

# Analyzing the Living Environment of Asukohani in Yunnan in Chinese Minority Culture from the perspective of Entity Detection and Architecture

Song, Xinwei\* · Zhu, Weixin\*\* · Seong, Dongkwon\*\*\*

The Azheke area in Yunnan, a typical region for Hani mushroom houses, is experiencing significant changes due to rapid economic development and the industrialization of housing. The transformation of traditional flat fortress Hani houses into mushroom houses reflects the Hani people's wisdom in solving their housing needs. Documenting these architect-free structures built by the Hani people is the aim of this study. The Hani mushroom houses in Yuanyang, represented by those in Azheke, have garnered attention from society and academia due to their uniqueness. The internal space and living conditions of these houses require in-depth, long-term research. This study focuses on Hani residences, aiming to comprehensively analyze the architectural space and current lifestyle of Azheke Hani mushroom houses. With rapid urbanization, some mushroom houses are being transformed into guesthouses for commercial operations, leading to the gradual disappearance of traditional Hani mushroom houses. However, the living styles and spatial utilization of Azheke Hani mushroom houses reflect the wisdom of the Hani people and offer valuable insights for the future development of these and other traditional Hani mushroom houses.

Keywords: Traditional Chinese Residences, Ethnic Minorities, Azheke Hani Ethnic Group, Living Styles, Current Living Conditions

본 연구는 아스코 (Azheke) 지역은 중국 윈난성 하니족 버섯가옥의 대표적인 지역이다. 전형적인 버섯가옥과 함께 정경대, 우코프 등 지역도 하니족 가옥이다. 경제가 급속히 발전하고 주택산업화가 진행되면서 많은 전통 하니족 가옥이 크게 변했다. 기존의 돌로 만든 토치형 하니족 민가가 버섯집으로 변화하는 건축형태 자체도 하니족이 자신의 주거상태를 해결하고자 하는 지혜를 반영한다. 그러나 하니족이 자신의 능력으로 건설한 건축가가 없는 건축물들을 객관적으로 기록하는 것이 본 연구의 목적이다. 윈난성 원양의 아자코 지역을 대표하는 하니족 버섯집은 일정한 특수성이 존재하기 때문에 근래 사회 및 학계에서 주목하고 있다. 하니족 버섯집의 내부 공간 모습은 과연 어떻게? 거주자의 거주 현황은 구체적으로 어떻게? 이 모든 것들은 장기적인 연구가 필요하다. 본 연구는 하니족 민가에 착안하여, 아스코 지역의 두 가지 사례 하니족 버섯집으로 대표되는 건축공간과 생활양식 현황과 구성요소에 대한 전면적인 분석을 시도한다. 도시화가 급속하게 진행됨에 따라 하니족 버섯가옥도 상업 개발의 영향을 받고 있다. 일부 버섯가옥은 이미 민박으로 전환되어 상업적으로 운영되고 있다. 전통적인 하니족 버섯가옥은 점차 사라지고 있다. 그러나 아스코 하니족 버섯집 민가의 주거형태와 공간이용은 하니족 민가의 지혜를 충분히 나타내는데, 이러한 것들은 아스코하니족 민가의 미래 발전 심지어 더 많은 전통 하니족 버섯집의 미래 발전에 많은 참고가치가 있다.

**|주제어|** :중국 전통민가, 소수 민족, 아스코하니족, 거주 방식문화, 거주 상황

\* Assistant Professor, Academy of Arts & Design, Tsinghua University, China, E-mail: xinwei@tsinghua.edu.cn), 1st author

\*\* Ph.D. Department of X-Cultural Studies, Kookmin University, E-mail: weixin1211@naver.com), The First Co-Author

\*\*\* Assistant Professor, Department of X-Cultural Studies, Graduate School, Kookmin University, E-mail: dongkwonseong@kookmin.ac.kr), corresponding author

## I. Introduction

Villages are a fundamental form of human settlements created to adapt to basic living conditions, where various production and living activities take place. Across the world, the vast expanse of village spaces has given birth to a rich variety of residential architectural styles, representing the crystallization of the wisdom of working people through the ages.(Zhang 2017; Hu 2017).The Hani ethnic group residences in the Azheke area of Yuanyang County, Yunnan, are a prime example of residential architecture naturally formed in traditional villages. Commonly known as "mushroom houses," they are named for their shape, particularly the thatched roofs resembling mushrooms. These Hani mushroom houses are typically three-story structures with wooden frameworks and earthen walls, characterized by their simplicity and lack of decoration. The mushroom house is one of the most distinct external representations of the architectural culture of Hani residences in Yuanyang. This ecological architectural style evolved as the Hani people migrated to the subtropical Ailao Mountain region. To adapt to the high-temperature and rainy conditions of the mid-mountain zone, they modified the traditional flat fortress-style (Pingdiao style) architecture. In this adaptation, a roof frame is erected on the earthen flat top of the flat fortress-style building, and this frame is then covered with a four-sided thatched or straw roof. This design reflects the Hani people's ingenuity in adapting their housing to the local environmental conditions.(Tang 2015; Yang 2015).The mushroom house features a unique roof design, characterized by a four-sided slope, short main ridge, and steep pitch. This architectural choice is influenced by the geographical location of Hani villages: Yuanyang County is situated in a mid-to-high mountainous area with abundant rainfall, exceeding 1000 millimeters annually. The mushroom house consists of a flat-roofed first floor and a sloped-roof second floor. From a distance, these houses resemble mushrooms emerging from the mountains, hence the colloquial name "mushroom house." This design efficiently manages heavy rainfall, showcasing the Hani people's adaptation to their environment.(Fang 2012; Yang 2012).

Regarding the origin of the mushroom houses, an ancient Hani song titled "Settling in Anzhai" narrates the story as follows:

先祖又去到惹羅山上，瞧見大雨洗過的山坡，  
長滿紅個綠個的蘑菇，蘑菇蓋護住了柱頭，  
是大雨淋不着的式樣，蘑菇蓋護住了柱頭，  
是大風吹不着的式樣，惹羅先祖瞧着了，哈尼寨房的式樣有了。

The ancient Hani ancestors went up to the Jieluo Mountain. They saw the hillsides which were washed by heavy rain. The hillsides were covered with red and green mushrooms. The mushroom caps shielded the tops of the pillars which stop the strong wind and heavy rain. The mushroom caps protected the bases of the pillars. Seeing this, Jieluo ancestors drew their inspiration for the design of Hani village houses.

Hani ethnic group houses in the Ailao Mountains typically consist of three floors, adapted to the humid subtropical mountainous conditions of Yunnan. Due to high humidity and dampness from the ground, the first floor, which is directly above the ground, is not suitable for living and is often used for livestock. which helps keep the stored grains and other items dry and well-preserved. Many Hani households also build side rooms, and those with double side rooms form a courtyard layout, known as a "four-sided compound." This architectural style reflects the Hani people's adaptation to their environmental conditions and their practical approach to domestic architecture.(Wang 2017).

In Azheke, the Hani mushroom houses typically have residents living on the second floor, although some do live on the first floor. The second floor's layout, apart from the area around the fire pit and stove which is covered in mud, is predominantly wooden. The interior is divided into three sections based on the house's orientation and the arrangement of four rows of twelve pillars.On the left section, near the rear wall, there is a kitchen stove, with a bamboo fence separating it to create a bedroom for the grandmother or mother. The earthen flat roof is ideal for wind protection and warmth, and also serves defensive purposes. This style inherits the cultural lineage of flat fortress-style architecture.To adapt to the hot and rainy subtropical climate of the Ailao Mountain region in Southern Yunnan, the flat earthen roof is covered with a thick layer of straw or thatch. Coupled with the small distance between floors inside the house, this creates an ecological architectural feature that keeps the house warm in winter and cool in summer.(Huang 2017).

In South Korea, there are "the following researchers in the cultural industry".It is also required to focus more on the vitality, place, people, and presence of urban brands and the cultural and environmental elements of urban regeneration so that residents can gain higher satisfaction; finally, urban regeneration and urban brands lead to resident satisfaction through their organic relations, which raises a need to plan an urban regeneration project that is connected with an urban brand in an effort to apply and highlight local culture and history so that the city's charm will be further enhanced.(Doh 2023; Kim 2023). . In addition, it is necessary to develop contents unique to each city in consideration of the differentiation and governance of each city to strengthen its identity. The results of this study are expected to be used as basic data for identifying the characteristics of other cultural cities as well as Bucheon and seeking development directions in the future.(Lee 2022; Ryu 2022). The 'cultural contents' project of the cultural city development project should rediscover the region's value and promote cultural functions through the development of customized content for citizens, the establishment of cultural diversity, the discovery of convergence programs, and globalization. Finally, the formation of various networks and cultural city governance will be the most important in the cultural city development project. The findings of this study could be used as primary data for the effective operation of cultural city development projects in cultural industry academics and the field.(Jung 2022).

From the layout of Hani ethnic housing, the traditional Ai Lao Mountain Hani homes are typically three-story buildings. Due to the high humidity and challenging terrain of the Yunnan subtropical mountain region, the first floor, directly on the ground, is not suitable for human habitation and is often used for livestock housing. The second floor is the place people live. Inside the living area on this floor, there is a hearth, a square-shaped earthen platform built into the floor. Some households also have a stove platform by the hearth for cooking purposes. Several rooms are partitioned along the walls of this floor, generally intended for the homeowner, their spouse, and young children. The third floor is used for storing grains and food supplies. This top floor has a mushroom-shaped roof design, which provides excellent ventilation, making it less susceptible to humidity and suitable for preserving grains and other items. Many Hani households also have earthen auxiliary buildings, and when paired with another, they create a quadrangle courtyard. (Wang 2017).

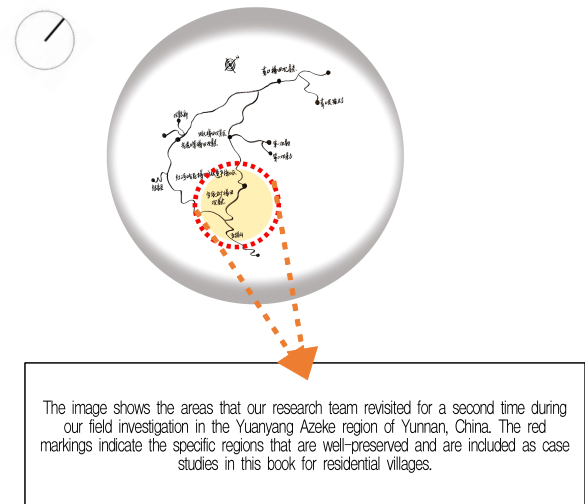
Based on the literature review mentioned above and through physical visits, this study aims to highlight the importance of China's cultural heritage represented by the Nan Hani ethnic mushroom houses. It encourages people to cherish and preserve the beautiful ecological environment while also providing scholars with a thematic focus on traditional Chinese ethnic dwellings. This, in turn, allows for a better understanding of the current living conditions of China's ethnic minorities, ultimately contributing to the future development and well-being of the Azeke Hani ethnic housing. Furthermore, from an architectural perspective, this research investigates the spatial characteristics and structural elements of Hani ethnic mushroom houses in the Yuanyang Azeke region of Yunnan. This serves as a reference for discussing future development in the area. Simultaneously, it records the current living conditions of residents in the Azeke Hani ethnic mushroom houses, with the hope that this information will have enduring research value for future studies.

By comparing the above studies, the significance of this study is specific as follows. The first is Cultural preservation and inheritance. By delving into the cultural essence of Azerko Hani ethnic dwellings, this study contributes to safeguarding and passing down the unique cultural heritage of the community. Understanding the historical, traditional, and spiritual aspects behind the architectural structures aids in transmitting these invaluable cultural elements to future generations, ensuring their continuity and development in modern society. The second is Cross-cultural exchange and understanding. The research facilitates cross-cultural communication and understanding. Through the study of Azerko Hani ethnic dwellings, individuals gain better insights into and appreciation for the architectural characteristics of different cultures, fostering collaboration and deepening understanding among diverse cultures, thus enhancing awareness of global multiculturalism. The third is Sustainable development and planning. Providing insights for contemporary architectural practices, the study serves as a reference for sustainable development. Analyzing the uniformity, flexibility, and cultural adaptation of architectural structures inspires cultural

inheritance and sustainable development in contemporary architectural design. This contributes to advancing sustainable architectural design and urban planning, fostering the organic integration of urban development and cultural inheritance.

## II. Theoretical Background

### 1. The location of Azeke Village



[Figure 1] The location of Azeke Village collected this time (this figure is hand-drawn by the author).

### 2. The process of Hani nationality formation

The Hani ethnic group has a total population of approximately 1.25 million people, primarily concentrated in the Yunnan Province of China. The majority of the Hani population resides in the extensive region between the Honghe River and the Lancang River, as well as between the Ailao Mountains and the Wuliang Mountains. Administratively, the Honghe Hani and Yi Autonomous Prefecture, Yuxi Prefecture, Simao Prefecture, and Xishuangbanna Dai Autonomous Prefecture are the main areas where the Hani people are concentrated. There are also scattered populations in the Chuxiong Yi Autonomous Prefecture and Kunming region. (Li 1994). By summarizing the major developmental stages of the Hani ethnic group based on historical records, one can gain a basic understanding of their historical trajectory, which is helpful in analyzing the overall development of the Hani people. (Li 1994).

<Table 1>. Formation and development process of Hani folk dwellings

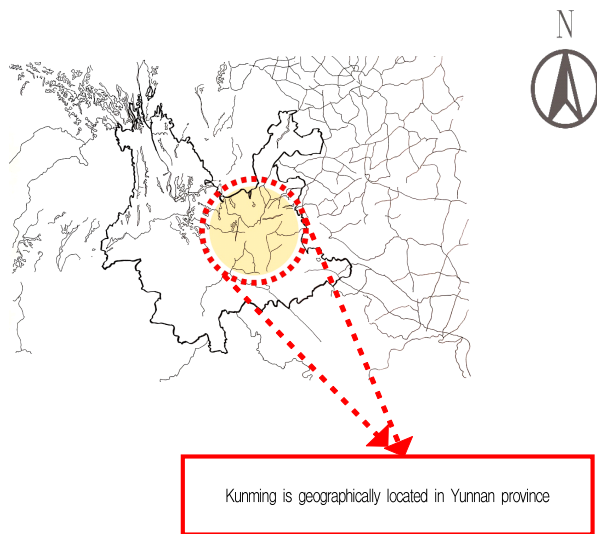
order number	period of history	appellation	domicile	Source of historical materials	Living form	developing process
1	First year of Tang Gaozong (656)	And pretty(和蛮)	Northwest Gansu, Qinghai Plateau	1The Biography of the South Man of the New Tang Dynasty	Half the hillside	×
2	2nd year of Kaiyuan of Tang Xuanzong (734)	And pretty(和蛮)	West Rock has stone and city	Zhang Jiliang wrote "save the leader of Annan Temple benevolence zhe book", "pretty book" volume 5	Half the hillside	×
3	Yuan dynasty	And mud, woni(和泥、斡泥)	Northwest Gansu, Qinghai Plateau	Ancient History of Yi nationality	Half the hillside	Agricultural settlement society
4	Ming dynasty	Russian mud, mud(和泥、阿泥)	Northwest Gansu, Qinghai Plateau	Ancient History of Yi nationality	Half the hillside	Agricultural settlement society
5	Qing dynasty	Wo mud, woni(和泥、高泥)	Northwest Gansu, Qinghai Plateau	Ancient History of Yi nationality	Half the hillside	Agricultural settlement society
6	The second century BC	Sou people: the sound is "Nasu"(爨族音即"纳酥")	Dianchi lake area	In Huayang Guozhi, South Middle Annals	×	Agricultural settlement society
7	The Western Han Dynasty	"He man" department(和蛮部)	Dianchi lake area	Records of the Southwest Yi	tribe	Social and economic development is rapid
8	The Western Han Dynasty	×	Huijiang area	Geography of The Book of Han, The Annals of the Book of Han	×	×
9	The Eastern Jin Dynasty lasted up to the Sui and Tang Dynasties	Sou clan(爨族)	Liangzi County area, Liuzhao Mountain, Lancang River area	×	Interterate, scattered living form	×
10	The twenty-sixth year of Kaiyuan in the Tang Dynasty	Once upon a time, and mud(昔朴、和泥)	East Yunnan region	Geographic Annals of Yuan History, Yunnan Annals - Customs of Zhongyi	Nest in the mountains	The feudal system of lords
11	he southern song dynasty period	Rokon (囉孔)	Ai prison mountain area	Fan Chengda "Gui Hai Yu Heng Zhi Man", Zhou Laifei "Ling wai answer"	Nest in the mountains	Selling horses and soil products

This table is based on the historical development of Hani, Due to the special geographical location and ethnic characteristics of the Hani people, In the great historical development, there are different states of migration through war, integration with other ethnic minorities, and the jurisdiction of the central government of the Han nationality, so, The development of the Hani people is more complex, Distribution is also relatively widespread, But in terms of the overall place of residence, Basically to the northwest Gansu, Qinghai plateau and Dianchi Lake generation reproduction, According to the table, Mid-level residence is basically the main form of Hani living, The economic development of the Hani people is also managed by the central government of the surrounding small countries and the Han people, and most of them are relatively rich, Early into the state of agricultural settlement.

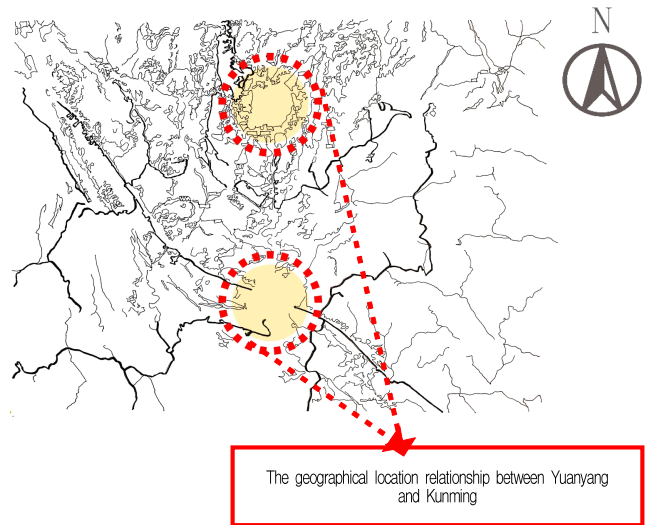
Yunnan Yuanyang A zhi family is located in the middle area of Ailao Mountain in southern Yunnan. The terrain is high in the south and low in the north. The dwellings of Azhi family are built on the mountain and scattered. The Village covers an area of 1.43 square kilometers, 1880 meters above sea level, average annual precipitation of 1370 mm, annual sunshine of 1700 hours, humid climate and perennial fog. The terraced fields extend down from the village gate, surrounding the village, and the village is closely connected and cannot be separated.(Zhang 2017). It belongs to Aichun Village Committee, 28km away from Xinjie Town and 8km away from Sheng Village. The population is 396 people and 62 households.(Luo 2012).There are 44 traditional dwellings in the village, and "Ake" means "bamboo" in Hani language. Smooth bamboo is a kind of small bamboo, common in the warm mountainous areas of Yunnan province. According to Professor Jiao Yuan Mei of Yunnan Normal University, the village was named after the bamboo because it was a large bamboo forest before people lived. Professor Jiao also asked a villager that an old book kept by his family contains the date of birth of his "old zu" in 1867; the family recorded the year because they were the first to move from Dayyu village. The village is closely related to the Niuluopu village above it. The two villages are very close away and only take 10 minutes to walk. Niuluopu Village is divided into Shangzhai and Xiazhai, and most of the villagers in Xiazhai were moved from A Zhe Xuezhai after the 1980s. There are roads through the village, the traffic conditions are better, so many of the families are the younger generation have moved to the company, and the older generation is still living in the family. The villagers who stayed in Adivision often laugh at themselves: " People with ability have moved up!" However, this phenomenon should be in the recent 20 or 30 years with the development of the national market economy, the increase of the population of rural migrant workers. Before the 1980s, rural life mainly depended on agriculture, and it was a village with good agricultural conditions. (References are derived from the author's in-person survey). In the Yuanyang new street town is relatively high. In the early 1990s, when the government implemented the "development hot zone", the residents of Ake responded positively and opened a lot of wasteland in the low altitude mountainous areas. Although these lands are mainly used for growing dry land crops such as corn, they also increase the rations to a large extent for villagers. At the same time, the terrain in the village is relatively slow, suitable for building houses. Due to these advantages in grain production and topography, Archaceae form large and tightly structured settlements. There is a big difference between the division and cattle Luo Pu, that is, the former has very few space between the houses, trees are rare, and the latter family has a courtyard melon shed, there are many trees in front of the house, and even corn fields. The density of settlements often reflects the development degree of a village. From this point of view, it may still be a settlement in the process of formation, while it belongs to a fully developed settlement.(References are derived from the author's in-person survey).

### III. Hani nationality residential houses range

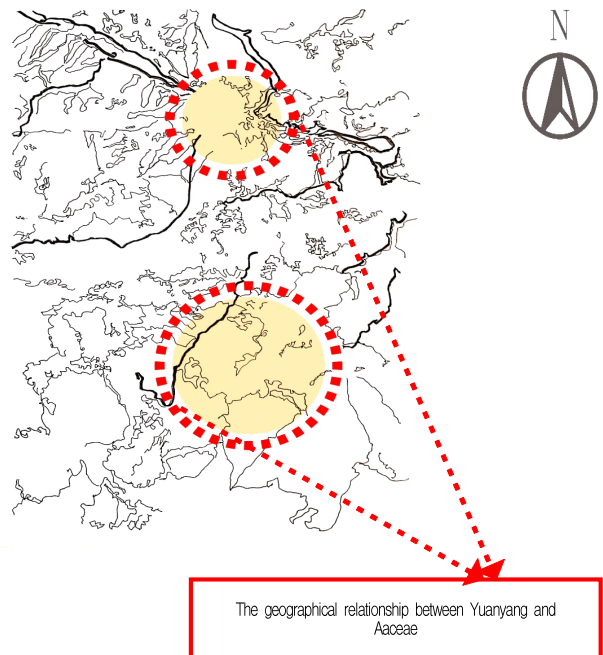
The village as a typical area of hani dwellings, retained the 62 with a one hundred-year-old "mushroom room" residential buildings, yuan Yang village is one of the five key properties in heritage area, is also the third batch of published Chinese traditional village, more than 80% of the village dwellings is traditional grass roof mushroom room, traditional style is complete, rich intangible cultural heritage. At present, the research on the architectural spatial mode and lifestyle of Hani dwellings is not comprehensive, but the architectural space form of Hani dwellings represented by Ake Village, the "mushroom house", the living status of residents and the future transformation direction all need to be paid attention to. Study of Yunnan yuan Yang, village "mushroom room" the present situation of the lot of surveying and mapping, this study involved eight mushroom rooms, although the mushroom room internal supplies some messy, but the construction of "mushroom room" to form, space use and the perfect combination of nature of modern architectural space design has important reference value.



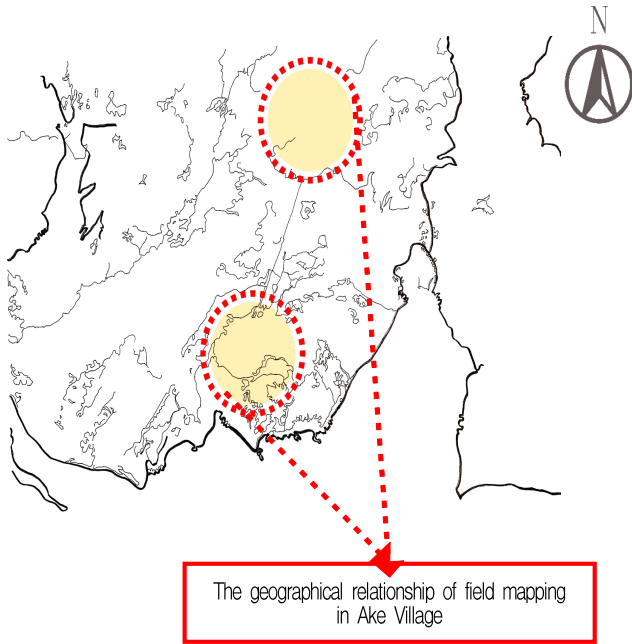
[Figure 2] The geographical location of Kunming in Yunnan (this figure is drawn by the author).



[Figure 3] Geographical location description of Aceae–Geographical location relationship between Yuanyang and Kunming (this figure is drawn by the author).



[Figure 4] Geographical location description of Azhi family– –The geographical location relationship between Yuanyang and Azhi family Village (this figure is drawn by the author).



The geographical relationship of field mapping in Ake Village

[Figure 5] Mapping geographic location relationship of Azeke Village (this figure is drawn by the author).

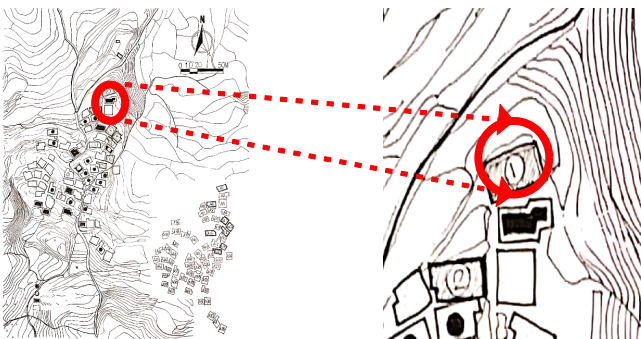
### IV. Case analysis

#### Case(1)

Location: Located at the northernmost end of The village, the house faces southeast, with a good view location, close to the terraced fields, with an area of 182.5 square meters.

Population information: four people, head of the household Ma Xuewen 45 years old; mother 70 years old; wife 44 years old, farming; son 13 years old, fourth grade.

Current situation of dwellings: grandma alone at home all the year round, the house has 3 floors, can accept the separation of people and animals.

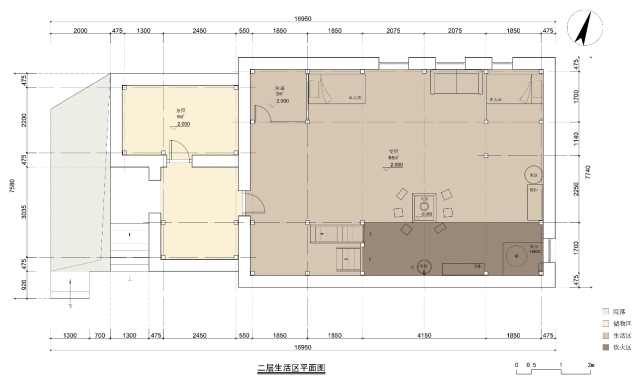


[Figure 6] Case 1: location in Azaike Village  
[Figure 7] Case 1 Geographic location large map



[Figure 8]Case 1 First floor plan (cattle stall and wood room parts)

1. The residential house has three floors. This picture is the first floor (half underground) composed of three parts, and the outer area is the courtyard.
- 2, A layer of height is generally about 170cm, mostly stone structure.
- 3, walking line: there are two stairs on the first floor, the courtyard stairs are sunken stairs, leading to the "cow stall", "cow stall" inside a straight running stairs from the first floor to the second floor, the traffic line arrangement is scientific and reasonable.
- 4, the house open southeast door, the first floor without windows.



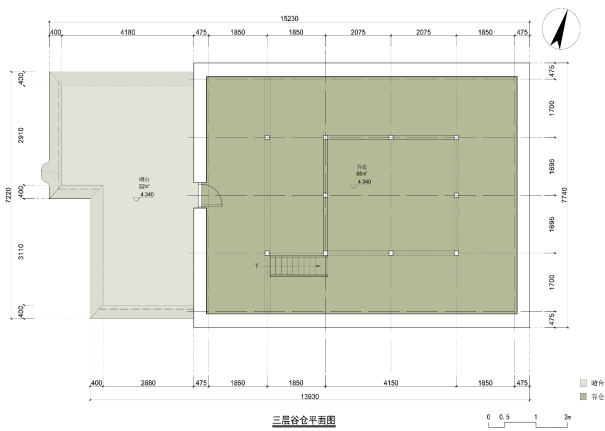
[Figure 9] Square meters of the second floor (fire pond, bedroom, kitchen, reception area)

1. The second floor of the household residential house is mainly the living area, which is divided into two parts: internal and external space. The external space is generally used in the Hani residential houses, which were divided into the main living area, sleep area and kitchen area, The overall space is basically open, sleep area only with wood to do part of the block, no independent room.
- 2, the fire pond in the southeast part of the room, is the main place for

party, chat and family discussion.

3, the second floor has two steps of stairs, through the three floor barn, very narrow, steep, only for only one person to walk, the other one leads to a layer of "cow stall".

4. The door is open in the southwest, with four windows on the second floor, one in the east and three in the northwest. The window open hole is small, indoor dark.

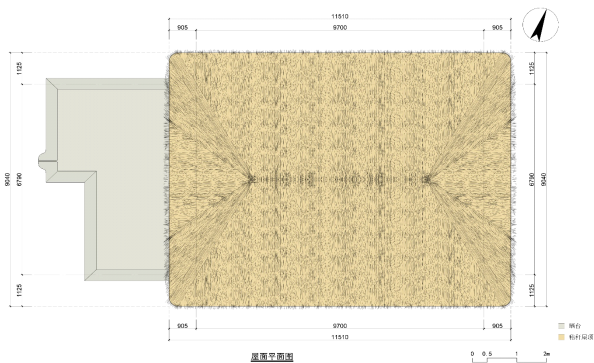


[Figure 10] Three floor plan (barn and sunstand) part

1. The third floor is composed of two parts, barn and drying platform, barn mainly storing grain and farm tools; drying platform is open, mainly used for drying crops, drying surface smooth, mostly cement leveling, scientific and reasonable cornice design, conducive to drainage.

2, the barn does not occasionally have windows, only a height of about 100cm door connected with the sun table.

3. The stairs are narrow and steep.



[Figure 11] Roof floor plan

The roof is in the form of four slope roof, the slope is large, conducive to drainage, bamboo and wood structure, above the laying grass or straw, thatch can be kept changed once for seven to eight years, straw is changed once a year. The advantages of grass roof are warm in winter and cool in summer, conducive to drainage, but the disadvantage is poor fire

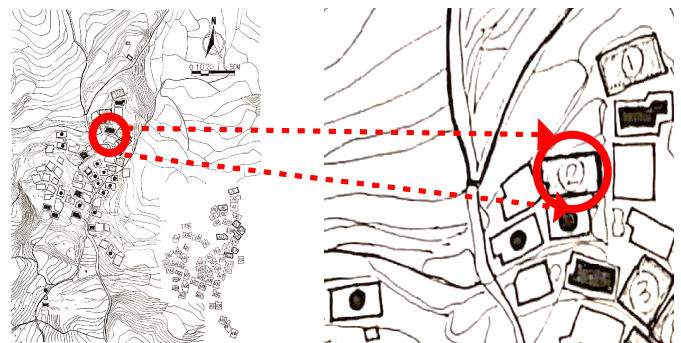
performance. With ecological changes, thatch has become more and more scarce.

### Case(2)

Location: Located at the northern end of village, the northwest view is open, suitable for viewing, the other three sides are adjacent to the neighbors, and the space between the buildings is narrow.

Population information: a family of seven, the head of 49 years old, no reading farming; the wife, 48 years old did not read farming; the eldest son 25 years old in the school canteen work, the eldest daughter-in-law in the school canteen; the younger son 12 years old 4 grade reading; the younger daughter 7 years old 1 grade reading; grandson.

Current situation of the residence: His eldest daughter is married, has livestock, and can accept the separation of people and livestock. The houses are two and a half floors. If the courtyard dam is built, it will have a good viewing position.



[Figure 12] Location of Case 2 in Azaik Village

[Figure 13] Case 2. Large picture of the geographical location



[Figure 14] Case 2 Local part of the building exterior



[Figure 15] Case 2 Local part of the building exterior

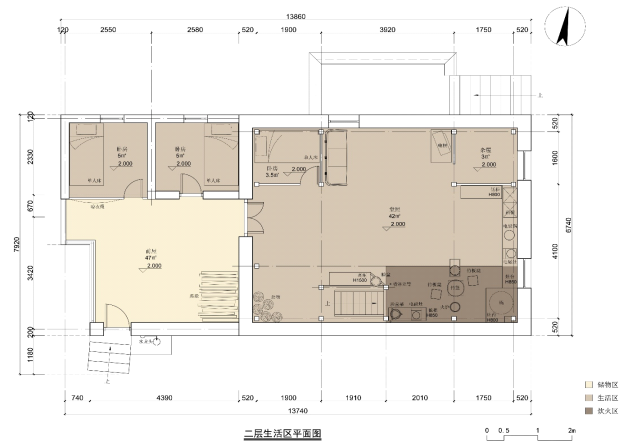


[Figure 19] Lifestyle live photos



[Figure 16] At the entrance of the second floor living room, the firewood is stored on the right side

[Figure 17] Life scene of the side wall of the entrance



[Figure 20] Case 2 Second floor plan (living room, fire pond, stove, bedroom)

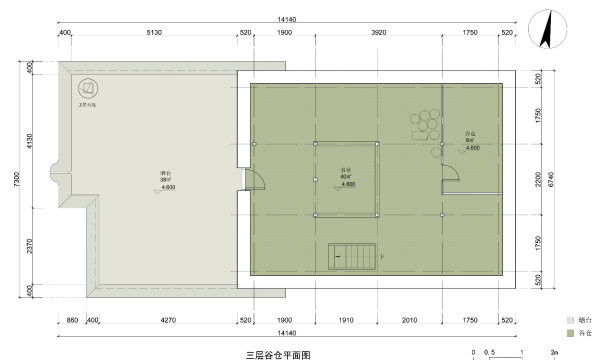
1, the second floor inside and outside two areas, the room is simple enclosed, mainly open.

2, the second floor open southwest door, a total of five windows, two northeast two, three northwest, southeast, southwest without windows, so indoor lighting is not good, indoor hanging stairs, more spacious.

3, outdoor ear put two bedrooms each separate closed state, there is a terrace at the door, stacked firewood.

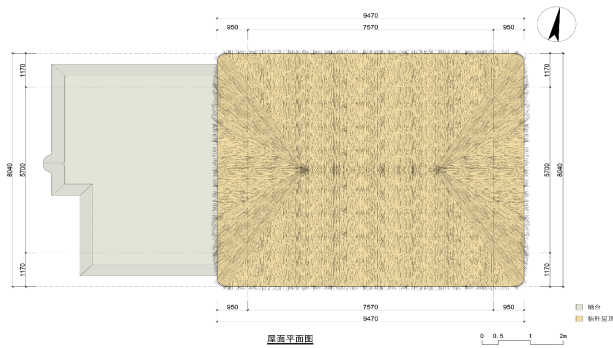


[Figure 18] Real photo of the building appearance



[Figure 21] Case 2 Third floor plan (barn, sunstand)

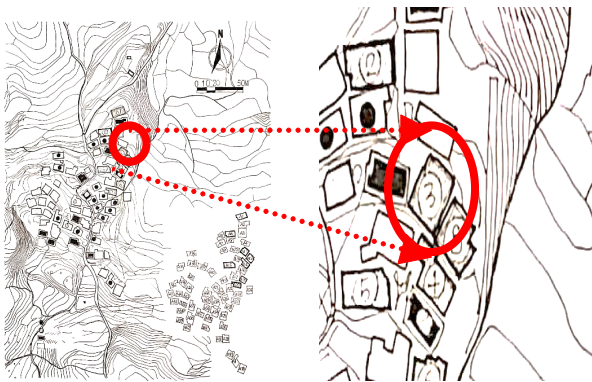




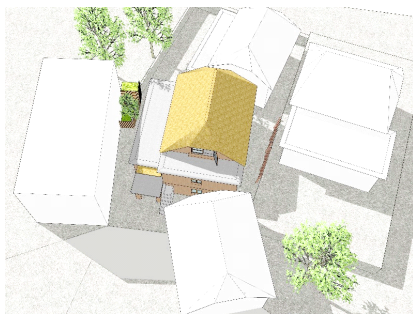
[Figure 22] Roof floor plan

The roof is topped by four slopes with thatch outside.

Case(3)



[Figure 23] Case 3, the specific geographical location map



[Figure 24] Case3. Building environment relationship diagram of residential buildings

1. The middle part is case 3 residential houses
- 2, around for the relationship between other residents and dwellings
3. Case 3: There are dwellings on all sides, which is not conducive to viewing



[Figure 25] The architectural relationship with Azaik Village



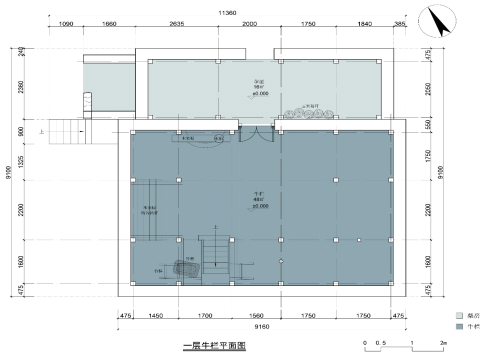
[Figure 26] The villagers are changing the roof grass site

[Figure 27] Top structure of the mushroom room



[Figure 28] Side mountain flower and roof parts

[Figure 29] Local cornice



[Figure 30] Mapping the plan of the first floor

1. The first floor is composed of two parts. The firewood room and the cattle stall are 3.
2. There is a hanging staircase in the cattle stall that can lead to the second floor. The interior space is rectangular and windowless.

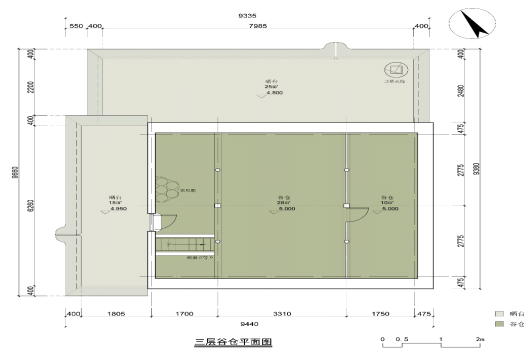
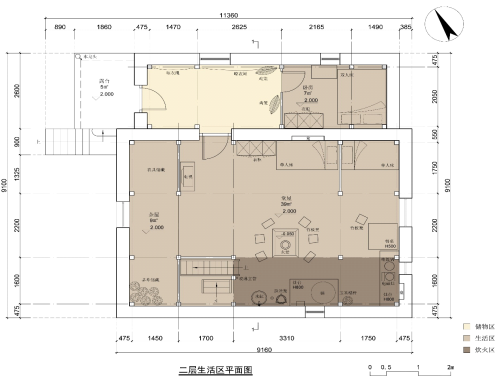


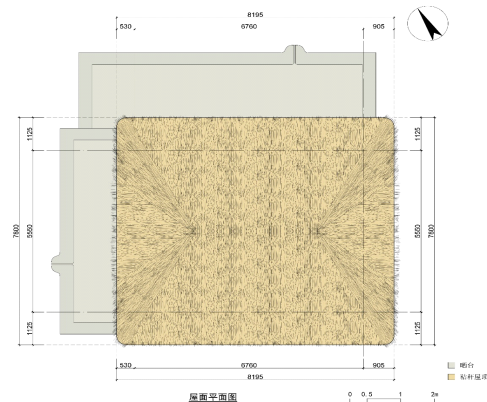
Figure 31: Mapping the plan of the third floor

1. The third floor of the residence consists of two parts, the terrace and the barn. The household has two terraces, respectively in the southwest and northwest of the building.
2. There is a hanging staircase in the barn to lead to the second floor, the barn is separated by the internal and external rooms, and the barn opens the southwest door to connect with the drying platform.



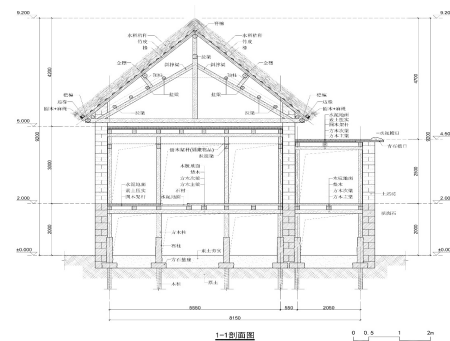
[Figure 31] Mapping the plan of the second floor

1. The second floor consists of three parts, including the courtyard, ear room and indoor, and there is a small terrace on the outside of the courtyard.
2. the courtyard open southwest door, northwest window, ear room for the closed state.
3. the indoor part is open, built-in two beds, the head of the bed has wood block, the rest is open, indoor open northwest door, there are two hanging stairs, respectively the same floor and three floors, indoor northeast open two Windows, southeast and southwest each open a window, living in the southwest window is very few.
4. The fire pond and the hearth part are in the southeast side of the house.

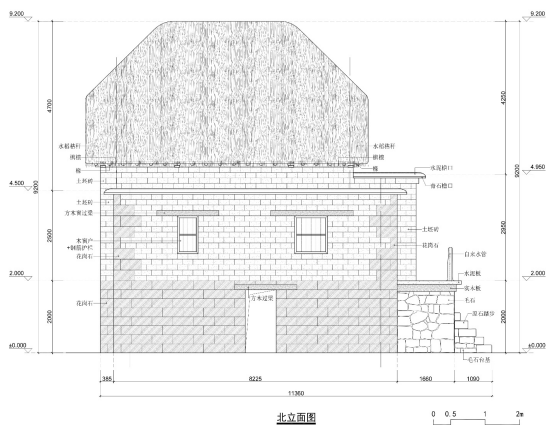


[Figure 32] Mapping map of the roof plan

- 1.The roof part is thatched four-slope top type.
- 2.The second side has a part of the drying table

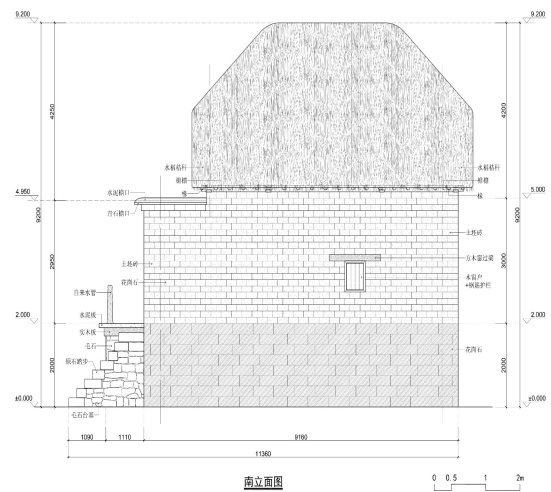


[Figure 34] section plan



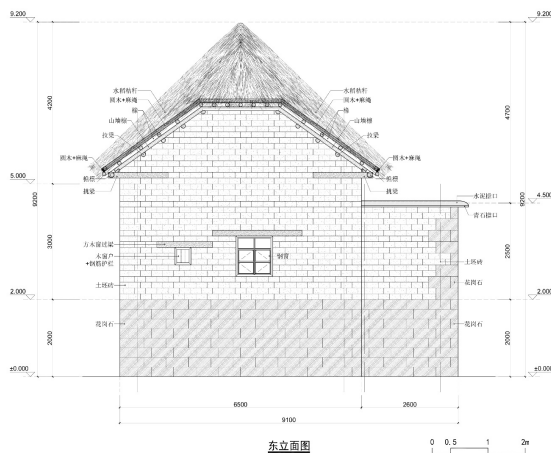
[Figure 35] The north facade

1. The stairs on the second floor of the first floor of the north facade of the building are open, the whole block of rubble masonry, and the cow stall part of the first floor is stone structure.
2. The second floor is the slope of the roof, the outer wall is adobe masonry, and the inner structure is wood, bamboo and thatched decoration.



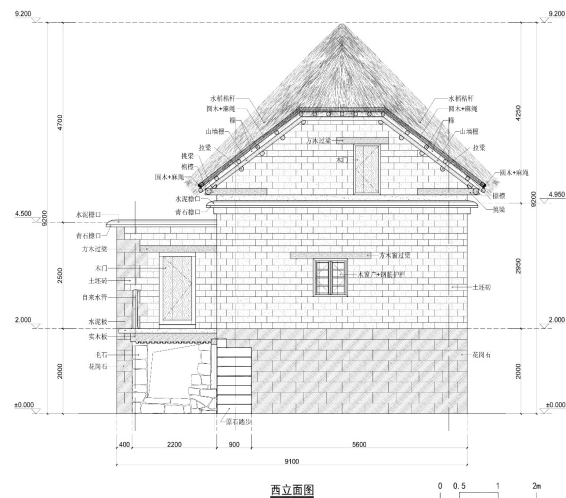
[Figure 37] The south facade

1. The first floor and the second floor of the stairs are used for rubble masonry.
2. The second floor is decorated with adobe masonry, and the Windows are very small.
3. The roof part is made of a thatched finish.
4. The table is a cement finish.



[Figure 36] The East facade

1. The first floor of the west facade of the building is a stone structure.
2. The second floor is opened, the upper window is supported by lintel, the outer skin is built of mud and grass brick, and the cornice of the second floor roof is cement roof.
3. three layer wall is adobe, the main structure is wood structure.
4. the roof part is wood and bamboo structure, thatch roof.



[Figure 38] The West facade

1. The first floor of the west facade of the building is a stone structure.
2. The second floor is opened, the upper window is supported by lintel, the outer skin is built of mud and grass brick, and the cornice of the second floor roof is cement top.
3. Three-layer wall is adobe and the main structure is wood structure
4. The roof is a wood and bamboo structure with thatch capped.

## V. Conclusion

Through the analysis of the above case can get the following results; through the investigation of 3 real case of information and housing surveying and mapping data respectively in its space characteristics, space function combined with the function of the plan layout, found that the hani people in the mushroom house residential life style and daily life and the characteristics of the natural environment, through the above of hani mushroom room one to three layer of plane function analysis, a clearer understanding of the mushroom room internal space function layout is closely related to the hani people's way of life. The above research for this part is summarized as (1) The site selection of the hani mushroom houses according to the natural environment, The orientation of the mushroom room is freer to choose, This also fully reflects the characteristics of hani-mountain dwellings, And the west to the east is the majority of hani residential sites, In the south, This is also in line with the Hani people's attachment and yearning for the ancestors and the once beautiful home. (2) The internal moving line of the mushroom room building space is flexible and practical. (3) The Hani people like to open the free space, There is no particularly strong distinction between male superiority and female inferiority, The residence of young people is more private (4) The livestock raising on the first floor of the Hani mushroom house and the barn and sunstand on the third floor show respect for nature, self-sufficient and optimistic character.1. **\*\*In-depth exploration of cultural essence:\*\*** My research is dedicated to delving into the historical, traditional, and spiritual aspects behind the architecture of Azerko Hani ethnic dwellings, aiming to comprehensively understand their cultural heritage and provide a deeper foundation for its preservation and inheritance.

Compared to previous research, my study differs in the following aspects:

**In-depth exploration of cultural essence:** My research is dedicated to delving into the historical, traditional, and spiritual aspects behind the architecture of Azerko Hani ethnic dwellings, aiming to comprehensively understand their cultural heritage and provide a deeper foundation for its preservation and inheritance.

**Observation of cultural changes:** Through long-term tracking studies, I am able to observe and record the evolution and adaptation of Azerko Hani ethnic dwelling structures across different historical periods, revealing their interrelation with aspects of society, economy, and environment. This facilitates better guidance for cultural preservation and urban planning.

**Collaboration with local communities:** My research involves establishing deep collaboration and communication with local communities, fostering practical application and feedback of research findings. This ensures that the research is closely aligned with practical needs and provides sustained support and guidance for the development and cultural inheritance of local communities.

## 1. Contribution to academia

Based on the above conclusions on the architectural structure of the hani dwellings, these advantages will have influence and advantages in the academic circle, which will provide research materials on the uniqueness and cultural value of the hani residential buildings. This uniqueness will help to enhance the understanding of ethnic minority architectural culture, and is of great significance for the protection and inheritance of ethnic buildings. In the cultural exchange and comparative research, elaborate the cultural reference characteristics in the architectural structure of the Kohani dwellings, which is helpful to carry out cross-cultural comparative research. This comparative research will promote the dialogue and communication between the buildings of different cultures, and deepen the understanding of the mutual influence and commonality between different cultures. Combining with practical guidance and sustainability, the analysis of the architectural structure of the Algerian Kohani residential houses can provide practical guidance and inspire the cultural inheritance and sustainable development in contemporary architectural design. These research results can provide a reference for modern architectural practice and promote sustainable architectural design and planning. In the interdisciplinary and comprehensive research, these conclusions also contribute to the intersection and integration between different disciplines, such as architecture, ethnology, cultural anthropology, etc. This kind of interdisciplinary research can provide more understanding from multiple perspectives, and promote cooperation and innovation among different disciplines. In the combination of unity and flexibility, the Algerian Kohani dwellings show unity in the architectural structure, which is reflected in the basic structure is similar but the size is flexibly adjusted due to the demand. This combination of unity and flexibility provides a basis for consistency in each building, while allowing for the consideration of individual differences and special needs. The wisdom of the Han nationality and its neighboring nationalities is integrated into the architectural structure of cultural reference and land suitability, and the unique climate and geographical environment of the region are also considered. This cultural reference and land suitability make the building structure more adapted to the local climate and environmental conditions. In the programming and local differences, the Algerian Kohani folk dwellings show a certain formula of the construction structure, that is, the commonality of the main structure, but there are also local differences. This difference highlights the flexibility of the dwellings, which can maintain the overall characteristics while meeting specific needs.

## 2. Study limitations

Limited to specific regions and cultures is based on the study of kohani residential buildings, which may not be directly extended to other regions and cultures. This regionality and specificity limits the universality of the study. The simplicity of the research perspective may ignore other potential cultural influencing factors or explanatory perspectives due to the limitations

of the researchers or the emphasis of the cultural perspective. This simplicity may lead to the neglect of other factors.

### 3. Practical research significance

In the cultural inheritance and protection, the study of the architectural structure of Azhekehani residential houses helps to protect and inherit this cultural heritage. This is of great significance for the inheritance and protection of national culture, and helps to the maintenance and development of local traditional culture. Through these investigations in cross-cultural understanding and respect, people can better understand and respect the architectural characteristics of different national cultures, so as to promote cross-cultural communication and understanding. This helps to promote multicultural coexistence and communication on a global scale. These research results can provide inspiration for modern architecture and urban planning, and promote the integration of the concept of sustainable development. At the same time, respect for and protection of ethnic minority cultures also helps to establish a more inclusive and diversified social environment. Long-term research is crucial for the understanding of the architectural structure of the Azerko Hani ethnic minority dwellings. Firstly, such research enables a deep exploration and comprehension of the underlying essence of this particular culture, including its history, traditions, and beliefs. This profound understanding aids in better protecting and inheriting this cultural heritage, ensuring its continuation and development in modern society. Secondly, long-term research allows for the observation and documentation of cultural changes, revealing the interrelationship between architectural structures and various aspects of society, economy, and environment. Through long-term tracking studies, a better understanding of the evolution and adaptation of architecture in different historical periods can be achieved, providing references for future cultural preservation and urban planning. Additionally, long-term research can establish deep collaboration and communication with local communities, promoting the practical application and feedback of research results, making them more closely aligned with practical needs, and advancing the goals of cultural inheritance and sustainable development. Therefore, long-term research not only facilitates a deep understanding of a specific culture but also provides sustained support and guidance for the development and cultural inheritance of local communities.

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