

## The Development Trend of Rural Dwellings in the Central Plains of China Taking County X in H Province as an Example

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### ARTICLE INFO

*Keywords:* Rural dwellings, Central Plains of China.

*Received* : 8 February

*Revised* : 11 February

*Accepted* : 25 February

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### ABSTRACT

Rural dwellings in the Central Plains region hold an important place in the history of ancient Chinese architecture, and the development of rural dwellings in this region plays a crucial role in the overall development of rural dwellings in China. Researchers have selected X county in Henan province, representative of the Central Plains region, as the subject of their investigation. They have categorized existing rural dwellings into three types based on their architectural forms, and selected three villages, Y, P, and L, to represent the minority, majority, and the direction of new rural development practices in the Central Plains region. Through field investigations, the researchers have analyzed the layout, overall situation, and representative factors influencing the development of dwellings in these three villages, and have classified and analyzed relevant graphical data. The aim of this research is to explore the commonalities of rural dwellings in the Central Plains region, and to provide guidance for future rural development.

### INTRODUCTION

Rural housing has always been an important part of China's socio-economic development and the lives of farmers. The construction and renovation of rural housing has always been a focus of government and social attention. Whether it was the "Chinese learning as the core, Western learning for practical use" concept advocated by Liang Shuming during the Republican period, or Yan Yangchu's rural construction philosophy of "Western learning as the core, Chinese learning for practical use", or the new rural construction and beautiful countryside construction promoted by the central government since 2005, and the current advocacy of rural

revitalization, the design of local rural areas in China has been characterized by government decision-making, design adapting to market demand, and passive participation of villagers. The initial trend of borrowing and imitation in design has been criticized by the academic community, resulting in a "one-size-fits-all" approach and loss of regional cultural characteristics. In recent years, policies regarding rural living environments have become more specific. The Central Document No.1 issued by the State Council in 2022 proposed to "implement the requirements of rural revitalization for the benefit of farmers and rural construction for the benefit of farmers, adhere to the principle of bottom-up

approach, village autonomy, and farmer participation, and launch a plan for rural construction actions, promote the development of the countryside in a targeted, powerful, and orderly manner," and implement the "action plan for rescuing old houses." The Central Document No.1 issued in 2023 proposed to "prepare guidelines for improving the appearance of villages, based on the local characteristics, regional features, and ethnic characteristics to enhance the appearance of villages." The implementation of these policy documents suggests that the issue of rural housing is a bottom-up matter, and it is necessary to protect ancient architecture and highlight the regional and unique characteristics of housing construction. These requirements have put forward higher and more specific standards and guidelines for the design of rural housing.

The Central Plains region is located in the central part of China and is an important geographical region in China. It is situated in the heart of the North China Plain and includes parts of Henan, Shanxi, and Hebei provinces. Historically, the Central Plains region has been the location of the capital cities and political and economic centers of many dynasties, such as the Qin, Han, Tang, and Song dynasties. There are still many archaeological sites of early Chinese cultures, such as the Xia, Shang, Zhou, and Yangshao cultures, in this region. In terms of industry, the Central Plains region is mainly dominated by traditional agriculture, with a small amount of industry and tertiary industry. In terms of economic development, due to the dominance of agriculture, the regional economy lags behind the southeastern coastal areas, but is still higher than that of western China. In terms of transportation, the Central Plains region is relatively flat and has advantageous geographic positions for railways, highways, and air transportation, making it a central hub in the region. Due to its history, geography, and economy, the Central Plains region has had many people going out and is open to accepting and applying other regional cultures. Rural housing construction plays a crucial role in the development of rural economy and society in China. With the process of modernization, rural housing

construction in China is undergoing significant changes. It is necessary to study the development trend of rural housing construction in China in order to better understand the current situation and future development direction of rural areas and provide guidance and support for rural housing construction in China. By studying the development trend of rural housing construction in the Central Plains region, we can provide reference and guidance for rural housing construction in other regions of China. From the perspective of cultural integration, due to its historical, geographical and economic reasons, the Central Plains region has a higher number of people going abroad and is more receptive to and able to apply other regional cultures. Rural housing construction plays a crucial role in the development of China's rural economy. It is of great significance for the local economy and social development. With the process of modernization, rural housing construction in China is undergoing significant changes. Therefore, it is necessary to study the development trends of rural housing construction in China. Researching the development trends of rural housing construction in China can help us to better understand the current situation and future development direction of rural areas, and provide guidance and support for rural housing construction in China. By studying the development trends of rural housing construction in the Central Plains region of China, we can draw references and insights for rural housing construction in other parts of China.

What are the excellent cultural elements in traditional rural areas of the Central Plains region that need to be inherited and developed? How should farmers' residences be designed? What are the trends in the development of rural housing in the Central Plains region and even in China as a whole? These are the main issues explored in this research. The researchers conducted qualitative research using methods such as historical literature review, field surveys, and classification analysis, and relied on the theory of imageology to address these questions. The main sources of historical literature review were local county chronicles, local literature and books, and local government websites. Field surveys were

conducted in over 20 representative villages in X County of H Province, with four of them selected as case analysis points and data collection sites. Classification analysis was based on the field surveys to analyze the various functional areas of rural housing in the region.

## METHODS

In the method of collecting data from various sources as much as possible theory and information related to research. These sources must be relevant and academically justifiable with scientific validation and validity such as books, journals, encyclopedias and other bibliographical materials.

## RESULTS AND DISCUSSION Rural Dwellings Development in The Central Plains of China

Some Chinese scholars have defined and delineated the Central Plains region. Fei Xiaotong defined the Central Plains region as the area within the Yellow River basin, including provinces such as Henan, Shanxi, Hebei, Shaanxi, and Shandong. He also proposed the concept of "Huaxia Civilization" and believed that the Central Plains region was the birthplace of this civilization. Based on research on geographical environment, natural geography, and human geography, Xu Zhongyue defined the Central Plains region as the plain area of the middle and lower reaches of the Yellow River, mainly including provinces such as Henan, Shanxi, Hebei, Shaanxi, and Shandong. Wang Guowei believed that the Central Plains region was the birthplace and inheritance center of traditional Chinese culture, mainly including provinces such as Henan, Shanxi, Hebei, and Shaanxi. Qian Mu believed that the Central Plains region was the birthplace and center of ancient Chinese civilization, including two cultural centers of the Yellow River basin and the Yangtze River basin. Among them, the Central Plains region in the Yellow River basin mainly refers to provinces such as Henan, Shanxi, Hebei, and Shaanxi. These scholars' definitions of the Central Plains region are generally broad and administrative regions usually include the four provinces of Henan, Hebei, Shanxi, and Shaanxi. Geographically, the region belongs to the middle reaches of the Yellow River.

The study of Chinese residential architecture originated from indirect sources such as literature,

archaeology, stone carvings, and paintings. The Yi•Xi Ci records the form of cave dwellings in ancient times. According to Si Cheng (1954), the "Peking Man" discovered by archaeologists in Fangshan County, Hebei Province, is considered the earliest physical evidence of Chinese residential and architectural history. As early as 450,000 years ago, the apes in the North China Plain had already used natural limestone caves to solve the problem of human habitation. Through the discovery of archaeological sites such as the Peiligang Culture Site, the Yangshao Culture Site, the Miandigou Site in Shan County, and the Dahucun Site in Zhengzhou, early residential structures in the Central Plains region gradually evolved from cave dwellings to ground-level buildings. Figure 1 shows the Zhengzhou Dahucun Site from around 5,000 years ago, where the villagers' houses were already built on the ground in parallel structures of four rooms. The roofs were sloped with doors, windows, and decorated with fine mud plaster on wooden walls. By the Sui Dynasty, the gable roof and eaves, with gentle slope and drip edges, had become a mature technique for roofing. During the mid-Tang to the Northern Song period, garden residences had become quite common among the wealthy.

## Central Plains' Residential Architecture Holds An Important Position in Ancient Chinese Architectural History

Table1. List of residential development in China before the Han Dynasty

period	Place	form	material	architectural considerations
Paleolithic (400,000 to 500,000 years ago)	Zhoukou Store, Fangshan County, Hebei Province	Natural cave/ artificial pit	limestone/ loess	unknown
Neolithic Age (8000 years ago)	Peiligang Village, Xinzheng, Henan	semi-burrowing	mud wall	Houses exist alone and live together
Yangshao culture period	Yangshao Village, Luoyang, Henan	Houses on the ground, with rows of	Thin wooden sticks, reed bundles, fine sand to wipe	digging caves in the highlands on the banks of the valley

		columns		
Longshan Culture Period to Shang Dynasty (5000 years ago-1122 years ago)	Both Henan and Shandong have	Above-ground buildings, courtyards, and palaces	Rammed Earth Construction	the settlement has a drainage system, the orientation of the building, and the indoor furniture
Western Zhou Dynasty to Spring and Autumn Period and Warring States Period	Henan, Shaanxi	The emergence of pavilions	The use of roofing tiles	political ideology and hierarchy, with palaces, temples or noble residences
Qin to Three Kingdoms (247 BC-246 AD)	Henan, Shaanxi	Three generations living together, the emergence of large mansions	wooden bucket arch	Get rich with etiquette, the front hall and the back bedroom, symmetrical left and right, high and open main hall, clear primary and secondary,

Source: Compiled by the author

According to archaeological evidence (see Table 1), Central Plains' region has held an important position in ancient Chinese architectural history since the discovery of human origins. From the Paleolithic era to the Three Kingdoms period, archaeologists have seen the evolution of human settlement in the Yellow River Valley from living in natural limestone caves to digging semi-circular and rectangular half-caves using natural loess soil, and then gradually transitioning to building houses on the ground, experimenting with various building materials such as stone, loess, wooden-mud mixture, and rammed earth until finally constructing houses with wood. Even after thousands of years, these forms of residential architecture can still be

found in the current rural areas of the Central Plains. (see Figure1) Early Central Plains' residential sites were often located near rivers to facilitate access to water for drinking and daily use. The hierarchy within a family and the concept of feng shui gradually emerged, with differences in the sizes and layouts of homes. As architecture developed, furnishings and interior decorations also became more elaborate, with the Longshan culture gradually adopting beds and tables, and the Han dynasty introducing chairs and the Tang-Song period bringing further improvements.

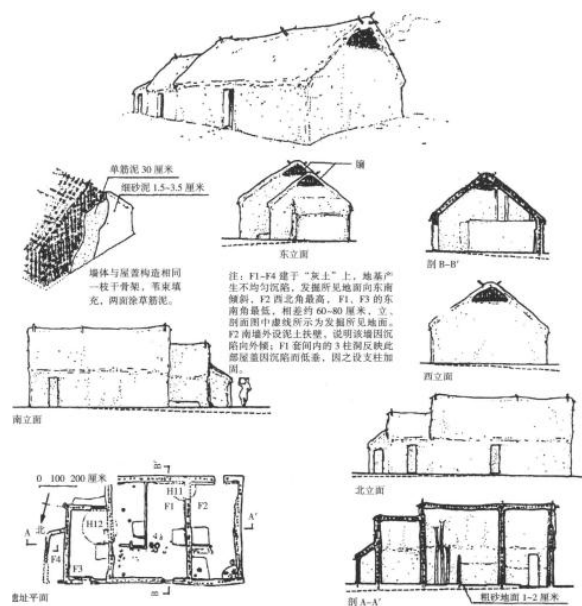


Figure 1. Ground-level residential buildings in the ruins of Dahe Village in Zhengzhou, Henan Image source: Yang Hongxun. Architectural Archeology Papers: 18

### Political turmoil led to the regression of local architectural development in the Central Plains region

From historical documents, it can be seen that during the Han, Sui, Tang, and Northern Song dynasties, residential architecture in the Central Plains region, especially in the Henan area, developed rapidly. During the Han dynasty, the residences of kings, nobles, and officials were flourishing, and gardens were built outside the courtyards. Ordinary people lived in single-story buildings with a structure using raised beams. However, during the Song dynasty, the region was

affected by frequent wars, causing people to struggle to survive. As a result, residential architecture in the Central Plains region did not develop, and with the killings carried out by the son of Emperor Hongwu from Nanjing to Yanjing (Beijing) during the early Ming dynasty, the areas between the Yangtze River and Beijing were devastated, and the destruction of buildings can be imagined. Therefore, the ancient buildings that remain in the Central Plains region today are mostly from the Ming and Qing dynasties.

### **The residential culture formed over thousands of year**

The earliest and most complete surviving book on residential architecture in China can be traced back to "The Yellow Emperor's Book of Residences." Its theory of residential management talks about the harmony between people and residences, people and nature, people and the universe. Ancient Chinese people were accustomed to placing their behavior in the context of the universe, believing that everything they did needed to be based on astronomical calendars, choosing the right time and space to avoid bad luck and seek good fortune. *The Yellow Emperor's Book of Residences* emphasizes that "a residence should have a good shape, use spring water as blood vessels, use land as skin and flesh, use grass and trees as hair, use the house as clothing, and use doors and windows as crowns and belts. If all of these can be achieved, it is a solemn and elegant affair, which is the highest good." This is a classic of Chinese traditional culture. The choice of a residence is based on the size of the courtyard, which is divided into twenty-four roads on all four sides, including the ten heavenly stems, twelve earthly branches, and Qian, Kan, Gen, and Xun. Qian rules three males, while Zhen, Kan, and Gen are all in the Yang position. Kun rules three females, while Xun, Li, and Dui are all in the Yin position. We can see that the earliest and most complete book in China explicitly established the relationship between residential architecture and people, residential architecture and the universe, and the construction of residential architecture should consider people, especially people of different genders and ages, the relationship between the current residence's Yang residence, ancestors' Yin residence, and the surrounding environment. In *The History of Modern Chinese Thought and Architectural History*, Lai Delin (2016) discusses

Professor Liu Dunzhen's "architecture and society" theory, which focuses on the evolutionary mechanism of residential architecture from a social development perspective. *The humanistic view of residential architecture* regards humanistic spirit and character traits as an organic whole with residential architecture, analyzing the relationship between migration history, dialect customs, ethical morals, aesthetic tastes, and residential architecture, emphasizing the crucial role of spiritual factors. These residential cultures have continued to this day, influencing current residential architecture.

### **Analysis of the Current Situation of Rural Dwellings in X County, Henan Province**

In China, contemporary rural areas are divided according to administrative regions based on the method published in the *China Statistical Yearbook* by the National Bureau of Statistics. The hierarchy is national-provincial-city-county-township-village (Junjie, 2006), and municipalities directly under the central government are not included in the rural statistics. Geographically, Henan Province is situated with the Qinling and Kunlun Mountains to the north and the Taihang and Dabie Mountains to the east and west, respectively. The "Pingze" mountain range in front, also known as the "Taishan" mountain, creates a favorable Feng Shui location, which has been called by *China National Geography* the *largest Feng Shui treasure land in China*. This land was once known as the "central capital of the world" by ancient people and is now known as the Henan Province in a narrow sense. Many historical sites mentioned above are located in this region. The geographical location is 115°E, 34°N, and the climate is temperate monsoon. In terms of industrial structure, Henan Province is primarily based on the primary industry, and in 2022, the total summer grain output of China was 147.39 million tons, of which Henan Province accounted for 38.13 million tons, ranking first among all provinces and cities in China, with the sowing area and unit area yield also being the first in China.

X County is located in the eastern region of Henan Province. From the perspective of population, it is situated in the Henan Plain area with a high population density. The population of each administrative village ranges from 1000 to 2500 people, and the area of residential land is not more than 200 square meters per household, with an

average of less than 50 square meters per person. The primary industry of X County is rural planting, and its economic level is below the middle level in Henan Province. According to data from the National Bureau of Statistics, the urbanization rate in 2022 was 65.22%, which was more than 20 percentage points lower than the national average. The urbanization rate of X County is even lower, reaching 39.7%. At the same time, the statistics show that X County has a large proportion of rural population. From a historical perspective, X County's village was poor and underdeveloped due to geographical and historical reasons, manifested by the threats of natural disasters such as floods, droughts, and wild animals. In recent years, the national support policies for rural areas have focused on supporting and promoting technology in the three areas of agriculture, rural areas, and farmers. Similar to other provinces and cities in China, Henan has developed its unique rural industries based on its characteristic resources and comparative advantages, actively developing "one village, one product", "one township, one product", and "one county, one industry". The agricultural structure is continuously optimized, and the development of advantageous specialty industries is fast-paced.

### Analysis of rural dwellings in County X with representatives of three types of local villages

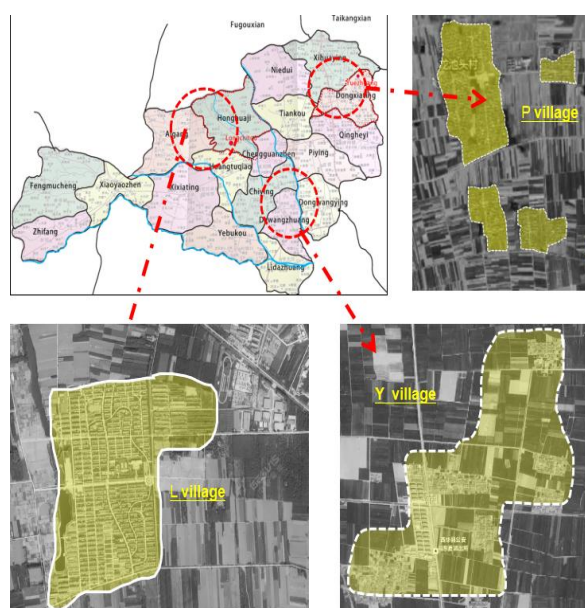


Figure 2. Location map of county X where the project research village is located. Source: Drawed by the author

Table 2. A list of the situation of the three representative villages

	Y village	P village	L village
construction age	Single-story buildings in the 1980s and 1990s	In the past ten or twenty years, the construction of new houses has been carried out, combining the old and the new	A new community of government unified planning and construction
Basic Information	It is 2.5 kilometers away from the town to which it belongs, with a population of 2479 and an area of 520 mu.	It is 5.6 kilometers away from the town to which it belongs, with a population of 2006 and an area of 410 mu.	It is 3 kilometers away from the county seat, with a population of 4043, and the community covers an area of 900 mu.
Economic sources	Migrant work + local farming	Migrant work + local farming	Migrant work + local farming
industry	traditional agriculture	Traditional Agriculture/Rural Tourism/Special Agricultural Products	Traditional agriculture/seeding planting/rural tourism
Living Space	Single building, poor lighting and ventilation	Self-built house/multi-storey	Self-built house/three floors
kitchen	Single building, can burn production straw	overall kitchen	In the annex of the whole building, the whole kitchen
bathroom	stand-alone building	independent building	In the annex of the whole building, the whole bathroom
sewage treatment	Self-built drainage ditches are	into the village sewer	into the village sewer

	discharged outside the building, and toilets are used		
Water Electricity	electricity, natural gas	running water, wifi, natural gas,	Tap water, grid, natural gas
vacant land	grow vegetables, grow flowers, cultivate	grow vegetables, grow flowers, cultivate	no idle land
Greening inside the homestead	Peach, plum, pomegranate and other fruit trees	partially planted	There are many vegetables, but there is no place to plant trees
Road	The main road cement is hardened, other	A large area of hardening, a small amount of dirt road	A large area of hardening, a small amount of dirt road
brighten	only two street lights	Street lights at 20-30m intervals	Street lights at 20-30m intervals
greening	Self-planted fruit trees/few	Common tree species/medium quantity	Valuable tree species/a large number
culture	Village's own culture	not yet organized	Nostalgia Memorial Hall, Party and Mass Culture, etc.
entertainment	temporary stage	community organization	Square Street, Food Street

Source: Compiled by the author

According to the electronic satellite map of BIGMAP GIS Office, the villages that need to be researched are located in the northern region of X county. Y village is situated in the border area between X county and H county, far away from X county, but close to D town. L village is located in H town adjacent to X county, with a distance to the county and town that are relatively equivalent. Both Figure 2 maps are updated satellite maps from 2019. Based on the satellite maps and on-site investigation pictures, field research will be conducted on the villages in the project research area, including seven

natural villages in Y village, four in P village, and one new community in L village. From the X county regional map in the upper-left corner of Figure 2, it can be seen that there are three rivers and two highways leading to the center of X county, which is only a 15-minute drive to the city. There are nine towns and ten townships under X county's jurisdiction that lead to the city center. The three target villages for the project research are located in different townships (see Table 2). Among the three target villages in Y village, the furthest one from the X county government was mostly built in the 1980s and 1990s, mainly consisting of single-story buildings. P village is a comprehensive old village with new houses and old buildings from the last century that have undergone simple renovations and exterior treatments. L village is a new community formed by integrating several natural villages after demolishing the original villages. In terms of village scale, all three villages have a population of over 2,000 people, and residential land occupies a large proportion. Like most rural areas, the main source of income for Chinese farmers today is migrant work. In heavy agricultural provinces like Henan, villagers engage in agricultural production, but income from agriculture alone is not high, and migrant work remains the main source of economic income and expenditure.

### Disorder and Order of Rural Houses in County X

From the perspective of residential architecture styles in villages (see Figure 3-5), the village areas of Y, P, and L villages exhibit a state of disorder. This disorderly state is based on the village construction that relies on the grid-like Chinese character "井" as its road network foundation. According to the criterion of "five households in one alley, three alleys in one street," the location of the main streets was planned. In Figure 5, the dashed line in pink that divides the two natural villages in the middle is the main street of these two natural villages, and the three blue dashed lines along this line represent the three alleys in each village. The width of the streets is 6-8 meters, while the width of the alleys is 3-5 meters. From the perspective of the

village's overall layout, the original village only had village buildings, and each village's focal point was spontaneous. There were no significant signs in Y village, and the public activity area in the natural village was only a big tree. In the later development of P village, a village activity center and a public tourist area were built for residents to use. Due to the larger population base, L village established a new community with a much larger number of residents and a larger scale than Y and P villages. The spatial function and layout seen from the plane are also more similar to urban communities.



Figure 3. Plane layout of project research Y village  
Source: Drawed by the author

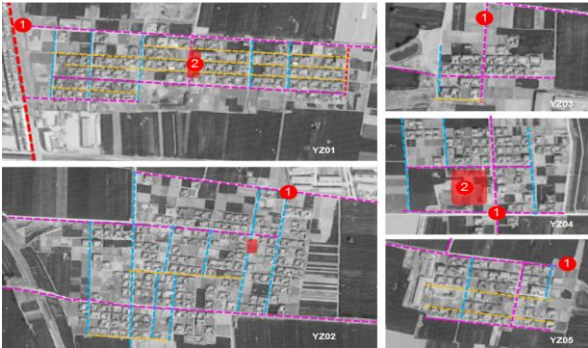


Figure 4. Plane layout of village P in project research  
Source: Drawed by the author



Figure 5. Plane layout of project study L village  
Source: Drawed by the author

From the overall spatial layout, L village includes an entrance plaza, commercial street, community plaza, residential area, party and government service center (formerly the village committee), nostalgia culture museum, community information board, community residential area, community kindergarten, community medical facilities, supporting markets, various factories, and so on. In terms of residential areas, industrial development, cultural construction, entertainment and fitness, commercial entertainment, education, and medical care, L village follows the development of rural revitalization, eco-living, social development, and affluent living. In terms of the form of plane layout, the construction of community houses is relatively concentrated, and auxiliary functional spaces are mainly located along the central axis. Similar to Y and P villages, L village is a long north-south and short east-west construction area, with houses built in clusters of five individual buildings and one alley. The residential area is relatively concentrated, and the alley roads are wide, reaching 8-10 meters. The plane layout also shows that the community green coverage rate in L village is higher than that in Y and P villages.

From the aerial view of Y village in Figure 6, we can see that the buildings in the original residential area of Y village are generally low-rise and single-story, with roofs made of uniform tiles (a material that has existed since the ancient Han Dynasty in China). Due to the age of the buildings (most of them are 30 years old), even if there are tiles of other colors, they have been uniformly turned into shades of gray due to mud and dust. The buildings are divided into primary and secondary structures, presenting a courtyard with different heights, which are integrated into a village with a harmonious mix of high and low. For example, in the close-up view of Figure 7, the double-ridged eaves with a projecting roof and white lime outline represent the main building, which is the living room in the A-style diagram on the right side of Figure 6. The adjacent low-rise long tile corrugated building is a tool room or bathroom, while the red-tiled building is a tool room or kitchen. In the gap between them, there is

also a low-rise building, which may be a shed for chickens or other purposes. From this picture, we can see that one residential plot has four or even more levels of building height, and there are gray small tiles, rectangular single-story tile corrugations, and square red tiles as building materials. The main building materials are also composed of green and red bricks. The planting of disorderly poplar, persimmon trees, poplar trees, green vegetables, and the placement of construction waste and production waste on the dirt road outline an unordered village scene in the central plains region.

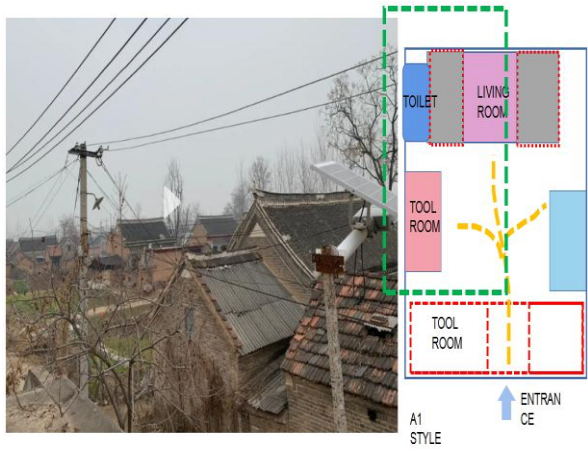


Figure 6. The aerial view of Y village in project research  
Source: Drawed by the author



Figure 7. Street map of Yvillage in project research  
Source:Photographed by researchers

From the street map of the village in Figure 8, we can see that the terrain of the P village studied in this project is relatively flat, with both the village and the crops situated on the same horizontal line.

Due to the different orientations, heights, and widths of the courtyard buildings in P village, even single-story buildings exhibit a varied and well-placed morphology. Additionally, the village's colors are diverse, with variations in red, gray, and green bricks. The facades of new buildings in P village have already been converted from planar to vertical, and more residents prefer two- and three-story residential houses. As shown in Figure 9, the new community in L village is entirely composed of three-story residential houses, featuring courtyards, tool rooms, garages, and storage for agricultural vehicles, among other diversified functionalities.



Figure 8. Street map of project research Pvillage  
Source: Photographed by researchers



Figure 9. Street map of L village in project study  
Source: Photographed by researchers

The development of rural housing in X County mainly presents three states. The first type is represented by Y Village, which represents the demand for well-preserved rural agricultural housing and has the autonomy to lead the use of idle land. This type of architecture is mostly multi-story, with independent courtyard layout groups using red or blue bricks. The main building functions as a hall house, with complete architectural decoration patterns, while tool rooms, kitchens, bathrooms, and other buildings are relatively simple, conforming to the clear hierarchy of traditional Chinese architecture. Such villages like Y Village are rare in X County.

The second type is represented by P Village, where self-built houses are prevalent. Wealthy villagers who work outside will choose to build their own houses on the land assigned by the government. The government only regulates the scope of land use, and does not interfere with other aspects. Therefore, the appearance of the village is constantly changing, with more new buildings being multi-story and mostly made of brick and concrete structures. The interior layout tends to be modern and urbanized. Villages like P Village account for the vast majority of X County's villages, even exceeding 95%.

The third type is represented by the government-led new community construction, with L Village as the representative. There are about ten new rural forms like this in X County. L Village has the largest investment and the most government-led and participation in the new community. It is relatively mature in architectural design, combining the villagers' demand for modern housing with their agricultural production needs. It is particularly representative in creating a public environment. However, its investment scale is too large, and it is a poverty-stricken village designated by the provincial government, which lacks replicability. These three types of villages represent the housing forms and current situation of all rural residences in X County.

## **Analysis of the development trend of rural dwellings in X County**

From the three representative rural housing forms in County X, we can also see that the current rural housing is developing towards modernization and urbanization, mainly in the following three aspects:

### **Urbanization of Rural Building Appearance**

In the research, it is easy to find that many urban buildings have appeared in rural areas, from building materials to exterior appearance to usage. In Y village and L village, the self-built housing models tend to be more like urban buildings and living environments. In terms of existing landscape plants in the villages, the plant matching and public space environment throughout the village have replicated the housing models of urban communities, and the original local plants have been uprooted. Each and every plant is abandoning the original local plants and using landscape trees commonly found in urban spaces. In terms of building structures, most self-built homes have overturned local traditional structures and adopted new reinforced concrete structures. In terms of building form, the exterior appearance of rural housing tends to be similar to the "villa" style found in urban buildings, and the interior space structure leans towards the layout of urban buildings. In terms of interior furniture arrangement, the living style of rural interiors tends towards the "several rooms and halls" layout and furnishings of urban interiors. The interior and exterior of China's rural buildings are developing towards urban housing, and how to adapt rural housing and environmental design to the development of modern society, and how to update and transform rural housing through which strategies are important issues in China's rural revitalization strategy. As shown in Figure 10, the emergence of new technologies and new techniques has brought new opportunities to rural housing. The left picture shows the modular housing with mixed structure, and in P village, four or five households use this construction method in the village under construction. There are ready-made module processing factories, and all processing and production work is completed inside

the factory and numbered. Installation and stacking are done on site using a crane, and on-site assembly. This technology is now quite mature and widely used. Another type is the on-site production shown in the right picture, which can be more sturdy by adapting to the terrain conditions and other forms of on-site foundation laying.



Figure 10. Urbanization Building - P Village  
Source: Photographed by researchers

#### Mix-and-match design of indoor environment

Compared to traditional rural homes, newly constructed rural homes generally adopt modern furniture and decoration styles. This phenomenon is common in the interior design of new housing in both P village and L village, as shown in Figure 11. Integrated furniture, bathrooms, and kitchens have become the mainstream of interior layout in the new era of rural homes.



Figure 11. Modern Interior-P Village  
Source: Photographed by researchers

L village is a pilot community for the new rural construction in X county. Since the completion and use of the first batch of houses in 2014, it has been almost ten years. During these ten years, many residents have planned for years on how to decorate their new homes to suit their living needs, and interior hardening has become a common phenomenon. Some residents even tile all the walls, including the living room, and they say, "This is how it's done in the south." For ordinary households, one can see tiles covering the walls from the stairwell to the bedroom walls, and even the floors. As shown in Figure 11, the modernization of the interior in many rural homes in X county is already evident.



Figure 12 Mash-up interior -Village Y and Village P  
Source: Photographed by researchers

Y village and P village have two main styles of bathroom design, new and old. As shown in Figure 12, the new-style interior bathroom layout integrates functions such as defecation, hand washing, showering with hot water, and washing clothes. Regarding excrement, there is a separate feces storage pit, which residents usually clean and pour

into their own vegetable gardens for fertilization. There is another style, as shown on the right side of Figure 12, which is a common toilet style in the original Yue village residential area. The toilet is surrounded by a single red brick or green brick wall, combined with the surrounding buildings. This toilet only provides defecation functions, and the excrement is not put into a pit, but a shallow pool with cover materials such as ash, sawdust, or dry soil, as shown in the blue square in Figure 2. The toilet is equipped with a shovel and a waste paper basket. The shovel is used to cover the excrement with cover material and remove it to the yellow area in Figure 2. When a certain amount of excrement is accumulated, residents will use a bucket to take it away and pour it into their own vegetable garden for fertilization.

In terms of cooking, traditional earthen stoves for cooking with a pot over an open flame are still prevalent in the kitchen. A small number of households have installed natural gas stoves. The most common form of earthen stove in Y village is the one that burns straw as a source of fire, as seen in Figure 12. This type of earthen stove is mostly made of cement blocks and covered with white tiles. There are two pots and a fire source on the stove. A small amount of corn stalks used for cooking are stacked in the kitchen, and the rest are stacked in the courtyard. As there is tap water in the village, there are not many water storage containers in the kitchen. The large barrels commonly used in rural kitchens for storing drinking water in the past are now used for other purposes. The kitchen in the lower left corner is a mixed kitchen with both a gas stove and an earthen stove. Many condiments are displayed in the cabinet on the wall, and cooking utensils are hung on the front wall. The kitchen walls are yellowed and blackened due to long-term oil fumes.

### **Pay attention to the creation of public space and environment**

In addition to the buildings themselves, the environment in which a village is constructed is also crucial. This environment is a process that starts from within and moves outward. A comparative study of Y village, P village, and L village based on the

statistical data in Table 2 shows that at the entrance to the villages, we can see that the original settlement in Y village, like many other natural villages in the area, is a centralized cluster of buildings that can be reached directly from the main road or the fork in the cement road. Typically, there are no signs or any directional items in natural villages, and even maps and navigation cannot display them. Only the most primitive way of asking people can help you navigate. The village entrance of Y village is a four-meter-wide cement road that leads directly to the residents' homestead without an open plaza or public space. P village has focused on developing tourism and has already established a village signage system and named its main roads. L village has built a village entrance plaza on the easternmost side of the village, with a stone wall sculpture of "two dragons playing with a pearl" and a brief introduction to L village on the back. After the circular plaza is the archway commercial street, with prominent displays of "National Civilized Villages and Towns" and "L village community" at the entrance. The entrances of the three villages show the differences between unknown, known, and famous villages.

In terms of public squares, the seven natural villages in Y village do not have a significant awareness of public space. If public space is to be added, it is the unused areas in front of and behind residents' houses. The centralized area of the village is mostly located in the middle of the village, and there are not many people gathered at the village entrance. P village has a public square with basketball hoops, public restrooms, and a sales office. The public square does not have seating for residents, and its basic function during the daytime in summer is for drying crops and clothes. After sunset, it becomes a place for residents to enjoy entertainment and build community, such as square dancing and other recreational fitness activities. Therefore, facilities such as basketball hoops, table tennis tables, and fitness equipment are installed to meet residents' needs. The public area of the new community in L village is larger, and the area on the west side of the new community is mostly public areas with more functions, such as the county's

Harvest Festival, farmer's Spring Festival, large-scale tug-of-war competitions, night markets, and daily entertainment and sales. The public squares in these three areas integrate public activities and the implementation of entertainment and cultural activities. The new community in L village also has an independent rural memorial hall for cultural development, where villagers donate their unused antiques such as televisions, flashlights, and agricultural vehicles for indoor display, providing cultural education and publicity for local elementary school students and visitors. At the same time, under the leadership of the village committee, various evaluations are regularly held, such as outstanding party member families, good daughters-in-law, and good neighbors, to pay attention to the residents' spiritual state.

Entertainment culture serves as a source of relief in the daily lives of residents in the original settlement of Y village. Singing traditional operas is a common form of entertainment in the local rural community. During important celebrations and festivals, individuals or government departments organize large-scale opera performances for the community. As there is no designated space for building a stage in the original settlement of Y village, the performances take place in public spaces within the village, particularly in the undeveloped areas of the new community. Apart from constructing the stage, providing accompanying food and snacks is also an essential aspect of the performances, which attract a large number of local villagers, forming a "gathering" or "meeting" of considerable size. (In the past, public entertainment activities were usually held only in the townships.) In contrast, public entertainment and cultural activities in the new community of L village are more politically oriented. Due to its proximity to the county seat and being a successful provincial-level model for new rural construction, the venue is large enough and attracts a significant number of people. As a result, the frequency and number of public entertainment activities are higher, and its local influence is stronger.

Based on field research, a review of the three residential areas from hardware facilities to supporting facilities was conducted. From the perspective of living space, the original settlement of Y village consists of older single-family homes, with no natural gas installed and only access to tap water. In contrast, the new community has more complete facilities for water, electricity, and natural gas, and residents do not need to burn firewood or dig wells to obtain water resources. In terms of sewage treatment, the domestic wastewater of the original settlement of Y village is directly discharged from the building to the ditch, then into the pond in the village. However, in the new community, there is hardly any visible domestic sewage. Y village and P village have more unused land, and many residents have taken the initiative to develop vegetable gardens, flower gardens, and livestock farming. The new community of L village does not have any idle land, but the courtyards of the new community in L village can also be used for vegetable cultivation and livestock farming. In terms of idle land distribution, there is no idle land available for cultivation in the new community of Y village.

According to field research, three residential areas were sorted out from hardware facilities to supporting facilities. From the perspective of residential space, the original residential area in Y village is relatively old, and there is no natural gas installed in the village, but there is tap water. The facilities for water, electricity, and natural gas in the new community are more complete, and residents do not need to burn fire or dig wells to obtain water resources. Regarding sewage treatment, the domestic sewage in the original residential area of Y village is directly discharged from the building to the ditch, and then to the pond in the village. In contrast, there is hardly any domestic sewage in the new community.

Both Y village and P village have a lot of idle land, and many residents independently develop planting, flower planting, and animal husbandry. The new community in L village does not have any idle land, and the courtyards in the new community can also be used for planting and breeding. In terms of

public supporting resources, the original village residential areas have the lowest hardening rate, and the village only has a main road leading to the "village-to-village" road. The road greening is relatively low, and there are only one or two street lamps in each natural village, so villagers have no outdoor activities after dark. The lighting project of the new community is relatively well done. For example, the lighting of the L village community, coupled with barbecues and dining at night, can operate until around midnight in summer. However, this is also a minority phenomenon and not the mainstream among villagers.

In terms of public medical, health, and education, the rural health in the original residential area of Y village relies entirely on self-awareness and the supervision of village leaders. The medical service point and education are under the jurisdiction of the new community in Y village. Since the service population is relatively small, and the village is relatively close to the town, common illnesses are treated in the local village health and medical center, and general diseases are treated in the town and county hospitals. In addition, all villagers participate in the new rural cooperative medical insurance. The reimbursement rate for hospitalization is around 60%. Villagers who need to be hospitalized basically choose to seek medical treatment and complete hospitalization procedures in Xihua county town. In this regard, the functions and basic configurations of the medical and health rooms in the new communities of Y village and L village are similar, and there is no difference due to the number of people. In terms of education, these two new communities also have basic functions. Both the new community in Y village and the new community in L village are equipped with kindergartens and primary schools, serving preschool children and primary school students in the surrounding areas. Junior high school students will choose to go to the township for further education.

## **Discussion on the Countermeasures of Rural Dwellings Development in X County**

Respect the cultural self-confidence of the village

After the contact between urban and rural cultures, people often simply oppose urban culture and rural culture with labels such as advanced and backward, civilized and ignorant. This view is not only held by urban residents, but also by many farmers themselves. Because China's rural culture is a traditional culture that emphasizes experience and is centered around "home," the elders have always been the dominant voices in cultural discourse, passing down the core values of rural culture through their identity and maintaining people's identification with rural culture. With the acceleration of urbanization, more and more young people are attracted by the material culture of the city, saying goodbye to their original production methods and living environments. They are eager to pursue material interests and become consumers of urban culture. The original rural culture endowed farmers with ontological and social values for their survival. The so-called ontological value reflects how farmers perceive the meaning and value of their lives, which is the basis for their survival. The social value reflects the relationship between individuals and society.

Looking back at the development of architecture over thousands of years, we can see that in each major stage, under different political and economic conditions, and with the progress and invention of new technologies and materials, craftsmen of each generation have continuously made inventions and creations. It is certain that each generation of craftsmen has been able to use their own traditions, innovate, and create new types to solve new problems that arise in life and consciousness. With this new creativity, each generation has continuously pushed Chinese architecture forward, achieving glorious achievements. Whenever new technologies and materials appear, ancient craftsmen are able to flexibly grasp these new technologies and materials, making them serve the requirements of artistic

design, and creating innovative techniques and styles that develop from tradition.

### **Respect the wishes of residents and strive for guidance**

During the period of China's reform and opening up, rapid economic development and urbanization have intensified, and new technologies and crafts have occupied the minds of villagers. After trying or using new types of household appliances for convenience and efficiency, many people's consumption concepts have also changed. In the views of young people, the new urbanized affairs are good and can be applied, while older people have become accustomed to preserving dietary and housing habits from a few years ago and cannot adapt to modern living conditions quickly. The mixing and matching style adopted by more people reflects their aspirations for a better life, as well as their recognition of the inherited living environment. In addition, indoor space belongs to the area that residents can independently control, and a mixed and matched interior living style can be reasonably and effectively guided and planned on the basis of respecting the wishes of users.

### **The cultural nature of supporting facilities in rural areas**

Rural public spaces are the most direct form that reflects the unique cultural characteristics and differences among different villages. For example, the planning of the new community public space in L village takes L village's historical culture as the starting point and propaganda point of the design. The dragon pattern, a decoration pattern that could only be used in the imperial palace in ancient times, is applied to ordinary people's living spaces. The nostalgia museum describes the new community building patterns, highlighting their unique shapes and historical and cultural characteristics. Besides, political factors also serve as a dominant factor due to the poverty alleviation policies of the Party and the government. The formerly impoverished villages have undergone significant improvements in their living environment. The villagers now live in their

ideal small Western-style buildings, and many decorate their courtyards and indoor spaces according to their own economic strength and aesthetic standards. Artists attempt to reflect the emotions towards the countryside through design practices by rural residents, seeking to resonate with more people and encourage them to return to the countryside to re-examine the relationship between Chinese rural areas and China's modernization development.

### **CONCLUSION**

Rural areas are a living community, and rural houses bear the overall environment of human survival and residence. From the ancient cave dwellings used for warmth, fire prevention, and protection against wild beasts, to modern western-style buildings for entertainment, leisure, and fitness, the architectural form has undergone changes, and emerging materials are increasingly prevalent. The changes brought about by technology are a new cultural turning point for rural living. This point requires us to combine the history of ancient Chinese residential architecture with local residential lifestyles and dietary habits, and on the basis of respecting the villagers' wishes, combine new technologies, new techniques, and new methods to give play to the originality of architectural cultures in various regions, and build a living environment with rich, healthy, positive, and profound cultural connotations.

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