture study take the built environment as a cultural product, their study in turn needs to confront men who are involved in the activity of these cultural products. In this way, the study of vernacular architecture is more spiritual oriented and usually cross several disciplines. Different methods are applied to study human influence and the most prominent approaches are the oral history, memory drawings, photographs, on-site sketches and even the artistic work which Henry Glassie, Robert Mellin, Marlene Create, David Blackwood use a lot in their studies and some of the studies became important in material culture.

Apart from the physical study, many studies also focus on the interrelationship between man and places and concerns more about the psychological aspects. Both *Space and Place* by Yi-Fu Tuan and *Winter in Tilting* by Robert Mellin treasure the way people see their environment, use the space and the meanings and emotions they attach to the space.

As the study of vernacular architecture relates so much with humanity that what aspects most interest him or her is often a determining factor so the specific or

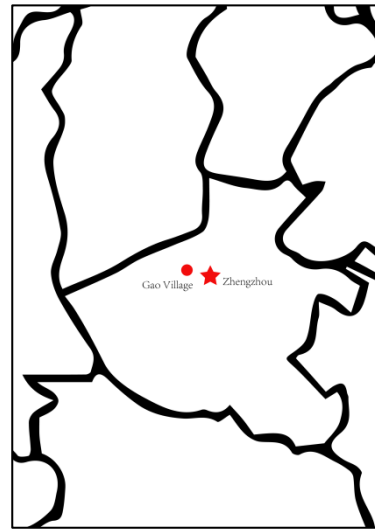
systematic theory of conducting the research and the studies of vernacular architecture can hardly be found.

Henan Vernacular Architecture Study

This study is to rediscover the value of vernacular architecture of Henan Province, China, particularly vernacular housing in its rural areas and the way of its revitalization in the recent thirty years by probing into its present role and to contemplate its future fate in the 21st century.



Henan Province, China



Zhengzhou, Provincial Capital of Henan Prov. and Gaozhuang Village

Undoubtedly China has been the biggest construction site in the world in the past three decades, going through a rapid process of modernisation and urbanisation. Each year, hundreds of thousands of brand-new buildings are springing up. However, one of the consequences of the mass production of modern buildings without caring for cultural heritages or relics is the rapid deterioration of local cultural landscapes and national aesthetics which are embodied in the vernacular architecture. More conspicuous is the changes of the houses in rural areas of inland China, like Henan Province. Besides, affected by the rapid development of modernisation and urbanisation in China since the adoption of Reform and Opening-up to the Outside World Policy in 1978 and the rising income of farmers (McKinley, 1996) (Leeming, 1985), lifestyle of farmers in rural China has changed dramatically with the change of economy (Unger, 2002) (Fan, Heberer and Taubmann, 2006).

Owing to its loss of advantage of location and influence in politics and economy, Henan is becoming more and more obscure among other provinces in China. Consequently, compared with the study of vernacular architecture in Beijing, Shanghai, Guangzhou, Anhui, Jiangxi, and Fujian Provinces, the study of vernacular architecture in Henan, has not attracted enough attention from the government or the scholars, let alone the houses in rural Henan.

The thin academic atmosphere of vernacular architecture study in China which requires time, energy, economic and academic support from both universities and institutions gradually became barriers to professionals to make further investigation of the field. Over the years, only a few scholars have devoted themselves to the study of vernacular architecture of China and fewer scholars dedicated to the study of Henan vernacular architecture. Zuo Manchang (左满常) and Bai Xianchen (白宪臣, two professors in Henan University, devoted much of their time to the field of Henan vernacular architecture with supports from Henan University and Conservation and Preservation of Historic Relics Institution of Henan Province. Their *Henan Vernacular Architecture*, published in the year 2007, is the first and the only book systematically and comprehensively written about Henan vernacular architecture in China. The brief geographical features, the political revolution, the climate and the history of Henan are written as an introduction to Henan in the first chapter of the book. And the development of vernacular architecture in Henan Province is divided into three periods, namely the period of primitive society, the slave society and the feudal society. Each period of development is presented by archaeological discoveries such as pottery model of architecture in Xi Han Dynasty (202BC-8AD), in Sui Dynasty (581-618), bricks in Nan Dynasty (420-589), and Chinese painting in Song Dynasty (960-1279), etc. In the third chapter, vernacular architecture is divided by region, as climate changes variously according to places. Typical examples of vernacular architecture are presented by four regions of Henan namely eastern Henan, western Henan, southern Henan and northern Henan. Several villages are shown to better outline the features of vernacularism in each region. Followed by the Silo-architecture, one of the most representative vernacular architecture types in Henan, the spatial arrangement and combination, the materials and structure, the typological study of doors and windows, and the decoration and furniture of Henan vernacular Architecture are systematically studied. Both of the two scholars have separately studied several villages in Henan Province by probing into detailed information of each village. But each has their own interest and focus. Take the Fangding Village in Zhengzhou, Henan as an example, Zuo Manchang concerns himself mainly about the layout of the village and the spatial characteristic of the whole village.

So far, *Ancient Henan Architecture* by Prof. Zuo Manchang published in 2015, is the most comprehensive and authoritative book about architecture in Henan. Apart from domestic architecture, it contains religious, official, educational and monumental architecture in Henan. The style of writing and the methods used in research follow the ones in *Henan Vernacular architecture*, mostly academic and the content is mainly around physical aspects.

Liu Dunzhen, a contemporary architect in China, has studied the architecture of Henan mainly in ancient official architecture such as government hall and ancient religious architecture such as temples and pagodas. Some of his books such as *Liu*

Dunzhen Literature Series were written in a more lively way like diary writings with many sketches and measurements.

Over all, vernacular architecture in Henan has not been sufficiently studied and the studies are often conducted in the physical sense such as the terrain of history, spatial arrangement, architectural decorations, material and structures etc. while the “individual and psychological approaches of ‘Place’” described by Yi-fu Tuan are rarely studied. And the approaches of a ‘Place’” are frequently the tools used by scholars like J.B. Jackson, Henry Glassie, Robert Mellin, Annmarie Adams, Yi-fu Tuan, Marlene Creates, etc. The approaches provide opportunities for the study of vernacular architecture in both tangible and an intangible ways.

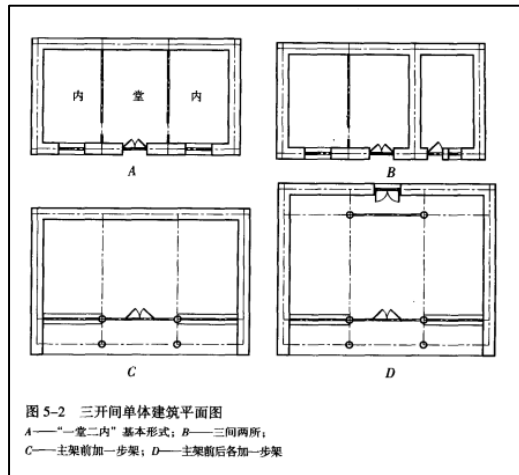
Courtyard House in Henan Province

Courtyard houses in China are different from those in other countries as there are respective forms and philosophy behind them. Still, courtyard houses in China differ from region to region. They are even different in one province, such as Henan Province. However, typical courtyard houses in Henan are easy to find. The houses in Gaozhuang Village are such a representative in northern Henan Province. Like those famous

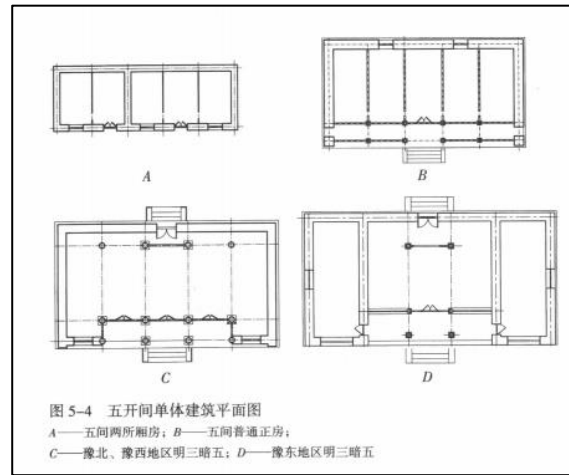
ones in Beijing, courtyard houses in rural northern Henan Province takes the similar layout of architectures and courtyards despite their much simplified form.

Courtyard houses which have been much studied in China is even seen as a symbol of China as the Forbidden City are modeled after such kind of architectural form that enables the whole complex to expand in four directions and get multiplied. The royal family took its symmetrical forms to define citizens’ social status. Therefore, for ordinary people, usually they only have one courtyard house instead of the complex ones. This observation can be easily made of villagers in Gaozhuang Village . However there are still many variations which have evolved in Henan Province to enable the houses to be adapted to the local climate, local culture and local lifestyles, finally becoming a unique vernacular architecture that can be found different from those in other areas.

According to *Henan Vernacular Architecture*, traditional courtyard houses in Henan Province is structured by Jian (间) or unit and Jia (架) or the number of purlin and it is unit that defines the scale of a house. The unit of courtyard house in Henan Province is between 2.56-3.52m, and 2.6-2.9m is usually for sloped roof houses, 2.7-3.1m for side houses and 2.9-3.6m for main houses. The width of a courtyard house in Henan ranges from 2.6m to 8.7m; 2.6-3.1m is usually for sloped roof houses, 3.5-4.5m for ordinary side houses, and 4.2-5.2m for ordinary main houses. Usually a house, whether it is a side one or the main house, possesses odd number of room, 1, 3, 5 or more to maintain the symmetrical layout and to keep Yin and Yang as odd number is Yang and even number is Yin.



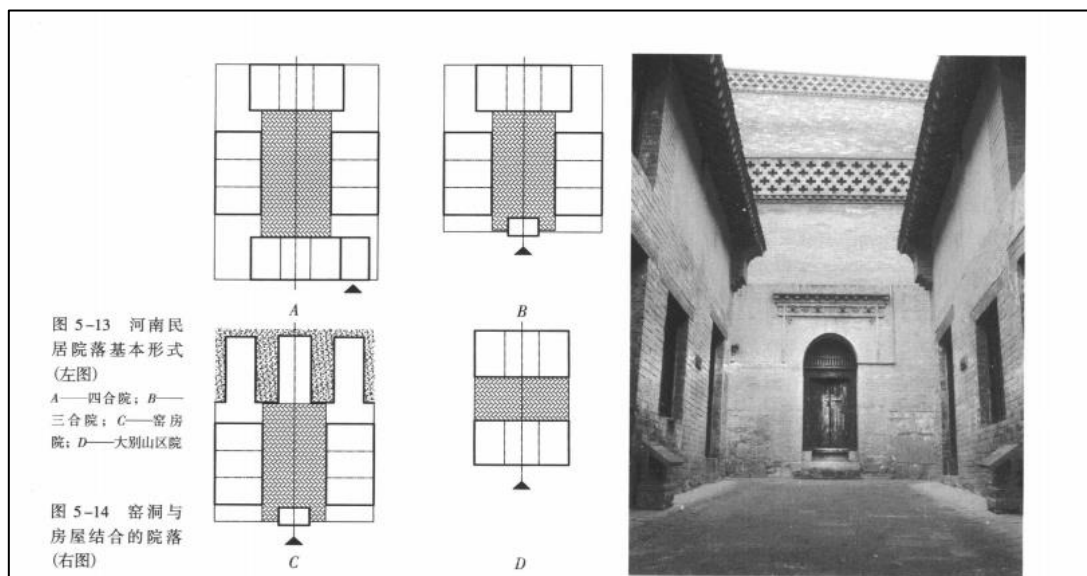
House of three units



House of five units

Picture retrieved from *Henan Vernacular Architecture*. Beijing: China Architectural Industry Press, P.163, p.164.

There are four main kinds of courtyard in Henan vernacular architecture which are Chinese Quadrangle, Sanheyuan (三合院, a central building with two wings attached perpendicular to either side), Yaofangyuan (窑房院, a combination of Silo-architecture with courtyard) and Qianhoupaifangyuan (前后排房院, houses are constructed in two lanes and a courtyard is created between the two houses). The first two can be seen in most parts of Henan while the other can be seen in western Henan and only in Xin County which shares the border between Henan Prov. And Hubei Prov. Chinese Quadrangle together with Sanheyuan can evolve into more than one complex courtyard by multiplying courtyard horizontally and vertically which prevails in large mansions of rich landowners. However, the fundamental forms prevail in ordinary families (Zuo & Bai, 2007).



The layout of courtyard house

A. Quadrangle B. Sanheyuan C. Yaofangyuan D. Qianhoupaifangyuan

Usually the orientation in northern China is regarded as an essential part of an architecture that the layout is often facing south to get more sunshine and according to Fengshui. Preferably, a courtyard house faces south. Courtyard house in the Gaozhuang Village is composed of two parts that are solid part and void part. The solid part refers to the actual architecture while the void part means the courtyard itself, as according to the Chinese philosophy, void or empty means there are eternal possibility to be full. This idea finds its way into the layout of the house, which later finds its advantages even in modern times that vehicles can be parked easily in one's house without having to build a garage. Also the courtyard is a materialized way to realise the ultimate aim in the Chinese philosophy to connect humanity with nature as integrity. Trees, flowers, vegetables are often planted in the courtyard, thus providing opportunities for residents to live in nature, sense the sunshine, the wind, the raindrops and to experience the change of seasons and the passage of time. More discussion is made of the theories embodied in the construction of the courtyard houses in Henan Province in later chapters to explore the the full implications and significance of the structure.



The distribution of land by family in Gaozhuang Village houses



Layout of courtyard houses in Gaozhuang Village

The courtyard house in Henan Province has been studied by professors in schools of architecture in Henan on a comprehensive scale, such as the orientation of the houses, the layout of the rooms, the function of each rooms, etc. but the scale of the houses, how people use their houses, the lifestyle of local people, the relationship of residents

and their neighbourhood are not given due attention. Although relevant studies of the vernacular architecture in Henan Province can be found, they are not enough and most of them are on a macro-level rather than on a micro-level. Thus, architecture and its users are isolated. Such isolation should be noticed by researchers so that further and more thorough investigation should be done to better trace and understand the evolution of vernacular architecture in Henan Province.

Methodology

Qualitative Study & Quantitative Study

Both qualitative and quantitative analysis are used for the study, the former being for documentation and interviews, the latter for the gathered samples to help draw certain conclusions and do analytical study. For a comparatively thoroughly study of the vernacular architecture and the cultural landscape in Gaozhuang Village, the two methods recommended in R. W. Brunskill's book *Illustrated Handbook of Vernacular Architecture* are used in this research which are featured with extensive recording and intensive survey and documentary investigation. Besides, specific methods used to conduct the research are of the typical methodologies used in cultural landscape study by scholars such as J. B. Jackson and Henry Glassie.

To better investigate the village, extensive recording and intensive survey are combined and are categorized into the typo-morphological characteristics study and cultural and domestic meanings study. Village fabrics such as street pattern, configuration of courtyard and houses (Knapp, 2000), plot pattern etc. are studied on a larger scale and will be documented by the measurement personally done by the author of this paper. Data will be retrieved from local archives and libraries. Henan Vernacular Housing (Zuo and Bai, 2007) will be carefully read to help develop an outline of vernacular housing in Henan Province. And unit of housing will be studied on a smaller scale in terms of space arrangement, layout of furniture (Zhang, 2013, 2015.P.27-32), structure (Steinhardt, 1984), materials, size of courtyard and house, orientation of houses etc. One of the aims of qualitative study is to rediscover the cultural, economic, political and social elements which help to reshape the form of vernacular housing in Gaozhuang Village and how vernacular houses in this village keep their uniformity and also maintain their diversity.

In his essay *The Many Guises of Suburbia*, J. B. Jackson reports his finding that the inhabitants in the typical village keep an overall uniformity in architecture, in occupation, in routine, in dress and in manner and they seek no individual freedom. They prefer conformity to diversity. Jackson advises studying the evolution of the villages which contains uniformity in both the sense of the physical and social aspect, and the quality the inhabitants possess that enable them to multiply and endure. Similarly, just like the village described by J. B. Jackson, there also exists such a high conformity in Gaozhuang Village. Therefore, conformity and the evolution of the village are traced in this research.

For qualitative studies, the theories and the techniques put forward by scholars in this and relevant fields are adopted and used. In this process, measurement techniques by other researchers will be used involving huge amount of measurement and mapping. And this process is perceived as a close way to understand and experience the cultural landscape, as both German and English geographers have put much energy in mapping and documenting in their early stages of studying the cultural landscape. To

Terry M. Tobias, it is a necessary step to make quality mapping and research. He lists as many as 13 tasks of mapping a project such as interviewing participants and collecting map biographies, replication and storage of raw data, translation of indigenous language interview tapes, elimination of redundant data, verification of community maps, etc. He states that: "Culture is not static or fixed in stone – patterns of occupancy and use change over time. There will always be a need to do good research, whether this involves collecting an initial baseline inventory or doing subsequent monitoring for change." He also articulates the distinction between land use and land occupancy by citing the work done by Dr. Peter Usher that "User Use refers to activities involving the harvest of traditional resources; things like hunting, trapping, fishing, gathering of medicinal plants and berry picking, and travelling to engage in these activities. For any given community or nation, use occurs over a specific geographic area. Occupancy refers to the area which, as Peter puts it, a 'particular group regards as its own by virtue of continuing use, habitation, naming, knowledge, and control.'" (Tobias, 2000). And in dealing with the concept of occupancy, he comes to another concept, the concept of boundary. In his view, since land occupancy usually generates less boundaries than land use, and some areas overlap each other, and on official occasions such as negotiations land occupancy are more constructive, thus, boundaries are essential in mapping and in claiming ones interest.

30 houses will be first measured and then computerized, and mapped to grasp the fundamental information of each house such as the structure, the layout of bricks, the relationship between house and courtyard, and to help draw the typology of the courtyard housing in this village. Plans, elevations and sections of each house will be analysed to demonstrate the importance of courtyard in terms of entertainment, health (Zhang, 2015) and traditional aesthetics and codes. Comparison and contrast between the past and the present states of the village will be made to trace the development of the courtyard housing and of the whole village.

J. B. Jackson mentions boundary in his essay *Public Landscape*. According to him, roads, public places and monuments are four important installations in public landscape and he claims that boundary is the most interesting in that "it arouses the most emotion and produces the most action and reaction." To make this concept more explicit, Jackson quotes a verse from Robert Frost poem "*Mending Wall*": "Good fences make good neighbours." And he questions subsequently if boundary ever got any support from everyday life and traces the meaning of the word boundary from lexicology. According to him, the word originally means binding together. He comments on boundary by saying that it provides possibilities for a society and individual as well to have their own individuality. Enclosure Act and parks are presented in this book as the supportive material in history and in present day. On the one hand, man respects an ideal landscape without boundaries. On the other hand, man seeks boundaries in their actual life since it functions as a medium for man to be independent.

These theories of boundary provide guidance of studying boundary in Gaozhuang Village which is also an important issue in land inheritance and landscape. Upon observation in Gaozhuang Village, boundary, often referred to boundary of family land, are regarded seriously because it is seen as the treasure passed down from ancestors and therefore boundaries of each piece of land especially the homestead are accurately measured and marked by Guiju, the white limestone powder used to fill a deep hole at the exact four points of a homestead usually of the shape of a rectangle. And because of the strict rules of boundary, inhabitants show special feeling for their land and in turn forms the public space streetscape and overall, the local landscape.

As for quality research, the relevant theories put forward by scholars such as Tobias and Henry Glassie and their techniques will also be adopted and used. Tobias reminds researchers that to conduct quality research the importance and urgency to document oral history and traditional knowledge for the benefit of future generations should not be neglected. (Tobias, 2000) The folklorist Henry Glassie made much of his effort in presenting his work through oral history such as his *Irish Folk History: Texts from the North* and *Pattern in the Material Folk Culture of the Eastern United States*. And the oral history presented in Robert Mellin's books such as *Tilting: Housing, Potato Trenching, and other Tales from a Newfoundland Fishing Village* and his recent book *Winter in Tilting* are good examples. In *Winter in Tilting* he describes an egalitarian, peaceful but sometimes dreadful landscape in Tilting, a fishing village in Newfoundland. At the same time through the oral history told by villagers and the memories from the author, the moving and true relationships between villagers and the researcher, villagers and places have been thoroughly displayed in front of readers. Readers may forget some theories and methods of cultural landscape or vernacular architecture Prof. Mellin applied to these books but may never forget the sentence "Plenty of Time" that contains countless meanings and feelings to recall a whole image of this village, not just its unique landscapes but also the kind, optimistic people. Instead of dull and dry citations and footnotes. These oral history-oriented works are usually not written in academic way but in literary style as *Landscape* magazine has always preferred, opening a new research world for cultural landscape study. It is not to be different but to rediscover the values of old, familiar landscapes and to better present brand new landscapes to readers in a more lively and virtual way.

Paintings, on-site sketches and analytical drawings are other methods to translate cultural landscape visually. Robert Mellin addresses the importance of painting in cultural landscape study in his book *Winter in Tiling* that "painting forces you to slow down and to think about what may be important" and "painting also provided the opportunity to explore the atmospheric character of a place that is difficult to put into words but is exemplified for me in the winter scenes of the Japanese print maker Kawase Hasui." (Mellin, 2015) He draws piles of water colour paintings to show landscape of each site along the round trip from Tilting to the Harbour Path. Following each painting is a piece of oral history told by villagers about their life,

their experience in fishing and their knowledge of local geographical features.

Using similar methods, Marlene Create interprets the landscape in Newfoundland in her book *Places of Presence* by memory maps drawn by her relatives and each mental map follows with a photographic portrait, a transcribed narrative, and a landmark photograph. Behind each memory drawing is the personal memory of a place that involves man and nature. Joan M. Schwartz comments : “In *Places of Presence* land is transformed into landscape, and space becomes place as ancestral land is invested with meaning by the experiences and memories of her Newfoundland kin.” (Marlene, 1997)

In this research, the study of the cultural and domestic meanings will be based on both primary resources and secondary resources. Primary resources are collected by in-depth interviews with 30 residents from different families about the way they use the courtyard and house, and the feeling of moving into new houses from old ones, their memory of the surrounding areas, etc. All villages in rural China attach great importance to religious worship and carefully observe their time-honored cultures, Gaozhuang Village is no exception. Cultural symbols embedded in houses such as the stove god, antithetical couplet, family trees, etc. will be probed into in the light of the theory of Fengshui and traditional Chinese philosophies like Daoism and Confucianism. The social meaning of courtyard housing to families will be learned through festivals such as the Spring Festival, worship of ancestors, parties for new born babies, weddings and even funerals.

Books related to vernacular architecture, landscape architecture, material culture, courtyard housing, economic, political and cultural development in rural China, history of Henan Province and history of traditional Chinese architecture as secondary resources will be read to learn about the Gaozhuang Village in a broader and comprehensive perspective.

Successful and instructive cases of courtyard housing from elsewhere such as the renewal of No.1 yard of Haotang Village in China (Zhang, 2011), will be comparatively investigated for an inspiration of how to combine the traditions with modernity in the houses in Gaozhuang Village .

While raising the awareness of the current situation of vernacularism in rural China, this paper aims at providing sound approaches to maintaining the vernacularism of housing in rural China without rejecting the modern world.

References

- Adams, A., & McMurry, S. (1997). Exploring everyday landscapes. Knoxville: University of Tennessee Press.
- Alexander, C. (1964). Notes on the synthesis of form. Cambridge: Harvard University Press.
- Brunskill, R. (1971). Illustrated handbook of vernacular architecture. New York: Universe Books.
- Cai, Y. (2011). Chinese architecture. Cambridge, UK: Cambridge University Press.
- Cullen, G. (1996). The concise townscape. London: Architectural Press.
- Deetz, J. (1977). In small things forgotten. Garden City, N.Y.: Anchor Press/Douleday.
- Des Forges, R. (2003). Cultural centrality and political change in Chinese history. Stanford, Calif.: Stanford University Press.
- Fan, J., Heberer, T. and Taubmann, W. (2006). Rural China. Armonk, N.Y.: M.E. Sharpe.
- Glassie, H. (1996). Material culture. Bloomington: Indiana University Press.
- Glassie, H. (2000). Vernacular architecture. Philadelphia: Material Culture.
- Groth, P., & Bressi, T. (1997). Understanding ordinary landscapes. New Haven: Yale University Press.
- Harris, S. & Berke, D. (1997). *Architecture of the everyday*. New York, N.Y.: Princeton Architectural Press.
- Holl, S. (2013). Pamphlet Architecture 31. New York, NY: Princeton Architectural Press.
- Jackson, J. B., & Zube, E. H. (1970). *Landscapes: selected writings of JB Jackson*. [Amherst]: University of Massachusetts Press.
- Knapp, R. (1992). Chinese landscapes. Honolulu: University of Hawaii Press.
- Knapp, R. (2000). China's old dwellings. Honolulu: University of Hawai'i Press.
- Leeming, F. (1985). Rural China today. London: Longman.
- Marlene, C. (1997). *Places of Presence: Newfoundland Kin and ancestral Land, Newfoundland 1989-1991*. St John's, Killick Press.
- McKinley, T. (1996). The distribution of wealth in rural China. Armonk, N.Y.: M.E. Sharpe.
- Meinig, D., & Jackson, J. (1979). The interpretation of ordinary landscapes. New York: Oxford University Press.
- Mellin, R. (1995). *A City of Towns: alternatives for the planning and design of housing in St. John's, Newfoundland*. Canada Mortgage and Housing Corporation.
- Mellin, R. (2003). *Tilting: house launching, slide hauling, potato trenching, and other tales from a Newfoundland fishing village*. New York: Princeton Architectural Press.
- Mellin, R. (2015). *Winter in Tilting*. St John: Pedlar Press.
- Prown, J. D. (1993). The truth of material culture: history or fiction? In S. Lubar & W.

- D. Kingery (Eds.), *History from things: essays on material culture* (pp. 1 - 19). Washington: Smithsonian Institution Press.
- Steinhardt, N. (1984). *Chinese traditional architecture*. New York City: China Institute in America, China House Gallery.
- Tobias, T. (2000). *Chief Kerry's moose*. Vancouver: Union of BC Indian Chiefs.
- Tuan, Y. (1977). *Space and place*. Minneapolis: University of Minnesota Press.
- Unger, J. (2002). *The transformation of rural China*. Armonk, N.Y.: M.E. Sharpe.
- Wilson, C. & Groth, P. (2003). *Everyday America*. Berkeley: University of California Press.
- Zhang, D. (2013). *Courtyard housing and cultural sustainability*. Burlington: Ashgate Publishing Company.
- Zhang, D. (2015). *Courtyard housing for health and happiness*. Farnham: Ashgate Publishing Company.
- Zhang, X. (2000). *Social transformation in modern China*. Cambridge, UK: Cambridge University Press.
- Zhang, Xiaochun. (2011). Renovation of No.1 Yard of Haotang Village, Xinyang, Henan, China. *The World Architecture*, (2), 94.
- Zuo, M. & Bai, X. (2007). *Henan vernacular architecture*. Beijing: China Architectural Industry Press.
- Zuo, M. (2015). *Ancient Henan architecture*. Beijing: China Architectural Industry Press.

Chapter 2 Gaozhuang Village, Henan Province, China

2.1 Background

2.1.1 An Overview of Henan Province

Geographically, Henan Province is in central China and its name Henan(河南)^①, literally meaning an area on the “south of the Yellow River”. Of the position of Henan, a line from *Lvshichunqiu* (《吕氏春秋》) reads: “Between the Yellow River and the Han River is Henan.”^② (though today about a quarter of the land in Henan Province lies in the north of the Yellow River,) and the ancient name of Henan was “the Central Plains” (中原) or “the Central Region” (中州) which are still used to refer to the province, and radiates cultural abundance mingled with nostalgia as it is where much of the Chinese civilization originated. Actually the name China or “Zhongguo”(中国: the central country) in Chinese originally referred to this area.

Stress is obviously put on transportation when “The Central Plains” is used. In history, Henan functioned as a hub since the Yellow River Valley was once part of the Silk Road and the ancient Nanxiang (Nanyang to Xiangyang) Passage was lying between the hilly area and the plain area in Henan, connecting Henan Province with Hubei Province. Today, Zhengzhou, the provincial capital is still the centre of transportation in China. The Jingguang Railway Line (Beijing to Guangzhou) and the Jingshen Railway Line (Beijing to Shenzhen) connecting the north with the south runs through Zhengzhou and Longhai Railway Line (Lianyungang, a coastal city in Jiangsu Prov. to Lanzhou, a capital city in Gansu Prov. in the west of China) connecting the east with the west also runs through the city. There is a popular saying in China which goes this: he who takes control over the Central Plains will surely conquer the world.

Culturally, this central land with a recorded history of more than 3000 years is one of the most important birthplaces of Chinese civilization and Chinese people. It is the cradle of literature, Henan opera, Shaolin Kungfu, Chinese calligraphy and painting, Chinese porcelain, etc. And Junxiang Xie, a scholar in the field of Henan folk history and family history, concludes in his book *The Origins of Top 100 Chinese Family Names*^③ that 73 out of top 100 Chinese family names completely or partly originated in Henan Province. According to this book, the majority of Chinese have more or less connections with Henan and the people there and are somehow bounded together as one big family sharing the same family names. This is where Henan has its uniqueness in China.

In the whole history of China, the name “the Central Plains” fits the province well, for politically Henan was the centre of the country for many centuries. From the first dynasty, Xia Dynasty, and for around 2000 years in the 5000-year history of China, cities such as Kaifeng, Luoyang, Anyang in Henan were in turn capitals in ancient China. Anyang served as the capital of seven dynasties including the Shang Dynasty, a representative dynasty of the Bronze Age in China for 500 years or so. Luoyang functioned as the capital of 13 dynasties from Xia Dynasty down. Zhengzhou, the present capital of Henan Province, was once the capital of Shang Dynasty. Kaifeng, the capital city of eight dynasties, a metropolis for all races of people and all ethnic groups, particularly

during the Song Dynasty (960-1279) during which shipping, printing, paper making, textile industry, porcelain, and the commercial trade was unprecedentedly developed and Chinese merchants traded with people from more than 50 countries ranging from the South Pacific Ocean, Middle East, Africa, Europe, and other places of the world. In turn, stimulated by the rising economy, cultural exchanges and communications between China, India, Korea, Japan and even countries in the Middle East were broadened in religion, technology, medicine, astronomy and many other fields.

Manchang Zuo wrote in his book *Henan Vernacular Architecture* that “the underground cultural and historical relics in Henan rank first in China and the relics on the ground second. And up to 1,400,000 cultural or historical relics are stored in all kinds of museums, accounting for about one eighth of the total relics all over the country. References of every dynasty or historical period can be found in Henan in various forms: ancient tombs, ancient city sites, ancient architectures, grottoes, bronze wares, potteries, jade decorations, etc.”

In terms of population, Henan was a “rich” area in China. According to *the National Bureau of Statistics of China*, the total population of permanent residents in Henan Province had reached 94.36 million, at the third place after Guangdong Province and Shandong Province until 2014 which means that Henanese account for approximately 6.90% of the total population of China.

Henan has always been the barn of the country since the ancient times. Lying along the Yellow River, one of the two Mother Rivers of China, the province covers around 167,000 km². Though accounting for only 1.73% of the territory of China, Henan possesses acres of fertile land nourished by the Yellow River, the Huai River, the Ji River, etc. In 2014, Henan yielded 33.29 million tons of wheat, more than a quarter of the total production of the country, 4.7129 million tons of peanut, approximately one third of the total national production, 7.19 million tons of meat, about one tenth of the total, and 72.7246 million tons of vegetables, one tenth of the total in China, etc. ☺It is not exaggerated that the land feeds not only this province but also other provinces.

For the past three to four thousands of year, the special landscape and culture in Henan has shaped the uniqueness of Henan Culture, the vernacular style in architecture, the character of Henanese and the distinctiveness of Henan dialect and they in turn influence the landscape in many aspects such as the layout of grains, the patterns of the land, the colours of the whole landscape, and even the smells of it.

Since 1978 when the Reform and Opening-Up to the Outside World Policy was adopted, priority has been given to coastal provinces like Shandong, Guangdong, Zhejiang and remote border provinces and regions like Xinjiang Uyghur Autonomous Region, Xizang Autonomous Region and so on. These areas have got economic and political aids from both the local governments and the central government. The infrastructure in these areas has seen a rapid development and their cultural and technological development are supported by all levels of institutions and departments. However, like other inland provinces such as Jiangxi, Shaanxi, and Heilongjiang, Jilin, Liaoning, etc. Henan Province, is not paid due attention to, thus, gradually falling behind in many ways. For example, urbanization in Henan was much below the average rate of China. By 2013 from *the*

National Bureau of Statistics of China was 47%, while by the year 2014 the rural population of Henan was 51.71 million and the urban population was 42.65 million ④. This is much below the average rate.

To conclude, in the whole history of China, Henan Province has always been one of the most important areas in term of geographical location, culture, history, economy, philosophy and politics. Against all of these circumstances, traditional vernacular architectures for residence being simple, practical, has evolved.

2.1.2 Introduction to Gaozhuang Village and the Gao Family

Gaozhuang Village is a small village in Mengzhou City, northwest of Henan Province, China, lying between Taihang Mountain and the Yellow River, on the northern bank of the Yellow River with Mengjin County and Gongyi City on the southern bank of the river, sharing the border with Jiyuan City, Luoyang City, and Qinyang City. According to *Ciyuan*, the major dictionary in China, “In ancient times, this land was part of Mengjin. It is said that the king Wuwang was in a war with Zhou, and he and his fiefdom rulers got reunited here. In the Spring and Autumn Period, it was named Heyang Yi, and in Han Dynasty, Heyang Xian, in Tang Dynasty, Mengzhou, and in Ming and Qing Dynasty, Meng Xian, which is Mengzhou today.”⑤ The whole area of Mengzhou City is around 541.6 km² with a population approximately 400,000. Mengzhou is the hometown of Yu Han, one of the most prestigious literati, a great thinker, philosopher, statesman in Tang Dynasty who ranked first among the *Eight Great Prose Masters of the Tang and Song Dynasties*. Also he has once been described as “Comparable in stature to Dante, Shakespeare or Goethe” in William H. Nienhauser Jr.’s book *The Indiana Companion to Traditional Chinese Literature* ⑥ for his strong influence on the traditional Chinese literature. There are many specialties in Mengzhou such as rehmannia, Chinese yam, chrysanthemum, and radix archyranthes bidentata ⑦ the four important ingredients in traditional Chinese medicine, straw painting, Mengzhou pancake, Mengzhou noodles, Mengzhou green bean jelly, etc.

Mengzhou consists of 7 towns and 4 districts, namely Xiguo Town, Huaishu Town, Zhaohe Town, Gudan Town, Chengbo Town, Nanzhuang Town, Huagong Town, Heyong district, Heyang district, Huichang district and Dading district. And Xiguo Town, Nanzhuang Town, Huagong Town, Huichang district and Dading district are along the Yellow River.

Huagong Town is composed of 20 villages including Gaozhuang Village which is situated on the west of the town government. Usually villages in Huagong Town are situated a little bit away from the Yellow River lest they are flooded by the Yellow River, a frequent occurrence in the 1960s and earlier. The land between the villages and the Yellow River is distributed to each village according to the number of people in family. Land pattern can be seen clearly either from the aerial picture or from the map of Huagong Town. The basic shape of the town is rectangular and each portion of land is cut into several smaller ones as bean curd is cut. According to my father, who spent his childhood in Gaozhuang Village and Houjie Village, that to ensure the equality of land distribution among numbers of production teams during the 1960s to 1990s, the period when China carried out the People’s Commune System, land would be divided equally like “田” and each group would

either take the land on the top right and bottom left or the land on the top left and bottom right.

Just as other villages get their names from the biggest family living in them, for example, Liuzhuang Village, Duanzhuang Village, Hezhuang Village, Duzhuang Village, etc., Gaozhuang Village, a small village in Huagong Township, Mengzhou City, Henan Province, China, is named after the biggest family, Gao, as the overwhelmingly majority of the families are from the Gao family.

Gaozhuang Village possesses a rich history in both its family history and the village itself. Its location qualifies it to be the representative of villages along the Yellow River in Henan. It is said that the ancestors of the Gao family is Shang Jiang (姜尚), a King of the Qi Dynasty (479-502) whose territory was around the Bohai Sea (渤海). Yuanhexingzuan (《元和姓纂》), a book about the sources of family names and written by Bao Lin in Tang Dynasty in 812AD explicitly denotes that Gao family is the descendant of Shang Jiang and the prince of Gao From Zuo Zhuan (《左传》): “Guo and Gao were named by the King of the Heaven that they were the courtiers of Qi Dynasty. Both of them were top-grade courtiers.” Also many other historical books have documented the origin of the Gao family name and all proved that the Gao family is a big and respected family deeply rooted from the King of Qi Dynasty. Results delivered from the journal *China Statistics* that according to the national survey in 2010, there were 1000 or so existing family names in China. And the top 20 family names account for 52.3% of the total population of China. The top five family names were Wang, Li, Zhang, Liu and Chen. And Gao was in the position 19, with a population around 12.98 million, accounted for 0.97% total population of China.

The Family History of Gao (《高氏族谱》) was edited in the 1990s by Mingjie Gao, the 17th generation of the Gao family. And according to the family history, Gaozhuang Village in Henan Province has a long history since Ming Dynasty (1368-1644). The frequent natural disasters, especially the Yellow River flood in the late Yuan Dynasty (1271-1368) together with the years of wars resulted in dramatic decrease of population. And during the Hongwu Period, the early years of Yuan Dynasty (1271-1368), people were ordered by government to leave their homeland to other places to help cultivate plantations so that the country could get economic recovery from agricultural loss. According to the History of Ming (《明史》), and the Actual Documentation of Ming (《明实录》), from 1373 till 1417, there were 18 times of huge emigration from Shanxi to other places, including Beijing, Hebei, Shandong, Anhui, Jiangsu, Hubei, Shaanxi, Gansu and Henan. It is easy to find out that these immigrants influenced the whole country dramatically. On the one hand, the massive population migration seriously disrupted people's regular life, forcing them to give up their land and home and to adapt themselves to new circumstances, which is never easy. On the other hand, such large-scaled migration helped the whole country to recover from wars and conflicts by improving agriculture and economy in the Central Plains, where people from different places got mixed together.

From the family history, among migrants from Waweng Village, Hongtong County, Pingyang, Shanxi Province to Huagong Town, Henan Province in 1404, there were three brothers' families who took on Gao as their family name. The eldest of the three brothers named Wu Gao, lived in Gaozhuang Village, the second named Zheng Gao lived in Shangzuo village, also in Mengzhou,

and the youngest named Sheng Gao lived in Balihuang County, Yanshi city, a place on the southern bank of the yellow River. In history, Mengzhou was called Heyang in Tang Dynasty (618-907). After 7 years of An Lushan- Shi Siming Rebellion (安史之乱) in late Tang Dynasty, the General Ziyi Guo and Guangbi Li once were in a war with each other for quite a long time. Local people who could no long bear the bitterness and sorrow from the war moved to other places to survive. And almost all villages vanished during this period. In Yuan Dynasty (1271-1368), this land was named Mengzhou. However, wars never ended in this area. And three disasters(兵灾) made by army in the first 16 years of Yuan(1271-1368) caused 70% people to perish. Under such circumstances, almost all of the villagers in Gaozhuang Village today are immigrants from Dahuaishu(大槐树, literally means “the big pagoda tree” is a name of a village whose symbol is a big pagoda tree), Hongdong County, Pingyang, Shaanxi from 1368 till 1396. Therefore before the three Gao brothers, the ancestors of Gao family in Gaozhuang Village arrived in this piece of land, there had already been several villages. At the beginning of Ming Dynasty(1368-1644), The original name of Gaozhuang Village was Beitanhu (北滩湖, meaning literally the north bank of the lake). Later its name changed to Beihuwa (北湖洼, meaning literally the northern depression) as the result of the frequent flooding by the Yellow River. In 1461, Fasheng Gao, the fourth generation of Wu Gao, managed to control the Yellow River, and to honour him this village was named after his name as Gaozhuang Village. After that, from Qing Dynasty (1644-1911) till the Republic of China, Gaozhuang Village consisted of three communities, namely, the Gaohou Community (also named Dongxiaoja), Gaoqian Community (also named Nanxie Street) and Gaoxi Community (also named Xixiaoja). This remained for about one to two hundred years.....In the 31st year of the Republic of China, though some families are named Guo, and Zhang, the overwhelming majority of the families in the village were named Gao. From the 1990s, with the increasing population and production, living conditions in this village has changed a lot and the whole village expanded unprecedentedly and finally forming the Gaozhuang Village today. Its area expanded almost 2.5 times as large as before. Elementary school, middle school were established afterward. And there were nearly 50 Combine in the whole village.

Unlike villages in southern China, where people not only farm their land but also participate in commercial activities, leaving their homeland either to have their own business or to work for others, Gaozhuang Village and other villages in this area are more introverted. After the Reform and Opening-Up Policy got brought into force, people from southern coastal provinces such as Guangdong, Fujian, Zhejiang, and southern inland provinces such as Jiangxi, Hunan and Hubei have stepped into commerce to make more money instead of farming at home. Several reasons could help explain why Henanese are unwilling to leave their land and would like to stay at home. One is the location of Henan is along the Yellow River. Farming in Henan has been much improved and much better than it was as back as 1960s, 1970s or even 1980s. With more and more farm machines being applied and the application of fertilizers and of other techniques, yield has increased dramatically. Not only is Henan able to produce enough food for its people but also for people outside. Farmers in Henan are traditional or conservative. The intimateness between the land and them is so powerful and the dearness of the land to them is so great that they simply do not want to leave their hometown for jobs in distant places. Secondly, people in Henan are influenced greatly by the doctrines of traditional Chinese ethics and values that children should be

kind to people who are older than them and it is seen as a virtue that young people should take care of their parents. So young men and young women are reluctant to leave their old parents alone at home and find jobs in big cities. The most important reason is that they do not have strong commerce consciousness. Only ten years ago young people in Gaozhuang Village started working outside, much later than those in other places. Different from people in southern China whose ancestors have their own business and help their children start off in their own companies, people in Gaozhuang Village mostly work for others.

Even if they have jobs in factories, many of the young would like to work in the nearby places. Mengzhou is one of the most important fur processing bases in China, many brands like UGG have set up their factories here, providing many job opportunities for the local people. Younger generations work every day at factories to earn money and older generations babysit their grandchildren and even great grandchildren while taking care of their land. People are still willing to find a job near home so that they could give a hand to their family when harvest season comes.

It is obvious that this old village is changing little by little from living conditions to means of transportation, from sources of economy to family patterns, from traditional festivals to foreign festival celebrations. This village is expanding larger and larger as time goes by from one or two rows of residential houses to five or six lines, streets increases from one to three, and houses built from adobe are replaced by concrete and bricks. People's life is getting better and better. Traveling around is gradually becoming an ordinary event for many families due to their increased income.

Whoever pays a visit to Gaozhuang Village and the surrounding villages, he/she will be deeply impressed by the boundless golden wheat, the purely white cotton, the crowds of sheep, the acres of corns, the endless stone roads, the smiling faces of kids and the silhouettes of houses at dusk and even by the scorching heat in summer. All of these are quite different from those in any other areas in China constantly reminding people of the hardship in the past the farmers here have gone through and the peace and happiness they have acquired.

2.2 The vernacular architecture of Henan as Embodied in Gaozhuang Village

2.2.1 The development of vernacular architecture of Henan

The vernacular architecture in Henan is time-honoured and deeply rooted in the history of the place. Henan as one of the first birthplaces of early Chinese people and then the cradle of Chinese civilization for creations of primitive shelters, tools, languages and society it is also a place where architecture gets well developed. Generally speaking, much of the history of Henan vernacular architecture or the history of the whole Chinese vernacular architecture is the history of soil and wood constructions in that these two materials have been the mainstay in Chinese vernacular architecture for more than 5000 years from the primitive period to feudal society and even until modern China. The former is the major essential material for the body of walls; the latter makes the skeleton of the structure. Therefore it is reasonable to trace the development of Henan vernacular architecture along the history and the structural and material development, Such tracing may be a little bit long but the process of questing is bound to be interesting and colourful.

Many architectures particularly religious, educational, official architectures in Henan which are taken as representatives of the main style of Chinese architecture have been studied and their features are well summarized and generalized by well-known scholars such as Sicheng Liang, Hongxun Yang, and others. There are multiple reasons behind this lack. Among them, one major reason is that these buildings are typical of the buildings in China. However, no due attention has been paid to the local colourism in architecture in Henan by scholars. The situation was changed with the publication of the book *Henan Vernacular Architecture* co-authored by Manchang Zuo and Xianchen Bai, two professors from Henan University in 2007 and of the book *Ancient Henan Architecture* mainly edited by Manchang Zuo in 2015.

With the history of Chinese architecture, the study of Chinese characters, the theory of Fengshui and the theory of yin and yang taken into account in this study, This chapter, based on these two books and my interview with Professor Manchang Zuo in the summer 2016, Xinzheng City, Henan, and by tracing the development of the housing in Henan with Gaozhuang Village gradually being brought to focus of the lens, is intended to make an introduction to courtyard housing, its overall layout and arrangement and others.

2.2.1.1 The Period of Primitive Society

According to *Henan vernacular Architecture*, “the tooth fossil discovered in Nanzhao County, proofed primitive men had been living in Henan and other discoveries of ancient stone ware in Mianchi, Xuchang and Anyang all verified that there had been human beings living in Henan since 400,000 to 500,000 years ago. Peiligang Culture is the representative of early culture of the Neolithic Age in China, around 8000 years from today. Archaeologically, it is seen as the beginning of Chinese civilisation.” Xuede Wu and Yan Liu wrote that: “In 1970s, 114 tombs, one pottery factory, 22 ash pit and several ruins of caved house bases, and more than 400 utensils were found through excavation... Half of the west part is the family tombs and the east part is residential ruins. This is the first time to discover the ruins of the early Neolithic Age. And it is named as Peiligang Culture.” And from the excavation, archaeologists extrapolated that residents in Peiligang had started to manipulate agricultural skills and knowledge and the earliest agricultural revolution happened in Peiligang. Other ruins were also discovered and inferred to be in the same period of Peiligang Culture, such as Wuyangu Ruins and Egoubeigang Ruins. Houses in Peiligang Period show that there existed a gradual transformation from naturally caved houses to semi-caved houses. First of all primitive people dug a round or rectangle pit on the ground and lifted poles around the pit and in the centre of the pit and then put leaves, dried grass on the poles to make a shape like a dome and finally put wet soil on the surface of the dome. Half of their houses were underground half above ground, which is later named as caved houses.

Yangshao Culture, discovered in 1921, and named after the village where it was, is the second important culture during the Primitive Period, and is the representative of the middle stage of the Neolithic Age in China and of the semi-caved houses developed to be in different styles such as vertical semi-caved houses and horizontal semi-caved houses. Youbin Hou and Wanzhen Li illustrated nearly each kind of typical house in ancient China in their book *Illustration of Ancient Chinese Architecture* and caved houses are categorized into three groups in this book, namely, the primitive horizontal caved houses, deep-pocket caved houses and semi-caved houses. And there

are three sub-types of semi-caved houses which are of round shape, rectangular shape and “吕” shape. Two ruins, Miaodigou, Shan County, Henan and Dahe Village, Zhengzhou, Henan demonstrate this period very well. And from the restoration of both of these ruins by Hongxun Yang, the embryo of ancient Chinese architecture could be found. And Manchang Zuo wrote that Xiawanggang Ruins in Xichuan County is the representative of late Yangshao Culture. And Houses in ruin site were one 155m long and 13 to 17m wide. Different houses had different functions and living areas were separate from other rooms, showing big social changes and this also means that architecture in China at that time had evolved from one single space to multiple spaces.

The third stage of the Primitive Period is the Period of Longshan Culture. 5000 years ago, Yangshao Culture developed into Longshan Culture, the late Neolithic Age. During this time, people were still using stone tools but the skills to make potteries had been distinctively developed. And handcraft became independent and got separated from agriculture. And social system changed from matriarchy to patriarchy and private ownership appeared. Houses were mainly underground but more and more buildings above ground had been constructed, and many walls were built from adobe, indicating the popular rammed earth architecture at that time. Manchang Zuo commented on rammed earth houses in such a way: “Rammed earth houses meant a lot to traditional Chinese architecture. People rarely used bricks in construction before Qing Dynasty and the main body of walls were mostly made by adobe. Bricks had not prevailed in China until Ming and Qing Dynasty, and in south of the Yangtze River, adobe was still the major construction material.”

2.2.1.2 The Period of Slave Society

The establishment of Xia Dynasty (c.2100--c.1600B.C.) symbolizes that China had entered the Period of Slave Society which lasted for more than 1600 years from Xia till Spring and Autumn Period. Ancient Henan Architecture indicates that 7 capitals of Xia Dynasty were all situated in Henan. 错误! Youbin Hou stated explicitly that in this period the techniques of rammed earth construction had developed maturely and it was the foundation time for Chinese wooden structure. The tongue-and-groove joint had been finely designed and made and the wood brackets had started being used in architecture. The multiplied courtyard houses had already come into being. And Manchang Zuo explained the appearance of Slave Society that: “With the emerging of private ownership, status of people within one family was different. Also the economy development and conflicts between families resulted in the increasing of slaves and thus enhancing the class polarization and the formation of Slave Society.”

One of the most prominent ruins in Xia is Erlitou Ruins, Yanshi, Henan. There were not many residential areas or groups found in Xia but the original methods of construction in primitive period were still in use and adobe was mainly used as construction material. Residential buildings discovered in Erlitou Ruins were not very large and usually no larger than 10 m². There were mainly two types of houses like houses in primitive society; one was semi-caved house, the other was above-ground house.

In Shang Dynasty (1600 B.C.- 1046 B.C.), many ruins were discovered and got excavated in

Henan, providing countless invaluable relics for archaeologists, historians, architects, city planners, literary scholars, handicraftsmen, etc. to know better of their respective fields and among all of these relics, the inscriptions on bones or tortoise shells are good examples which plays an important role in guiding their researches as they are more direct and explicit. Houses were moving from underground to ground level in Shang and houses above ground began to prevail over semi-caved houses step by step.

In Zhou Dynasty (1100 B.C.-221 B.C.), the slave society broke down and was replaced by the feudal society. City planning got developed and many theories guiding the planning of cities appeared as described in *Qiaogongji*: “When architects design a city, the city should be 9km on four sides and on each side there should be 3 doors... ..”⁹ And Xinian Fu wrote in his paper: *Survey: Chinese Traditional Architecture*: “ During the period of Shang and Zhou in the second stage, the most important features of Chinese traditional architecture---wooden framework and the courtyard style---were already formed.” (Steinhardt, 1984)

2.2.1.2 The Period of Feudal Society

The Feudal Society in China lasted more than 2300 years from 475 BC till 1840 AD. During the 2300 years, the system of traditional Chinese architecture became more mature and finally got formalized. During the Spring and Autumn Period(770-476B.C.) and the Warring States Period (475-221B.C.), architecture had been developed with the creation of iron and was greatly influenced by the uniformity of unit, currency, laws and regulations, and characters settled by ShiHuang Qin (秦始皇), founder of the Qin Dynasty (221-206B.B.), and he was regarded as the first emperor in Chinese history.

In Han Dynasty (206B.C.-220A.D.), apart from ancient history books, geography documentations, many burial artefacts also help draw a clear picture of the evolution of architecture which is an important means for researchers to grasp the general and even some detailed information of architecture of certain period. Usually the burial objects were meant to express good wishes of the alive to the dead. For example, ancient people would bury big house models in the dead’s tombs. These burial objects are useful in guidance of the researches especially when there is no actual architecture restored today or even no ruins left today. However, Zuo raised his questions when he discussed the role of funeral objects in *Henan Vernacular Architecture*: “I always have two questions when professionals used to regard funeral house models as an important media to reflect upon actual architecture. My first question is: were there really so many buildings and so many high-rise buildings? My second question is: were round and plate tile roofs (筒板瓦) so popular?”¹⁰ He got his answer to his first question from *Definition and Categorization of Han Burial Objects in Henan*¹¹ which says that houses for ordinary people were all one-story high in every dynasty. High-rise house models as burial articles in Han (206B.C-220A.D.) tombs demonstrate that people could not be ordinary people when many valuable funeral objects were excavated from their tombs and they must have high social status and at the same time these burial objects were meant to express people’s good wish to the dead, expecting them to live in a spacious house after their rebirth.

And for the second questions Professor Zuo found his answer in Sanyangzhuang Village,

Liangzhuang Town, Neihuang County, northern Henan (豫北内黄县梁庄镇三杨庄) that by late 2005, archaeologists had excavated 4 courtyard houses, uncovered the round and plate tile roof and were surprised to find that the tiles were still joist together. Explanation to his surprise was that courtyard houses were flooded and immersed in the Yellow River and were not severely destroyed. Finally, supported by other evidences, Zuo concludes that the round and plate tile roofs were already in wide use in Han Dynasty (206B.C.-220A.D.). We have to admit that on one hand, these models were somehow exaggeratedly made as they were not models for real houses as they were too high, being far from social reality and beyond the techniques and skills at that time. On the other hand, they display, to some degree, the proficiency of building skills of architects and the prevailing style of architecture at that time. By Han Dynasty, the combination of the patriarchal clan system and architecture and the relationship between courtyard and buildings had all reached a new level which could be found in the layout of houses and of their decorations, stairs, roofs, width or units of houses and even the arrangement of furniture etc. and meanwhile, the wooden structure of the architecture became more reasonable.

During Wei Dynasty (220-265), Jin Dynasty (265--420) and Southern and Northern Dynasties(420--50), Buddhism together with Confucianism and Taoism were popular. The poem written by the famous poet Mu Du (杜牧) vividly shows the phenomenon of constructing temples and grottoes in this period of history: "Of the hundreds of temples built in Southern Dynasty, the terraces and buildings are still standing, shrouded in mist and rain." Besides, yin and yang theory also found its way into architecture in Henan and finally making it a more cultural product rather than physical object. The methods to present these elements will be written in the third chapter of this paper.

In Sui Dynasty (581--618) and Tang Dynasty (618--907), Luoyang was established as the eastern capital and Chang'an (or Xi'an) as the western capital. The city of Luoyang was quickly built and the advanced city planning of both Luoyang and Chang'an were models for Japanese city such as Nara, Kyoto, Osaka, etc. And in Song Dynasty (960--1279), Henan architecture almost reached its peak as levels of architecture were clearly defined and controlled by laws, and each part of the wooden structure had been developed rationally and buildings were even constructed by pieces of wood which had been calculated and accurately processed before they were put to their proper positions. Regulations concerning the decoration were clearly stipulated. It may be safely concluded that the whole system of wood structure was sophisticated and highly symbolic and the craftsmanship in construction and tool making was high. Some would still doubt the control of construction as it was so strict with classes and status and limited the creation from architects, city planners, and craftsmen.

2.2.2 Vernacular Architecture in Gaozhuang Village

Houses in Henan vary greatly from regions to regions in type, material, scale and structure but houses in this village are still a good representative of vernacular architecture in Henan and particularly along the Yellow River. Though houses are of several different types, a courtyard is always a must. Most of them are sanheyuan or erheyuan, though some merely consist of one main house with a big courtyard.

It is important to note that “House” here has two meanings: one is a house or a building proper for a family to live in, the other a house or a building proper for such a purpose together with a gate and a courtyard fenced with walls, so that a house is a separate independent complex unit. And courtyard house refers to both of the two meanings and the differences of definition will not be explained again below.

2.2.2.1 Spatial Study of Gaozhuang Village

In my interview with Manchang Zuo, he emphasized on the spatial study of Chinese architecture because the space of traditional Chinese architecture should be more focused on as it is different from western architecture and conveys its own meaning and symbols of Chinese philosophy which is unique in the world.

For a convenient analysis, space is classified into four categories in Gaozhuang Village based upon the architectural boundaries and the form of courtyard housing.

Open space

The first one is open space. Open space in Gaozhuang Village mainly denotes residential streets and main roads connecting Gaozhuang Village to the outside. The former runs mostly east-west between two rows of residential houses and the latter run mostly north-south connecting the whole village with the outside world. The development of Gaozhuang Village is like other villages in Henan. According to Professor Zuo, “usually each generation of the whole family lives in each street and when the land is fully occupied then the second generation will start a new row of houses. A village develops firstly with the increase of houses and then by the increase of streets.” Indeed, this also applies to Gaozhuang Village that each street indicates a generation. Obviously, the remoter the street is, the younger the residents are. In Gaozhuang Village, streets run from east to west and increase from north to south, more and more nearer to the Yellow River. Streets are not only vital for transportation. They are also places for neighbours to communicate with one another. Actually they are fantastic places for kids to play with each other. For the sake of safety, children usually play on residential streets instead of on the main road. They bring their toys to the street, showing and sharing them with their little friends. It is definitely a place of acquaintance, laugh, quarrel and reconciliation. Besides that, villagers store their bricks, dry their corns, park their cars and greet with their neighbours along the streets.

Years ago Hutongs (胡同) or alleys were also an important open space. Hutongs are usually quite narrow passages used only by several families who live deep between houses and distantly from the main streets or roads. Some of them are straight but some are in a zigzag way because of the residential boundaries. And they are short cuts for people from different rows of residential buildings. Hutong is an ideal place for children to play hide-and-seek, though an inconvenient passage for adults to go in and out. However there are fewer Hutongs now than before because the village has been restructured with wider streets. Another open space in Gaozhuang Village is the threshing grounds which were used to process their harvested and gathered-in crops, park their farm machines, store their tools, and so on. But that was more than thirty years ago when farmers were organized in different production teams in the village. Despite the abrogation of such

organization and the reformation of agriculture in 1984, some of this kind of land either stands idle or is used for other purposes such as kindergarten, school or is simply assigned for farmers' homestead plots, etc.

Buffer space

The second space is buffer space. Buffer space is unique in Gaozhuang Village because of its shape and its functions. It lies from the outside line of the gate and the street house to the street. As the early rows of houses were constructed with angles from street and had setbacks, so buffer space is in the shape of trapezium. This area functions as the entrance road to the gate of the house and it is impressive to find that occupants are so industrious that they take the advantage of this piece of vacant land to plant some vegetables or some flowers. For the sake of heavy rain or flooding, foundations of houses are always constructed very high, leaving a slope in the buffer zone and in some families whose houses are far from the street, then the slope and the buffer space would be more obvious and eventually their houses look more grant than others.

Architectural space

The third space is the architectural space, which is named as solid space from yin and yang theory contrary to the courtyard space, the void space which is the fourth space and will be mentioned later. Architectural space is the most important space among the four in that it embraced the most theories from Chinese philosophy and Chinese aesthetics.

As other Chinese, Henanese divide the architectural space or the solid space by different functions and by their ethic values. In Gaozhuang Village, three types of vernacular architecture are prevailing namely siheyuan (or quadrangle), sanheyuan and erheyuan. And it is also noted that quadrangle and sanheyuan are most popular in this area and these two types of layout demonstrate traditional Chinese ethic, aesthetic values well. Out of the thirty cases in this study, seven houses follows the pattern of quadrangle, 12 houses are in the form of sanheyuan, nine houses are erheyuan, only one house is a single detached house with a front yard and one house is a single detached house with a side yard.

In siheyuan, houses can be seen as three parts: the main house, the street house (usually with a gate to the street), the left and right wings. In Chinese the main house is called shangfang (上房), meaning the most superior house. Right inside the door of the main house is the living room where the whole family have their daily activities, receive their guests and worship their family ancestors, or gods. On the left of the house is usually a bedroom where the oldest persons live. The bedroom is separated from the living room by a wall. As the roof is fairly high, up to four or five meters and is doubly sloped, the wall between the living room and the bedroom is not built up to the roof but approximately half of the clear height. And strong boards are used to form a ceiling of the bedroom.

The secondarily important house is the house built along the street, therefore named the street house. This is the house where the eldest child lives and in some cases it is the place where he lives with his wife and children when he is married. The left and right wing-houses refer to the houses built on the left and right sides of the whole yard. They usually serve as bedrooms for

second son and/or daughters or for their families. The left wing is above the right one in priority.

Actually in the old siheyuan in Gaozhuang Village, a formal dining room can hardly be found, but the table and chairs in the living room space serve as dining space for the whole family. Kitchen always lies near the main house so that dishes could be served conveniently to the main hall.

Generally speaking, affected by Confucianism and Taoism and the social regulations and ethics which had evolved for thousands of years since Spring and Autumn Dynasties and Warring States, male is regarded more important than female in China that they have been the major labour force in production activities and the major source of military strength. Also the continuity of a family relies on male that female is not supposed to be documented in the family tree. Gaozhuang Village, like most of the rest of China, sons stay at home after they grow up and get married while daughters will leave their parents and live with their husbands' families and raise their children there. Though left wing house and right wing house are both side houses, they are not totally the same. According to the tradition, left is superior to right, so left wing house is superior to the right one, and this influences sanheyuan, where there is only one side house. Consequently, in most sanheyuan, the side house lies on the right of the main hall. In the 30 houses investigated in this paper, there are still some exemptions such as the courtyard houses owned by Gongshe Gao, Zhengkui Gao and Sanxi Gao. And from my interview with the residents in the three houses, the reason to build their side houses right is the same that by the time they built their houses, families supposed to be on their right either hadn't moved to it or the land on their right was vacant. In order not to build one more wall on the right, they chose to build their side house on the right instead of on the left. Therefore, apart from these exemptions, side house in Gaozhuang Village observes the general traditions in China and when it is in sanheyuan, it is to be built on the left side.

(Note: left and right are determined from the main house with one standing in front of the main house and facing in the direction of the street. If the main house stands in the far north side of a quadrangular courtyard and faces the south with a gate on the far south side of such a courtyard leading outside to the street, then the left side of the courtyard house is the east side where a wing house is supposed to stand and the opposite side is the right side)

The street house, the one with the gate leading out to the street functions as a small house with a living room and a bedroom. The status of each house is different and the street house is inferior to the main house and the wing houses are inferior to the street house. Houses are distributed to family members according to their status in a family. Usually, parents live in the main house, the oldest son live in the street house, the younger brother live in the wing house, and so on so forth. Take Gongshe Gao's courtyard house and Shehui Gao's courtyard house as examples, Gongshe and Shehui are brothers who were living together in one courtyard house which they call it Old Courtyard today. Before Shehui, the younger brother got his homestead plot from the government to build his own house, they had been living together with their parents and the house was owned by the parents. Gongshe's family lived in street house and Shehui family lived in the wing house, and their parents lived in the main room. And as Shehui's kid Xin Gao grew up, Shehui moved to his new house with the street on the south of the courtyard. Built in the year 2009, his courtyard follows the general pattern of courtyard housing: a two-story high main house with a very

spacious attic formed by the sloped roof, a wing house on the east side and a flower bed on the opposite side and a street house along the street.

Architectural spaces in the new courtyard house changed a lot mainly in four aspects:

1. Flat roof of the wing houses and street houses is favoured because it can be used for drying grains, installing the solar energy equipment, etc.
2. The space for wing houses is devoted to kitchen and toilette. Kitchen is separated from the main house but usually next to it. Toilet or bathroom within the courtyard is usually on the left side of the main house though outside toilette is still built.
3. For convenience, the order of the house has changed. The first floor of the main house remains to be occupied by the oldest and serves as the living room and the place to worship ancestors and gods. The second floor is prepared for the younger generation, children or grandchildren, while the street house is for parents. Another ways to organise the whole architectural space is that the parents live in the main house, their children live on the second floor, and the street house used as storage room or the street house is open and serves as a parking space. Though much of the architectural space have been changed in use between the old and new courtyard houses, still one could find the evolution traces between these two.
4. The height of each room has been reduced to 3.5 to 4.5 metres and the length of plot has been increased to more than 20 metres, forming the whole complex slimmer.

Courtyard

The fourth space is the courtyard. Xinian Fu states that large single houses composed of rooms for various functions could hardly be seen in ancient China but the one-storey buildings in a courtyard was popular. (Steinhardt, 1984) The main house together with the street and the left and right wings form a plot which Chinese people call it *yuan* (院, same as courtyard) and all of these buildings, windows and doors are facing the yuan and once the main gate is closed, yuan will act as an extension of the architectural space and the whole house is closed from the outside world, establishing a peaceful and private place for the whole family. According to Hesui Chen's book, the original meaning from *Shuowen* (《说文》) is: "Yuan is the surrounding walls or parapets." And Zengyun (《增韵》) defines yuan as: "Where there are walls or parapets forming an enclosure with a house, there is Yuan." In Chinese bronze inscriptions, the Chinese character "院" was written as



and in oracle bone script as



. It is a space enclosed on three sides but with an opening on one side. Chen explained that the two characters explicitly show the pattern of a yuan that the residents of the cave house and the nearby bushes and grass are surrounded by buildings. He listed as evidence from a portrait brick dated from Han Dynasty excavated in Sichuan Province that the houses drawn on the brick illustrate three yuans and each yuan is partitioned by porch. He concluded that "apart from residential architectures, buildings such as palaces, tombs and temples are the expansion of residential courtyard houses" and in his opinion, "the culture of traditional Chinese architecture is the culture of yuan....a residential house, a palace, a city, all in all is the expansion of yuan." (Chen, 2005) And similar comments can be found in *Walls: Inside China and Its Architecture* that after the writers discusses the spiritual perspective of courtyard housing, they articulate the prominence of courtyard house in China that: "All of these relationships exist not only within the context of the Chinese house, but are repeated in the forms of temples, palaces and

China's towns and cities." (Rapson, 1981)³⁴ Indeed, when talking about Chinese architecture, one could never neglect the courtyard house which is socially and culturally responsive and conveys harmony and unity derived from the classical Chinese philosophy and the view of the world and even cosmology.

Courtyard surpasses other forms of architecture in that it creates possibilities for the inhabitants to get in touch with nature. In Gaozhuang Village, if possible, people always would like to have a flower bed in their yuan or courtyard for flowers to please their eyes or vegetables for convenience of their tables. Courtyard benefits man a lot in terms of improving human immune system, warming the house in winter, helping human generating vitamin D and killing bacteria (Kuo,2005; Luo,2006).

This changeable micro-environment along with seasons and different weathers shows without blocking nature and man and in fact its multifunctions allow almost every inhabitant in the house to get in touch with it in whatever way. For man never fails to love nature, to enjoy nature and gain something from nature with this tie. To emphasize the healthy aspect of a courtyard, Donia Zhang claims *Four Key Themes in Chinese Philosophy to promote Health and Happiness at Home* in her book *Courtyard Housing for Health and Happiness: Architectural Multiculturalism in North America*. They are: Health as balancing *Yin* and *Yang*, health as gathering *Qi*, happiness as attaining oneness and happiness as knowing the *Dao*. For *Yin* and *Yang*, she claims that traditional Chinese philosophy believes that man is part of nature and every living organism is from the endless cycle of the sun fire and earth water and fire and water are the major compositions of life. The theory of *Yin* and *Yang* is based on this and it becomes the fundamental concept for the interplay between man and nature. And she interprets *yin and yang* clearly:

"Yin Yang (阴阳) literarily means 'shade and light' with the word Yin (阴) derived from the word for 'moon' (月) and Yang (阳) for 'sun' (日). Zhouyi (Yijing, "The Book of Changes") suggests that polar opposites created Heaven and Earth, and Yin and Yang. When Heaven and Earth intersect and Yin and Yang unite, it gives life to all things. When Yin and Yang separate, all things perish. When Yin and Yang are in disorder, all things change. When Yin and Yang are in balance, all things are constant. The mutual interdependence of Yin and Yang is called 和合 (hehe). The first 和 signifies "harmony" or "peace" and the second 合 denotes "union" or "enclosure". The combined words imply that harmonious union of Yin and Yang will result in good fortune, and that any conflict is viewed only as a means to eventual harmony."

The following part Zhang introduces *Qi* as "cosmetic breath", "life-force" or "matter energy" which is created by Yin and Yang but only when both of them work in a balanced way, the complimentary forces are in perfect balance. She states that *Qi* can flow smoothly it can do good to the occupants. Also the architectural space or the solid space is regarded as Yang when the courtyard space or the void space is regarded as Yin. (Zhang, 2015) And Yuan Ding concludes three aspects of Yin and Yang that should be well comprehended: "Yin and Yang relies on each other, inside each other and need to mate with each other or be the companionship of each other." (Ding, 2011) Actually Yin and Yang has other meanings such as the moon and the sun, negative and positive, hell and heaven, evil and justice, dark and bright, female

and male, even and odd, etc. And the figure of Yin and Yang illustrates the interaction of them. Quotation from Kuei Ku Tzu: “The Yang returns cyclically to its beginning; the Yin attains the maximum and gives place to the Yang.” In Yin and Yang theory man is Yang, odd number of units is Yang, the world of living is Yang, the world of the dead is Yin, roof is Yang symbolizing the Heaven and the platform is Yin, etc. In this way, the courtyard together with its occupants form a harmonious circle of Yin and Yang that they are mixed with each other, rely on each other and even conflict with each other.

Spiritually courtyard enables Qi to flow into the house, brings vigorous and vitality to the occupants. But functionally Courtyard in Gao village is mainly used by villagers to plant their vegetables. In houses built during 1980s till 1990s where floor was not paved with bricks or marble, actually it was just paved with soil, rough stones or concrete, courtyard remains quaint, natural or even wild. But in new houses built after the millennium, courtyard has been quite organised with parapets built around to define its area and a sink aside. Differences between old courtyard and new courtyard changed slightly but influence greatly on residents’ behaviour and the interrelationship between neighbours and family members. In old courtyard houses, people intend to do their work in courtyard not only because of its openness but also its freedom as old courtyard are often disorganised and people could rearrange the courtyard space at their will. Frequently, family members or neighbours would either sit in mazha (马扎, campstool) or in chairs, chatting and or doing agricultural work together. However, as a result of the expansion of house dimension, courtyard in new houses shrinks and functions more as a means of decoration rather than a place fostering social relationships. The existence of courtyard advocates the traditional Chinese understanding of Heaven and Earth and can be seen as a marvellous creation of architectural form which combines human with their living environment and meet the ultimate goal of Chinese: oneness of men and heaven(天人合一) which is claimed by Liu as well: “The essence of Chinese architecture is harmony and unity.” (Liu, 1989)

Feng Shui and Courtyard House

Feng Shui or Kanyu is an ancient theory guiding the design and construction of Chinese architecture. According to Cihai, “Feng Shui is a doctrine used in deciding the location and the layout of architectures and tombs. It is an ancient superstition as ancient Chinese believed that the wind and water surrounding the residential buildings or graves could bring fortune or misfortune to the residents or the dead.” *Oxford Dictionary of World Religions* defines Feng Shui in other way: “Feng Shui is Chinese art or skill of geomancy. Taking account of the five elements and the two forces of yin and yang, the practitioners use a circular wooden plate on which the outline of neo-Confucian cosmography is inscribed to determine the best site for buildings, graves, temples, etc.” Feng Shui has been guiding the location and the determination of the orientation of an architecture, the layout of furniture, the procedures of construction, etc. for thousands of years and still influences Chinese architecture today. According to Yuan Ding, although the history of Feng Shui could hardly be confirmed, the written history of it could be dated back to 3000 years ago, and “Kanyu originated, thrived and declined synchronically with the development of Chinese civilization.” (Ding, 2011)

Architecture as a product of human activity evolves with the development of human beings. Browsing through the history of Chinese architecture, architecture has been developing with the rise of Chinese civilization and gradually been an approach for man to meet their physical demands first and then later spiritual needs. Traditional Chinese courtyard houses can be seen as a reflection of Feng Shui theory, or rather it embodies the conceptions of Feng Shui. Laurence G. Liu expresses his understanding of Chinese architecture and the relationship between architecture and symbols: “Hence symbols, as employed in language, art and music, were used to express the deeper meanings of daily life... .. Architecture’s specific symbolic language was developed to represent the character, spirit, feelings and ideas of both the builder and beholder.” He goes even further by stating, “traditional Chinese architecture symbolised many levels of meaning: axial and symmetrical planning expressed ethics and rituals; orientation and Feng Shui depicted deeper religious meaning; the form of an individual structure characterized the Chinese spirit; while private garden planning expressed a philosophical content.” And eventually he commented on Feng Shui that although some parts of it is superstition, some parts could still be lessons for people to utilize the surrounding landscape and to cope with orientation (Liu, 1989).

Based on the theory of Feng Shui, the gate of a courtyard house is of vital importance as gate is regarded as “the mouth of qi”(气口) and the position and size of it affect the whole household and as a passage connecting the outside with inside space (Zhang, 2015). So the main gate is usually situated in the southeast corner of the whole lot when the courtyard is sitting north and facing south and gate will be situated in the northwest corner of the whole plot when the courtyard is sitting south and facing north as the southeast wind is regarded as yang and it is thought as healthy for people and the northwest gate is merely to remain the shape and the layout of houses which demonstrate other important Feng Shui theories. However, behind the main gate lies not the main house, the left and right wings, the south hall, or the courtyard but instead, a screen wall or gable wall of left wing house. This is owing to Chinese belief that the evil spirit can only move sprightly. Screen wall is hardly used in a new courtyard house in Gaozhuang Village but the wall of the left wing house is commonly used as the screen wall in front of the main gate to save space and to meet such spiritual needs. And in a house facing the south, the size of the main house in Gaozhuang Village actually affects the size of the whole courtyard as the main house crosses almost from the west boundary to the east boundary of the lot and its scale is measured by unit and the number of unit is always odd number, the Yang number. Three-unit main house prevails in Gao village and some houses are five-unit wide, which is rather grand and this happens when the lot of the family is really large and runs parallel to the street and gate can only placed towards the street, so the length of their lot is designed as the width of their lot which is certainly longer and looks solemn.

Sometimes, Feng Shui is superstitious. During my research in Gaozhuang Village I interviewed Yuhai Du (杜宇海), a local craftsman who has been engaged in architectural design and construction for more than 40 years. By 2016, he is 73 years old and is still designing and instructing the local constructions. The place we met was on a construction site where he was supervising the workers and construction of a residential house he designed. In this interview, he showed me a door ruler, measuring the width of door which he made himself by referring to some theories and old Feng Shui masters. On the ruler, each width indicates something. Some are

auspicious denoting fortune, longevity of life, populous family, etc. some are inauspicious, such as disaster, disease, death, etc. He said that though there is something useful in Fengshui that it could guide people to design their houses better to conform to nature and to take the context into account and even take the advantage of the surrounding environment, it never lacks superstition. And he encourages people to respect good rituals, but abandon bad ones.

The open space, the buffer space, the architectural space and the courtyard form the general layout of Gao village, making it unique in expansion, in social interactions, in family orders and in humane environment. They together create a lively atmosphere between houses but at the same time protect the privacy within each house. For sure Courtyard housing is a good representative of traditional Chinese philosophy and an excellent sample of vernacular architecture of China.

2.2.2.2 The Typological Study of Courtyard Houses in Gao village

30 houses were investigated in this paper and for a systematic study, these houses are grouped by time. Among all of the 30 houses, nine were built before 1985, nine were built between 1990 and 2000, and the rest 12 were built after 2000. Except one house which was built in 2015, the newest house among the 30. All of the houses are courtyard houses and the typological study will be made of them by order from old to new.

Nine houses were studied in this research which are No. 1 Courtyard House (the house of Yue Pan), No. 2 Courtyard House (the house of Guangming Gao), No. 3 Courtyard House (the house of Yanli Gao), No. 4 Courtyard House (the house of Jinbao Xie), No. 5 Courtyard House (the house of Jianbo Gao), No. 6 Courtyard House (the house of Dayong Gao), No. 7 Courtyard House (the house of Zhengkui Gao), No. 8 Courtyard House (the house of Fengqiang Gao) and No. 9 Courtyard House (the house of Haiyan Gao). Among the nine houses, three houses are of erheyuan. They are the house of Yue Pan, the house of Jinbao Xie and the house of Fengqiang Gao. Five houses are of sanheyuan. They are the house of Guangming Gao, the house of Jianbo Gao, the house of Dayong Gao, the house of Zhengkui Gao and the house of Haiyan Gao. Only one house is of siheyuan. It is the house of Yanli Gao; All of the courtyard houses face south with the exception of the house of Jinbao Xie, which faces north. Three houses are flat-roofed. They are the house of Yanli Gao, the house of Zhengkui Gao and the house of Fengqiang Gao. And all of the houses in this section were built by adobe and bricks.

Nine houses were investigated in this research as samples of courtyard house during the period between 1990s and 2000 in Gaozhuang Village. They are No. 10 Courtyard House (the house of Laidao Gao), No. 11 Courtyard House (the house of Chaoyi Zhang), No. 12 Courtyard House (a house owned by a grandma, who is the oldest and the senior in the clan of Gao), No. 13 Courtyard House (the house of Xuxia Li), No. 14 Courtyard House (the house of Heyou Gao), No. 15 Courtyard House (the house of Sanxi Gao), No. 16 Courtyard House (the house of Lelian Gao), No. 17 Courtyard House (the house of Zhiguo Gao), No. 18 Courtyard House (the house of Gongshe Gao) and within these nine houses, only No. 11 Courtyard House is single and detached. No. 10,13,14,15 Courtyard Houses are of erheyuan. No. 12,16,17,18 Courtyard Houses are of

sanheyuan. No.9,11,14,15,17 Courtyard Houses face either north and all of the other investigated houses face north; the gates of No. 11 and 12 Courtyard Houses are situated in the right middle of the exterior wall while the gates of all others are located in the bottom right of the exterior wall.

12 courtyard houses were measured and studied as the representatives of courtyard house constructed after the year 2000. These 12 courtyard houses are No. 19 Courtyard House (the house of Dali Gao), No. 20 Courtyard House (the house of Yuanhe Gao), No. 21 Courtyard House (the house of Fengwu Gao), No. 22 Courtyard House (the house of Shehui Gao), No. 23 Courtyard House (the house of Yuanzhong Gao), No. 24 Courtyard House (the house of Xugong Gao), No. 25 Courtyard House (the house of Yongli Gao), No. 26 Courtyard House (the house of Changen Guo), No. 27 Courtyard House (the house of Dagang Gao), No. 28 Courtyard House (the house of Xiongfa Gao), No. 29 Courtyard House (the house of Baozhong Gao) and No. 30 Courtyard House (the house of Dajian Gao). No. 27 Courtyard House is a single and detached house; No. 20 and 24 Courtyard Houses are of erheyuan; No. 19,21,25 Courtyard Houses are of sanheyuan, and No. 22,23,26,28,29,30 Courtyard Houses are of siheyuan; No. 19,20,21,22,23,29 Courtyard Houses face south. All the others face north. All of the front gates are positioned at the bottom right of the exterior wall.

Courtyard houses in Gao village can be categorized by different standards. By the typology of plan arrangement, courtyard house can be divided into four parts which are single detached house, erheyuan, sanheyuan and siheyuan. By the type of roof, courtyard house can be divided into two groups namely the houses with gable roof and houses of flat roof. By the construction materials, courtyard house can be sorted into two, one is the wood-adobe-brick house and the other is wood-concrete-brick house.

2.2.2.3 The Structure of Courtyard House

2.2.2.3 The Structure of a Courtyard House

The structure of Chinese architecture is quite different from that in the West and has a great influence upon the nearby countries such as Thailand, South Korea, Japan, and so forth, and according to Ssu-Ch'eng Liang that the basic characteristics of Chinese architecture is the structural system and the plan arrangement. ³⁵As the development of structure of Chinese architecture has been described above, this part mainly discusses the structure of courtyard houses in Gaozhuang Village today. In Chinese architecture, though approximately all of the mainstream houses were wooden framed and are of beam-and-column construction, there are still differences between them. According to Xinian Fu, the wooden structure is divided into three categories, namely Tailiang framework or raised beam construction and Chuandou framework or column-and-tie system, and Miliang Pingding style. And Laurence G. Liu divides Chinese wood framework into two types, Tailiang framework and Chuandou framework. Both ways have their respective reasons and interpretation. And both make sense for courtyard house in Gaozhuang Village as approximately all of the residential houses in Gaozhuang Village are courtyard houses, in the similar forms and layout and they are all constructed in raised beam system.

In that the structure of Chinese architecture is quite different from the West and has a great influence upon the nearby countries such as Thailand, South Korea, Japan, and so forth, and according to Ssu-Ch'eng Liang that the basic characteristics of Chinese architecture is the structural system and the plan arrangement (Liang & Lin, 2011). In *Aesthetics of Chinese Architecture*, Youbin Hou summarizes three features of wooden framework of Chinese architecture: the natural and societal adaptation, the orthodoxy, continuity and highly maturity, and the tolerance and distinctiveness (Hou, 1997). As the development of structure of Chinese architecture has been described above, this part will only discuss the structure of courtyard house in Gao village today. In Chinese architecture, though approximately all of the mainstream houses were wooden framed and are beam-and-column construction, there are still differences between them and according to Xinian Fu the wooden structure is divided into three categories, namely Tailiang framework or raised beam construction(抬梁结构) and Chuandou framework or column-and-tie system(穿斗结构), and Miliang Pingding structure (密梁平顶结构) (Fu, 1998). And Laurence G. Liu divides Chinese wood framework into two types: Tailiang framework and Chuandou framework. Both of the two categorizations have its reasons and understanding, and they still make sense for the courtyard house in Gao village as approximately all of the residential houses in Gao village are courtyard house, in the similar forms and layout and all of the courtyard houses are constructed in raised beam system. Raised beam structure is described by Xinian Fu: "The method of building is that of laying major beams across anterior and posterior columns, then laying over them successively shorter and smaller beams, supported by struts which rise in between to heights that create a roof line slopping to either side of the building. Over the successive tiers of beams are added purlins over which rafters are laid, thus forming the roof frame. The area defined by two adjacent columns is called jian (bay) which serves the basic unit of space in a wooden framed house." (Steinhardt, 1984)

Beam-and-column structure enables the fluidity of space in each house in the courtyard and users can design their interior space as their wishes and also the spacious house helps the wind ventilate well and always brings fresh air into the house. This structure also makes construction easier and faster as wood can be easily chopped and carved into the ideal shape. Since Song Dynasty, buildings had become modularly constructed, as beams, columns, purlins, struts, joists, doors, windows, etc. had been prepared in advance and all of these were assembled on the site. The small gap between each wooden part brings flexibility to the whole house and because the supporting structure is the beam-and-column structure, walls are more likely to be destroyed in natural disasters but the wooden framework could bear them such as earthquakes, water floods, and so on. Like the other two types of wooden frameworks, raised beam structure can also be conveniently repaired in that whatever part of the structure does not functions it can be replaces with a new one. This reduces the cost of repair and extends the life-span of the building. Like the other two wooden

frameworks, raised beam structure also conforms to the ritual regulations of ancient Chinese societies and on the other hand it conveys the social rankings of the owners, the wealth of the family and even the occupation of the landlords. Raised beam structure in Gao village observes the regulation of the low level of architecture which could be seen obviously that every part of the wooden framework is comparatively smaller and the decoration is reduced to the least than the palace, temples, schools and so forth.

Although walls does not function as supporting structure and only support their own mass they are still special in Gao village especially in old courtyard house which was composed of adobe and bricks. Traditional courtyard house in Gao village were built mainly with adobe with small amount of bricks. And in the old days, apart from professional workers, houses were constructed by family members and neighbours. Adobe bricks were usually made by families to save money and time. Soil was firstly dug from far away land and transported in a tricycle back home. There were two ways to build an adobe wall. One was put the adobe in a square mould and after it had gained the cubic shape the mould would be removed from it and let it dry a little bit and later put each adobe brick on the wall and aligned each of them to be vertically straight and the other way was to put the mould directly on the wall and after the adobe took its shape the mould would be removed from it and next adobe brick would be made next to the former one. Usually brick walls would be erected first on the ground for about 6 to 9 layers and adobe bricks would be placed above. This type of house had already been obsolete since 2000, and was replaced by brick walls or concrete walls. Viewing back the history of materials applied to traditional Chinese architecture, adobe had been the major source of construction materials ever since primitive period which was at least 5000 years ago and until Ming and Qing, bricks hadn't been popularized due to the production capacity and the techniques (Zuo, 2015).

It is interesting to notice that the proportion of adobe walls is less in the front wall than it is in the back and residents gave answers to this phenomenon that by the time they built their houses, adobe was still the cheapest construction material while bricks were expensive, and also a house built with adobe could reduce much of the labour fees in that families could build the adobe wall themselves. But to make the house look more grand occupants were intended to build less adobe wall but more brick wall in front and more adobe wall in the back to save money.

References

- Bowker, J. (1997). *The Oxford dictionary of world religions*. Oxford: Oxford University Press.
- Chen, H. (2005). *Ancient architecture in Chinese Characters* (《汉字中的古代建筑》 Chinese edition). Tianjin: Bai hua wen yi Press.
- Ding, Y. (2011). *Kanyu (Feng-shui): a forgotten intangible heritage in China*. Nanjing: Southeast University Press.
- Henan Museum Group. (2011). *Ancient Civilization of the Central Plains*. (《中原古代文明之光》 Chinese edition) Beijing: Science Press.
- Hou, Y. & Li, W. (2002). *Illustration of Ancient Chinese Architecture*. Beijing: China Architecture & Building Press.
- Jackson, J. (1994). *A sense of place, a sense of time*. New Haven: Yale University Press.
- Junxiang Xie (1996). *The Origins of Top 100 Chinese Family Names*. Zhengzhou: Zhongzhou Gu Ji Press.
- Kuo, X. (2005). *A treasure dictionary for prosperous residences: A guide to residential Feng Shui* (《旺宅宝典：住宅风水指南》, Chinese edition). Beijing: Culture and Art Press.
- Liang, S. & Lin, Z. (2011). *Chinese Architecture: Art and Artifacts*. Beijing: Foreign Language Teaching and Research Press.
- Liu, D. (1984). *History of ancient Chinese architecture*. Beijing: China Architecture & Building Press.
- Liu, L. (1989). *Chinese architecture*. New York: Rizzoli
- Rapson, R. (1981). *Walls: inside China and its architecture*. [Place of publication not identified]: University of Minnesota.
- Steinhardt, N. (1984). *Chinese traditional architecture*. New York City: China Institute in America, China House Gallery.
- William H. Nienhauser Jr., ed. (1986). *The Indianan Companion to Traditional Chinese Literature*. Indianana University Press.
- Wu. Xu & Liu, Yan. (2001). *History of ancient Henan architecture*. Zhengzhou: Zhongzhou Gu Ji Press.
- Yang, H. (1987). *Paper on the Architectural Archaeology*. Beijing: Cultural Relics Press.
- Zuo, M. & Bai, X. (2007). *Henan vernacular architecture*. Beijing: China Architecture and Building Press.

Zuo, M. (2015). *Ancient Henan architecture*. Beijing: China Architecture & Building Press.

Note

1.Numbers retrieved from:

<http://data.stats.gov.cn/easyquery.htm?cn=E0103&zb=A0301®=410000&sj=2014>

2.Numbers retrieved from:

<http://data.stats.gov.cn/swf.htm?m=turnto&id=432>

<http://data.stats.gov.cn/easyquery.htm?cn=C01>

<http://data.stats.gov.cn/easyquery.htm?cn=E0103>

3.Ciyuan. (1986). Beijing: The Commercial Press. 孟州 地名。古孟津地，相传武王伐纣，与诸侯在此会盟。春秋为晋河阳邑，汉为河阳县，唐会昌三年改为孟州，明清为孟县。即今河南孟县地。参阅太平寰宇记五二孟州，读史方舆纪要四九怀庆府。

Chapter 3 Courtyard Houses in Gaozhuang Village

No.1 to No.10 Courtyard Houses are put into the category of the old as they were built between 1960s and 1980s, experiencing beginning of the national practice of its Reform and Opening-to-the-Outside-World Policy in 1978. No. 11 to No. 18 Courtyard Houses are representatives of those built during 1990s, when the Reform and Opening-to-the-Outside-World Policy was fully implemented throughout the country. And No. 19 to No. 30 Courtyard houses are chosen in a random way as a model of new courtyard houses in Gaozhuang Village. This research targets at the overall understanding of the village's residential buildings not only from the perspective of architecture but also from the perspective of the culture, the daily life of the villagers and the whole social and natural landscape in which setting people are born, grow up, establish families, give birth to their children...a rotation from generation to generation for thousands of years.

The grounds for such classification of these 30 courtyard houses are that the evolution of the residential buildings in this village is closely connected with the national policy. Houses established between 1960 and 1978, are generally mainly limited by the backward technology and the scantiness of materials available. Traditional style of architecture peculiar to this area and not easily seen in other places, was maintained in these houses.

Since 1978, China, began to have a dramatic historical change with the amazing leap in economy, the flooding capital, the pouring foreign cultures, the divers goods, the newly exported technologies, and the abrupt change of thoughts pushing or even forcing the whole society to change, to meet the demands of the "new world" including architecture. High-rise buildings sprang up in mega-cities. Six-storey residential buildings and higher ones were normal in medium-sized cities and even in towns. They follow the style of New International. But as Liu shows his worries in architecture and urban planning in China today, these brand-new buildings have not found their own identities. In other words, the local uniqueness has lost in the sharp competition between modernity and tradition. No emotion can be traced through them.

The fortunate thing is that more of the country is the rural areas where vernacular architecture have not been entirely squeezed out by concrete structure. In the countryside of Henan Province, tradition is retained to some degree though a lot changes have take place in residential buildings and other related aspects.

Houses in Gaozhuang Village are typical of such buildings as they still possess the essence of courtyard houses, though, built with new materials and new ideas, they have undergone a conspicuous changes since 1978, And after 2000, people's life had

been improved greatly with several policies carried out in China such as social medication policy, social insurance for the low-income, the disabled, etc. that the pockets of the villagers in this village were no longer short of money. People began to take their living conditions seriously and pay more attention to food, comfort security, high-quality education for children, medical environment and all in all, their life quality.

Since 2000, their courtyard houses began to take on a new style, with aesthetics and psychological demands taken into account instead of simply solving the fundamental issues such as comfortableness, health or social connections. Money permitting, villagers would build as higher as they could to show their wealth and to meet the demand of living. It is an interesting phenomenon in Gao village that people are competing to build their houses in height. And one could easily tell the construction sequence of each house simply by their height. Until 2015, villagers are seeking new styles of architecture and they prefer something new and different from others, and several houses built in 2013 and 2015 demonstrate such differences. This can also be noticed in other nearby villages where villagers are richer and have more tendency to embrace new things like Nanzhuang Village.

The new style mainly refers to western style with orders, pediments but for sure meanwhile lost the form of courtyards as they are single detached houses only with a yard symbolically lying aside. Western culture prevailed in big cities in China such as Shanghai, Beijing, Guangzhou, Shenzhen, Qingdao, Dalian, Chengdu, but over the years of fast absorbing and digesting overall aspects from the West neglecting and throwing away Chinese way of life, Chinese style of architecture, clothing, eating, thinking and viewing, people have realised what they had lost is what composed them and they spent more efforts to find them back than to learn from the West. Under such circumstances, New Chinese Style is created in architecture calling for the perishing beauty of traditional Chinese architecture and a good combination of tradition with new lifestyle. But the pain brought by the delay of such procedure in rural China still needs time to notice, go through and recover.

I was fortunate to conduct my research in this village as the development of vernacular architecture was so clear enough for me to document and study and the grandmas and grandpas were so kind and many of them are already more than 70 years old but were still enthusiastic to tell me their stories, the history of their families, their love for this piece of land and their expectation of their children and even the whole country. And I have to say that they are the ones who teach me the meaning of land and soil, the treasure of family and root and the spirit of industrious work and fulfilled life.

3.1 Detailed Information of 10 Old Courtyard Houses

No. 1 Courtyard House

The senior woman, already in her mid-seventies, is always called by her childhood name in daily communication, as is the usual practice in the village. In fact few neighbors, even her lifelong friends, Xiuzhi Pan and my grandma do not remember her formal name. And like most villagers in her age in this village, she is illiterate, unable to read or write. I got to know exactly her full formal according to her ID card.

Her house where she and her husband Zhengshu Gao are living in is the oldest houses I can find in the village in my research. As a legacy from her husband's parents, it is typical of the houses in Gao village back in the period of 1960s. And there is no way to figure out the accurate date of its construction. Even its owners cannot remember the exact month or year, but they will tell you that "It was built 51 years ago." There seems to be no problem about their memory about the time of the construction, as my interviews with inhabitants in Gao village show that seniors like her always remember clearly the past events which they regard important such as their own birthdays, their first children's birthdays, the years of they got married, the flooding of the Yellow River in their life and so on. Therefore one must be good at calculation when asking them about the construction time of their houses or anything related with numbers.

Built with soil and red bricks the house has been sheltering Zhengshu's family for more than half a century and fortunately is still in a kind of condition good enough for dwelling. The main house consists of three units long and is around four meters wide. The side house is 6.5 meters long and 3.5 meters wide. For years Yue and her husband lived in the main house and their children in their side house. However, after establishing their own families, all of the children moved out of this old courtyard house, leaving the courtyard together with the old house to their parents. Now the yard is no longer so crowded and noisy as before but seemingly a bit lonely and quiet and looking much shabby though simply repaired only two years ago. That's one of the reasons the old outgoing woman is a frequent visitor to my grandma, who is her lifelong friends in the neighbourhood.

I always call her grandma, as she is of the same age with my grandma and they are of the same generation according to the big family tree. However, I never know her real name though she drops in my grandma's house almost every day in the past 40 years and a usual case is she comes to my grandma's house several times a day for chat, for getting or spreading news.

Yue, 73 years old this year got married to Zhengshu 78 years old when she was 20. Her favourite story goes like this. At the age 18, she, together with other 140 people or so from her mother's village, 3 kilometres away from Gao Village, and other surrounding villages, answered the calls by the government to help digging a canal in

Qinghai Province, more than 1500 kilometres away from Henan Province. They were divided into different groups to dig a canal. She never forgets the biting cold winter in Qinghai where they were assigned to dig a river. Living conditions there were horrible where they got no boiled water, and had to drink icy water from snow and ice. They cut the ice into blocks and carried in their baskets on their back to their residential camps. She has deep impression of the harsh environment and the hard days when she got so little as her wage, 19 RMB a month, which could hardly cover her expenses and what was worse, food was scarce and she often went hungry. Missing her family and unable to bear the toughness there, she fled from the team several times, and the last time, she made it, first by hiding herself in a pick-up loaded with wool and then spent 19 RMB taking the train back home. Still, I could tell that she has some pride in herself for having such kind of experience though she was a runaway, as she kept telling me that she had once been a volunteer in Qinghai. Nobody has ever doubted her experience and her comments on the beautiful “sea” which she enjoyed most and remembered most clearly at the deepest of her heart as few in Gao village had ever reached that remote area, nor had they really seen a sea or experienced that unforgettable period of history except her companions.

Her audience usually consisted of old wives, occasionally of absent-minded men who had nothing else to do in cold winter nights after dinner. They just sat around the stoves and interrupted her with a few questions when they were curious and inspired. When she knew that my family moved to Qingdao, a place by the seaside, she immediately declared that she had also seen the “sea” and she said it was unforgettable and marvellous and the water was so clear and was flowing so rapidly that the current could even take people away. I just smiled and would never tell her that what she meant was actually not a sea but a big inland lake. Though I have never been to Qinghai, I know that the Qinghai Lake is beautiful from the geography textbook I learned at school and from the pictures I can see easily from the Internet or simply from the TV. Clearly understood by listeners and by myself, her sea and her memories of the experience in Qinghai, a piece of land to which she and her friends devoted their time, sweat, and even blood are always part of her pride in her life. The silence that ensued after her repeated telling was unforgettable, for she couldn’t help sighing and sighing: “Many of my companions died there and today only about 30 people survived among the 140.” For me it is a piece of the past far from the present, untouchable. I would never know how the old grandmas and grandpas experienced that dreadful environment when they were very young. However, I could sense their strong love, passion, and dedication to their beloved country and people though some of them were not strong enough to go through the whole process.

Yue has been living in her house ever since, has given birth to four children and will continue to live in this house for the rest of her life. She laughed when I asked about how her wedding was and she answered with no shyness, no excitement, but laugh: “I didn’t get acquainted with him until the matchmaker matched us on a blind date. And soon after that we got married. But in 1960s, we were so poor that I only got several

clothes from my parents for our wedding. The clothing we wore was pieces of cloth gathered from different pieces of clothes and was stitched together and I only got four pieces of such “new” clothes.” I made no response to her and indeed I didn’t know how to. Comforting words were useless and helpless, and I have come to find that life today is so much happier than half a century ago, which is dearly cherished by Yue and all of others of her generation and all of them feel happy and satisfied with their life now. Should this be cherished by all of us later generations?

No.2 Courtyard House

No. 2 Courtyard House belongs to Guangming Gao. He and his wife were born in the same year, 1947. He didn't spend his childhood in the courtyard house where he and his wife are now living, but in a courtyard house lying in the west of the current one. Both the courtyard house in the west and the courtyard house in the east were of the same plot belonging to his family, but after he and his brother grew up and established their own families, the land was divided into two parts for each and he got the east plot for his own family. The right and left wing houses in his courtyard house were built first where he and his parents used to live and after he got married at the age of 20, the main house was constructed afterward. "By the time I built the main house, all of my three boys had been born, the oldest and the middle ones were delivered in the old courtyard, and the youngest was born in this courtyard. But later as going through the corridor between the two courtyard houses was inconvenient, both of my sons moved to the new courtyard house and lived with us until they got married and the west courtyard, the old courtyard house was left to my younger brother and my parents." He recalled the process of his moving from old courtyard house to the new one.

The major building material was blue bricks, he said, unlike today when we have more choices, blue bricks were popular, almost every house was built with blue bricks in 1960s. Actually blue bricks were still overwhelmingly dominant material for building walls of house in 1980s, almost all houses were built with the blue bricks. The bricks he bought at the brick and tile factory were transported to his house site by two-wheeled barrows driven by his neighbours and his friends. "I didn't pay them, as we help each other to build houses and at noon or at night, I would make food for them, and that was tradition. Sometimes we borrowed the horse cart from the Production Brigade if they were not occupied. And sometimes there were ten to twenty people helping me and sometimes there were thirty."

He laughed when I asked him the price of tiles and bricks in 1981, the year he built the main house as it was extremely cheap compared with the price today: Tiles were less than one cent each and bricks were three cents each. Bricks and tiles cost most of his money and the main house cost him 3000 RMB. I was surprised at first how little money he spent building his house but he argued that money wasn't easy to earn at that time as they didn't have opportunities to make money. Perhaps they could earn some money by working for others, but it was paid little, thirty or forty cents a day and often they couldn't get any. Therefore, every cent was saved and they really had to work hard to make a good living.

Right now from the government he gets his share of land on which he grows economic crops such as peanut and corn mainly and sometimes works outside in surrounding factories to earn some extra income. In fact, almost every adult in Gaozhuang Village is a bread earner. People work hard all year round to pay their children's tuition fees, to cover their medical fees and insurances, to buy their farm

tools, farm machines, vehicles, cell phones, computers, domestic appliances, etc. and to celebrate various festivals. Life of the old in this village seems rather dull and hard. Their habit is to rise early and go to bed early when it not the busy time of the year, as they are a generation closely attached to land and depend on land. And they devote their whole life to it. It is a commonplace to see people farm their land with their father or grandfather's tombs nearby and to see people keeping an eye on their sons, daughters, grandsons or granddaughters while being busy working in the field. It is not surprising to find that very young children know how to plough or drive trucks skilfully with no guidance. For the older generations, land, families, and their courtyard houses are the components of their whole life.

No.3 Courtyard House

No. 3 Courtyard House is Yanli Gao's house, built in March, 1982. Unfortunately, Yanli's house was built by his parents who died several years ago, so it was a pity that I could not interview them and could only document the current situation of the house. But what is special in this courtyard house is that there are two stairs. That was the only courtyard house in the 30 case studies. One is located between the west wing house and the main house and the other in the yard, next to the street house. For me, it was fascinating to find a stair to climb high and get the bird's eye view of the nearby streets and clusters of houses in that there were not many opportunities to see the village from above.

The west wing house and the street house are all flat roofed. The west wing is used by Yanli Gao and his brothers and sisters while the main house by his parents. The layout of the main house was quite similar to others with a wall serving as a partition between the living room and the bedroom and kitchen is in the north side of the main house, next to a window. After Yanli's brothers and sisters got married, they moved out and Yanli moved to the street house and has been living there ever since.

The main house in his courtyard house is quite formal and authentic. The bricks and tiles are laid neatly, the rammed earth walls are joined well with bricks and the details of roof can be seen clearly----typical of Gaozhuang Village with uniformed Wadang¹, ridge decorations and protection. Brick walls ends at one metre high to protect the house from rain and key load-bearing positions such as columns supporting beams and purlins are constructed with bricks instead of adobe from the ground to the very top. It is a smart way created by the folks to combine adobe with bricks, as adobe walls can be easily constructed, cost much less ,though adobes making demands strength and consumes much more labour in the construction while brick act better in shearing stress and are water-proof.

Two types of raised beam structure are found in this courtyard, one consists of tiles, mortar and wood framework, the other tile, straw and wood framework. Obviously the latter is more ancient and more primitive as the history book shows how primitive people firstly built their houses out of soil and grass, the ready materials. Also it is reasonable to find that adobe walls are built for the latter one while brick walls or brick and adobe walls are constructed as the framework of the former. Straws are placed in the middle of tiles and rafters and were stuck with tiles and rafters by mud.

No. 4 Courtyard House

Jinbao Xie's courtyard house is No. 4 Courtyard House in this study, located in the west end of the village. His house is different from others as there is a big tree in front of the gate of his house and whoever is going to pay a visit to him will never miss it.

Jinbao Xie's family is among the minority of the village as the family name is *Xie instead of Gao*. But they have been living in this village for quite a long time. When I visited Jinbao Xie's House, he was not at home and was working outside, only his mother was at home, a very neat and elegant old lady. She knew clearly every detail of her house because she participated in the construction and even the design of the whole house with her husband. When I asked her about the width of her house, she said: "Oh yes, the width of the house is 370 (370 cm) wide and I still remember how my husband and I quarrelled with each other about the width of walls as I preferred 24 (24 cm) wide and he preferred 37cm. But finally we decided to build walls 37cm wide and 37cm-width type of walls were popular at that time and we decided to build our house with blue bricks as well instead of the red ones. The unit and the jia of the house and all of the materials such as the wooden purlins, beams, and columns were decided by us." Pride and confidence I could tell from her eyes and smiles and how she missed the old days spent with her husband. She grew many plantations in her courtyard, and actually her courtyard was rather large and I was surprised to find that she even grew some opium poppies. "The flowers were beautiful and gorgeous but they withered away a couple of days ago. I used to put a little when I cooked and they serve well as seasoning material for making dishes." Later, opium poppies were found in other courtyard houses and people grew them just as they grow flowers or cabbages in their gardens and actually flowers like roses, jasmine were seldom found in their yards but vegetable flowers such as cucumber flowers, eggplant flowers, pumpkin flowers and pea flowers. Indeed, courtyard serves more for practical purpose like the opium poppies for cooking other than for static eye pleasing.

Inside the main house a big picture of a Chinese character "寿"(meaning "longevity") hangs on the wall, and a couplet on each side of the picture show good wishes of the families to enjoy a longevity of life and keep healthy always. And family pictures are placed beside the picture on the table. Jinbao Xie's house is a representative of those whose children are no longer bound to their farm land and work far away from home, leaving their old parents and children at home, which is a commonplace and also a big problem in the countryside of China. Jinbao's mother lives in the bedroom in the main house and Jinbao and his wife and children live in the left wing house. As erheyuan, there is no street house in his courtyard house and the gate is located in the right bottom of the plot towards inside.

No. 5 Courtyard House

No. 5 Courtyard House is the house of Jianbo Gao. In fact it is the old courtyard house of Jianbo Gao as all of his families already moved to a new street where almost all of the houses along it are newly built since 2000 and owners of these new houses are of younger generations. However, in order to live together and take care of each other, many old parents chose to move to their sons' new houses, thus leaving their old courtyard houses vacant but families would come frequently to see to them and Jianbo's mother constantly comes to water the plant grown in front of the house and pull up the weeds.

Unlike other courtyard house or sanheyuan, this homestead plot is short in length and width, therefore the scale of houses and corridors are smaller. Two wing houses were built in front of the main house and between the two wing houses is the gate in the middle of the yard. There is no space for a yard in this house so Jianbo's families could only use the buffer space outside of the courtyard house as their yard. This house follow the symmetrical laws in design and built in the year 1982, adobe was the main construction materials for the two wing houses and even windows were made by rough branches. At first, the two wing houses were used as kitchen and bedrooms for children but later, after kids became independent and settled in their own new houses. The left wing house was converted into a working room mainly for drying foxgloves---one of the economic crops grown by the local people.

In contrast with the wing houses, though the back wall of the main house was mostly built with rammed earth, the facade of the main house was mostly built with blue bricks. As is indicated in the former chapters, No. 5 Courtyard House demonstrates the local techniques for construction of adobe houses and the outside walls of left wing house and the gable walls of both of the wing house exposed outside are all good illustrations of the inner construction. After decades of being exposed to the sun, almost all of the outside paint of the adobe walls in Jianbo's house fell off from the adobe bricks, giving a real picture of the structure of how these adobe bricks were laid and connected with each other and how they functioned as insulation besides protection and partition.

No. 6 Courtyard House

Dayong Gao's courtyard house is No. 6 Courtyard House. His house is right next to Jianbo Gao's courtyard house but its location is quite different from any other houses in the 30 cases in that it is almost hidden in the clusters of buildings. In fact, to find the gate of Dayong's House, one must first go along a long way enclosed on both sides by walls of his neighbours' houses.

Dayong was born in 1931. He didn't remember the exact date of his birthday and he could only tell me that he was 85 years old. He has an elder sister and a brother, the father of Jianbo Gao. Actually, the plot of his house and Jianbo's house once belonged to his parents but later was divided into two, one for Jianbo's father, the other for Dayong Gao. Dayong's plot is back and distant from the main street. When I visited his house, he had moved to another house on another street, the one on the south of his own house where his son lived. Right now he is taken care of by his two sons by turns.

He recalled that his previous house was a humble house built with soil and broken bricks. The old house could not shelter all of his families and was too shabby for them to live in, so he decided to tear down the old house and build a new one. He hired a master worker to instruct the construction by offering him 3 RMB per day and two meals every day, he was mainly in charge of the wooden framework. "I was lucky because my family was a big one with many people to help especially when we were constructing walls, adobe walls so I didn't spend much on hiring labours. The main house was constructed in 1974 and the east wing houses in 1978 and the west wing house in 1985. For making the two wing houses match each other, blue bricks were also used for the east wing house." His house is the only one in my research that the wall is a combination of both blue and red bricks, probably also because of the different cost. The courtyard in his house is medium-sized but unlike other courtyards where vegetables are cultivated and which covered almost the whole area of the yard, his yard has a pomegranate tree, in front of the gate. "There used to be a big elm tree but I later replaced it with the pomegranate tree. It contains auspicious wish of my big family."

Although Dayong is 85 years old but is of the same generation of my father in Gao family. He lives with his sons but he often comes back to clean the house, water his plantation and simply sit for a while in the yard. Sometimes he doesn't lock his house and just put the lock in the hook on the door. I found that many villagers in Gaozhuang Village seldom lock their house. Probably it is because the boundary between interior and exterior space is not that clear in this area and villager will keep an eye for each other as they are families in general, the same root and some even have marriage connections. So when villagers pay a visit to each other, they just push the gate door, enter and then ask if there is anybody in the house or directly enter sitting room of the main house to find their friends or relatives. This is different from

the practice in the city and villagers whose children work in cities and who have some time living with their children almost always make a lot complaint about the trouble locking doors each time they enter or go out of the houses and things like climbing stairs.

No. 7 Courtyard House

Zhengkui Gao's house is No. 7 Courtyard House, lying in the centre of a street. Zhengkui Gao has a totally different experience than others in Gaozhuang Village who have never been away from home before, not even for a one single day. A graduate from Zhengzhou Agricultural Accounting School when he was 18, in the year 1958, Zhengshu was assigned to a storehouse as a bookkeeper and accountant for two years in Puyang, a city in northeast of Mengzhou City. He worked there for two years. And later he declined an offer -----a new position at Pu-Xun Coal Mine (Pu refers to Puyang in Henan and Xun refers to Xunxian County in Hebei), quitted his job and went back home. I sensed his regret of making the decision as he said that: "At that time, there was nobody who could give me useful advice or guidance and I could hardly handle my future and fate. Or else I wouldn't have come back home and become a farmer." At that time he was one of those few villagers who could read and write. But he said that he would never tell others this experience and the opportunity he lost.

In 1961, 1 year after he came back from Puyang, he got married and his wife was from Dongmeng Village, northwest of Gaozhuang Village. Since 1984, he began to demolish the old courtyard to build a new one and then built his own house in this new plot which I documented in this research. "I didn't have money to build my house, so the old ones I built was all from soil and I couldn't afford to pay for expensive materials like bricks until 1980s and by that time, bricks were sold by weight and about three to four cents a kilo, approximately one tenth of the price today. My family and I spent about a month to finish the whole construction and the total expense was about 1500 RMB."

Zhengkui's house is kind of complicated as he renovated his houses to meet the changed demands of living and he expanded the main house by building a long room with the same width of the main house, attached it to the main house and connected the new room with the west wing house. Expansion can seldom be found in Gaozhuang Village, especially when people expand the main room by building rooms behind the main house. One reason is villagers take their homestead plot seriously and always build their houses as far as the demarcation allows. Another reason is that there is a saying in this area that the main house is very important to the family members and the foundation of the main house which is to be built to replace the old should not be moved either backward or forward. Inconsideration of this will be inauspicious for the old, affecting their health. Such belief is superstitious. However, villagers are still willing to observe it as an old tradition when conceiving their reconstruction of their main house.

A staircase between the west wing house and the street house leads to the flat roof of the street house from where one can get a good view of the neighbourhood and the nearby courtyard house such as the courtyard houses of Chaoyi Zhang, Yongli Gao and Gongshe Gao. Zhengkui. Zhengkui's wife frequently uses this roof. When I

visited them, corns were drying on the roof, spread evenly on a door curtain that they no longer use.

A screen wall is an important part of his courtyard house. It is built inside the yard several feet away from the gate of the street house. It is used to block people's view of the whole house at a glance in order to have privacy and to be a barrier for evil spirits and stop them at the entrance. The space between the screen wall and the gate is a buffer space guiding people from exterior space or the buffer space mentioned in chapter two (from the street to the outside wall of street house and the gate) to architectural space, the real interior space. This space used by Zhengkui to grow grapevines providing shades in the hot summer, is a most refreshing and lively place in the courtyard house. There is little boundary between exterior space and interior space in courtyard house in Gaozhuang Village. Both exterior and interior space embrace each other and at the same time are separate from each other and can be converted to each other. They interact upon each other, but at the same time they work individually. This is where the Chinese philosophy and the theory of *yin and yang* embodied in courtyard houses and they have become an inseparable part of people's life.

No. 8 Courtyard House

Fengqiang Gao's Courtyard House is No. 8 Courtyard House in this research. And actually this courtyard house is not occupied by Fengqiang Gao and his families but by a man together with his family from other province in China and was a villager's adopted son in Gaozhuang Village. Adoption can be frequently seen in the history of Gaozhuang Village and the family of Gao. A family which does not have a son to inherit the family's legacy may adopt a man as their descendant in order to keep the continuation of the family blood lest the family ends. When a boy from other family in the clan or even from other clans is adopted as son and joins the family, he will have to give up his original family name, take on the adoptive father's family name, the position in the family hierarchy and take the corresponding responsibilities in the family such as supporting the old when they have lost their ability to support themselves. It is an interesting phenomenon, however, it is also a not that pleasing for a family.

The moment I entered the yard, I realised that it was a courtyard house worthwhile studying and documenting because the paint on the very outside of the wall almost all flaked off the adobe bricks and exposed all of them to the public thoroughly. Built in October, 1980, the main house is much smaller than the rest in terms of height. The words written on the beam could be read without any difficulty: "On 13th, October, 1980, the three-room-wide main house has been constructed at the auspicious time, the owner of the house is Yuanzhi Gao. The constructor is Yuefa Gao. From the time the house has been established, the family and its descendants would be in good health and good luck accompanies them." According to Yuhai Du, there are many rules for the word written on the beams that the number of word must be odd which is regarded as lucky and yang and the pattern drawn at the beginning and the end of the words are derived from the picture of Bagua (eight trigrams, ba means eight in Chinese and gua means trigram), an important theory in Daoism that the three dash lines ☷ indicates Kun trigram, which refers to earth, female and yin and three straight lines ☰ denotes Qian trigram, which means the heaven, male and yang. Qian is at the bottom of the beam while Kun is written at the start of the beam because it conveys ancient Chinese's idea about the world. The qi generated from the heaven on the bottom will flow upwards while the qi generated from the earth on the top will flow downward. Both qis will meet together and create a balanced condition that will do good to the occupants. Also when Qian and Kun meet together, a new diagram is then formed, the Tai trigram ☵☲. Tai in Chinese means peace, health and good luck.



No. 9 Courtyard House

No. 9 Courtyard House belongs to Heyou Gao. The whole house had been vacant for a long time since he and his families moved to their new house in a new street. His house is different from others in that the courtyard house looks like a sanheyuan, but actually an erheyuan as the street house is a semi-open space, a shed built with bricks for storing tools and bicycles, not for living. This semi-open space and the main gate are as a whole as the shed also covers the gate.

It is notable to find that Chinese are willing to give special meanings to their houses by all means out of their intelligence and understanding of men and nature and in turn cultural activities and everyday life give them rich sources to create, extend, imagine and relate their dwellings with good meanings. Upon my observation in Gaozhuang Village, many families grow persimmon trees in their courtyard and Heyou's courtyard is no exception. Between the gate and the main house is the courtyard where corns and wheat were grown and a persimmon tree was standing as well. Obviously, it is a materialised way and a symbolic method to convey people's good expectations of their life. Because persimmon tree is pronounced as *shi* in Chinese, same pronunciation to a word in *wan shi ru yi*, a fairly common idiom in Chinese life which denotes a wish that all things will run smoothly and successfully and Chinese use it on all kinds of happy occasions such as birthday parties and the spring festival.

No. 10 Courtyard House

No. 10 Courtyard House is the house of Gongshe Gao who inherited the house from his father. After his father passed away, the house was his mother Xiulian Du, and his brother Shehui Gao all year round. Gongshe Gao, my father, work and live in a city. After my uncle Shehui Gao moved to his new courtyard house. This house was then inherited and owned by my father. And my grandmother still lives there. She likes this old house better than the new ones as she has lived there for dozens of years and she is so familiar with everything in the house.

Though this courtyard house was built in 1984, but adobe bricks were not used like other houses in the same period. The main house, the right wing house and the street house were all built in red bricks. When talking about this house my father would be very proud. “this courtyard house was the first house built in this street as most of the villagers in 1980s were living in the north side of the street. “And this house was built by your grandfather. The main house stood the highest in the street, and your grandfather was very happy and proud. However, he died and hadn’t spent much happy time in this house. The plot behind our house was a piece of vacant land, or rather a big pit and many poplar trees were growing. We dug the soil there and transported to the site so that the yard would be as high as the street.” My grandmother, Xiulian Du is from Houjie Village, not very far from Gaozhuang Village and she has six sisters and one brother, which was not uncommon even in the old days. Her family is big and each child makes a different living, one runs a family factory to process cotton, one help people to dig wells, one was working as the representative of women in the village, etc. She ranks fourth in her family but her elder and younger sisters and younger brother got the chance to enter school. She was very cable in helping her mother at home. She is upset for not having a chance to go to school. Though, illiterate, she is very popular in Gaozhuang Village because of her smart head and her deftity in needle work. Almost all of the children in the street have worn the clothes or shoes she made. “Neighbours know I can make clothes and the clothes I make fits well and looks smart. More and more people come, asking me to make shoes for their new-born babies and their grandchildren because it is a customary that grandmas make several sets of clothes for their grandchildren when they are born. But few of the women who have become grandmas are not confident in making children’s clothes or catering to their daughters-in-laws or are afraid of being laughed at for their poor craftsmanship would like to turn to my grandma for help. And they are always satisfied. It is not good to turn them down. Whenever they come and ask, I would always make clothes for them. They don’t know what materials are needed for making clothes. They only come with pieces of cloth and strings and often I have to go to the fair or market to buy rabbit fur, wheat flour and corn flour, bling bling paper to get everything prepared and then start my work.”

She was famous for her beautiful needle work in this area. Though she no longer make clothes because of her health and because of the convenience of buying them, people from neighbourhood and other villages still come and visit her to see if she has

time to make a coat, or a pair of trousers, or a pair of shoes or merely to seek her advice. This year, at the age of 74 she can still thread the needle faster than I do, a girl of 24. And during my research in the village, my admiration of her work made me repeatedly persuade her into making a pair of baby shoes(tiger shoes, because the shoes are made look like a tiger, an auspicious symbol to keep off evil spirits from the baby) for me. I got myself actively involved in the project. I was amazed by the cuteness created by the fine stitching of the shoes. Surely mass production out of factories costs less, saves time and energy but lack of love and personalities. She loves the colourful children clothes sold in the open market----a kind of fair held every six days on the main road but she knows the quality is poor.

As a little girl, she suffered from ceaseless hunger and biting cold. In her childhood and adolescence, she suffered strain and exhaustion because of endless backbreaking toil in the fields. She knows what happiness means. She is frugal and knows that things repaired can still be useful, and is never in favour of the throw-away habits of younger generation when they think something useless. She can never understand why children want to live and work far away from home, and home in her mind is always a warm and sweet place. During my stay for my research in Gaozhuang Village, or my hometown, she told me “I will never go to Qingdao again, too far from home. I prefer to stay at home. I can never understand it.” This was what she constantly said to me and to one of my uncles who had already moved to Toronto, Canada, thousands of miles farther away from home than Qingdao.

Probably in the eye of the young, the old generation fall behind the times, or are out of date, or even obsolete, but they are respectable. The slow life pace, the hardworking, the love for land, the caring for people, the freedom of social connections of them are all what we desperately work for in mega-cities.

There used to be plants in the yard and the floor was earthen. Later the yard was paved with concrete because Shehui had to park his pickup frequently, so it was transformed into a vacant space without any flowers or vegetation. Nevertheless it functions as an outside living room all the year round except winter. The yard is a lively place all the year round especially when summer comes. It is large and open. Neighbours would come to visit my grandma and my grandma is also used to sitting in the sun, peeling peanuts, ironing clothes, looking after her three-year-old great granddaughter, chatting with her friends and neighbours, exchanging ideas and so forth. Definitely the yard acts as a tie to connect people together, exchanging “information” of the village, the situation of their old acquaintances and the happy and sad stories of different families.

The flat roof of the street house is also used in this house for storing pickles, warming the showering bags and placing the aerial. It was an unforgettable memory in my mind that my uncle, aunt, cousin, my parents and I while lying on a bamboo mat, enjoyed the coolness on the roof. With no street lights fifteen years ago, the inky sky

provided perfect black velvet for stars and I was excited and impressed by the different constellations and I learned something wonderful about the sky. It was the first and only time in my life lying in the open air and observing countless stars, which is impossible in cities. And that was novel for a little girl.

Detailed Information of 8 Courtyard Houses built between 1990 and

2000

The time from 1990 to 2000 can be seen as a transitional period of vernacular architecture in this area from old vernacular architecture to new one. On the one hand, like the old ones, most of the houses built in this decade are one storey high, and they still keep the features of old courtyard housing in many aspects such as the spatial layout, residential hierarchies, beliefs and values, cultural and spiritual symbolisms, lifestyles and so on. But they are different from the old ones in regard of material. Red bricks were widely used in most of the houses in this period and rammed earth walls were no longer in use because it was not so strong as the brick walls, It is regarded as outdated or even as a symbol of poverty and they did not please eyes as the brick walls. Some houses like the No. 18 Courtyard House already had the characteristics of new houses though the style and the layout were not fully-fledged yet.

No 11. Courtyard House

No. 11 Courtyard House is the house of Laodao Gao. His house is very similar to Zhengkui Gao's but the house of Zhengkui Gao was built earlier than his. Laodao's house was also featured with grapevines but his courtyard is larger than Zhengkui's as he didn't build a shelter on the west side of the yard. The roof of the main house was pitched and roof of the left wing house was flat. Gate was open in the southeast.

The whole courtyard houses faces south, which is considered the best orientation in northern China. According to Duyu Hai, in the theory of *yin and yang*, different orientations exert different influences. Taking houses facing south as an example, southwest is Qian, the heaven and northwest is Kun, the earth. In the sense of propitiousness, south and north are of the least positions. Southeast is of the best position, therefore enjoying the biggest share of the propitiousness. East is between the two. These propitious directions are suitable for placing doors and for settling kitchens. This house follows the rules above. A fig tree is grown at the corner of the screen wall. It is not recommended to grow fig tree in the yard in Fengshui as it means "things without any result." Though it is superstitious, people still believe that and seldom have fig trees inside their yard.

No. 12 Courtyard House

No. 12 Courtyard House is the house of Chaoyi Zhang. He lives alone in the village and he is one of the few people whose family names are Not Gao although Zhang is one of the biggest family names in China. His house is different from others in that it is a single detached house with a very large courtyard. It is rare in this village because people prefer yuan, which is formed by several houses around.

When I visited his house, I noticed that he took his bankbook with him all the time. He didn't have salaries and was too old to farm his land. It was a pity to see him sitting next to the door of his house, unable to move quickly because of his broken leg, looking outside through his yard, as if he had been sitting like this for a whole afternoon. His house was very tall and the only wall alone was 4.5 metres high, let alone the pitched roof. Also the roof of his house was not evenly divided into two slopes because the front roof covered the porch as well while the back roof did not because there was no porch in the back. The courtyard is covered with grass. Owing to the spacious courtyard two enormous leafy trees in the east of the yard can flourish. One is a persimmon tree the other an apricot tree. Both trees are auspicious in China. On the west of the yard, some vegetables are grown, but compared with the plantation in Heyou's house, the plantation is much.

The gate of his house is set in the middle of the outside wall, facing the door of the house. Gate as we call it because it is the barrier between the street and the yard. However door should be more appropriate name for it because of its simplicity, primitiveness and its small size. The frame of the gate is made of strong branches. This is rarely seen in Gaozhuang Village or other villages in this area in that its main function as the protection from the outside world almost vanished and it merely acted as a line differing the public space and the private space. Therefore, it was not necessary to lock the gate, but he just leaves it open all the year round. And only when Chaoyi leaves home for a long time, will the gate be locked.

No. 13 Courtyard House

An old lady lives in the No. 13 Courtyard House. She is the oldest grandma in this village and her status is far more superior to the other grandfathers and grandmothers in the Gao family. She must be more than twenty. But whenever people ask her about her age, she always replies with a smile: "I'm already 18 years old." with her fingers showing the exact number at the same time. Hardly could I understand her clearly or accurately because almost all of her teeth had fall off. But it is surprising to find that though she is too old to remember her age or daily issues in her current life, she remembers clearly the time in the past. She can recall the whole story of her family and how people struggled in the starving years in the early 1940s.

She likes to talk with people but few people would like to really sit down and listen to her because everybody is busy with their farm land and their work. She is a frequent visitor to my grandma, just dropping in for a small talk or a brief exchanges, sitting for a while in her courtyard, chatting with her and running back over her past, people and events she finds worth talking about.

The gate of her courtyard house is the same as the one of Chaoyi Zhang's house, wooden panels made from branches. Her house is sanheyuan, facing south. The main house and the right wing house were built in 1990s, all in red bricks. The year the left wing house construction was not clear but it was constructed with adobe bricks and blue bricks so the construction date should be 1980s or 1970s. Houses built in 1990s are much higher than houses built before. Walls are more than four metres high and some are even 4.5 metres high. There are three reasons for this. First, villagers were getting richer than before as they could have their own business, farm their own land and work in factories or other companies. They could afford to buy expensive materials which they hesitated to buy in the past such as red bricks, concrete, sand, etc. Second, bricks could support more weight and could support the wood framework better than soil even they were built higher. The last reason is that people intended to build their houses high out of their psychological needs. In the old days, living conditions were poor and people didn't have any chance to live in grand houses so when it was possible to build new houses, villagers built them high to realise their wish of big and grand houses. Many houses were built in 1990s as a result of the psychological needs ----keeping up with the Jones, both in height and style. This is most prominent in neighbouring houses as they will influence Fengshui of each house and people didn't want their houses especially their main houses to be lower than the houses around. Out of such silent competition, houses were built higher and higher and eventually people ignored the basic utility of houses and the beauty of it. However, the two aspects neglected in this period had been taken seriously since the millennium year, providing possibilities for courtyard houses in this area to be more humane and liveable.

No. 14 Courtyard House

Xuxia Li's courtyard house is No. 14 Courtyard House. After her husband passed away, the house belongs to her. Currently, she and her two sons are living together. Her house was built in 1995, similar to Laidao Gao's courtyard in terms of house arrangement and layout. Her house is an erheyuan, but there is a semi-open garage and storage room on the right of the yard and the left wing house was divided into two parts, the kitchen and the storage room. Roses are grown near the screen wall and the vegetable yard was in a triangle shape in the southeast corner, not very small and pumpkins, Chinese cabbages, cucumbers and green peppers are grown in lanes. She keeps a tactic dog from her friend. She told me she didn't have time for her dog since she had to go to work and take care of her crops. Apart from those families which are large and need a dog to keep on guard, villagers seldom keep a dog at home or they don't keep their dog as pets like people living in cities because they are engaged in making money and caring for their children and parents.

For Xuxia it is hard to raise her two children alone and she was crippled by polio as a child, but she is very industrious and busy working in the field and at home. In sharp contrast with other courtyards, hers was the cleanest---no weeds in the vegetation land and no garbage on the road, the whole floor had been swept neatly and stuff had been placed tidily. I visited her courtyard twice, the second time I visited her she was having her dinner with her children and looked happy. She left a deep impression on me by her optimistic attitude towards life and her braveness to support the whole family.

Porches attached to the main house are one of the features of the residential houses built in this period. Two ways are found to construct a porch. One way is to extend the eaves of the main houses and then construct columns under the roof to create a semi-space, the porch; the other is to build the porch separately from the main house, columns and roofs were constructed next to the walls of the house, roofs were usually built by flat precast concrete panels and were supported by precast columns. Main houses of Chaoyi Zhang and Xuxia Li are great examples of the first method and the houses of No. 14 and Laidao Gao are examples of the second. Porches were popular in this period mainly because it is more likely to keep off the dust from outside, thus helping keep the living room in the main house clean. The semi-open space may help keep people from wind, rain or snow while they enjoy the good light, fresh air and suitable temperature outside and the convenience of small informal exchanges between a visitor and the host. And courtyard was developing more likely into a family garden rather than a place for gatherings, working or even outdoor entertainment. Porches limit people's connection with their yards. And the added feature weakens the social aspects of a courtyard in the whole village and at the same time became prototypes for courtyard houses in the 2000s. Almost every house built ever after has a porch.

No. 15 Courtyard House

No. 15 Courtyard House is the new house of Heyou Gao the one he and his families are currently living in. Built in 1998, this house possesses many characters of new courtyard houses. There are several prominent features of his courtyard.

The main house is a *two-and-half-storey* house and the gate and the left wing house are built as a whole, sharing the same flat roof and there is no street house, but the land near the outside wall is covered with a shelter for parking and storage. Therefore, strictly speaking, Heyou's house is an *erheyuan*. Also porches could be found in his house but it is interior and kitchen and lavatory are all in the left wing house. Staircase lies in the left wing house as well, leading directly to the flat roof. So whoever goes to the second floor should pass the roof. The same position of porch on the second floor was not enclosed by wall but was left open. The decoration of this part is the same as the porches of No. 13 Courtyard House. From the book of Illustration Dictionary of Chinese Architecture, *queti* is a part at the top of a column to disperse the press from above (Wang, 2007). *Quetis* in Gaozhuang Village are very simple and in the same pattern similar to the one in Song Dynasty and Yuan Dynasty.

Heyou has two sons and a daughter but none of them are with them in Gaozhuang Village. His sons are working in another province and his daughter is working and living in Guiyang, provincial capital of Guizhou Province, a southwest province in China, approximately 2000km from Gaozhuang Village. He and his wife are now living together and sometimes go to their old courtyard house to take care of their plants and crops. Compared with his neighbours, Heyou had a different life. He had a job in a machine factory near Gaozhuang Village. Born in 1944, Heyou is 72 years old this year. He told me he got an opportunity to enter a textile factory in April, 1969 mainly possessing furs, chemical fibres and nylon. In 1970, the factory changed producing fixings of diesel engine for steel mills. "The first few years I come in the factory, I earned 26.7 RMB per month, but that was not the money I got myself because I had to give 12 RMB to the village so I only had 14.7 RMB to feed my families. Life was quite difficult in these days and every day I brought my own food to the factory and seldom ate in the canteen because it cost more. Later my salaries was raised and by the year I retired in October, 2001, my salary was around 160 RMB. From 2001 till now salaries for workers in the factory had been raised several times and by this year I get 2000 RMB or so per month as a retired worker." Heyou's family was the neighbour of my grandmother and is the neighbour of Shehui, my uncle. They are on good terms for dozens of years. I attended their 50th wedding anniversaries in May when their daughter and granddaughter flew from Guiyang to celebrate with them. Rong, his wife recalled their wedding and shared her precious memories with me: "My family is also in Gaozhuang Village but I didn't know Heyou because we were neither neighbours nor classmates at school. I got acquainted with him from a matchmaker and like other people at that time, we decided to get married very soon. However our wedding was during the Great Proletarian Cultural Revolution, so any forms of celebration were forbidden and close interactions among relatives,

neighbours were avoided. I only got a hoe from the Production Team and just carried a basket with two or three biscuits to his house. Nobody from my family bade me a farewell when I left, not even one person on the day of my wedding. We only spent less than 5 RMB to prepare everything we need for the wedding. After that, we worked together in the same Production Team. A good labourer can earn 20 cents a day and generally each labourer could earn 10 to 20 cents a day. All of the people in the same Production Team worked together and ate together. Some were in charge of cooking, some in charge of farming, some in charge of planting trees and some in charge of feeding animal, etc. People do different jobs and rotated constantly. The land we farmed was the land which belongs to Gaozhuang Village today, near the dam of the Yellow River and on the side of the road in the east of the village, not much changed.” It was the first time I heard about how the Cultural Revolution affected people’s daily life, specifically and virtually.

No. 16 Courtyard House

No. 16 Courtyard House is the house of Sanxi Gao. I didn’t meet the families of Sanxi Gao because they moved to their new houses and seldom come to their old one. In fact, Sanxi left the key to the gate and each room to his neighbour Lelian Gao, who lives opposite to him. Lelian Gao opened the door for me. And while I was doing my measurement, he was watering the cucumber in the courtyard. Sanxi’s house is an erheyuan. The right wing house and the main house were built as a whole in the shape of an L. His courtyard was fairly large and vacant even though Lelian grew various vegetables in the yard. Houses on its left, right and behind it are all new houses so they are all higher than his house. The main house is very similar to the one of Chaoyi Zhang, four metres high with a porch one metre wide.

No. 17 Courtyard House

No. 17 Courtyard House is the house of Leliana Gao, built in December, 1992. There are five people living in this house, namely Lelian and his wife, their son, daughter-in-law and their grandson. His house is a sanheyuan, facing south. In terms of changes, this house stands between the old courtyard houses and new ones. On the one hand it contains the features of the old ones such as one-storey high, flat roof on the street house and a yard. On the other hand, it possesses the characteristics of the new courtyard houses. From its floor plan, it is apparent that it shares some similarities with the new courtyard house. The left wing house acts as serving area and bedroom in the main house has been divided into two, one is next to the living room, the other is next to the porch. The porch of their house has been widened, and the depth of the porch is as the same as the depth of the bedroom. The roof of the street house and left wing house is accessible by a staircase on the western part of the courtyard. Space under the stair is also fully used storing coal. The flat roof is covered with several stripes of asphalt that was left when Lelian paved the water-proof materials on the roof. On the roof, one can clearly see the whole street and the neighbouring courtyard houses including Sanxi's courtyard house and Xugong's courtyard house. The street in front of his house is an old street where the older generations once lived. But as time goes by, many of the houses have been taken by their sons and some of those who once lived there have moved to the southern street, the one on which the houses of Gongshe Gao, Heyou Gao, Zhengkui Gao, Jianbo Gao stand. It is not wise to predict a street new or old simply by the houses but it is reasonable to tell from direction because the whole village is gradually expanding from north to the south. Though the residential land in the north is old but the houses there have already been renovated or reconstructed as new as the houses along the new street.

No. 18 Courtyard House

No. 18 Courtyard House is the house of Zhiguo Gao, built in 1996. His wife is Shu Du, from Houjie Village, also in Huagong Town. Zhiguo Gao was born in 1951 and Shu Du in 1954 and they got married when Zhiguo was 26. When he was 16, he started working on a state-owned farm devoted to growing single crops such as wheat and soy beans. The salaries he earned was 20 to 30 RMB per month but he quit before he got married. The year they married was 1958, the Great Cultural Revolution just ended and Shu Du said: "Things in at that time was not available and people didn't have any money to buy. I only bought a piece of cloth, people called it the foreign cloth for my wedding. I only spent 100 or 200 RMB for the ceremony and the money was borrowed from my friends. We made a living by farming until today like most people in this village. The construction materials were saved by my husband and me for a long time. Sometimes when we found a branch in the field we would take it home, chop it by ourselves and sometimes we found some bricks scattered on the road and we would take them home. We were lucky because later the farm was no long into use and was in ruins very soon, so Zhiguo and I got many bricks there. We saved a lot of money on the materials. And my elder brother, Yuhai Du is a local architect, though he never really learned architecture at school but he knows a lot about design, construction and calculation and has designed many houses in Gaozhuang village and nearby villages. He designed this house for us according to our budget. We paid for the master worker 20 RMB a day and ordinary worker 18 RMB a day. Today, people earn much more than they did at that time, sometimes more than 100 RMB a day or more. It took us a month to finish building the street house. The small tile for the main house was 10 cents each and the big tile for the street house was 500 in total, I don't remember the exact price for each. The tiles of the street house was in red not in blue, because it was cheaper. And the beast on the ridge of the roof was 50 RMB a pair."

This house is quite different from others not only in terms of the main house but also from the street house. From Shu Du's son who witnessed the whole process of construction of the house and could recall the scale of his house very clearly. He told me that in order to save money, his uncle design a vault with concrete and precast panels in place of wood on the roof of the street house because wood cost more than the concrete structure which was both cheap and strong to support the pressure coming from the roof. "I live on the second floor and actually it is the attic of the house where most families won't use for a bedroom and actually it is a waste of money and waste of space. But for me it is okay because it saves money and I have a room of my own. And no balcony on the outside facade of our street house is designed in order to save money and my uncle thought it useless as people won't use it even once in a year." Money and practical use are the principle for the design this house and it is reasonable to build a house in such an economic way because it meets the occupants' needs without wasting a penny. Though it might look a little bit out of fashion but the whole design is reasonable and excellent.

Detailed Information of 12 New Courtyard Houses

12 courtyard houses built after 2000 were investigated in Gaozhuang Village in this research. Houses during this period are quite different from the old ones because more advance materials and techniques have been applied to the construction and the design of courtyard house has been improved to provide better living conditions for occupants. To some extent, the wood structure has been replaced by brick and concrete structure though the outside style still looks like wood framework. As for the courtyard, the second important element in courtyard housing after architecture has evolved into a form of decoration other than it was as a natural world for people to keep in touch with nature and a means to combine architecture with nature as it appreciated in traditional Chinese philosophies mention in Chapter 2.

It is worthwhile to study new courtyard houses as to better comprehend the development of courtyard housing in this area, to compare and contrast between new and old houses and to find out more about the triggers of these changes, improvement and even retreats. Detailed information of each house will be described as below.

No. 19 Courtyard House

No. 19 Courtyard House was built in 2001 and belongs to Dali Gao. His house is a sanheyuan, though the street house is not for living and quite small.

It is composed of a main house, a left wing house and a street house and these three houses are built as one by the flat roof. The main houses are *two-and-a-half-storey* high, the left wing house and the street house is one-storey high. Stairs are completely inside the main house, close to the porch and leading to the second floor of the main house and the flat roof of the left wing house and street house. The first floor is used by Dali and his wife while the second floor by his daughter and their son-in-law. Matrilocality is practised when a family is sonless but has a daughter. Their daughter and son-in-law can live with the daughter's parents and when the parents are old, they can be taken care of by the young couple. Most importantly, their grandchildren will take their mother's family name. And such is the case in Dali Gao's family.

There are still some differences in his house. Unlike other people's house where kitchen and lavatory are located in the wing house, only kitchen is settled in his left wing house, next to the staircase, linked with the main house by a door so serving dishes to the living room is much easier as Dali and his families usually eat in the living room----a practice in many families because there is a TV there or there are other reasons. Another room in the wing house is used as a garage. Definitely it is a new development in courtyard housing and it is consistent with people's everyday life. Thanks to the limited space in the wing house and also for convenience, part of the street house is used for bathroom and lavatory. The yard is in the West. Small amount of vegetation is cultivated in a tiny land and the rest of the yard is covered with

shelters for drying clothes. It is easy to find that his house follows the basic principles of traditional courtyard housing in this area. But the whole courtyard is designed to maximally satisfy the needs of occupants without wasting any space.

No. 20 Courtyard House

No. 20 Courtyard House is the house of Yuanhe Gao. The time when I visited his house, Yuanhe was working outside, but his wife Chunmei was at home, so most of the information about their family and house was derived from Her.

Yuanhe's courtyard house is situated in the north side of Nanxie Street facing south with his father's house (Zhengshu Gao House) behind it, also facing the south. At first they lived together, but after he's married and formed his small family, he moved out of the old house and established his own and later they demolished the old one and built a new one in the year 2012. Yuanhe and Chunmei got married in 1988. Their wedding was different from their parent's in 1960s, twenty years ago because situation was much improved and source was not that scarce but this does not mean they could have a big ceremony and in fact their wedding was largely limited by economic issues in that both of their family were rich. "I married Yuanhe at the age of 25 and girls at that time didn't marry that young, say, 19, 18, or even younger. I got to know him through a go-between and at that time Four Major Items (四大件) were popular for new couples and Yuanhe prepared these Four Major Items for me, namely a bicycle, a watch, a radio receiver and a sewing machine. The dowry I brought was pieces of furniture, a suitcase, a table, a big closet.... No, they were not bought from the furniture store because people in late 1980s tended to make their own furniture to save money even though it was complicated and time consuming. My mother had these made for me. If I don't remember wrong, she paid the carpenter by day, 10 or 15 RMB a day. She first showed him the style she wanted and he then made it... We spent around 500 RMB on our wedding, much less than young people today." She laughed and I can sense her enthusiasm and excitement of remembering the old happy days. And right now she is a mother of two. Both of her children are working outside making money for their family. The new courtyard house cost them 200,000 RMB and neighbor told me that it would cost more if you build a house like his today because prices of materials and labour had been raised dramatically. And Chunmei said that the principal reason to build this house was for their son because a big house could ensure her son to find a wife easily and for sure there would be plenty of space for the whole family to live together.

There are small differences between Yuanhe's house and Dali's house but generally their styles and layout are consistent. The courtyard house, facing south, consists of a main house and a left wing house. The main house is two-and-a-half-storey and the left wing house is one-storey. The main house, the left wing house and the gate were built as a whole in the shape of the letter L. The porch of the main house is enclosed by glass walls, but unlike the layout of rooms in Dali's house, the wall of the porch is not aligned with the wall of the bedroom and this results in forming a balcony on

the second floor as the roof of the porch. Therefore, the door opened in the main house to the flat roof was not aside but in the middle of the house, directly facing the balcony. Inside the main house, there are two bedrooms on the left and a staircase is designed next to them, right in front of the door of the main house. In order to reduce the prominence or unpleasant protruding of the stairs in the house, a sliding door is installed right in front of the first step of the stair and the door is easily closed when occupants don't use it. The door was located where people usually place their table, chairs and idle things, worshiping tools, and paintings in their old main houses. All of these things are placed aside a little bit in the room. The worshiping stuff is placed on a short closet and the traditional table and chairs have been replaced with a set of sofa, a tea table, a TV, a desk computer and a refrigerator. Owing to the location of the stairs, the main house and the left wing house were merely built together but were not connecting with each other. To enter the wing house, or the kitchen or the washroom, residents have to come out of the main house, walk through the yard. Plan of the second floor is the same as the first floor and the third floor can be reached through the stairs. The roof frame is still wood and functions as a part of the beam and column system, concrete beam and brick columns. Apparently, wood framework is no longer a part of vernacular architecture in Gaozhuang Village because it is replaced by precast concrete and bricks. Nostalgia as it becomes, the rituals of construction still alive. And the word written on the wooden beam reads like this: "On February, 6th, 1992, three-unit main house was constructed. The owner of the house is Yuanhe Gao whose son is Lekang Gao, daughter is Nana Gao. The construction Engineer of the house is Changying Pan. From the date the construction is completed, the whole family is blessed with happiness and good luck."

No. 21 Courtyard House

No. 21 Courtyard House is the house of Fengwu Gao facing south. Fengwu is the son of the oldest woman in the neighbour who, because of her generation is of senior hierarchy of the family, is always called Big Grandma by people old or young in the neighbourhood. He is the one who keeps the Family History of Gao in Gaozhuang Village. His house is almost the same as the house of Yuanhe except the position of staircase. Stairs in his house is located in the northeast corner of the main house.

The family hierarchy pattern he keeps is particularly worth mention, as it is the representative of the emerging marriage in this small, ancient, and in some cases somewhat conservative village.

There are four people living in this house, Fengwu Gao, his son and daughter-in-law and his grandson. His daughter-in-law is from Gansu Province, a remote province in west China more than a thousand kilometres away. But it is not a cheated marriage. She is willingly to come to Gaozhuang Village. In fact, she and her husband met each other when both of them were working in Jiangsu Province, a coastal province in China, rich in textile, electronic and handcraft factories. They fell in love with each other and finally decided to get married and returned together to Gaozhuang Village to make a living as children can be better babysitted with the help from his families. Right now she has already settled down in Gaozhuang Village and regard it as her home.

No statistics show from what time young people in Gaozhuang Village began to leave their home to work in other provinces or to show where they work. But from the interview of the villagers, most of their kids are working in coastal provinces, provinces that develop fastest in China. This is definitely an attack to the traditional family patterns. In the past, wives in this village were either from Gaozhuang Village, from nearby villages such as Houjie Village, Zhonghua Village, Liuzhuang or from surrounding towns or counties. Few of them were from other provinces except extreme situations such as human trafficking. However, things change rapidly. With more and more young boys and girls become migrant workers out of economic reasons, their working places become the best places to find their spouses. More and more girls from different places in China get married to boys from Gaozhuang Village, leading a brand new life here and more girls from Gaozhuang Village get married to boys, living far away from their parents. Actually, this is a phenomenon in rural China and certainly it is another way of stimulating the understanding of various areas within China and the exchanges of local cultures from around China.

No. 22 Courtyard House

No. 22 Courtyard House is the house of Shehui Gao, facing south. Shehui is the author's uncle, he moved from his parents' old house to the new one in 2009. His house can be seen as the universal style of new courtyard house in this village. The whole house is composed of a main house, a left wing house and a street house. The main house is two-and-a-half-story high, the wing house is one-storey high with a flat roof, and the street house is two-storey high. The layout of room and stairs is the same as that in Dali's house but the east wing house is composed of a kitchen and a washroom. The street house together with the wing house form the shape of the letter L. The space inside the door of the house is the living room and on the left of the sitting room is two bedrooms next to each other, one on the north, one on the south. Street house is occupied by Xin Gao, Shehui's son and his wife, Yuan Du while Shehui and his wife occupy one of the bedrooms in the main house. Therefore the second floor is not in use by anyone and sometimes only for storing the agricultural tools or crops. To some extent this space is not fully used. Probably it will serve the family well when new babies were born and when Chang Gao, Shehui's granddaughter grows up.

Courtyard in Shehui's house is fenced by parapets which are around 30cm high, laid with bricks and decorated by ceramic tiles. The parapets seem to make the yard deep smaller and crowded if looked from above, thus limiting residents' activities in the courtyard. The street is often a gathering and playing place for children of Chang Gao's age. And their merry laughs, giggles and even quarrels often attract more to join. From time to time children drop by with their babysitters----sometimes mothers or fathers or sometimes grandparents and thus interactions take place between children and this always in turn engages adults in exchanges.

No. 23 Courtyard House

No. 23 Courtyard House is the house of Yuanzhong, built in 2004, facing south. His house is as same as Shehui's house except for the second floor of the main house that the unit in the east part extended around two or three metres and is enclosed by brick walls and glass walls.

There is an osmanthus tree growing in the courtyard. Like persimmon tree in China, osmanthus tree is auspicious as well because the pronunciation of osmanthus tree in Chinese is gui hua shu and the pronunciation of gui is the same as gui is fu gui, which means wealthy and important status. The yard hasn't been circled so the courtyard looks spacious and together with the flower scent of the tree provide a refreshing ambience.

There are seven people of four generations living in this big house, Yuanzhong and his wife, Jinbao Gao, Yuanzhong's son and his wife, Zhiyi Gao, Yuanzhong's granddaughter, Zhihui Gao, Yuanzhong's grandson and Kuan Wang, his wife. This house is used thoroughly by the family because of the big families number except the second floor of the street house which is vacant that is used as storage that grandparents and Zhiyi are living in the bedroom in the main house, Jinbao and his wife are living in the street house, Zhihui and his wife are living on the second floor of the main house and now they have got a baby. As the plan of the second floor is similar to the first floor so Zhihui and Kuan have their own living room and two bedrooms. It is a good design in that different generations live in different separate private places within the same yard, avoiding possible embarrassments and even conflicts families and the residential hierarchies are clearly drawn. Though Zhiyi is of the same generation with Zhihui, she is very young in this family, she lives in the bedroom on the first floor so that she won't interfere with the life of her brother and vice versa.

No. 24 Courtyard House

No. 24 Courtyard House is the house of Xugong Gao, built in 2013, sitting in the south and facing north. His house is next to the house of Sanxi Gao. His house is occupied by three people at the present namely his son, daughter-in-law and himself. However none of them are living in the village as they are working in other provinces. So I visited his house via his mother and she told me she had to come to this house several times a month to open the window, turn on some appliances and clean the furniture and floor. His mother told me this house cost his son 150,000 RMB in total. Xugong's house is an erheyuan and living room is smaller than others as the western part of the living room is partitioned by a wall using as a bedroom so there are three bedrooms in the first floor of the main house. The staircase is in the northwest corner of the main house. Porch on the first floor is semi-open covered by the floor of balcony on the second floor. Door to the roof is opened in the middle unit facing the balcony. This house is well organised in functions and courtyard. The floor of the yard was paved with concrete and a large portion of the yard was circled with low parapets to prevent soil coming out and make the yard dusty.

No. 25 Courtyard House

No. 25 Courtyard House belongs to Yongli Gao built in 2014. Yongli's house is different in colour so it is easy to recognise and also the interior is not fully furnished so the interior and exterior made great contrast. The whole construction cost this family 200,000 RMB and Yongli's wife told me: "We still need to keep on working to save money. It is apparent that this big house requires a large amount of money to furnish and decorate." The porch is different from others because there are two columns on both sides as a decoration. Actually this house is a sanheyuan as the old street house hasn't been demolished and is still used Yongli's mother. She was not accustomed to living in the new house (funny reason). It is a huge contrast between the old and the new in scale. The old street house is much smaller and lower than the new main house. But viewed from other perspective, it was fortunate that the old house like this can still be found and is still in use.

No. 26 Courtyard House

No. 26 Courtyard House is the house of Chang'en Guo, facing north. Four people live in this house, parents and their two sons. Chang'en's house is very similar to Yongli's house because both of the houses were reconstructed in August, 2015. Chang'en's mother was interviewed in this research informed me that: "we only had the money to build the main house and we spent 170,000 RMB to finish the construction in a year. We didn't demolish the left and right wing houses or the street house. So at the present our courtyard house is a quadrangle, but we will tear down the wing houses and design a new one which matches well with our main house and then we can have a courtyard more spacious and more beautiful. I am 71 years old this year and my husband is 75. We built this house for our sons as neither of them has got married. In this area it is a must for the boy to own a big new house and probably a car to find a wife and get married. We have no other choices, and parents in this area all prepare houses for their children. It is a kind of tradition here... .. Yes, the left wing house is two-storey high and the stair to the second floor is not inside it. You have to climb the staircase in the right wing house to the flat roof and on the gable wall of the left wing house is a door to the second floor. We used to store the dried crops in the left wing house and the right wing house is used by my elder son and the street house by my younger son. My husband and I are living in the main house. we decorated our house with Chinese element. The idea was not from ours but from the construction team and they make everything for us."

The space arrangement in Chang'en's house is more mature as the floor plan is more like the one in the city that the number of bedroom on the first floor has been reduced to one but the kitchen and dining room were all put into the main house, and toilet was moved next to the kitchen so no separate pipelines need to be installed, saving material, time and labour. The stair is next to the living room but in the south. This house is well decorated and when I paid my visit, it was still being furnished by workers. There is no attic in the main house because it is the least place people would use in their house and the structure of the roof was composed of precast concrete panels and concrete beams. Wood structure completely vanished in the main house. The tile of the roof was in red, even the auspicious beasts were in red. It was because of the cheap price and the changing aesthetics of architecture in this area. It is hard to comprehend the phenomenon that more and more houses in this region are built in red bricks instead of blue bricks and tile. But in my opinion, it is the result from imitations of other vernacular architecture in China such as the one in Qingdao that are featured with red tiles and green trees. Another trigger might be the economic aspect that the red bricks and tiles are cheaper than the blue ones, so brickyards produce less and less blue bricks. Besides, red bricks and tiles are advocated by the local government and local institutions of architecture and constructions. For my part, blue bricks and tiles and the rammed earth walls are the major components of vernacular architecture in Gaozhuang Village that have a thousand of history which can be dated back to the primitive society. Blind imitation of other styles in other regions will surely damage the local vernacularism in a great way and most importantly the uniqueness and the regional code of courtyard house will be discarded. The development of courtyard house in Gaozhuang Village can be seen as a two-way process of self-fulfilling and outside-borrowing. It is hard for local architects to guide the direction of courtyard housing as they are of different levels and are easy to be affected and by fashionable styles, western styles particularly. Therefore guidance from historians and architecture professors in universities, professional architects and urban planners as well as support from institutions and

government is necessary in this village and probably other rural villages in China.

No. 27 Courtyard House

Dagang Gao's house is the No. 27 Courtyard House and his house was built in 2015, the newest house in Gaozhuang Village. It faces south. His house is a single detached house and accurately speaking it is not a courtyard house in that traditional courtyard housing is a complex of several houses with different functions and residential hierarchies and they form a yard in the centre. But it is the most expensive and grand house in this village and to a large extent, it demonstrates the coming trend of housing in Gaozhuang Village. Washroom lies between the two bedrooms and the staircase is situated in the north of the house along the vertical to the outside wall to gain sunshine from outside. His staircase is the widest in this village, 2.7 metres. There are three storeys in this house and the height of each floor is different. The height of the first floor is 3.5 metres, the second floor 3.3 metres, and the third floor 2.8 metres. Generally speaking the clear height of each floor is reduced to increase the safety, cut down the cost of the whole building and bring much more convenience for the daily use. It is much lower than the courtyard houses built between 1980s and 1990s the wall of which is at least 4 metres excluding the roof. The layout of rooms on the second floor is the same as the first floor. But on the third floor, the living room is replaced with a terrace. There is a yard in his house but in the west of the house, and it is fairly large. The southwest of his residential land is vacant, paved with concrete. "I spent 500,000 RMB on this house and there are still many rooms to be furnished. I bought this sword when the house was erected as home-guarding and exorcism. A Fengshui master told me to do so because my house is so big and not many family members living in it. My son is working and living in the downtown. So at the present I am the only person living in this house."

No. 28 Courtyard House

Xiongfa Zhang's house is the No. 28 Courtyard House built in 2013 and facing north. Like Chang'en's house, Xiongfa only reconstructed the main house while the wing houses and the street house remained. Reasons to build new main house is that his son got married and more family members requires more space because there are four generations living under the same roof, his mother, his son, his daughter-in-law, and his grandsons. His daughter-in-law just delivered the new born baby and came back from the hospital. She and her husband were living on the second floor which was decorated in bright colour and the style of furniture is different from that downstairs, lively and sweet but they moved downstairs to better take care of their children and get exercise in the outside. A unique part in this house is the balcony on the first floor in the south, near the bedroom. The balcony is one metre wide but is very long, covering the whole length of the whole house and is closed by glass walls. It is not a decoration in the facade but Xiongfa and his families use it frequently, drying their clothes or crops.

No. 29 Courtyard House

No. 29 Courtyard House is the house of Dajian Gao. The style of his house is similar to the house of Shehui Gao but the whole house was constructed with precast concrete panels and bricks rather than wood structure. Also there is no washroom outside the house. The street house is only one-storey high but a washroom was constructed on the second floor on the same position of the washroom on the first floor, leaving his house in a tidy manner.

No. 30 Courtyard House

No. 30 Courtyard House is the house of Baozhong Gao, built in 2007, facing south. Baozhong Gao is the second son of Zhengshu Gao and Yue Pan and there are six people living in the house, namely Baozhong and his wife, his son and daughter-in-law, his daughter and his grandson. The style of his house is the same as Shehui's. At first Just as I thought I had taken enough pictures of his house, finished the measurement and ready to leave, it suddenly occurred to me I haven't checked the date of construction of the house. I climbed up to the stairs to the roof but Baozhong's wife laughed and told me that the staircase does not lead to the roof and in fact there is no attic space in this house so the roof was not accessible. It was the first case I found where roof is not accessible. I asked her the reason and she relied with an uncertain answer: "the architect who designed and constructed my house told me that the attic space under the roof was seldom used by people. So our staircase only reached the second floor and the ceiling of the second floor is constructed with concrete panels." Because of the roof, there is no hard evidence to show the date of the construction. Only way to know it is from from Baozhong's wife and it was 2007.

In a nut shell, courtyard housing in Gaozhuang Village has experienced three stages from 1960s till now, seeing the economic changes of the country and the development of materials, technologies, and the philosophy of constructions. I have to say that the cultural landscape shaped the villagers living in courtyard houses for thousands of years, from generation to generation. People form their love of their land, their ideas of a courtyard, their way of managing space and their interrelationships with family members in the yard and the social interactions with neighbours. All of these are shaped by the landscapes, physical and cultural. And in the process of the rapid development of urbanisation and modernisation in China, villagers will continue their rediscovery and formation of the vernacular architecture of their own, their action on the landscapes of this area and the people of this village. Wood and soil are what make up their homes, giving a sense of the place and time. And intelligence, humanity and philosophy developed in thousands of years, though constantly influenced by different elements from outside world shall always remain the local architecture. .

According to Prof. Manchang Zuo, rammed earth walls are the easy folk way of construction as earth can be found and collected everywhere with fewer tools and could be moulded by residents themselves without much training. He explained the way of making adobe bricks: “most of adobe walls are made in this way: collect soil---mix the soil with water and sometimes straw powder can also be added into the mixture---put the mixture into the mould---ram the earth within the mould with a rammer until the earth becomes one solid adobe---disassemble the mould from the adobe---dry the adobe in the open air until it is dry, solid and strong to be used. He says that sometimes there will be small air bubbles within the adobe bricks and they improve the wall to function better as thermal insulation. According to Yuhai Du, there are some requirements for the soil used in making the adobe walls. The earth for making adobes must be red soil or clay so that the earth could stick together. Usually in this area, adobe bricks would be made on site. He recited a rammers’ work chant : “打糊剂,十八杵,会打不会杵.” which means: “making an adobe brick, one must vibrate the mould for 18 times, most people know how to hit the mould but don't know how to pestle it.” And the time of building a house with adobes usually is around one month.

Chapter 4 Cultural Landscape in Gaozhuang Village

Anyone who has been to Gaozhuang Village will easily be impressed by the distinctiveness of its landscape. The longer they live in this village the more they will discover the various aspects of landscape of it. From J. B. Jackson there are many landscapes in our life, social landscape, public or political landscape, natural landscape, economic landscape, etc. each has its functions but they shape people's life, characteristics, and values together through long and slow process. This chapter will be primarily focusing on three aspects: the natural landscape, cultural landscape and everyday life of villagers, as upon my observation in the village, they relate closely with each other, sometimes rely on each other and have profound influence on each other.

Culture in Gaozhuang Village is much rooted from the natural landscape despite the influence of Confucianism and Taoism, the traditional Chinese philosophies. Salter put cultural landscape in this way: "The cultural landscape is the artificial landscape man creates, remarking nature to better provide himself with his short-term needs of food, shelter, clothing, and entertainment." (Salter, 1971) Natural landscape in Gaozhuang Village changes as time goes by, the green wheat land changes to yellow, the brown cotton land changes to white, the peanut land flourishes with green leaves for months and then is replaced by watermelon, Chinese yam, potatoes, and so on. Far along the bank of the Yellow River, acres of land are cultivated with apple trees, pear trees, strawberries, peas, and so forth that for tourists, they are sceneries but for people who have been living in this land for more than half a century, this is their home where they used to play hide and seek in the apple garden, spent their whole summer holiday helping parents pick up pears, and keep on guard with their father in a small farmstead at night.

Though entertainment in rural China is not that colourful as it is in cities, villager still have many ways to have fun, such as a small live show, a parade for the Chinese new year, snow sliding along the dam and even the open market become a very place for them to get something new or have some relaxation. Decades ago, people did not often buy vegetable in the fair as their farm land and their courtyard could feed them well but today, fairs have been the most lively place in town that people from several nearby villages will come to buy their daily needs. Once you joined the crowd of the fair you will keep greeting with old friends, neighbours and relatives. And it is amazing to find anything you want can be found in the fair, from watch repairing to fresh sesame oil producing, from farming tools to delicatessen, from peanut peeling to steam bread making. And whenever you are tired you can always find a snack-bar at your hand. For sure, this is a place of people, bargaining, chatting, eating, quarrelling and laughing.

Villager in Gaozhuang Village are likely to spend their life in a slow pace and an

“ancient” way, especially for the senior citizens, that sometimes they prefer to do their work by hand instead of machine, they prefer to get up early and sleep early, they tend to live on the first floor than climbing the stairs, they would like to grow vegetables in their courtyard than to buy in the market, they care more about the quality of clothes other than the price of it. For youngsters, it is impossible to live in such a way, but it is the lifestyle of their grandmas and grandpas which is gradually vanishing as time goes by.

During my stay in this village, I strongly felt that it is never too late to explore the local culture via discovering the vernacular landscape and people living within it even though it is becoming more and more modernized, crushed by the urbanization and the changing of mind as long as there are people living on this piece of land, loving it and fight for it.

Along the Yellow River... ..

When talking about the elements that shaped the unique culture in this area, one should not neglect the Yellow River, being one of the two Mother Rivers in China, which gave birth to the embryo of Chinese civilisation since 5000 years ago.

Yellow River is embedded in the heart of every villager in Gaozhuang village, not because of its severe flooding half a century ago and the fertile land it nourishes but also because of the efforts people made in constructing the dam, miles of dam along the river. Stone should be the most common stuff along the river to prevent it flooding to the village. They stack along the river as far as the eyes can see.

There are still some ships travelling in the Yellow River in this area but not that many. Basically, these ships are transporting sand from the bank of the river to other processing places. Light posts are erected on the dam, guiding their way.

Along the river, there is hardly a house, not to say a village. The only things can be seen are trees, wire posts and the remote mountain on the opposite bank.

This is the nearest dam to the village and the slopes on both sides create a main road in the middle connecting Gaozhuang Village with the surrounding villages.

Agricultural land is distributed by person or by family and is divided into rectangular shape. It starts from the edge of the village till the nearest dam to the Yellow River.

Dams are divided into several parts, parallel to the yellow river. To get to the bank of

the river one has to go through all of these dams. The farthest dam is a long way from the village, approximately 30 minutes by bicycle. The way to the Yellow River is vertical to the dam, lying between two parcels of land. Most of the land is wheat land, few are watermelon land. Poplars are standing by the edge of the road. This landscape repeats until it meets the Yellow River.

In early May, wheat has not been fully ripen, they are still yellowish green.

Clearing the weeds in the wheat land is a very important work for farmers and they have to spend days to clear all of them, by hand. I did not notice her at first when I passed by, heading for the Yellow River on foot, because she was wearing in green, the same colour as the wheat. She greeted with me shyly, and surprisingly I found that we were relatives, remote kinsfolks.

Sometimes farmers help each other to clear the weeds that makes their work not that dull and much quicker.

Children are taken to the field with their parents or grandparents, playing around and watching their parents working. From the very beginning, they establish their keenness to land and the knowledge of agriculture.

In late May, all most all of the wheat are ripe and turning into golden. And harvest time is nearer and nearer.

Farmsteads are scattered in the field provide a place for farmers to rest and to water their crops.

A farmer is standing in his watermelon land.

The field of watermelon during the sunset.

A shepherd is coming back home from the dam, with his goats and dog.

Goats from Liuzhuang Village are roaming along the dam, protecting by a shepherd dog. Villagers take the full advantage of local landscape to fulfill their daily needs. Goat milk are collected and then sold to other people, making profits for the family. "We don't know how to slaughter them and we never slaughter them, so we only sell them to butchers. We take care of them and have to walk them twice a day, in the morning and in the afternoon."

Fairs and markets

Balloon selling Noodle selling Watch repairing, seal engraving Pear selling
Sesame oil producing Seedling of vegetables Snacks selling

There are many fairs in Huagong Town in terms of location. The largest fair in Huagong Town is in the crossing of the main road in front of Gaozhuang Village and the road lead to Liuzhuang Village, held very ten days, days with number 6, that is the 6th, 16th and 26th of each month. Going to fairs is part of people's life and they often go there together, riding a tricycle. For sure it is a noisy, crowded place in that people in the surrounding villages all join in researching and buying what they need.

Everyday life---Food

Staple food in this area is mainly made from wheat, peanuts, and soybeans as they are the major produce in Henan. People in Gaozhuang Village are expert at making steamed bread, dumplings, pancakes, noodles and soy bean pickles.

From right to left: Jellied tofu, Sweet fried pancake, Rice noodles, Green bean soup, Steamed Bread, Dumplings.

Dried soy beans for making pickles

Everyday life---Friendship

Friendship is of vital importance in Gaozhuang Village; sometimes it is not just about the two friends but the two families. The buffer space in front of the street house offers a perfect place for people to get together. Villagers like to sit on the parapets in front of the gate, usually at first there are only two people chatting, but gradually more people will join them and thus social connection is formed. Also, courtyard provides another opportunity for villagers to sit together but this only happens in old courtyard houses and courtyard houses built between 1990 and 2000 because their courtyards are more spacious. Villagers would do chores casually while talking with their friends or neighbours such as peeling peanuts and selecting soy beans. In fact, many villagers in Gaozhuang Village spend most of their life in this area and their relatives are scattered in the nearby villages or towns, they do not have other ways of connecting with people so social interrelationship is vital to their life, in terms of family power, mutual understandings and information exchanges. And for children, friendship is rather simpler. The buffers space and the street between two lanes of courtyard houses are their playground. They invite each other to play outside. Sometimes they will show off their new toys to others, sharing them with their little

friends and sometimes they will play hide and seek along the street, laughing and running happily. Often parents are with them to better take care of them and because of children, parents are triggered to communicate with each other, starting dialogues either short or long.

Xiulian's sister (the right) comes to see her. They haven't seen each other for a while though they sometimes send regards to each other over the telephone. Her sister helps her to peeling the peanuts which is to be used for seeds for new plantation.

They were playing on the street in front of their house the time I saw these four cute children. Their mothers made them stand in line to take pictures but it seems that younger kids are even not that clear about what pictures are or how to take pictures. They are good friends, their mothers are neighbours and somehow become friends because of them as mothers were married to Gaozhuang Village from various villages and at first did not know each other at all.

Everyday life---Clothing

Clothing of young generations is the same as they are in cities that are mass produced in factories and are purchased from stores but for older generations they are different in that they made clothes themselves. Even today, many grandmas still use the old way of making clothes. Taking my grandmother as an example, she is used to make clothes herself and she still uses the ancient way to iron her coat. As for the shoes, they are designed for new born babies, in the image of a little tiger which conveys a kind wish for the babies to be as healthy as the little tiger. It took her three days to make a pair of shoes from preparing materials to sewing.

Everyday life---Wedding ceremony

Wedding ceremonies are complicated and are more and more close to the format in cities that relatives, friends and colleagues are invited to a restaurant instead of groom's house to have a big meal together. But there are still some traditions remained in the wedding process such as exchanging the position of quilts in new couples' bedroom, putting peanuts, dates, sunflower seeds and longans on their bed, worshipping the ancestors and gods, giving lucky money to the new couples, etc. It is unforgettable to document a wedding ceremony in this area that relatives of the bride were taking to their new house first by a bus and then to the restaurant to have a big meal and watch the ceremony.

All relatives of the bride are invited to attend the wedding, so they hired a bus to take them to the house of the new couples.

Worshipping the ancestors and gods is important and the candle should be lit all day long.

Lucky money collected from friends and relatives are put on a plate holding by a little boy.

Changing the position of quilt is one of the steps before the wedding ceremony that parents of the bride will put the quilt prepared by the bride part on the top of the quilts prepared by the groom's family which indicates that the bride will be the "boss" of the new family. Also almost everything in the new couples' bedrooms are red, an auspicious colour in China.

Wedding ceremony was much like a western wedding in regard of clothing and procedures.

Everyday life---Entertainment

There is not much entertainment in Gaozhuang Village and actually for young people life in the village is kind of dull and they are more willing to meet their friends in downtown where there are cinemas, karaoke, various restaurant, poker houses and game houses, amusement park and so forth. Events are rare but there are still some such as a live show, the parade in the spring festival and some games created by kids, snow sliding.

Celebrating the spring festival

Snow sliding on the slope of the dam in winter with just a fertilizer bag

Live show performed by a commercial company and villagers were enthusiastic in participating and watching the show.

References

Salter, C. (1971). *The cultural landscape*. Belmont: Wadsworth Publishing Company.

Conclusion

This report is mainly studying the courtyard housing in Gaozhuang Village, Henan Province, China, the typical vernacular architecture in this province. Reasons to study Henan vernacular architecture are that Henan has been the center of politics, economy, culture and education since the first dynasty in China, the Xia Dynasty, and the mainstream of traditional Chinese architecture is mostly originated in this land. However, Henan vernacular architecture have not been fully studied nor has it raised the attention from scholars or professional institutions. It is necessary to document the condition and the development of vernacular architecture so as to better understand the people and the place. Gaozhuang Village is a special village in Henan in that it has a clear development of courtyard housing and its location along the Yellow River gives it priority in the research of houses influenced by the landscape along the Yellow River. 30 houses are investigated through measurement, detailed drawings, on-site sketches and interviews with the residents. Among the 30 houses, 10 are old courtyard houses built between 1960s and 1980s, 8 courtyard houses were built between 1990s and 2000, 12 courtyard houses are built after 2000. Apart from the physical study of courtyard houses in this village, the philosophy of design, construction, decoration, etc. are also learned to better comprehend the architecture. Also the psychological aspect is also concerned such as the relationship between families and neighbors, how people see their houses, how people use their house, etc. It is obvious to see that houses in this village are hugely affected by the economic development of China that its shape, space arrangement, layout of rooms, style of living, family patterns are all changed more or less. Fortunately, courtyard houses in Gaozhuang Village, still conveys the basic intentions and good wishes passed down from generation to generation particularly the idea of oneness of man and the Heaven and the residential rituals and hierarchies. There are still many challenges in the further development of courtyard housing in this area because of the strong storm of modernization and urbanization that a couple of houses constructed in recent years have shown the tendency of imitating western styles while abandoning traditional Chinese symbols or the local aesthetics, such as using the pediments other than traditional decorative tiles, enlarging the architectural space but shrinking the courtyard space, etc. Like vernacular architecture in big cities courtyard housing in Gaozhuang Village still has a long way to go to explore or create a better way of combining the modern life with the traditional codes.

References

- Adams, A., & McMurry, S. (1997). *Exploring everyday landscapes*. Knoxville: University of Tennessee Press.
- Alexander, C. (1964). *Notes on the synthesis of form*. Cambridge: Harvard University Press.
- Bowker, J. (1997). *The Oxford dictionary of world religions*. Oxford: Oxford University Press.
- Brunskill, R. (1971). *Illustrated handbook of vernacular architecture*. New York: Universe Books.
- Cai, Y. (2011). *Chinese architecture*. Cambridge, UK: Cambridge University Press.
- Chen, H. (2005). *Ancient architecture in Chinese Characters* (《汉字中的古代建筑》 Chinese edition). Tianjin: Bai hua wen yi Press.
- Cullen, G. (1996). *The concise townscape*. London: Architectural Press.
- Deetz, J. (1977). *In small things forgotten*. Garden City, N.Y.: Anchor Press/Douleday.
- Des Forges, R. (2003). *Cultural centrality and political change in Chinese history*. Stanford, California: Stanford University Press.
- Ding, Y. (2011). *Kanyu (Feng-shui): a forgotten intangible heritage in China*. Nanjing: Southeast University Press.
- Fan, J., Heberer, T. and Taubmann, W. (2006). *Rural China*. Armonk, N.Y.: M.E. Sharpe.
- Glassie, H. (1996). *Material culture*. Bloomington: Indiana University Press.
- Glassie, H. (2000). *Vernacular architecture*. Philadelphia: Material Culture.
- Groth, P., & Bressi, T. (1997). *Understanding ordinary landscapes*. New Haven: Yale University Press.
- Harris, S. & Berke, D. (1997). *Architecture of the everyday*. New York, N.Y.: Princeton Architectural Press.
- Henan Museum Group. (2011). *Ancient Civilization of the Central Plains*. (《中原古代文明之光》 Chinese edition) Beijing: Science Press.
- Holl, S. (2013). *Pamphlet Architecture 31*. New York, NY: Princeton Architectural Press.
- Hou, Y. & Li, W. (2002). *Illustration of Ancient Chinese Architecture*. Beijing: China Architecture & Building Press.
- Jackson, J. B. (1994). *A sense of place, a sense of time*. New Haven: Yale University Press.

- Jackson, J. B., & Zube, E. H. (1970). *Landscapes: selected writings of JB Jackson*. [Amherst]: University of Massachusetts Press.
- Junxiang Xie (1996). *The Origins of Top 100 Chinese Family Names*. Zhengzhou: Zhongzhou Gu Ji Press.
- Knapp, R. (1992). *Chinese landscapes*. Honolulu: University of Hawaii Press.
- Knapp, R. (2000). *China's old dwellings*. Honolulu: University of Hawai'i Press.
- Kuo, X. (2005). *A treasure dictionary for prosperous residences: A guide to residential Feng Shui* (《旺宅宝典：住宅风水指南》, Chinese edition). Beijing: Culture and Art Press.
- Leeming, F. (1985). *Rural China today*. London: Longman.
- Liang, S. & Lin, Z. (2011). *Chinese Architecture: Art and Artifacts*. Beijing: Foreign Language Teaching and Research Press.
- Liu, D. (1984). *History of ancient Chinese architecture*. Beijing: China Architecture & Building Press.
- Liu, L. (1989). *Chinese architecture*. New York: Rizzoli
- Marlene, C. (1997). *Places of Presence: Newfoundland Kin and ancestral Land, Newfoundland 1989-1991*. St John's, Killick Press.
- McKinley, T. (1996). *The distribution of wealth in rural China*. Armonk, N.Y.: M.E. Sharpe.
- Meinig, D., & Jackson, J. (1979). *The interpretation of ordinary landscapes*. New York: Oxford University Press.
- Mellin, R. (1995). *A City of Towns: alternatives for the planning and design of housing in St. John's, Newfoundland*. Canada Mortgage and Housing Corporation.
- Mellin, R. (2003). *Tilting: house launching, slide hauling, potato trenching, and other tales from a Newfoundland fishing village*. New York: Princeton Architectural Press.
- Mellin, R. (2015). *Winter in Tilting*. St John: Pedlar Press.
- Prown, J. D. (1993). *The truth of material culture: history or fiction?* In S. Lubar & W. D. Kingery (Eds.), *History from things: essays on material culture* (pp. 1-19). Washington: Smithsonian Institution Press.
- Rapson, R. (1981). *Walls: inside China and its architecture*. [Place of publication not identified]: University of Minnesota.
- Steinhardt, N. (1984). *Chinese traditional architecture*. New York City: China Institute in America, China House Gallery.
- Tobias, T. (2000). *Chief Kerry's moose*. Vancouver: Union of BC Indian Chiefs.

- Tuan, Y. (1977). *Space and place*. Minneapolis: University of Minnesota Press.
- Unger, J. (2002). *The transformation of rural China*. Armonk, N.Y.: M.E. Sharpe.
- William H. Nienhauser Jr., ed. (1986). *The Indianan Companion to Traditional Chinese Literature*. Indianana, Indianana University Press.
- Wilson, C. & Groth, P. (2003). *Everyday America*. Berkeley: University of California Press.
- Wu. Xu & Liu, Yan.(2001). *History of ancient Henan architecture*. Zhengzhou: Zhongzhou Gu Ji Press.
- Yang, H. (1987). *Paper on the Architectural Archaeology*. Beijing: Cultural Relics Press.
- Zhang, D. (2013). *Courtyard housing and cultural sustainability*. Burlington: Ashgate Publishing Company.
- Zhang, D. (2015). *Courtyard housing for health and happiness*. Farnham: Ashgate Publishing Company.
- Zhang, X. (2000). *Social transformation in modern China*. Cambridge, UK: Cambridge University Press.
- Zhang, Xiaochun. (2011). Renovation of No.1 Yard of Haotang Village, Xinyang, Henan, China. *The World Architecture*, (2), 94.
- Zuo, M. & Bai, X. (2007). *Henan vernacular architecture*. Beijing: China Architectural Industry Press.
- Zuo, M. (2015). *Ancient Henan architecture*. Beijing: China Architectural Industry Press.

