

JIP Final Report

An Investigation and Research of Traditional Houses in Gansu

By

Xiaojun Tang, Lanzhou University SYLFF fellow

Ms. Yingchun Wei, Lanzhou University SYLFF fellow

Ms. Yanling Shi(Lanzhou University),

**Mr. Chongyu Sun (Cultural Relics Preservation and Maintenance Research
Institute of Gansu Province)**

Mr. Li Lu (Nanjing Normal School),

Ms. Bin Dong (Northwestern Politics and Law School)

I. Abstract

This project is a comprehensive and transdisciplinary research of traditional houses in Gansu with all the members' cooperation and each member's research focus, involving on-site investigation and survey, historical, architectural, anthropological, artistic and philosophical methodology. Based on the on-site investigation and survey, and consulting related documents and literature, this report explores the three problems related to traditional houses in Gansu:

First it gives a comprehensive description of the distribution characteristics of traditional houses in Gansu: Majority of the traditional houses are the Han traditional houses which are located in the areas where the Han people live, whereas minority of them are the minority traditional houses in the areas where the minorities live which have unique religious and ethnic characteristics under the influences of Buddhism, Islam and polytheism.

Second it focuses on the six types of traditional houses in Gansu, including their present conditions, layouts, construction materials, structures, and functions. These six types of traditional houses are: (1) The courtyard houses, which fall into six systems in structure and style;(2) Cave dwellings in east and middle Gansu;(3) *Zhuangke* houses;(4) Earth fortresses and stone fortresses;(5) Wooden board houses in Longnan City;(6) Tibetan traditional dwellings in Gannan City.

Last it points out that the historic and cultural cities, towns and villages in which traditional houses are located are facing the crises, and give the suggestions concerning their conservation and protection.

II. Introduction

Since 1949, with the quick economic development, the growth of urban population and the modernization of towns and villages, traditional houses in Gansu have been pulled down or damaged so much that they have drawn the attention from international cultural heritage organizations and specialists in traditional houses. From April 10, 2008 to April 25, 2009, funded by SYLFF Joint Initiatives Program (JIP), scholars from Cultural Relics Preservation and Maintenance Research Institute of

Gansu Province, Lanzhou University, Nanjing Normal School, and Northwestern Politics and Law School as a team group, carried out the project “An Investigation and Research of Traditional Houses in Gansu,” and made an investigation and research of 317 houses in 11 cities of Gansu.

2.1 Methodology

The project is a comprehensive and transdisciplinary research of traditional houses in Gansu with all the members’ cooperation and each member’s research focus, involving on-site investigation and survey, historical, architectural, anthropological, artistic and philosophical methodology. We divided the 12-month into 3 periods of time: In the first period (the first 5 months) fieldwork was our focus. All the members, divided into 2 groups, went to the 11 cities to make field investigation and survey, mapping and photographing, visiting the owners of some houses, and consulting the literature, such as biographies of house owners, ethnographies of minorities, the files of houses rebuilding and maintenance, governmental documents and statistics; we spent the second period (the second 5 months) sorting out, processing and categorizing all the data, and making special research by resorting to the historical, architectural, anthropological, artistic and philosophical methodology: (1) Categorizing the 317 traditional houses investigated into 6 types, based on the areas in which these houses are located, ethnic and religious groups who built the houses, and materials of which the houses were made, and describing the characteristics of each category, including its shape, layout, structure, materials, architectural methods, functions and historical background related to the family history of the owner; (2) making the historical, architectural, anthropological, artistic and philosophical research of these houses, for example, architectural cultures of different ethnic groups and how they came into being and developed, folk-custom, folk art and aesthetic interests of traditional houses and cultural and historical implications reflected in traditional houses, historical literature of traditional houses, genealogical history and culture, the influences of the Western architectural cultures and religions on the traditional life styles and the traditional houses in Gansu; (3) how and why the traditional houses were destroyed or damaged; and the last 2 months were used to write the report and academic papers, and made preparation for the upcoming book. Meanwhile we wrote reports to local and provincial governments, in which the present conditions, historical and current causes of damages and destruction, social and historical laws of wearing away, and the preservation problems of these traditional houses are described, and preservation suggestions and measures are given to draw their and citizens’ attention to the preservation of these traditional houses.

2.2 Achievements

According to the proposed schedule, we have completely finished the fieldwork in 11 cities. In doing the fieldwork, our team has taken 200 photographs, drawn 300 drawings, including distribution maps, plans, section-plans, elevation, and sketches of architectural structures of typical traditional houses in different areas of Gansu, and collected and processed literature and data including literature about the history and styles of these traditional houses from fieldwork surveys, documents, ethnological records, and chorography in local libraries and museums.

Base on what we have done above, we have obtained the following research results:

(1) Archives of most of the traditional houses in both electronic and paper form, which include the basic information, maps, plans, section-plans, elevation, and photos of these houses.

(2) Reports to both CRBGP(Cultural Relics Bureau of Gansu Province) and SYLFF.

(3) A handbook concerning the significance and present conditions of some traditional houses and knowledge of traditional houses.

(4) An upcoming book.

III. Literature Review

There have not been many research achievements of traditional houses in Gansu. So far no one has made a systematic investigation, classification, and artistic and structural research of them. All the publications about them, including papers and books, are just case studies.

Chinese scholars' research of traditional houses in Gansu are made in two ways:

(1) Traditional houses in Gansu are explored in researches of traditional houses in China. For example, Hou Jiyao and Wang Jun made a relatively systematic study of types of cave dwellings in Longdong and Pingliang in *Cave Dwellings* (1999). Xiao Mo made a case study of "The Bai Family Residence" of the Hui nationality traditional dwellings in Linxia City in *History of Chinese Architectural Art* (1999). Wang Lizhi and Zhang Zugang made case studies of the Han and the Hui people's courtyard dwellings in *Chinese Traditional Houses* (1989). Tang Yu made a comparative study of architectural structures of traditional dwellings in Gansu and in other places in his dissertation "Architectural Technology of Traditional Buildings in Gansu and Qinghai"(2004).

(2) Case studies of traditional dwellings in Gansu

Case studies occupy the big part of research achievements concerning traditional dwellings in Gansu. Jing Qimin explored the origin and development of cave dwellings in Qingyang in "Rammed Earth Dwellings"(1988). Wu Qigui focused on the four Tibetan traditional houses in Gannan in "Traditional Houses in Gannan"(1986). Hou Qiufeng focused on the layouts, architectural structures and wood carvings of five traditional houses in Tianshui City in "A Study of Traditional Houses in the Ming and Qing Dynasties in Tianshui"(2006). Nan Xitao made a basic exploration of the characteristics of the Han people's courtyard houses in Tianshui in "The Characteristics of Traditional Houses in Tianshui."

In recent years more and more graduates have begun to show great interests in traditional houses in Gansu, which made the studies of traditional houses in Gansu come to a higher level. Zhou Baoling, in her thesis "Architectural Characteristics of the Hui Nationality Architecture," mainly made examination of the Islamic culture in the Hui nationality architecture, and Ma Zhongliang, in his thesis "A Study of the Islamic Decoration Art," mainly made a study of the decoration art of the Hui

nationality courtyard houses. Wang Xu, in his dissertation “Studies of Traditional Fortresses,” made studies of the architectural materials, technology and functions of fortresses in the north of Gansu.

Foreign scholars, especially Japanese scholars, showed great interests in cave dwellings in Gansu and have produced many achievements: “Cave Dwellings in China,” and “An Investigation Report of the Structures of Traditional Houses in the North of China” are representative achievements.

IV. Distribution of Traditional Houses in Location and Times

4.1 Distribution in Location(Fg.1)

There are 4 national level historic and cultural cities(Dunhuang, Zhangye, Wuwei and Tianshui), 4 national level historic and cultural towns and villages(Hadapu in Tanchang County, Qingcheng in Yuzhong County, Liancheng in Yongdeng County and Dajing in Gulang County), 7 provincial level historic and cultural cities(Jiuquan, Linxia, Xiahe, Longxi, Huining, Lintai and Qingcheng), 11 provincial level historic and cultural towns(Xincheng in Lintan, Qingcheng in Yuzhong, Nanliang in Huachi, Tange in Wushan, Liancheng in Yongdeng, Longcheng in Qin’an, Dajing in Gulang, Langmusi in Luqu, Chaona in Lintai, Bangluo in Tongwei, and Bikou in Wenxian), and 8 provincial level historic and cultural villages(Yongtai in Jingtai, Yangdian in Liangdang, Renhe in Jingyuan, Fengshan in Qin’an, Zhengping in Ningxian, Chengguan in Zhengyuan, Jihong in Jingning, and Shaodian in Qin’an). Traditional houses in Gansu are mainly located in these cities, towns and villages.



(Fig.1)

4.2 Distribution in Times

The earliest existent traditional houses in Gansu were built in the Ming Dynasty(1368-1644). They are mostly located in Tianshui and Lanzhou, only taking up 1% of all the existent traditional houses in Gansu. For in the Ming Dynasty, there

were strict ranking systems, and many edicts and imperial orders in houses construction which affected the construction of houses.

Compared to the Ming, there are more traditional houses in the Qing Dynasty(1644-1912), which occupy 30% of the existent traditional houses in Gansu. In the Qing, although there were edicts in ranking of the houses construction, they were not strictly carried out.

The houses in the Republic of China (1912-1949) occupy 50% of the existent traditional houses in Gansu. This is because its government abolished the ranking system in houses construction.

Many houses built in the Qing were rebuilt in the Republic of China, occupying 19% of the existent traditional houses in Gansu

In the Ming, Qing and the Republic of China, more type of construction materials appeared, and bricks were applied to the construction of houses, which resulted in the improvement of carving skills. In the Republic of China, under the influence of the Western architectural art, houses took on the obvious occidental style.

V. Shaping Factors of Traditional Houses

The diverse styles of traditional houses in Gansu are shaped by many factors, mainly natural factors, and religious and ethnic factors.

Gansu is located in the upper river of the Yellow River between longitude 92°13'E and longitude 108°42'E, and between latitude 32°12'N to latitude 42°57'N. Its total area is 453,700 square kilometers, taking up 4.72% of the total area of China. In its west most part is desert and so windy and sandy that all the houses of the Han people with thick walls are built to prevent from winds and sands, and houses of the nomad are set up like movable tents. In its east and north, cave houses on the Loess Altiplano are very popular. And in its south, houses are mostly built of wood because there are rich resources of forests. In its middle, there are not many forest resources and therefore one-pitched houses are built in order to save wood. And Tianshui City is rich enough and houses here have magnificent brick carvings, wood carvings, and stone carvings.

In Gansu many ethnic groups lived, who had quite different religions and folk-customs. Thus traditional houses in Gansu show strong ethnic and religious characteristics. For example, in Gannan mainly lived Tibetan. Tibetan houses here, under the influence of Tibetan Buddhism, hold the characteristic "All Tibetan families live on the hillside and have their own courtyards." In Linxia mainly lived the Hui nationality. Houses here not only have strong Islamic characteristics in layout and decoration but characteristics of the Han's houses.

VI. Types of Traditional Houses

6.1 Courtyard Houses

Courtyard housing is characteristic of Chinese Han people's traditional dwellings and is also the main type of the dwellings for peoples in Gansu. Wherever the Han live, the courtyards are their major constructions. However, the courtyards in different

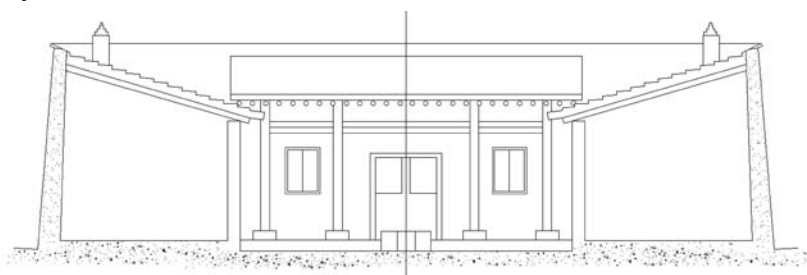
areas are small or big because of the different climate, natural conditions, and construction materials. Besides with the religious influence, the courtyards differ much in the layout, facing, function and structure. We made investigations of courtyard houses, which we put into 5 categories of architectural systems: the Hexi Corridor system, Lanzhou system, Middle Gansu system, East Gansu system, Tianshui system, and the Hui nationality system.

6.1.1 The Hexi Corridor System

The Hexi Corridor includes 5 cities: Jiuquan, Jiayuguan, Jinchang, Zhangye and Wuwei. The unique arid climate and natural conditions produce the unique architectural system. The houses in this area can be divided into 3 categories: (1) Han people's earth fortress scattered in villages, (2) Han people's courtyard houses concentrated in towns and villages, and (3) Mongolian, Kazakstan, Yugu and Tibetan's tents, felt dwellings and Mongolian yurts.

The walls of the courtyard in the Hexi Corridor are mostly constructed of rammed earth. They are thick and strong enough to prevent the strong wind and sand. The houses in the courtyards are mostly constructed of wood and earth, with 3 living rooms along the central axis, 2 or 3 symmetrical wing-rooms on either side of the axis, and south room at the south end of the axis. If the main gate is festoon gate, it has brick carvings and wood carvings.

(1) Dunhuang. In 2006, 3 houses in the Qing Dynasty were discovered in Dunhuang (Fig.2). In 2008, we made investigations of them, which turned out courtyard houses.



(Fig.2)

(2) Jiuquan. There were many large-scale manors and houses. However, all the traditional houses and dwellings were pulled down in the transformation of cities from 1992 to 2006. In June, 2008, when we went there, we found that large amount of materials of the pulled-down houses were piled on the places ready to be developed, and many woodcarving artworks had been sold to some businessmen. Now no traditional houses are left.

(3) Zhangye. It has 4 counties and 1 district. According to the government's documents in 1986, Ganzhou District had 62 traditional houses. However, there are only 26 houses left because many have been pulled down in the transformation of the city. Now the existent largest traditional house is Gaomeng Mansion, the residence of a Qing general, built in 1691. It is located in West Minzhu Street and is a provincial cultural relics conservation unit. It, facing south, has only the second hall and the third hall left, which were Gao Meng's office. He and his family lived in the backyard, which are surrounded by a two-storey tower.

(4) Wuwei. It has 3 counties and 1 district. According to the local documents, in

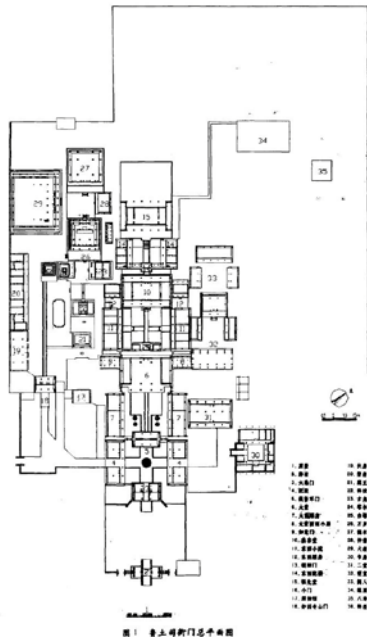
2001, there were more than 40 courtyard dwellings in Liangzhou District. In 2005, many of these dwellings were pulled down in the transformation of the city. Now we just find 10 courtyard dwellings. The most valuable is Jiatao Former Residence(Picture 1), a provincial level cultural heritage conservation unit. It is located in Liangzhou District, built in the late Qing and renovated in 1929. It, facing south, occupies the area of 687 m², and consists of the frontyard and the backyard. The frontyard consists of the south room, the east and west wing-rooms with the front partition wall. The backyard consists of 2 wing-rooms and the main hall. The main hall is a two-storey wood tower with front partition wall, which is 13 meters wide, 6 meters long, and 7 meters high.

6.1.2 Lanzhou System

Lanzhou City has 3 counties (Yuzhong, Yongdeng and Gaolan) and 5 districts (Chengguan, Xigu, Qilihe, Honggu, and Anning). In 2008, we made investigations of 38 traditional houses in Chengguan, Xigu, and Qilihe, of which 3 are traditional dwellings of the Hui nationality, 102 traditional houses in Yuzhong, of which 45 are in Qingcheng, 49 in Jinya and 7 are ancestral temples, and 1 traditional house in Yongdeng.

The courtyard houses are characteristic of traditional houses in Lanzhou. These houses with one-pitched roof or two-pitched roof are built of bricks, rammed earth and wood. The yard of these houses have 3 types: the yard with houses only on one side, the yard with houses on 3 sides, and the yard with houses on 4 sides (courtyard houses). Of them, the second type occupies the majority of traditional houses in Lanzhou. It consists of the front yard, and the left yard and the right yard; the front yard is used for production, and the left yard and the right yard are used as the life area.

Lutusi Yamen Complex(Fg.3) in Liancheng, Yongdeng is typical of traditional houses of Lanzhou. Here Tusi in the Ming, Qing and Republic of China handled the official businesses. *Rewriting the Pedigree of the Lu Family* says Lutusi Yamen began to be built in Hongwu Emperor(1378) in the Ming, occupies the area of 33025m², and has 226 rooms. The existent buildings are layed out on the middle, east and west lines respectively: Yamen(offices) are located on the middle line, and has 4 courtyards, which stand along the axis, including entrance screen, torii gate and main gate, ancestral hall; Miaoyin Temple, a 8200 m² Tibetan Buddhist temple for the Tusi family, whose main building has 8 Buddha halls, stands on the west line; and the residence for Tusi with gardens stands on the east line and has 6 courtyards, including courtyard for study, courtyard for sleep, and kitchen.



(Fig.3)

6.1.3 Middle Gansu System

Middle Gansu mainly consists of Baiyin City and most part of Dingxi City, that is Anding County, Tongwei County, Weiyuan County and Lintao County. Middle Gansu is lack of natural resources, and traditional dwellings here mostly have one-pitched roof, and their gates and windows seldom have woodcarving design. These dwellings are mainly fortresses, courtyard houses and rammed earth cave houses. The courtyard house has a two-storey earth tower standing in its south-east corner for looking out or preventing being stolen.

Our team members made investigations of 2 traditional houses in Baiyin and 48 in Bangluo Town in Tongwei.

(1) Renhe Traditional Houses Complex

Renhe Traditional Houses Complex, located in Jingyuan, Baiyin, was built in the late Qing. This brick and wood complex, facing east, is built in a fortress and occupies the area of 600m². It is 9 meters wide, 3.8 meters long and 5.6 meters high. It has 3 east main halls and 3 west main halls. Its south wing-room is 13.5 meters wide, 5.1 meters long and 5.2 meters high. On its north-west corner stands a two-storey wood tower, which is 11 meters wide, 5.5 meters long and 6.8 meters high.

(2) Fanzhenxu Former Residence

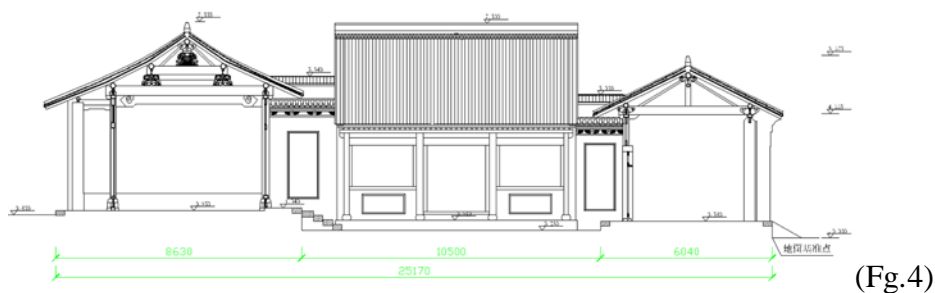
Fanzhenxu Former Residence, built in the Qing, is located in Jingyuan. This courtyard dwelling occupies the area of 200 m² and its existent part is 3 north brick and wood rooms (10 meters wide, 6.3 meters long and 3.5 meters high). Fan Zhenxu(1872~1960) was born in Jingyuan and his father and grandfather were officials in the Qing Dynasty. From 1906 to 1909 when he studied in Tokyo, he joined the Chinese Revolutionary League with Sun Yixian as its leader.

6.1.4 East Gansu System

East Gansu consists of Qingyang City and Pingliang City. Qingyang has 7 counties and 1 district (Qinzhou District) and Pingliang has 6 counties and 1 district.

The existent traditional dwellings in East Gansu can be divided into 3 categories: (1) cave houses; (2) earth fortresses; (3) courtyard houses built of brick, earth and wood. East Gansu has not many courtyard houses, and cave houses are characteristic of the traditional houses here. The courtyard houses here are similar in architectural art, style and material. They have two-pitched roofs and their gates, windows and gate towers have rich brick carvings and wood carvings for decoration.

Our team made investigations of 6 courtyard houses in Qingyang and 8 courtyard houses of the Han nationality in Pingliang, and found that the Zhang Family's Residence(Fg.4), built in the Qing in Ningxian County in Qingyang, has better conditions. This 24.75-meter-long and 19-meter-wide residence faces east and has 3 courtyards. The main building consists of the main room, the south and north wing-rooms, and the east room. The main room is 17.86 meters wide and 6.60 meters long, the wing-rooms are 7.71 meters wide and 5.25 meters long. The walls were constructed of mud-bricks. And the gates and windows are carved with designs of flowers.



(Fig.4)

6.1.5 Tianshui Courtyard Houses System

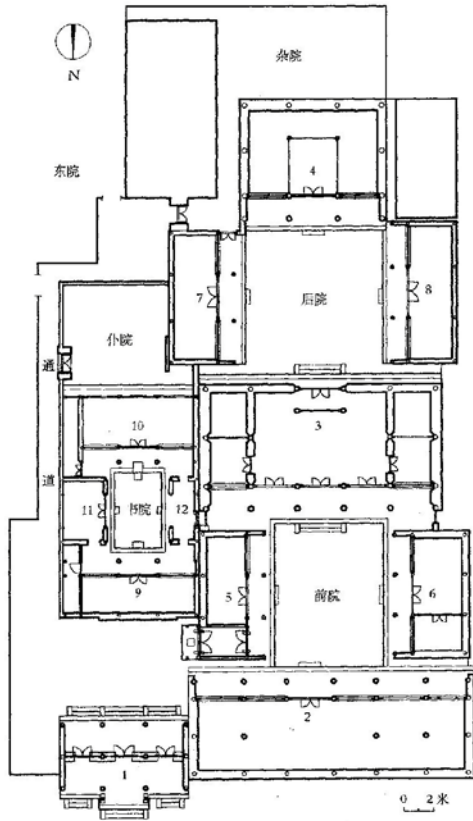
Tianshui City in the southeast of Gansu lies at latitude $34^{\circ}05' \sim 35^{\circ}10'$ north and longitude $104^{\circ}34' \sim 106^{\circ}43'$ east. It is 197 kilometers from west to east and 122 kilometers from north to south. It had abundant traditional courtyard houses complexes and historic streets and lanes built in the Ming, Qing, and Republic of China. According to the local documents, in 1980s, Sanxinghang Traditional Houses Complex, mainly concentrating on 6 streets, has 71 courtyards, and 232 constructions of which 82 are in the Ming and 150 in the Qing. Thus it got the title "Oriental Wood Carving Gallery." Now a big part of it has been split or rebuilt, and its original appearance cannot be seen.

Since 1980s, large numbers of traditional houses have been pulled down. From 2001 to 2006, 40% of the traditional houses were pulled down in the transformation of the city, which has drawn the attention from governments at all levels and international organizations. In 2004, existent Tianshui traditional houses were listed among "The Lists of 100 Most Endangered Sites 2006" by The World Monuments Watch Program.

Tianshui traditional houses have their unique system and characteristics, which generally have 2 to 4 conjoint courtyards, whose gates with brick carvings, and wood carvings and stone carvings are magnificent.

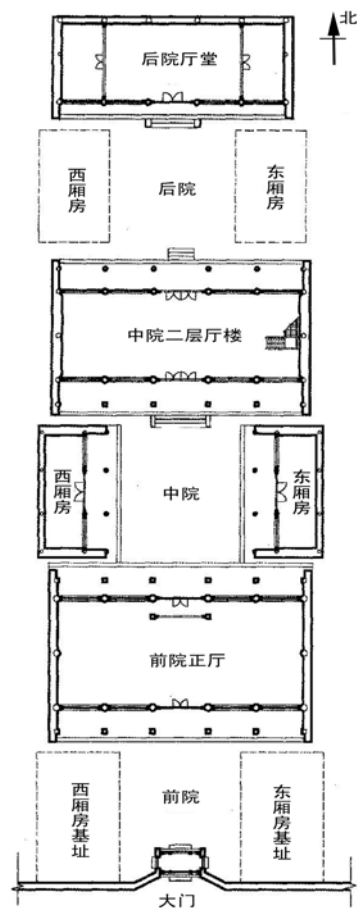
In 2008, our team made investigations of 33 traditional houses of the Han nationality in Tianshui. What is valuable is "The Hu Family's Former Residence,"

which has two parts: (1) South Residence(Fg.5). It was built in 1558-1567 by Hu Laijin in the Ming Dynasty, and later used by his offsprings. It, facing south, has 5 existent courtyards which stand on either side of the central axis, covering the area of 2239.2m². (2) North Residence(Fg.6). It was built by Hu Xin, Hu Laijin's son. It was burnt down in 1939 and rebuilt later. Since 1949, it has been taken up by the army. It is facing south and has the area of 1600m².



图一 南宅子总平面图

(Fig.5)



北宅子总平面图 (1: 200) (Fig.6)

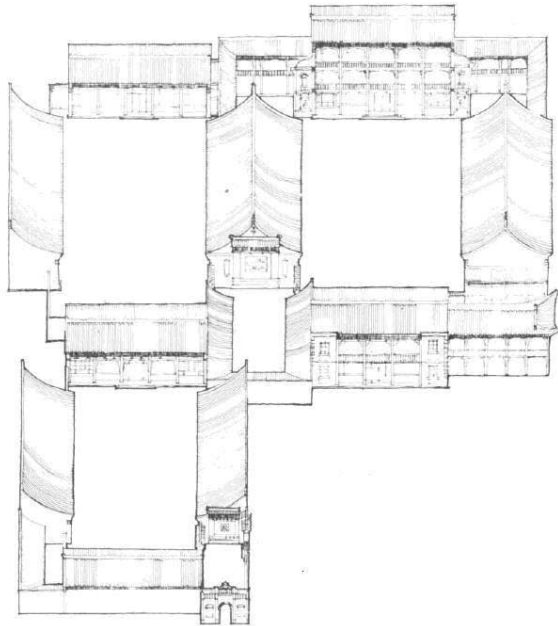
6.1.6 The Hui Nationality Courtyard Houses System

The Hui nationality in Gansu mainly live in Tianshui, Lanzhou, Linxia and Gannan. The traditional houses of the Hui have their ethnic characteristics: The traditional courtyard houses either distribute in cities along the main roads or center around the Islamic Mosques.

Their houses have 3 types: (1)Houses for ordinary people. They are built to satisfy the needs of ordinary people in living. (2)Warlords Mansions. These grand mansions were built by warlords in Gansu. Linxia East Mansion, Butterfly Tower and Ma Lin's Former Residence are their representatives. (3)Houses used for living and business. These houses were built for the transportation, storage and processing goods, as well as for living.

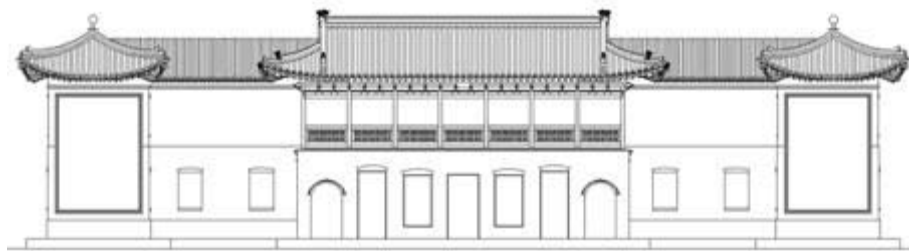
Our team made investigations of 6 courtyard houses of the Hui nationality in Tianshui and Linxia:

Linxia East Mansion(Fg.7), built in 1938-1947 by Ma Buqing, a warlord, facing south and famous for brick carvings, occupies the area of 8639.56 m² and has 4 courtyards. Butterfly Tower(Fg.8), built in 1945 by Ma Buqing for his fourth wife, is 56 meters wide from east to west, and 74 meters from south to north. The main building is a two-storey brick and wood tower. Linxia East Mansion and Butterfly Tower have strong characteristics of Islamic culture, and are a combination of Islamic architectural art, traditional Chinese residence art and modern western architectural art.



鸟瞰

(Fig.7) bird's-eye of Linxia East Mansion



(Fig.8)

蝴蝶楼正立面 (1: 100)

6.2 Zhuangke

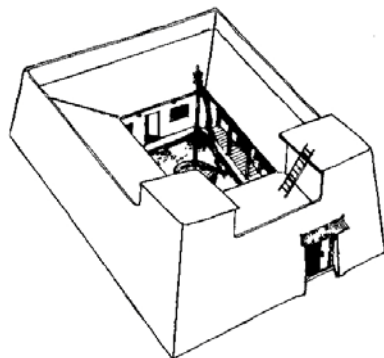
Zhuangke can be traced back to the Han Dynasty. No. 36 of Yulin Grottoes paints *Zhuangke* in the Five Dynasties. This type of houses was built to adapt to the special geographical environment and climate in the northeast of the Tibetan Plateau and in the Hexi Corridor. Residents in *Zhuangke* are mainly minorities such as Tibetan, Hui, Tu, Sala, and some Han people.

Zhuangke is mainly constructed of rammed loess, which are used to construct high and strong walls surrounding a courtyard. The walls are 1-1.2 meters thick. They are constructed to prevent from coldness, wind and sand, and preserve the heat. *Zhuangke* is facing south and there is a gate in the south wall. In the yard surrounded by walls, houses are constructed of brick and wood.

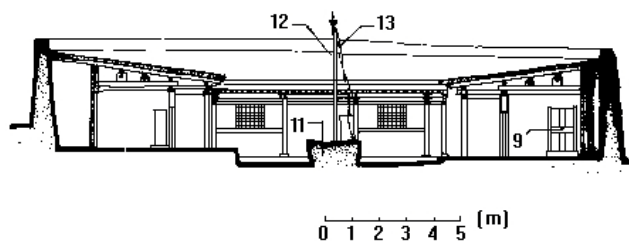
Zhuangke looks like fortress-style constructions, but they are different: (1) fortress-style constructions, like a fortress, are much larger than *Zhuangke*; (2) Houses in the yard of *Zhuangke* of the Han nationality are constructed with the outside walls as the their back walls; and houses in *Zhuangke* of minorities are lower than the surrounding walls, and there is a distance between walls of houses and walls of *Zhuangke*.

(1) *Zhuangke* of the Tu Nationality(Fg.9,10)

The Tu nationality mainly live in Tianzhu County and Yongdeng County. People of the Tu always join 2 or 3 *Zhuangke* as a familial village. The main building in *Zhuangke* is “big house,” which has 3 rooms with the middle one (main hall) for preservation of rice and flour, the left one as bedroom or livingroom, and the right one as hall for worshipping Buddha. On the corners of *Zhuangke* stand gatehouse, kitchen, barn and restroom.



(Fg9, scenograph of *Zhuangke*)



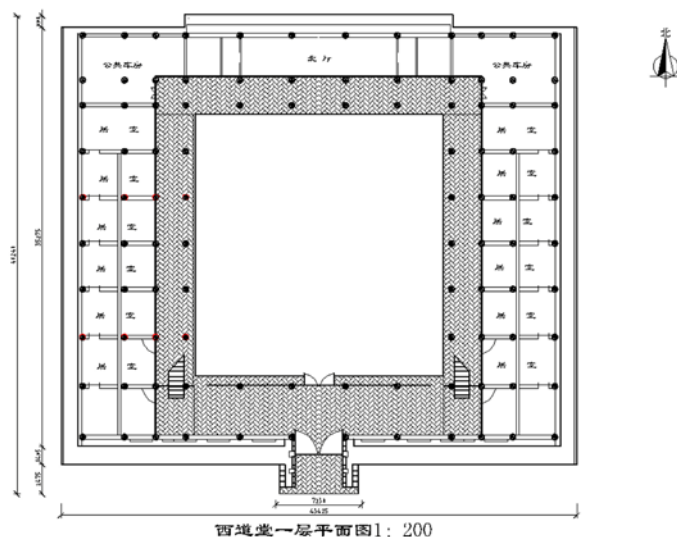
(Fg10, section of *Zhuangke*)

(2) *Zhuangke* of the Sala, Dongxiang and Baoan Nationalities

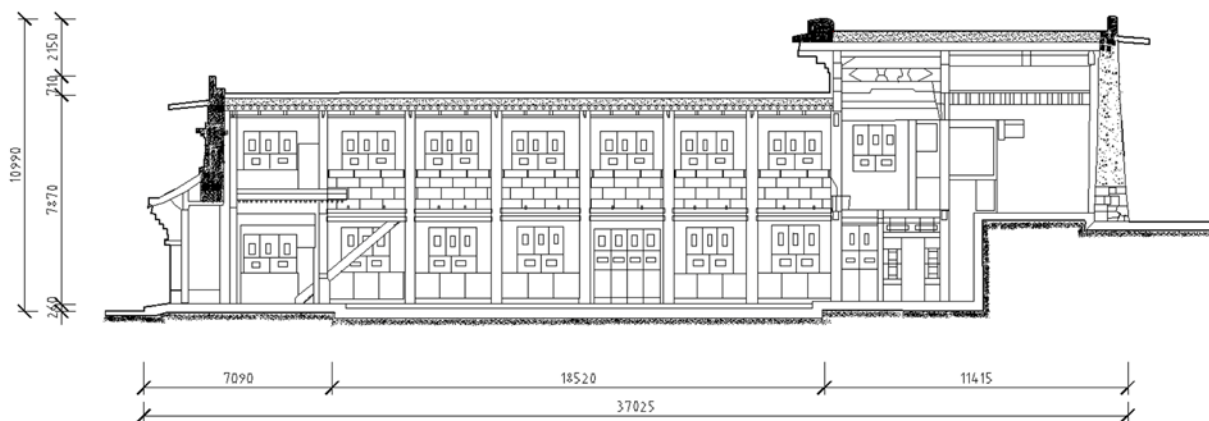
The Sala, Hui, Dongxiang and Baoan nationalities mostly live in Linxia City and believe in Islam. They live in *Zhuangke*. Their *Zhuangke* is similar in shape, layout and decoration. Houses in their *zhuangke* have flat roof and fine wood carvings.

Zhuangke of the Sala nationality is in the shape of “回” while *zhuangke* of the Hui and Dongxiang nationalities in the shape of “冂” or “—.”

Our team made investigations of 6 *zhuangke* in Linxia, of which “big house” constructed in Lintan County by Xidaotang, an Islamic sect, is the biggest *zhuangke* kept intact(Fg.11,12). Xidaotang was founded in 1908 for the purpose of coping with unstable society and complex ethnic conflicts at the end of the Qing Dynasty. It advocated the believers should regard Daotang as their home and live the collective life. They had their own economic system that all the income are divided equally among the believers, and constructed “big houses” for believers who collectively live in the big house with a family as a unit. South-facing “big house” in Lintan County was constructed in 1944 and has high and strong rammed earth walls surrounded. It is 37 meters long, 28.6 meters wide and 0.8-1.5 meters thick. In the yard two-storey buildings (10.1 meters high) were constructed against the walls of yards with aisles connecting all the rooms.



(Fig11, Plan of the first floor of Xidaotang)



(Fig12, Section of Xidaotang)

6.3 Earth Fortresses

Earth fortresses were shaped by the special arid climate in the north of Gansu. They are found from the Hexi Corridor to Qingyang. They were mostly constructed at the end of the Qing Dynasty and Republic of China to defend from being invaded, prevent from civil strifes and guarantee the safety. They were more for “defending” than for “living.”

There are 2 types of fortress-style dwellings in Gansu: one is constructed of rammed earth and the other is constructed of stones; the former is used for cultivation and garrison, and the latter for living.

Our team made investigations of 8 fortress-styled dwellings in the east, the middle and the west of Gansu and found that there are 5 types of layouts of these dwellings: (1) unattached fortress, in which villagers in a village live; (2) two or three fortresses in one village; (3) smaller fortresses set in bigger fortresses; (4) unattached fortress on the top of a steep mountain, constructed to defend from bandits; (5) manors of officials, businessmen and the wealthy.

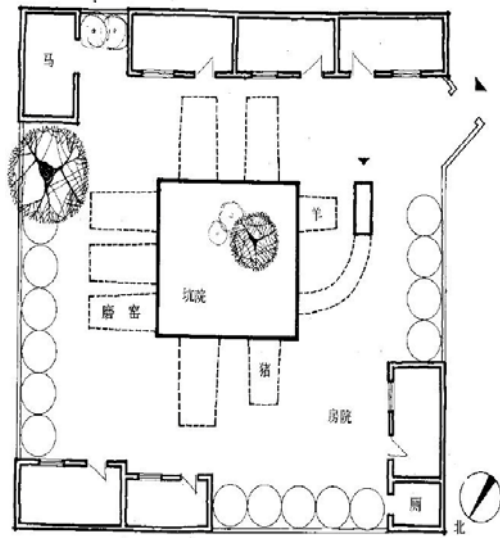
The walls of the fortress are very high and strong. On them stand watch stations

which were constructed in the Qing and Republic of China. Many cave dwellings are preserved because Chinese Communists lived here in 1930s and 1940s, and after 1949 these cave dwellings were given special protection.

Cave dwellings have 4 categories:

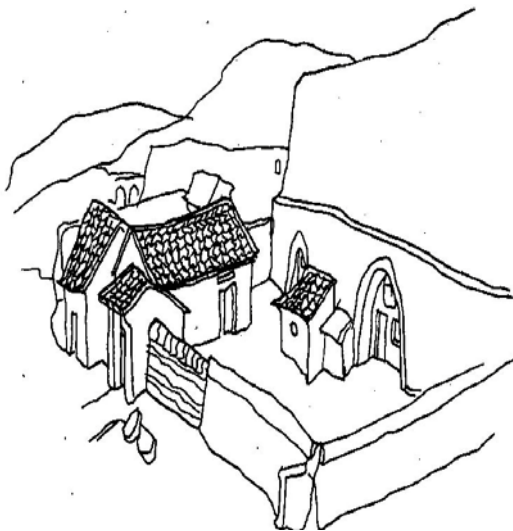
(1) Caves dig into the sides of cliffs. It is at the foot of the hill or the flat part of a slope.

(2) Sunken courtyard cave houses(Fg.14). Dig a pit on the ground, which is 9 meters long, 9 meters wide and 6 meters deep, and then dig caves on the four sides of the pit.



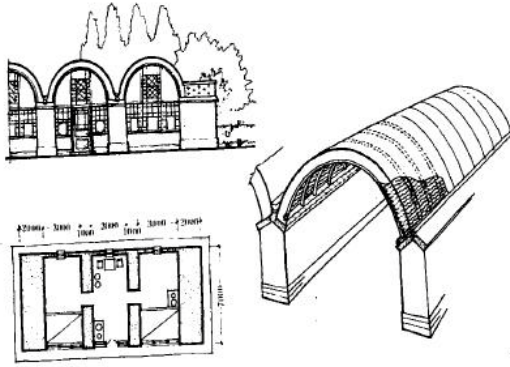
(Fg14)

(3) Caves with houses(Fg.15). Dig 3 caves into a cliff and then construct houses in front of the caves.



(Fg15)

(4) Mud-brick vault caves(Fg.16). It is constructed of bricks, mud-bricks and wheat straw mud on the ground.



(Fig16)

6.5 Traditional Houses in Longnan

Longnan City(at longitude $104^{\circ}1' \sim 106^{\circ}35'$ E and latitude $32^{\circ}38' \sim 34^{\circ}31'$ N) is located in the southeast of Gansu. It is 221 kilometers from east to west and 220 kilometers from south to north. It has 9 counties.

Traditional dwellings in Longnan demonstrate particular locality and ethnic flavor. These dwellings fall into 3 categories: (1) The courtyard houses built of bricks and wood by the Han, Tibetan, Qiang and Baima Tibetan. This type of the courtyard houses is different from the courtyard houses in other places; it consists of 4 two-storey buildings. (2) Fortress constructed of stones by the Qiang people; (3) Wooden board house by Baima Tibetan and Qiang.

6.5.1 Wooden board Houses of the Qiang in Tanchang

In Tanchang County there is special nationality officially called Tibetan, who called themselves as “Di nationality,” but some scholars call them “Tanchang Tibetan,” “Tanchang Qiang,” or “Qiang Tibetan.” Actually they are the offsprings of ancient Di nationality, and absorbed many cultures of other nationalities in different periods, for example, Tibetan culture in the Tang, Dangxiang nationality culture in the West regime, and Mongolian culture in the Yuan Dynasty. Tibetans believe in Tibetan Buddhism, but they do not; they just believe in natural gods.

Our team made investigations of 25 wooden board houses in Tanchang. There are two types of wooden board houses: wooden board houses constructed of log in the forest areas; and wooden board houses with logs as the framework and the roofs covered with wooden board. Many white stones are put on the roofs because they worship the white color. This type of the house has 3 floors: the first floor is used for livestock, the second floor for living and worshipping and the third for storage.

6.5.2 Traditional Houses of the Qiang Nationality

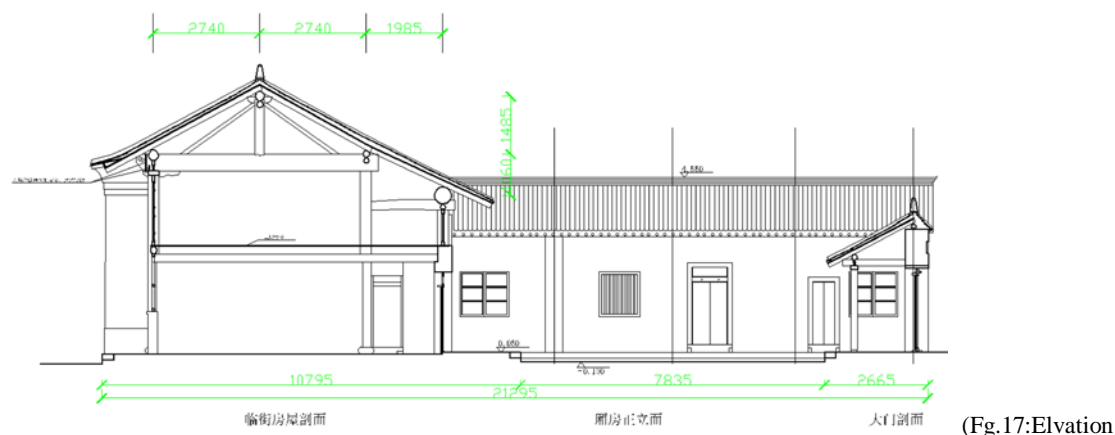
The Qiang nationality mainly live in the north of Sichuan Province and Wenxian County of Gansu. They worship mountains, rivers, trees and sky, especially white stones, as their gods, and have complicated religious rituals.

Our team made investigations of 8 traditional houses of the Qiang. All the traditional houses of the Qiang fall into two categories:

- (1) Fortress constructed of gallets. This type of fortresses are constructed on the

hillside close to the fountain. It is a 3-storey building with flat roof and stairs, in which 7 or 8 families live together.

(2) Wooden board houses(Fg.17). Wooden board houses of the Qiang nationality are the same as wooden board houses of Baima Tibetan in shape, structure, materials, and function. This is because the two nationalities shared the same historical and cultural origins.



(Fig.17:Elevation

of Wooden board houses in Yangdian Town, Liangdang County)

6.6 Tibetan Traditional Dwellings in Gannan

Gannan City (at longitude100°45'~104°45' E and latitude 33°6'~35°34' N) is located in the southwest of Gansu. It has 8 counties. Tibetans occupy 54% of its total population and believe in Tibetan Buddhism.

In history Tibetan traditional dwellings evolve from tents to *Makang* (cave dwellings) to earth or stone fortresses to courtyards. In the Ming Dynasty, Tibetan people began to live in the form of villages. Generally speaking, a village consists of one or several tribes. The center of the village is the Tibetan Buddhist temple.

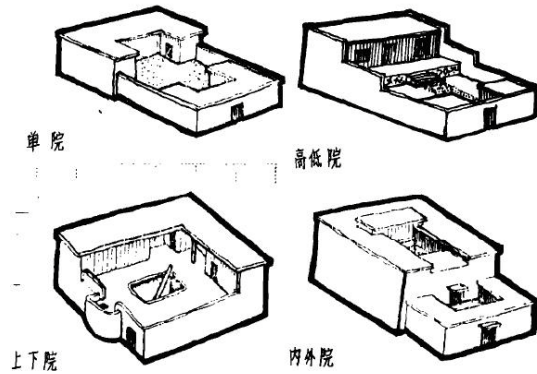
Under the influences of climate, natural conditions, economic models and religions, Tibetan traditional dwellings developed their own unique characteristics and styles: Majority of the traditional dwellings here are fortresses constructed of rammed earth and stones, and courtyard houses constructed of mud-bricks and wood, but there are also some different styles of dwellings; the ornaments and decorations of Tibetan dwellings takes on heavy Buddhist atmosphere.

Our team made investigations of 20 traditional dwellings in Ganan.

(1) Wooden board houses in Diebu County, where there is rich forest resources.

(2) *Makang* in such pasturing area as Xiahe County. *Makang* is semi-cave dwellings built against the hill with rammed loess walls on the other three sides and felts and branches of trees covering the top. Inside it, *Kang* lies on the left and kitchen stands on the right.

(3) Fortress constructed of bricks, stones, earth and wood in the agricultural area of Gannan(Fg.18). The frame of this type of fortress is constructed of wood, and its walls are rammed earth or mud-bricks. It has two storeys, the first floor is for livestock and the second for bedrooms, wing-rooms and hall for worshipping Buddha.



(Fig.18:Different style of Tibetan Fortress in Gannan)

(4) Fan-shaped Dwellings in Zhuoni County. This type of dwellings has five houses standing in a line in the north of the courtyard as the main house. It looks like a fan because the eaves of its middle three main houses are higher than the others by 0.7 meters.

VII. Destructions and Problems of Traditional Houses

7.1 Three Destructions

Since 1949, traditional dwellings in Gansu have suffered destructions for three times. The existent traditional dwellings just occupy 10% of the number recorded in original documents and files, such as county annals, investigation reports of antiques in 1940s by Republic of China administration.

(1) In 1950s, in the land reform, mansions of landlords, businessmen and officials confiscated by local governments were split and given to poor people who changed or rebuilt the mansions, which caused 30 % of these mansions to disappear.

(2) In Great Cultural Revolution (1966-1976) many traditional houses were pulled down or rebuilt, and many brick and wood carvings on these houses were destroyed, which caused 20% of these traditional houses to disappear.

(3) Since the reform and opening (1978), large scales of transformation of cities have produced disasters of traditional houses surviving from the previous disasters: many traditional houses have pulled down for developing real estate; traditional houses have been pulled down and replaced by archaized buildings. This has caused the disappearance of 40 % of traditional houses in Gansu.

7.2 Problems

In recent years, many traditional houses have been destroyed in the transformation of cities, towns and villages, and existent traditional houses in historic and cultural cities, towns and villages are faced with problems as follows:

(1) In the development of historic and cultural cities, towns and villages, some traditional houses stand alone without the matched historical and cultural facilities around, which makes these traditional houses lose their cultural and architectural values.

(2) Rebuilding of traditional structures is very popular. In the city construction,

many archaistic buildings appear while many traditional houses are destroyed. These archaistic buildings, built in the style of streets of the Ming and Qing Dynasties and cities of the Tang and Song Dynasties, are built in a rough way and have no sense of historical culture.

(3) For some historical reasons, in the preservation and protection of the traditional houses areas, there are many problems concerning the property rights, rights and responsibilities, and profits. Thus a slow and less lucre results from a long-term high investment. Therefore traditional houses areas have to make room for modernized “archaistic business streets,” which earns hugh economic profits for local governments.

(4)For the biggest economic value of the traditional houses in tourism, the non-renewable and fragile cultural heritage is developed as average tourist resources, which leads to the loss of its cultural and historical authenticity.

(5) New life styles and development of technology are damaging the traditional houses. This is mainly because modern architectural materials, structures and technology are taking the place of traditional architectural technology and materials.

(6) The natural damages of traditional houses. Traditional houses are mostly constructed of loess, mud-bricks, bricks and wood. The natural factors have affected their structures and facilities and caused damages in their ventilation, sannitation facilities, daylighting, and drainage.

(7) The natural ecological environments in which the traditional houses exist are suffering from the havoc. It shows in two aspects: the natural resources are brutally exploited; and the environments in which traditional houses exist are heavily polluted.

VIII. Conclusions and Suggestions

Through our investigations, we made systematic research of traditional houses in Gansu, classified the traditional houses and made detailed descriptions of characteristics and distribution of each category for the first time. No one has ever done such a complicated job. We drafted the suggestions of protecting traditional houses, propagandized the international concept and domestic laws in preserving traditional houses. We also drafted the report of traditional houses to local governments, which involved current conditions of traditional houses, problems and suggestions in their preseervation. By all the means, we attempt to draw people’s attention to the cultural and historical values of traditional houses.

The preservation and protection of historic and cultural cities, towns and villages have been attached great importance to by governments and people throughout the world. Since 20th century, international organizations, governments, academic institutions have made many laws, proclamations, and published numerous research reports concerned: “International Charter for the Conservation and Restoration of Monuments and Sites” (1964, Venice); “ICOMOS Charter On the Conservation of Historic Towns and Urban Areas” (1987, Washington) ; “Convention concerning the Protection of the World Cultural and Natural Heritage” (1972, Paris) ; “Recommendations concerning Protection of Historic Areas and Their Contemporary

Roles” (1976, Nairobi) ; European Charter of the Architectural Heritage (1975, Amsterdam).

In 2007, State Cultural Relics Bureau made an announcement “A Notice Concerning the Conservation of Vernacular Architecture,” which draws people’s attention to the fact that “Vernacular architecture with its unique locality, ethnicity, and rich type and styles is important part of Chinese traditional culture.” The values of historic and cultural cities lie in the fact that historic and cultural cities are part of richness, diversity, and integrity of cultural heritage. Governments at all levels must strictly act according to international charters and conventions, and laws issued by Chinese governments. The central value of traditional houses can be found in the rich information they carry with; the central value of historic and cultural cities, towns and villages can be found in their traditional structures and houses. Therefore, we must protect the historical and cultural authenticity in historical and cultural cities, towns and villages. Just as Feng Jikai said, “whatever was created in history is non-renewable.”

Considering the present conditions and values of the historic and cultural cities, towns and villages, we advance the following suggestions concerning the management and conservation:

- (1) Make a through investigation of traditional streets, lanes, house and structures;
- (2) Make regulations concerning conservation, utilization and restoration;
- (3) Make special conservation and utilization planning;
- (4) Make scientific and careful plan of the restoration and maintenance of traditional houses;
- (5) Make special research of traditional houses with unique characteristics;
- (6) Set up files of traditional houses and structures with special characteristics;
- (7) Draw plans, elevations and sections of traditional houses and structures with special characteristics for future.

IX. Bibliography

- An Yuyuan. “Traditional Dwelling Culture in the South of Gansu.” *Journal of Lanzhou Science and Technology University*. 2004(3).
- Bing He. “On the Hui Nationality Architectural Art.” *Gansu Society and Science*. 2001(5):117-119;
- Chen Jiaju. “Eight Suggestions concerning Protecting Historic and Cultural Cities, Towns and Villages.” *Changjiang River Construction*. 2002(1).
- Cheng Jingwei, Cong Wu. “Subject, Design and Craft of Brick Carvings in Linxia.” *Journal of Lanzhou Jiaotong University* (Social sciences edition). 2006(3).
- Gao Feng. “A Study of the Tibetan Culture in Tanchang.” M.A thesis. Lanzhou University, 2007.
- Hou Jiyao & Wang Jun. *Cave Dwellings*. Henan Science and Technology Press, 1999.
- Hou Qiufeng. “A Study of Traditional Houses in the Ming and Qing Dynasties in Tianshui.” M.A thesis. Xi’an Architectural Science and Technology University,

- 2006.
- Jing Qimin. *Rammed Earth Dwellings*. Tianjin Science and technology Press, 1988.
- Liao Lianhong. "Development and Environment of Cave houses on Loess Plateau." *Journal of Xi'an Jiaotong University* (Social sciences edition). 2000(3).
- Liu Li and Tong Su. "Investigation and Research of Feng Guorui's Old House." *Ancient Gardens Building Technology*. 2004(4): p57-60.
- Li Shaoming. "A Comparative Study of Cultures of Qiang and Baima Tibetan." *Journal of Yunnan University*. 2000(5).
- Lu Yuanding. *Chinese Traditional Houses*. South China Science and Technology Press, 2003.
- Liu Zhiping. *The Islamic Architecture in China*. Xinjiang People's Press, 1985.
- Ma Zhongliang. "A Study of the Islamic Decoration Art," M.A.thesis. Northwest Nationalities University, 2006.
- Nan Xitao. "The Characteristics of Traditional Houses in Tianshui." *Shanxi Architecture*. 2005 (5): p34-40.
- _____. "Gate Culture of Tianshui Traditional Houses." *Journal of Tianshui Normal College*. 2004 (3).
- Planning of Tianshui, the Famous Historical and Cultural Town. Designed by Tongji University. 2002.
- Qi Yan. "Protection and planning of Historic Towns." M.A thesis. Dongnan University, 2005.
- Sangji-cai-rang. "Tibetan Traditional Houses in the South of Gansu." *Journal of Northwest Nationality College* (Social sciences edition). 1999(4): p78-83.
- Sui Jianming. "Brick Carving Art in Linxia, Gansu." *Journal of Ethical Art Window*. 2003(5).
- Sun Dazhang. *Studies of Traditional Houses in China*. Chinese Construction Industry Press, 2001.
- Tang Yu. "Architectural Technology of Traditional Buildings in Gansu and Qinghai." Dissertation. Tianjin University, 2004.
- Wang Jinghui. "Concept and Approaches concerning protection of historic Areas." *Cities Planning*. 1998(3).
- Wang Lizhi & Zhang Zugang. *Chinese Traditional Houses*. Shandong Science and Technology Press, 1989.
- Wang Shufang and Jiguang Wang. "Historical Documentation of the Lutusi Family." *Journal of Northwest Nationality College*(Social sciences edition). 1999(1).
- Wang Wenquan. "On Culture of Cavehouses in the East of Gansu." *Gansu Social Sciences*. 2006 (3): 194-196.
- Wang Xu. "Studies of Traditional Fortresses." dissertation. Tianjin University, 2004.
- Wu Jiaqi. "Tibetan Traditional Houses in the South of Gansu." *Journal of Village Construction*. 1986(4).
- Wu Qigui. "Traditional Houses in Gannan." *Villages and Towns Construction*. 1986(4).
- Xiao Mo. *History of Chinese Architectural Art*. Cultural Relics Press, 1999.
- Xu Conghui. "On Houses of the Family Hu in Tianshui City." *Journal of Hebei*

- Cultural Relics*. 2004(5): p34-40.
- Xuemei Yi. "Pedigree of the Lutusi Family in Yongdeng." *Archives*. 2002(4).
- Yuan Wei. "Characteristics and Growth of Traditional Houses in the East of Gansu." *Journal of Railway Engineering*. 2001 (1):62-64.
- Zhang Tao and Yaoshan Zhu. "Traditional Houses in the Hexi Corridor: Clay Fortress." *Journal of Hexi College*. 2002(1): 106-110.
- Zhang Zhenguan and Gusheng Yang. *Traditional Houses*. Architectural Industry of China Press, 2004.
- Zhang Zugang. "Protection and Development of Historic and Cultural Cities." *Journal of Architecture*. 2006 (12).
- Zhao Yong & Cui Jianpu. "A Study of Historic and Cultural Village and Towns." *Cities Planning*. 2004 (8).
- Zhou Baoling. "Architectural Characteristics of the Hui Nationality Architecture." M.A.thesis. Chongqing University, 2007.