RENOVATION OF HANGLAI VILLAGE

运用全面分析重建夯来村乡村地区

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A Thesis Submitted in partial fulfillment of
the requirements for the degree of
Tsinghua University and Polytechnic of Turin

In fulfillment of the requirement
for the professional
Double Degree of Master of Architecture

By

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February, 2018

Abstract

Hanglai is the village in the Hunan Province of South China which we investigate in our thesis, because of its exemplary preservation of the authenticity of the site and the presence of the peculiar minority Miao. Those two are indispensable elements to reach our intent to discover the other China, far from the western Haidan district, where Tsinghua campus is located. Our research starts with a look at the Chinese reality to understand the central government's attitude towards the extreme poverty of the countryside, which is in sharp contrast to the dense urbanization of the New Town. The two phenomena, albeit with regard to totally opposite realities are linked. The abandonment of villages involves massive urbanization. Both have a single problem: the loss of China's authenticity and the enlargement of the gap between cities and countryside. The central government, however, is recently implementing policies to redirect these two trends: (1) the New Urbanization Plan

2014-2020, aimed at a conscious and sustainable urban expansion, and the amelioration of the city-country gap with targeted population action. (2) A plan on the recovery of rural villages through different actions, such as museum solutions, wellness tourism, social housing and population services in general. Analyzing to the complexity of the phenomenon, we realized since the beginning that it was necessary to go to the place, despite the suggestions of choosing a more convenient site, to understand this particular reality, and thus formally our point of view in this regard. We met locals and lived with them to understand their main needs. So we realized that our design approach had to set aside the creator's ego and focus on the analysis of the local context and culture to maximize local resources as well as the constructive habits of the inhabitants. Our project wants to be an alternative to local policies that despite our own goal do not always solve it. It is not building a home that improves a village, but through a strategy that takes into account different aspects and aims at improving the local economy and preserving tradition and authenticity. So our project does not only provide for the restoration of dwellings or a simple sky-dumped building in a site, but a global approach.

DEFINITIONS OF KEY TERMS

Genius loci: The atmosphere or spirit of a place, distinguished by the qualities or traits that characterize the location ('loci'). These could be a certain type of soil, rocks, trees, mountains, water, the air, light, and so on.

(O.D.)

Heritage: Property that is or may be inherited; an inheritance. Valued objects and qualities such as historic buildings and cultural traditions that have been passed down from previous generations.

(O.D.)

Holism: (from Greek ολος, holos - all, whole, entire) The theory that parts of a whole are in intimate interconnection, such that they cannot exist independently of the whole, or cannot be understood without reference to the whole, which is thus regarded as greater than the sum of its parts. Holism is often applied to mental states, language, and ecology.The opposite of atomism.

(O.D.)

Local: (from Latin locàlem da lòcus - place). Which belongs or refers to place, to a particular area or one's neighbourhood.

(translated from O.P.)

Low-tech: Less advanced or relatively unsophisticated technological development or equipment. In contrast to high tech, it indicates a way of constructing architecture characterized by the use of simple and low-cost materials and technologies. The model l. t. include the use of natural materials and technologies inspired by the past (raw earth, wood, straw).

(TR.)

Regionalism: in architecture is about the context and customs of making buildings in a particular region. These buildings, mainly houses, rely on specific knowledge of the climate, geology, geography and topography of the region.

(O.D.)

Rural: (from Latin ruràlem, from rùs - countryside). Which belongs to the fields, to the countryside

(translated from O.P.)

Sustainable: *Architecture managed in such a way as to employ design techniques which minimize environmental degradation and make use of low-impact materials and energy sources.*

(O.D.)

Vernacular (from Latin. Vernàculus) belonging to the servants born in the house, and therefore domestic, country, from vèrna, the slave child born from slave in the house of the master.

(translated from O.P.)

Vernacular architecture refers to building made by local tradesmen. Often called 'architecture without architects', this type of building develops over time, and changes to become more efficient and more performative in its context.

(O.D.)

O.D. is abbr. for Oxford Dictionary | O.P. for Ottorino Pianingiani Italian Etymological Dictionary | TR. for Treccani

CONTENTS

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1.1

Urbanization in China: Rural vs.urban

by Chiara Menna

A general introduction about urbanization tendencies in China versus the abandon of rural areas and all the problem related such as the loss of authenticity of such places and the poverty of the inhabitants. The coexistence of urban and rural in China, is not just a binary opposition, but in most of the cases the boundaries between theese two states are blurred, presenting different nuances. The effect is still the same and to solve "big city diseases" and the loss of authenticity of the countryside, government on one side and architects from the other are taking different measures. For the former is the new urbanization plan, for the latteri is the rediscovery of regional architecture.

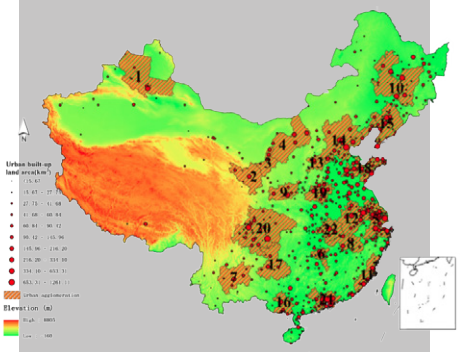


Fig.1 Distribution of urban built-up land area and urban agglomeration in 2012.

Fig. 2 City sizes and urbanization levels in China in 1978 and 2007.

1.1.1: Urban: New towns and new policies

China's urbanization process has been ongoing since 30 years and is possible to approximately set its starting point after Mao's death, in 1976, when Deng Xiaoping took power and started promoting the People's Republic opening up to the rest of the world. The rapid economic growth and dramatic urbanization consequent to these policies brought an immense urban land expansion, which indeed increased by 513%, taking over rural areas[1]. The urbanization, in general concentrated in the East and South East part of the country, being 60% of China's territory occupied by mountains and plateaus, mostly located on the Western provinces. At the present day the three main urban agglomerates are indeed located on the East coast: TBH (Tianjn, Beijing Hebei), Yangtze River Delta (Shanghai) and the Pearl River Delta (Guangzhou and Shenzhen). With increasing urban population and expanding industrial activities, China has experienced vigorous land urbanization, with a growing number of so called "new towns". However, being this phenomenon faster than the growth of urban inhabitants, it caused a decrease and uneven distribution of the population density.

China could take economic and social benefit from this phenomenon, but this brought also adverse impact. In the last 30 years, in fact, the gap between urban and rural areas got deeper on mainly two aspects. First, there is the uneven situation between urban and rural population, for what concern their rights. China's urbanization's peculiarities are, indeed, mainly due to the household registration system (*hukou*), established by Mao in 1955 and still in place. This policy divide population into rural and urban *hukou* holders, so in two types of residents, with different rights and social assistance services granted. The urban *hukou* holders, in fact, have right to benefit from public education, health care and pension, while rural *hukou* holders have just the right to own a piece of land for agricultural purpose. The transformation of household registration is restricted, in fact rural citizens are allowed to move in the city for work but still keeping their rural *hukou*, because the only ways to permanently change their status is only by means of marriage, studying or by having a non-agricultural status when rural collective lands are acquired during processes of urban land expansion. Because of this policies, throughout the years, the Central government have been able to develop at a very fast pace since they cut off the cost of public services for over 800 million people.

The second important gap between urban and rural is the creation of informal village-like communities inside the cities, also known as *Chengzhongcun*[2], the Chinese for urban village. Urban villages are by-products of rapid urban expansion, where, in the process of converting rural land into urban areas, the farmland is requisitioned, while rural settlement is left to avoid compensation cost and relocation of indigenous villagers, creating unique

1 Chen M., et al, Challenges and the way forward in China's new-type urbanization, *Land Use Policy* vol. 55, 2016, pp. 334-339.

2 Lang, W., et al., A new style of urbanization in China: Transformation of urban rural communities, *Habitat International* vol.47, 2015, pp. 279-284.

spatial phenomenon surrounded by both urban and rural landscape Those, with time became informal settlements mostly inhabited by rural or migrant workers and are still nowadays effectively far form the modernity characterizing urban environment, not integrated with the urbanization process, unable to meet requirements of sustainable urban development and contribute to give a negative impact on city's image. The speed of urbanization has not allowed to take care of the transition between the city and the rural areas within it, whose boundaries are nowadays undefined and blurred[3].

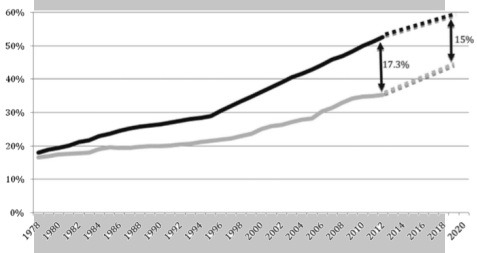


Fig.3 Level of Urbanized population compareed to their Hukou status

Linked with the urban-rural gap, the rapid urbanization brought other three main problems. Firstly, there is the loss of a substantial amount of high-quality arable land, together with risks related to food security and scarcity of resources. Secondly, there is the growing phenomenon of the "gohst cities". Such urban areas are the result of excessive housing supply and infrastructure construction, not taking into consideration the actual needs, along with business speculation on property demand. This urbanization mode was rooted in unreasonable evaluation on local government performance based on a single index of local gross domestic product, which in turn resulted in aggressive development and further induced social injustice. Thirdly, the continuously increasing urban expansion, connected with the conversion of the average middle-class Chinese towards a more westernized lifestyle, is one of the main influence on the urban heat island effect and global warming, together with other climatic and environmental changes, like air pollution, excess in consuming resources, flooding...[4]


Fig.4 Ordos, in Inner Mongolia, hosts one of the biggest gohst town in China.

The government, aware of this problems and threats brought by urbanization, in 2014 has set a new agenda called New Urbanization plan for 2020. The new foreseen policies are aimed to set a new path for urbanization to accommodate Chinese society's characteristics and transfer from a land-centered urbanization to a people-oriented urbanization (Chen M. et al., 2016). This means aiming at relaxation of *hukou* rule, redefining the existing mode of urbanization considering the inhabitants and not the efficiency of land use, and promoting a more sustainable urban development of the country, conscious of the threat for the environment and resources.
This will be carried out through 4 main policies[5]. (1) Make China's urbanization more people oriented and a relaxation of the *hukou* status aimed at extending public services in the cities and town, focusing in particular on education for migrant workers' children. (2) In order to balance the regional disparities in term of spatial distribution and scale structure between East and West, attracting migration in middle size and small cities by encouraging urban household registration in the less dense urban settlements. (3) To enhance

3 Lang, W., et al., A new style of urbanization in China: Transformation of urban rural communities, *Habitat International* vol.47, 2015, pp. 279-284.
4 Chen M., et al, Challenges and the way forward in China's new-type urbanization, *Land Use Policy* vol. 55, 2016, pp. 334-339.
5 Wang X. et al., The new urbanization policy in China: which way forward, *Habitat International* , 2015, pp. 1-9.

the sustainability aspect in the expansion, setting a target for what concern urban infrastructure, resources and environment, together with encouraging "green" production and consumption, like for example spreading the use of renewable energy, as a common ground for the urban lifestyle. (4) Transform informal settlement, rather than demolish them, by adopting a tourism and culture oriented approach in order to retain culture and history into a new type of urban community[6].

These policies, in order to implemented in the future, shall be preceded by different actions (Chen M., 2016). (1) Accelerate the process of the citizenization of peasants migrants, where the central government encourage and support local governments to promote this process through policies connected to a city's capacity to absorb migrants. (2) In order to promote the development of new urban areas and harmonious development of urbanization, industrialization and agricultural modernization, the government should first evaluate the quantity of off-farm jobs, the sustainability of the future economy, and the attraction to urbanization of a certain area to quantify and control the speed, scale, and spatial distribution of local urbanization or a new settlement. (3) Redirect people to cluster or disperse in cities of different scale, to avoid the consequences of "big city disease" in the major urban agglomerates: obstacles of environmental degradation, traffic congestion, fast-rising houses prices; in short, all factor derived from coexistence of insufficient or excessive agglomeration during urbanization process. (4) Consider the urban development and the urban planning system through policies that take into consideration at the same time the perspective of the city and of the villages, in order to guide to an harmonious urban-rural development and reduce the gap between the two Chinese realities. This relationship is indeed necessary to keep a balance on the distribution of national resources and public services. (5) Establish red-lines for what concern environment, resources use and land acquisition. The fast urbanization, in fact, has put a lot of pressure on the environment and damaged the natural resources. Red-lines are thus necessary to secure basic services and working infrastructures, such as running water and heating, an healthy environment, by reducing particle emission in the atmosphere, and a diverse ecosystem. (6) Give voice and information to all the groups forming the society. Public participation is fundamental in order to implement the new urbanization plan, for example for what concern recovery of informal settlements in the cities. Moreover information and education about the present situation in China is important to make Chinese people aware of the gap between East and West and encouraging people to emigrate from the Eastern seaboard of the country.

To achieve sustainable urban development in China, policy makers may not

6 "Considering that farmers are looking into a non-agricultural use of their land and resources to improve their earnings, the best possible strategy, already used in some urban villages in Shenzhen and Xiamen, is the post-productivism, involving culture creative development and also public participation from the villagers. This is the ideal strategy for the Chengzhongcun because together with taking into account socio-cultural aspects and helping respecting the traditional culture of the original rural settlement, and using it to ameliorate the condition of the village through tourism-oriented functions, it also improve the transition between rural and urban areas." (Lang et al., 2015)

place too much emphasis on the quantity of growth and the growth rate, but mainly focus upon the reform of relevant policies so as to keep informed of growing urbanization. Multidisciplinary approaches are required to continue refining the understanding of the relative importance and complex interplay of population, land, economy and environment in the urbanization process.

1.1.2. Rural: loss of identity and transformation

The Chinese countryside has been often perceived, especially in the West, as an harmonious and uncontaminated locus, home of the authentic China, where you can find the pure-minded peasant with his triangular hat harvesting in the rice paddies, in opposition to the city as a place of trade, were relationships among people are only aimed to profit[7]. In reality, there are two wrong assumption in the common way of conceiving rural China. Firstly the countryside is more than a bucolic landscape unique in the world, but a 100% manmade place just like the city[8]. Secondly, besides the appearances, rural areas are more of a deeply contested and politically ideological terrain. Especially after the 30s, rhetorical distinctions, often forced, between the countryside and the city, have been employed by officials and intellectuals as an effort to locate the site of an uniquely Chinese national identity. Architecture has played an active role in these efforts. More than other forms of cultural production, is building that have helped to formalize the imagined lines drawn between Chinese cities and countryside by giving each a visible material, tectonic and spatial distinctiveness. Especially after 1949, linkages between the Chinese countryside, perceived purity of vernacular construction and nationalistic notions of genuine *Chineseness* endured. Starting from this year, there is a big shift of the countryside's situation from a place of harmony and peace to one of violence and fear (Dikötter, 2012). The so called Great Leap Forward and the manmade famine characterizing the Communist Party's first decade of rule has, in fact, brought to death at least 45 million people and even physically damaged the countryside and its built heritage.

During the first years of the establishment of the PRC, the majority of people lived in the countryside. The first action of the local party officials has been to "depurate" the countryside from the rich landlords and eventually share their belongings among the peasants, so that in the end the poor villagers had no one to rely on except for the Communist party. This made private entrepreneurship slowly decline, since everyone had a roughly similar plot of land. In addition, every village had to pay a tax to the Party in form of grain. In 1953 the Party decided to make the sharing of tools and resources among the villages mandatory and permanent by creating cooperatives that grouped together great number of villagers and imposed a monopoly of grain that enhanced the famine, since every family had left barely

Fig. 5 Chen Yanning, Chairman Mao inspect a village in Guangdong, 1972, propaganda poster.

7 "Goodness develops only in the village, evil in the city. The city is the place of commerce and trade. People relate to one another with the aim of making profit. They are superficial and pretentious. As a result the city is a sink of inequities. The village is different". Quote from Gu Yanwu, seventeenth-century scholar-official.

8 "The countryside is an artificial constructed, constantly manipulated and managed by human intervention" (Tong Ming, *Homecoming*, 2013).

enough grain to get through the year. Later, in 1955 the Party created state collectives, which means that the land was taken away from the villages to become state property. In the same year the state introduced the *hukou* system, in this way the rural inhabitants were literally tied to their land, or in other words, to the Communist Party, since they had no real private property. At this stage rural inhabitants became literally serfs, bonded servants of the state and by the end of 1962 the countryside was a broken place, ruled by fear (Dikötter, 2012). The violence has not ben limited to the inhabitants but also to natural and built heritage. In Hunan, for example, 40% of the housing stock vanished, since the dwellings, mostly traditional ones, were torn down to make fertilizer or as a form of punishment. In the worst cases, the villagers had to eat the roof's thatch to survive (Dikötter, 2013).

Together with these violences brought by the cultural revolution, the restless developmental pressures caused by the fast economic development happened during the years following Mao's death, have dramatically altered many rural region throughout China with indiscriminating architectures. Moreover, the fast urbanization caused also a shift in the relationship between city and countryside. In fact, while before, like in every other traditional society in the world, it was the countryside the one supplying the city with food and resources, over the past 30 years it grew the reliance on the city as a major source of income and holder of wealth. As a result the notion of traditional village is slowly vanishing and in the rural areas there is currently a process of renovation, which fully reflects the socioeconomic gap between rural and urban and the desperate attempt to fill it. For what concern the dwellings, for example, now many rural settlements are prevalently composed of generic multi-story concrete brick and tiled houses. These generic buildings take place everywhere in China, they look the same no matter which is their geographical location in the country, and are replacing the very specific vernacular housing types that have adapted gradually over hundred years of history. In some villages, in fact, additions are made upon the traditional courtyard house through concrete structures, sometimes eliminating the courtyard itself, which is traditionally the expression of rural livelihood, and turning the old part of the house, the one that has more heritage value, into a pig shelter (Lin, 2013). This way of building reveal the lifestyle transition happening in rural areas, that already took place in the city decades ago. Even though the villagers live in the middle of nowhere in a house where there is no running water and very few electricity, they are still looking forward consumer goods and they believe that a concrete house is synonymous with modernity and being wealthy. So the destruction of traditional architecture in rural areas is a direct consequence of the migrant workers sending money back to their families to get this consumer goods brought by globalization. After China's opening up the amount of houses build in rural areas was four or five times higher than in the cities. The Sichuan earthquake in 2008 proofed that those houses were definitely of a worse quality in comparison to the traditional ones, which survived the disaster in good conditions. In other words, the most remarkable achievement in rural china after the opening up was to build crappy houses (Hsieh, 2013). The

Fig. 6 Concrete white tiled building coexisting with traditional dwellings in Hanglai village. Most of the times this option is chosen by the villagers for their private houses because industrialized materials are synonimus with modernity. Sometiems, the government imposes this type of housing because is the cheapest solution to remodernize a rural village.

original village houses are the ones that have integrity with their environment, but this DIY way of building new dwellings and thus the lack of control from professional designers, make it look like the connection to 2000 years of building culture has been lost. Regardless of this many years of tradition that villagers have on what concern vernacular architecture, new materials, values, techniques, make difficult for them to find their way to make their dwellings.

Preserving the intelligence from our traditions is a challenge that Chinese architecture, in order to modernize the countryside appropriately, is necessary to make a new hybrid type of architecture that is able to respond to the local environment, economy, culture and history. This will also allow to create an harmonious relationship between human activity and nature and develop an intelligent construction that can coexist with the landscape. The only use of rough material, though, is not enough to bring the ancient craft back[9]. Moreover in order to fully respond to an ever changing lifestyle, it is needed to integrate vernacular techniques with contemporary ones in a way to revive traditional architecture, by triggering sensitivities and memories. This is very difficult to achieve nowadays, not only because of this apparent loss of identity in the countryside, but also because globalization brought in China the formal language of western modernism, now widely accepted. Moreover, to revive the vernacular is needed to abandon any attempt of looking for "Chineseness" in architecture; this, together with filling the cities with scenographic hybrids buildings, having both modern and vernacular features, is not possible to achieve, because China is a huge country with many different regional features, that would be lost if united together in a whole concept of "Chineseness"[10].

The loss of identity in the Chinese countryside, though, is not only related to architecture. Agriculture is part of the identity of all the rural settlements that were founded throughout the centuries around the world. Nowadays, though, the urbanization is triggering also this aspect of Chinese rural environment, because of the huge loss of arable land. To face this issue, the Beijing based firm ZAO standardarchitecture, proposed a colossal infrastructural hybrid integrating rural and urban environment. The main concept of this project, called village mountain, is to make agriculture and dwellings coexist in a vertical structure and offer a totally new experience (Zhang Ke, 2013). The interest in this project is also that its main concern can be considered as close to the ancient Chinese conception of nature, because it epitomize the *vita contemplativa* up in the mountains. Besides this the contemporary agricultural techniques are extremely polluting and contribute to exploit intensively the rural environment and make its landscape very engineered. Another activity that in the last 30 years contributed to the alteration of the natural rural landscape is the XXI century western colonialism, tourism. Starting from the 80 Chinese countryside has been seen as a raw material for the

Fig. 7 ZAO standardarchitecture, Conceptual representation of village mountain.

9 Yung Ho Chang, *Homecoming*.

10 Li Xiaodong The celebration of superficiality: Chinese architecture since 1979, *The Journal of Architecture*, (2000) 5:4, 391-409.

exotic fantasies of Western travelers, willing to experience "the real China"[11]. Tourism have lately been by local authorities as a tool to economically improve not wealthy places full of potentialities in terms of natural and built heritage, but also to take away the identity of those places[12]. All the infrastructures built to make the foreigners reach the most remote places in China and all the services related such as hotels, info points, and leisure centers, contributed to alter massively the image of villages where the local's lifestyle is far away from modernity.

The emergence of hinterland of semi-industrialized and semi-agricultural landscapes in the middle of the city is also a phenomenon that makes question the rural China's traditional identity. These sites of indeterminate fabric are often legally designated as rural despite being highly urbanized, representing a collective, social form of living and urban life that are not present within the formal city that encapsulates them. This very ambiguous situation and the various forms in which it reveal itself is the object of the study "Rural Urban Frameworks", explained in further detail in the next paragraph.

1.1.3. Case study on urban transformation: Rural Urban frameworks studies by Hong Kong university

Rural Urban Framework is a research made by by Joshua Bolchover and John Lin at Hong Kong University, which explores the fate of over 18 rural villages, with different scales of intervention. The projects promoted by the team deal with different kind of issues, all brought by the broader factor of urbanization process, and all of them aim to be robust enough to withstand and adapt to rapidly changing context. Phenomenas of blurred boundaries make understand how the urbanization is actually tied to urban centers and the countryside is an active agent in the evolving process of urban transformation (Bolchover et al. 2014). The team, in particular, focus on territories that are characterized by places in an in between state: half finished, partially abandoned, half demolished. These zones present a critical juncture in China's economic revival and bring to light unresolved contrasts existing in the country, such as black-market and discrepancies between individual and collective action (Bolchover et al. 2014). The authors identified 5 different conditions of contrast, all resulting from the original state of countryside, were they engaged with a huge variety of architectural projects, aimed to strengthen villages and communities and find new models for development that enables, in areas characterized by poverty and scarcity of resources, social, economic and spatial evolution of villages and resist the overwhelming process of urbanization.

The interest in analyzing this research as a background for the recovery of Hanglai village stays in the fact that "Rural Urban Frameworks" represent what can be defined as the "first generation of recovery projects in rural

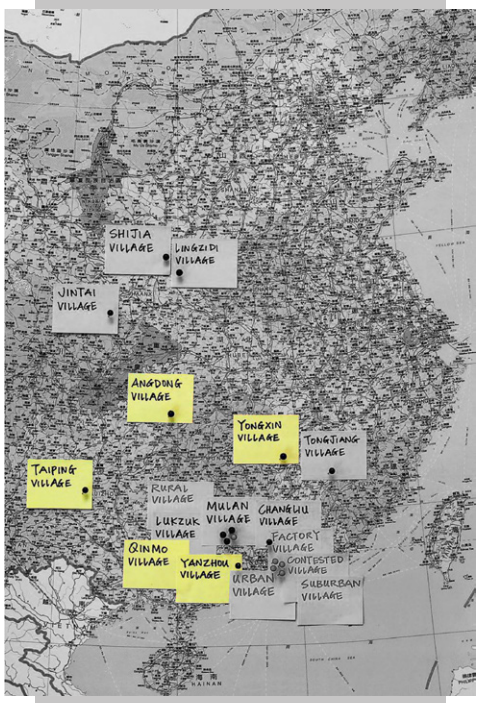


Fig 8 Map of the intervention of Rural Urban Framework.

11 Tim Oakes, Tourism and Modernity in China, Routlege, London, 1998, pp. 1-21

12 This strategy have been used in Guizhou province. This area of China, in fact, is characterized by a harsh landscape and many minorities groups, lacking of "developed culture", which represent somehow a drag for the province's economy. Tourism, contributed to bring wealth in Guizhou by making these minority acquire a more modern lifestyle (T.Oakes, 1998).

China"[13]. It can be considered as first generation all the redevelopment projecct which uses one single archiectural design as a catalyst to recover a rural village, while the more recent trend is to focus the redevelopment on a project involving the whole village and not the design of a single building. In the following paragraph are explained the 5 different conditions of villages analyzed in this research, and every condition is associated with an architectural project.

1.1.3.1. Urban Village

The urban village, is a rural enclave emerged as a result of the difference in policy over land use right with the surrounding urban fabric. This kind of areas develop in the city independently from it and follow informal processes and mechanisms normally typical of rural villages and can be considered as the Chinese version of ghettos, home of distinct ethnic minorities and migrant workers, and offering underground services such as black market (Bolchover et al. 2014).

The village analyzed for this type of village is Yongxin village, where the HKU team designed a prototype for a secondary school that could adapt to variations in program according to state policies in sponsored education as well as different site conditions. Considering that new policies on school clusters are more focused on the urbanization of the new towns, the school plays an integral part in the process of rural urbanization. The design concept is to treat the school itself as a village within the city center, modeling the volume as a courtyard building enclosing a large plaza, like in old Chinese towns. The big courtyard building create an abstract backdrop, its own individual context that allows each project to have an interesting resonance in either the city or the countryside. The inner courtyard is then divided in a series of smaller scaled spaces that activate the square, giving to the students interconnected spaces for living, working and socializing, where creating micro communities. This implementation of the courtyard stand as a reaction against the generic school building. The team, in fact, manage to make the prototype flexible by designing different ranges of social building that can be inserted in the large plaza according to the specificity of the different sites.

Fig. 9 View of the courtyard of the secondary school designed in Yongxin village by the HKU team.

1.1.3.2. Factory village

The factory village is a widespread phenomenon in particular in the Pearl Rriver Delta area and as its name suggests, it is related with the recent industrialization of China, its shift from a collective to an individual economy and in general the collapse of market economy, which caused a change of system, and the decentralization of the factories to Asia. After 1978 many villagers swapped fields for factories because many industries relocated to the attractive conditions offered by the special economic zones such as financial incentives, abundant resources of land and cheap labor. In other cases villagers started their own enterprises and this phenomenon

13 Comment by prof. Peter Ferretto, 2018.

generated a huge variety of activities. In general the coexistence of factory compounds and rural village is not problematic. The factory worker, they rather spend time in the nearby village, where they can find better food and entertainment and, if they have enough money, even better housing quality (Bolchover et al. 2014).

The presence of factory compound, though, altered massively the rural landscape and the social balance of the settlements, by requiring infrastructure to have connections with the city for supply. This is what happened in Taiping, a village in Guizhou province where the bridge was the most important place of gathering, and commercial center, but then lost its importance because of the construction of an highway. The team here focuses on renovating this 300 year old bridge by using both modern and traditional techniques, helped by the villagers. This project, though, goes beyond this and aims to give back to the village its most significant place and engage social, economic, cultural issues in it. The new surface for example, is made with hollow concrete bricks of different dimensions, where the holes are filled with grass and soil in order to make part of the bridge also a vegetable garden. Moreover these bricks are positioned in a fashion to recreate urban furniture and give places to sit and chill to the villagers.

Fig. 10 Refurbished bridge in Taiping village.

1.1.3.3. Suburban village

The appearance of the suburban village, correspond with the one of a middle class in Chinese society. Before the 80s, in fact, there was no such class subdivision, but after the economic reformation policies and the beginning of migration from the countryside, many farmers turned into wealthy people. This led to a demand for a new lifestyle choice and creation of suburban typologies such as golf real estate developments, gated tower compounds, theme parks, shopping malls... Often these type of development areas are separated from the surroundings, which in most of cases are informal settlements, with walls and security guard always present at their gates. Moreover, when there are enough funds for expropriation the government use such new development projects to relocate the families in the villages that get replaced by urban fabric (Bolchover et al. 2014).

An example of this phenomenon is Yanzhou village, a fisherman's settlement in a small island on the pearl river, nowadays relatively empty, accessible only by boat and remains an oasis of under development in an otherwise fast growing town. The HKU team participated to a competition launched by a private developer, aiming to transform the island into a new recreational destination for the rising middle classes in the region. Their proposal is about inserting programs related to leisure and tourisms, concentrated as "islands" in the fabric, preserving the existing remote rural quality of the area, with every leisure island being linked to the others with pedestrian and bike paths. A remarkable thing to mention is that, through the lease process proposed by the developer the villagers hoped to become middle class citizens, also through their own investments on potential house rentals, restaurants, shops.

Fig. 11 Conceptual view of Yanzhou project. The circles represent the functional island connected by bike

1.1.3.4. Contested village

In the process of rapid development, policy changes and land reform, the building and land use regulation have led to evolve to try to keep pace with new, unforeseen conditions. Nevertheless the high potential for corruption of individuals or village collectives, seeking for mechanism to develop rural land into profitable investments, cause the appearance of the so called contested village. In this areas the ambiguity of developers' rights and the unclear state of the land cause fragmentation and thus coexistence of patches of land having different speed of development and different stages of transformation, depending on power, financial status and political clout of individual agencies acting on the terrain. Contestation happen within different stakeholders including villagers, local government, developers and factory owners, in most of cases because of the lack of clarity in the land ownership rights, which can result in conflict (Bolchover et al. 2014).

For this type of village, the HKU team engaged itself in Angdong village to design the first charitable hospital in China and a model rural healthcare building capable of supporting the many progressive reforms on rural hospital management and caregiving. Since the hospital as a public institution is a completely new concept in China, in this framework, the task for architecture could be to change the perception of rural institutions to conceive them as public, open and accessible to all. A peculiarity of the project is the outside facade, made of old gray bricks recycled from the demolition of a nearby factory building.

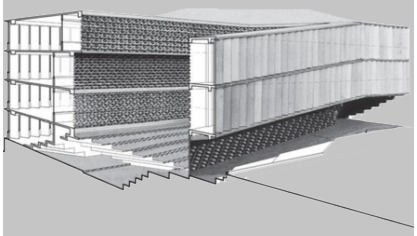


Fig. 12 Axonometric section of the Charitable hospital designed for Angdong village. This project has not

1.1.3.5. Rural village

As mentioned above, the rural village is a place full of contrasts, where at first glance everything seems untouched by the events of the past 30 years, but at the same time migrant worker's revenue are replacing the traditional dwellings with new low quality housing. Moreover, lately, the concept of the new modern socialist countryside made the countryside as an ongoing site for experimentation for the government, which give out housing blueprints for multistory new village housing to encourage domestic spending.

In this framework HKU team conceived for Qinmo village a long term, strategic project to gradually enable it to become more environmentally friendly and economically self-sustainable. So the solution has been to build a new school, a new community center and demonstration of an eco-farm. It is clear the emphasis on environmental education and good practice. The building was designed to have a green roof above each classroom that could serve as student garden and since Chinese villages are characteristically dense and lack of public gathering spaces, from the beginning the school was envisioned as a public building, not just as an educational place for children. The volume of the building was quite unusual but, since it was following the line of the nearby rice field, it was conveying good fengshui and it was blending well with the landscape, which made the villagers appreciate the new architecture. Since with this new school, the old one has been abandoned, the latter has been turned into a community space. Here the idea is to create a demonstrative eco-household and

Fig. 13 Celebration in the courtyard of Qinmo's new school.

education center for agricultural techniques. Moreover an ecological cycle is implemented through linking household waste to the feed for pigs and chicken that in turn produce manure for plants beds.

1.1.4. Case Study on rural transformation: Wang Shu and Wencun village

"Construction is actually ignorant destruction of the build environment, when architects have no understanding of traditions". This is Wang Shu's statement about the current trends in Chinese architecture. The main peculiarity of the work of the Chinese Pritzker prize's office, Amateur Architecture Studio, is indeed, to preserve Chinese building traditions and regional awareness of materials in a nation that is rapidly loosing its building culture. According to Wang Shu, in fact, craftsmanship represent a counterforce against the estrangements and discontinuity that modernity seems to constantly present everywhere in the world and that nowadays constitute a threat in China because of the fast and rapacious development. To achieve a special sensibility towards the use of materials in traditional building techniques, Wang Shu spend the 90s on building sites, learning traditional skills from artisans. Those experiences contributed to give him sensitive and poetic approach to traditional construction experience and develop an hybrid architectural style, often a blend of recycled, modern and traditional materials. Wang Shu believes in this type of architectural language because the reinterpretation of traditional style and forms help to give a continuum with the past. His work also reflects his ongoing concern about relationships between building, landscape and nature.

It is possible to see application of this thoughts in the Xiangshan academy of arts, where the arrangement of the 22 buildings that compose the campus follows the topography to well integrate the complex with the landscape. Moreover in this project Wang Shu reinterpret the use of traditional materials to regulate indoor temperature and implement recycled tiles, since this habit is particular of Chinese architecture as an economical way of building and already give to a newly-built architecture history of decades. Another project worth mentioning is the museum in the renovation of Zhongshan street. Here Wang Shu juxtaposes a modern version of a local wooden structure technique, dating back to the 10th century, on the clear lines of the envelope's concrete walls.

Recently Wang Shu took care of a project in a rural village with remote accessibility in Zhejinag province, Wencun, consisting in the combination of new village housing and renovation of the existing one. This project is funded from the local government, in the framework of the "beautiful countryside" policy, already tested out in a number of villages in Zhejiang[14]. Besides national guidelines regarding this policy has been defined recently, the existence of such action shows the awareness from central and local administration of the importance of preserving traditional villages. The hope of all those policies is that enhancing the villages will attract young people

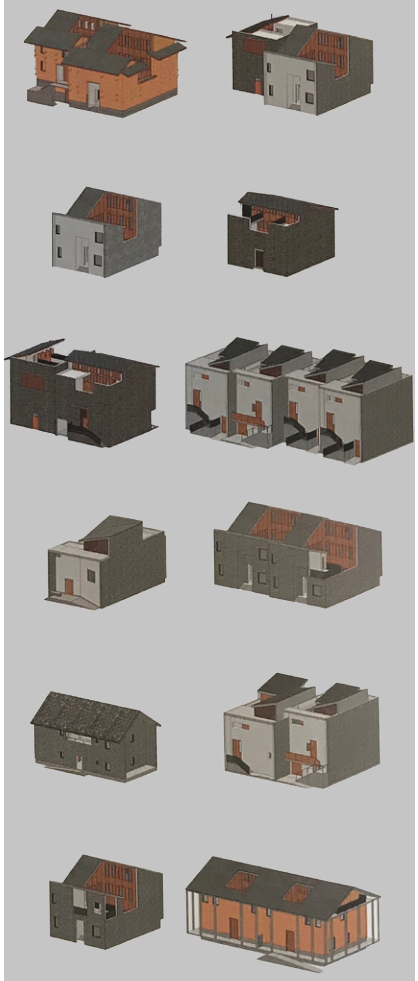


Fig. 14 For Wencun village project, Amateur architecture studio created 12 new typolofies to implement in the existing fabric. The various typologies differ from one another in terms of size, material and technique.

14 Frampton et al., *Wang Shu, Amateur Architecture studio, ,Lars Müller Publishers, Zurich*, (2017).

Fig. 15 View of the new buildings on the riverfront, in Wencun.

back to the countryside. Before the recovery, Wencun had over 500 registered households and around 1800 homes and the main economic activities practiced by the villages are agriculture, light industry and breeding of silk worms. The village is home to a mix of historic timber frame and masonry wall buildings dating back to the Qing dynasty and modern concrete housing covered in white ceramic tiles from the 90s. Most of the houses are located along a canal crossing the village and built around a courtyard, which is the key element of the original rural architecture. The new project foresee 24 units for local families in 14 new building typologies. Wang Shu's intentions for the new rural house type is to establish a new code for modern vernacular architecture and give typologies that can serve as a basic atlas to be included in many other village projects. The various typologies thought by Wang Shu are meant to differ from one another in terms of form, size, material and technique to recall the diversity of local building tradition and at the same time to create a more consistent villagescape according to the basic idea of coexistence between traditional and modern. Every house is articulated around the traditional courtyard, present adequate space for living and in general the ground floor is designed for family-run workshops to serve the rural industry, such as breweries or hardware production. Together with this every house have space for dining and cooking plus 3 bedrooms and one toilet on each floor. The use of traditional materials, like stone, bamboo, earth, is integrated and sustained through the use of an in situ reinforced concrete frame, in order to meet the current seismic regulations. Together with this, traditional techniques are used in a smart way to grant thermal comfort and energy conservation. To keep the architecture integrated, Wang Shu uses a particular "facade upgrade" process for 80s concrete tile buildings which consist in peeling off the tiles from the facade and then plastering with the same yellow clay above the wall footings which are chiseled like an artificial stone coating (Chen, 2017). The cornices are likewise modified to echo the new buildings. After this process, the dual poles of now and then in the village are not divided anymore, erasing the time between.

Fig. 16 View of the interiors of the new housing typologies in Wencun, showing the use of natural materials.

1.2

Introduction about Hunan Province

by Germana Isacco

Hunan is a Province in the South of China and throught this chapter will be described from the historical, economic and demographic point of view. Natural and architectural heritages are both really important here, considering, for examples the Wulingyuan Mountains, also called Avatar Mountains, or the historical dwellings along the river in the Fenghuang County. In Hunan there are also lot of different Etnich Minorities, with different traditions and cultures, that increase not only the tangible heritage (clothes, jewerly, dwellings, instruments..) but olso the untangible heritage (oral literature, songs..) of the Province.

1.2 Introduction about Hunan province

The People's Republic of China is a unitary one-party Socialist Republic that plays an important role in the global political, economical and environmental sphere. With a population that reach 1.4 billion is the most populated country in the world, but second by territorial extension after Russia. China, in fact, covers an area of 9.6 million square kilometres (31 times Italy) and has a density of 145 inhabitants/km^2, way more than Russia, who reach only the 8.4 inhabitants/km^2. The Communist party exercises jurisdiction in this enormous territory thought a division of it in 33 administrative divisions, whit different influence and power. They are classified in the follow way: five are autonomous province (Guangxi, Inner Mongolia, Tibet, Xainjian, Ningxia); four are municipalities, directly-controlled (Beijing, Tianjin, Shanghai and Chongqing); two are Special Administrative Regions (Hong Kong and Macau) and twenty two are normal provinces.

Fig.1 - Administrative division of China

1.2.1 Geography and Climate

Hunan (湖南) is one of the twenty-two provinces and is located in the South Central China and its capital is Changsha. Its name translated means "South of the lake", *hu* (湖) means "lake" while *nan* (南) means "south", and it refers to the Dongting lake in the North part of its territory, at the border with Hubei Province. Its territory is occupy for the 80% by mountains and hills,

that surrounded the province in the east, west and south. The height of the relieves is modest and the Huping Mountain is the highest, around 2000 meters above sea level. The plain is in the north consists in the U-shaped basin of the Dongting Lake, the largest in the Province and the second in China. The area of the Lake Dongting and the Xiaoxing area figures quite a lot in Chinese poetry and paintings, during the Song Dynasty (960–1279), when was considered a wild place. Another important area in term of natural landscape is the Zhangjiajie National Forest Park, commonly called Avatar Mountains, in honour of the eponymous film of 2010 and listed in 1992 as UNESCO Global Geopark. This park is inside the Wulingyuan scenic area, a huge territory who covers an extension of 690 square kilometers and is characterized by more than 3000 quartzite sandstone pillars and peaks, many of them are more than 200 m in height. They peaks are a world-rare landform created by a tectonic position and under particular conditions of neotectonism and exogenous process. Zhangjiajie was recognized in 1982 as first national forest park in China. Another important site is the Fenghuang Ancient Town added to the UNESCO World Heritage List on 2008 in the Cultural category. This ancient town has been regarded as the most beautiful town in China by New Zealand writer Rewi Alley. It was built in 1704, and has 300 years of history. The ancient city is an important centre for Miao and Tujia ethnic minorities.

The climate of Hunan is subtropical. This climate zones includes continental areas at latitudes between 25° and 35° in the northern or southern hemisphere. In the subtropics winter is short, cool, damp and can freeze, while summer is very hot and humid with a high degree of solar radiation. The annual sunshine duration is 1300 to 1800 hours. Precipitation is high especially in autumn when there are monsoon. January temperatures average 3 to 8 °C, with a lower limit of -5°C, while July temperatures average around 27 to 30 °C. Average annual precipitation is 1200 to 1700 millimetres.

Fig.2.1 - Physical map of Hunan Province

Fig.2.2 - Map of Hunan Province

1.2.2 History and heritage

The first written evidences about Hunan province date back 350 BC, when it became part of State of Chu, which was ruled by the Zhou dynasty till the 221 BC. After was ruled by the Qin dynasty till the 207 BC, when the Qin dynasty downfall and as consequence the Hunan became quickly incorporated into the Chinese empire, ruled by the Han dynasty (206 BC – 220 AC). At this time and for hundreds of years thereafter it was a magnet for migration of Han Chinese from the north, who displaced and assimilated the indigenous people, cleared forests and began farming rice in the valley and plains. The province was created in 1664 from Huguang and renamed to its current name in 1723. The population continued to climb until the nineteenth century, when became overcrowded and prone to peasant uprisings. Some of the uprisings, such as the ten-year Miao Rebellion of 1795–1806, were caused by ethnic tensions. Hunan became a centre of revolutionary activity: uprisings against Qing rule broke out in the province in 1910, presaging the more widespread Chinese Revolution the following years that finally

Fig.3 - Zhangjiajie National Forest Park

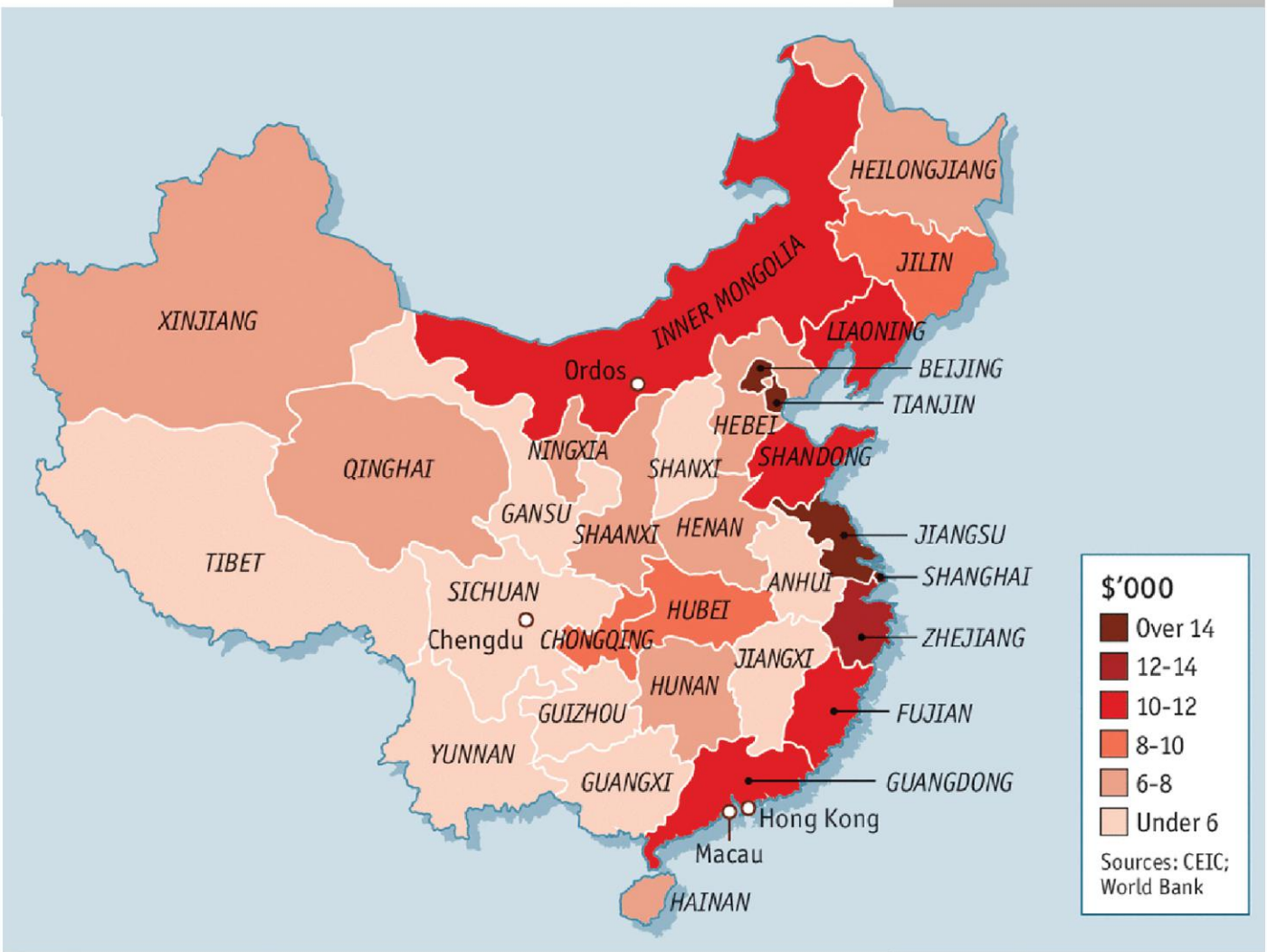
Fig.4 - Fenghuang Ancient Town

overthrew the dynasty and established the Republic of China. Thereafter, Hunan remained in a state of unrest from which it had little respite until 1949, when the People's Republic of China was established. Many important Chinese Communist Party leaders—including Mao Zedong, who was born in Shaoshan, and Liu Shaoqi, chairman of the People's Republic (1959–68)—were from Hunan. During the Sino-Japanese War (1937–45), Hunan was the scene of bitter fighting between 1939 and 1941. As Mao Zedong's home province, Hunan supported the Cultural Revolution of 1966–1976. However, it was slower than most provinces in adopting the reforms implemented by Deng Xiaoping in the years that followed Mao's death in 1976. Hunan supported many of the policies of Mao's Cultural Revolution (1966–76), and it was slower than other provinces in implementing the economic and political reform programs instituted by the post-Mao leadership[1].

1.2.3 Economy

Although mining and industry have been developed since 1949, Hunan's economy remains mostly agricultural. Hunan ranks first among China's provinces in rice production and exports a large surplus to other provinces. It is estimated that most of the province's cultivable land is devoted to paddies (wet-rice fields), a great many of which in the south produce two crops of rice per year and demand careful cultivation. The first crop is planted at the end of April and harvested at the end of July; the second crop is harvested in November. Other food crops include sweet potatoes, corn (maize), barley, potatoes, kaoliang (a variety of grain sorghum), buckwheat, garden peas, millet, and horse beans. Red and black tea plus peanut cultivations are widespread and variety of fruits is grown throughout the province, including citrus, pears, peaches and chestnuts. During the early 20th century, heavy and wasteful cutting of Hunan's timber reserves occurred. Since then, stricter control of cutting has been enforced, and some reforestation has been carried out. In Hunan's considerable mineral wealth includes ample coal

reserves; iron ore, tin, and manganese deposits; rich deposits of antimony; and lead, zinc, tungsten, molybdenum, bismuth, niobium, and tantalum. The main coal measures are located in the south. Hunan is one of China's largest producers of tungsten. Coal is used in large thermal-generating plants in Hunan's major cities. However, some two-fifths of the province's electric power is produced by hydroelectric stations, most of them of small and medium size. Hunan's metallurgical industry is centred in the triangle formed by the three large cities of Changsha, Xiangtan, and Zhuzhou. Plants producing iron and steel, processed foods, and electrical equipment are located in Xiangtan, while Zhuzhou is the hub of large-scale heavy industry (notably chemical fertilizers and nonferrous metals) and commodity exports. Changsha is Hunan's centre for light industry, which includes rice milling, food processing, aluminium smelting, and the manufacture of machine tools, bearings, and textiles. It is also famous for its handicrafts, which include xiang (border) embroideries (one of the four noted embroidery styles of China), duck-down quilts, umbrellas, and leather goods. Yiyang, known as "Bamboo Town", is typical of many of the smaller cities specializing in one particular handicraft. Nearly everything required in domestic life, from beds to scrubbing brushes, is made from bamboo. Fireworks and firecrackers produced in Liuyang are world-renowned, and porcelain wares made in Liling are known as the "cream of pottery arts of the East"[1].



1. History and heritage and Economy from https://www.britannica.com

Fig.5 - China GDP per person,2015

1.2.4 Population

Hunan's population reach 67 million, the 5 percent of the country's total and it the 7th most populous provinces of China. The average population density is 318 people per square kilometerr. Between these inhabitants only 20.23 are households registered, this means that around 46,77 million lives in shelters or abusive house. Referring to the Hukou Registration Status 35,2 are Registered as Citizens, and 32.2 million as Farmers.

Hunan is a multiethnic province, where the Han nationality 89,79% and other 55 ethnic groups reside 10,21% (57.5 million). The population of the ethnic groups exceeds 7 million, accounting for 10.23% of the province's total. Hunan is a concentrative residence of the Tujia, Miao, Dong, Yao, and Bai people. The population of the five groups totals more than 100,000. Hunan has over 5.44 million religious people, including 3.697 million Buddhists, 1.108 million Taoists, 144000 Muslims, 44000 Catholics and 446000 Christians. According to surveys conducted in 2007 and 2009, 20.19% of the population believes and is involved in ancestor veneration.[2]

Item	Population (million)	Proportion (%)
Total	68.22	100
Of which: Urban	35.986	52.75
Rural	32.234	47.25
Of which: Male	35.176	51.56
Female	33.044	48.44
Of which: Aged 0-15	13.448	19.71
Aged 16-59	42.762	62.68
Aged 60 and above	12.011	17.61
Of which: 65 and above	8.015	11.75

Fig.6 Population and Its Composition by the end of 2016

2. Population from worldpopulationreview.com

1.3

Miao Minority

by Germana Isacco

The Miao Minority is an etnich group that count 11 million people. In Cina they live in Guizhou, Yunnan, Sichuan, Hubei, Hunan, Guangxi, Guangdong and Hainan Province. This Minority includes groups that are different for clothes style, jewelry, traditions and activities. The Miao people usually live in mountain areas in wooden traditional dwellings.

1.3 Miao Minority

The Miao, also known as the Hmong, are one of the most numerous ethnic minorities in between the fity-five "minority nationalities" (*shaoshu minzu*) officially acknowledged by the Chinese central government. "Nationality" (*minzu*) and "minority nationality" are two prevalently used terms to define the relationship between the majority Han and the non-Han nationalities. Within this categorization, fifty-six minzu have been recorded in the official census of today's China: the Han nationality plus fitly-five shaoshu minzu. There are around 80 Miao's community in the province of Guizhou, Hunan, Sichuan, Yunnan, autonomous region of Guangxi, on the island of Hainan in the provimce of Guangdong and Hubei. The largest communities are found in Tahiland, Laos and Vietnam (fig.2). What these different group share is the typology of environment they have chosen to live in: with many watercourses, natural resources, a mind climate and plenty of rain, which they use to have varied farming. All of these groups where located in western Hunan and eastern Guizhou in the third century BC, after which they began to migrate firstly in west toward northwest Guizhou and the river Wujian in south Sichuan, and later on in the above mentioned places. This wide geographical distribution of the people has led to a profound difference in customs, dress and dialect.

Fig.1 Map of people of China

Their language belong to the Sino – Tibetan group and has three dialects in China. Their traditional dresses for special occasion but also the every-day clothes varies from community to community. The age, civil status, sex and provenance of the wearer are the main reason for differentiation inside the same community. A short description of the Miao that is useful to understand they separated way of living is the following quotation from Savina (1928) in his Histoire des Miaos:

"Living continuously on the heights, away from all other Asiatics, these men speak a particular language unknown by all those who surround them, and wear a special dress which is seen nowhere else"[1].

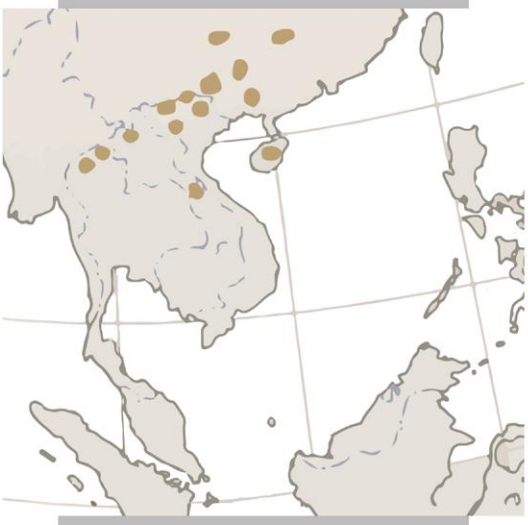


Fig.2 Miao communities in Asia

1.3.1 Miao minority and the different group

The variety in clothing present in the different group of Miao People in China has led to classify the community according to the colour or the pattern of their clothes, but also for hairstyle and special accessories. Their festival are mostly in coincidence with festival in the Chinese lunar calendar, one of the most important is the Mia New Year celebrated by the group who live in Guizhou or the "day of the rabbit" or the " day of the ox" celebrated in Guangxi. Other are the festivals of the Sisters, of Cows, of the Mountain Flowers and Tasing of New Rice. They also celebrate in a very impressive way the Dragon-Boats, of the Pure Light, and Mid-Autumn. The communities are rigidly monogamous and the cultural canter of their villages are song and dance. Also the traditional easy unrhymed songs are really developed and accompany with many type of musical instruments: the most common is the lusbeng, copper drums, bamboo pipes and horn. The most common dance is the dance of the drum, that takes place in minimum a couple (one person hit the drum while dance the other hit the edge of the drum to give rhythm). The local hand made products are generally highly coloured and include different techniques like embroidery, waving, paper cutting and batik, that is their principal exported product.

Fig.3 Long-Horned group

- Long-Horned: they live in mountains at height of 2000 m and their group is compose by 12 near villages that in total accommodate 4000 people. Their name is due to the cow's horn the woman put in their hair to good luck, and after it they rap around with a fabric, to make the special hat that the woman wear. It is actually created by the fact that the woman bind their hair up on the top of their head in a knot and hold it in place with a piece of cotton.
- Blacks: The Miao who live outside of Cina, more precisely Thailand, Vietnam and Laos, they call them self Hmong, because the Thai called them Meo (a pejorative term that means "barbarians"). The Blacks are classified in two subgroups: the blues and Whites. So Blue Miao women wear their hair in a large chignon and their pleated skirts have red, blue and white horizontal stripes. They also wear black satin with cuffs and collars embroidered in yellow and orange. Blue men wear baggy black trousers and jacket, similar

Fig.4 Long-Horned group

1. Geddes, 1976

Fig.5 Blacks group

to those of the women, which are closed by a button on the left shoulder. Instead, White Miao women wear loose black trousers, held at waist by long blue sash that falls to their feet, and simple jacket with blue cuffs. Some groups wear a blue brimless hat.

- Pointed hat: they are different mainly for the double pointed hat that the women wear in all the different festival, and they are specialized in playing the lusheng.
- Small flowers: they are based expecially in Guizohu and their jacket are particularry elaborated compared to other minorities once. In fact they are made from satin and decorated with cross-stitch pattern. Their embroidery decoration are quite developed and abstract respect the Flowered that wave mainly butterfly, birds and flowers. They are distinguished by the red turbans they wear in the popular festival that take place in Nankai. A very popular festival is Trampling the Mountain Flowers' in which childless couples repeat their marriage vows to the god of fertility.
- Silver: the women of this group wear the most elaborate ornaments in the Miao, in fact they are made of silver and includes necklace, collars, arm-bands, tiaras, brooches, combs and ring. Silver is a symbol of wealth and beauty, and the Miao favourite Metal because it remember the reflection of the Moonlight, to whom they are really attached because of the Moon Festival they celebrate.

1.3.2 Traditional activity and lifestyle of Miao of Hanglai Village

This focus on the Miao minority rather than the others is bacause the object of this research is a Village in North – West of Hunan, named Hanglai Village, where the populations can be classified as the Blue Miao. The next para-graphs will illustrate some specific characteristics and traditions of this group.

Fig.6 Blacks group

1.3.2.1 Names

In the village, the surname Ma is the most widespread, while Long and Shi are surnames coming from outside the village. Ma is the surname of people migrated here from Jiwei, people with surname Long come mainly from Ma Li. There is an oral legend that said that three brothers came to the village: one went to Hanglai upper village, one to the lower, one to the border Hanglai, in Molao village (which is a big compound of Long families). According to the villagers, Long's ancestors originally come from Buchouxiang, in Huayuan county. In Hanglai there are also three Shi families, two have come from Miao village, and the other from Yanji village, in Paiwu county.

1.3.2.2 Oral literature – "The ancient stories"

"Ancient stories" of Miao people from Huayuan is one of the most unique pie-ces of oral literature in China. It has been bequeathed between Huayuan county and all other Miao paople's counties inside the Xiangxi region. It's a long ancient ballad, composed a very long time ago, which got longer and longer with the passing of time and generations. It describes the invention and origin of all things. This song is very important in Miao cultural studies, it can be compared to an enciclopedia of the Miao culture itself. According

to the villagers, Badai xiong people are those who best narrate the "ancient stories".

1.3.2.3 Festivities

The traditional Miao festivities are: "The dragon lifts its head" festival, in February, when people go to the temple of Earth; April, 8th is the celebration of cattle slaughter; the Dragon Boat Festival, where people make rice dumplings (according to the tradition, they should be wrapped by people with surname "Yang", if they are not wrapped and given as gift to friends, it is said that snakes will bite you);"Autumn", where people celebrate the autumn harvest; Double Yang Festival, which is very important in Miao culture: in this day, everyone, rich or poor, must "hit" the glutinous rice doughi, kill ducks and goats and others not ordinary dishes.

1.3.2.4 Food

Xiangxi fat meat (smoked pork meat), sour soup, rice, toufu, paddy rice fish and wild mushrooms are the most common food. They also make wine from corn starch and they mainly sell to Huayuan, Jishou and other cities nearby, as well as to other nearby villages and in Jiwei township. They really like this wine flavour, and since local water quality is so pure and coming for a spring, the corn starch wine produced here have the best flavour in the entire region. Both the upper and lower village has a brewery, the one in the lower village has been active for 10 years and has been taken from the previous generation: it is registered commercial activity, the lowest price is 12 yuan/jin, but better quality wine can be 30 yuan/jin (Jin = 500 g). The upper village brewery is not registered as private business , one jin of wine costs 10 yuan, and in high-peak season it can sell 70-80 jin of wine; they store their wine in caves: almost 1000 jin wine is stored here, the "collection" can be seen on request.

1.3.2.5 Miao embroidery:

Huanglai village is called the "the place to learn the traditional embroidery techniques of Miao" in Xiangzi autonomous prefecture. Almost all women in the village have learnt the basics of embroidery, they have already started two classes. In the free time, women gather together to do embroidery, sing Miao songs, be happy together: this a very beautiful scenery, and the atmosphere of happiness is contagious. They use caws bones for the embroidery, they have a special structures where they put colourful beams, and it is a very peculiar activity to take part in. However, as a consequence, most women in their 30/40 have sight problems, but do not have money to buy glasses, nor a place to buy them. In the village there are two embroidery textile machine, but they haven't been neglected, as it is very difficult for this village to enter the market. The idea of creating their own brand does not seem very feasible, and we should therefore think of how getting them in contact with already existing brands, and how to build an economic cooperation advantageous for the village.

Fig.7 Pointed Heat group

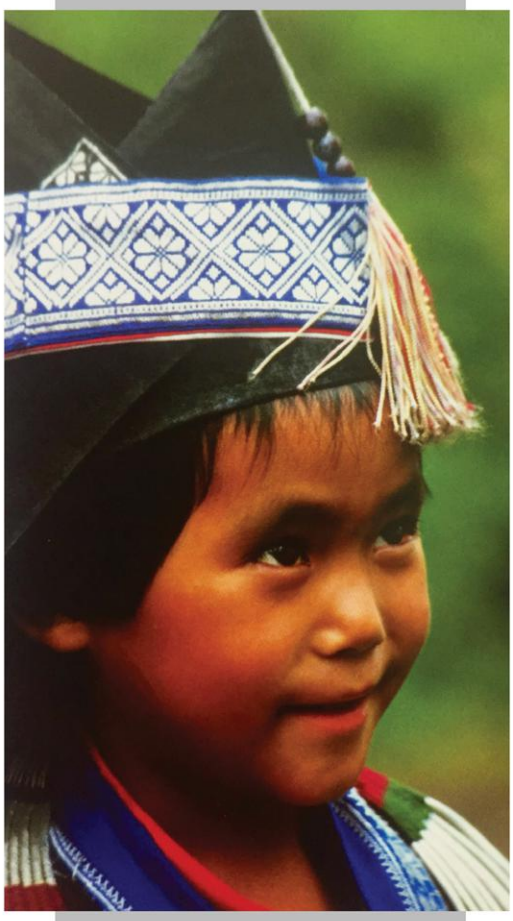


Fig.8 Pointed Heat group

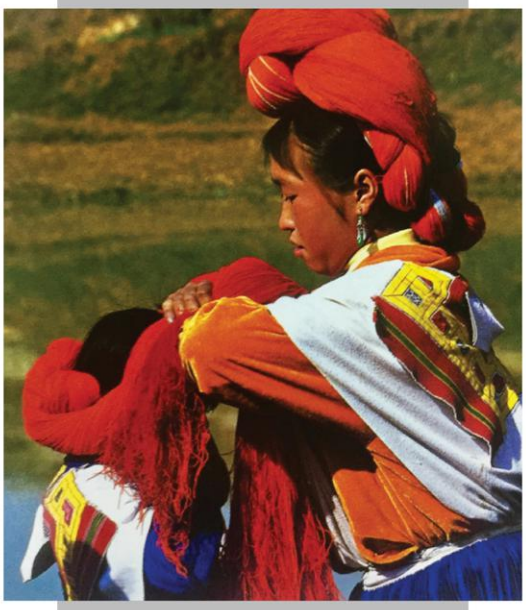


Fig.9 Small flowers group

1.3.2.6 Miao songs and drums

Most songs are sung in pair: one sings and when he stops, the other continues, while the last part is sung by everybody. In the past, people would sing spontaneously also while walking along the mountains, but now this only happens when people are in groups, for example, to do embroidery, or when a guest is coming from another village. Middle aged people really like Miao song, or playing Miao drums. Playing drums and singing songs is a very special event, full of local culture, however, young people do not sing that often anymore, and in the village there are no drums to play.

1.3.2.7 Ancient tombs

On the west side of the mountain there is the village ancient tomb, but it is been looted. According to the villagers' reports, in the middle of the tomb there is a spring which flows all year round. However, the village does not hold any books or reports on its history, and among the township records no document is related to Hanglai village. So far, no researcher of cultural history and folk tradition has been contacted.

Miao culture has no alphabet, history accounts are bequeathed orally, including "the ancient stories". Villagers say that the ancient tomb is one of Chi You's 99 tombs: Chi You is considered the ancestor of Miao people.

1.3.2.8 Miao people's wedding

Miao from Huayuan have a monogamous wedding system. Most of the time they use a procuress to define and set the wedding. Young people meet at the workplace, at the market, visit each other houses, and after dating a few times, singing together and exchanging gifts, they define their relationship, and freely decide when to get married. Usually it is the broom's family to contact the bride's family to set the wedding date. When a guy likes a girl or two young people fall in love, the guy must prepare a present, and ask a procuress to go to over to the girl's family and inquire on the circumstances. If the girl's family seems to be happy, the procuress will inform of the guy that everything went well, and choose a auspicious day to officially ask the family to marry the girl. The more times the procuress visits the girl's house, the better, because Miao people say "if you need to ask many times, it must be something precious". When finally the girl's family makes up its mind, they announce the wedding with petards, eating and drinking together. Once the date is set, the guy will send the girl his "gift": this usually takes place one year before the wedding: in the gift usually there are glutinous rice balls, wine, meat, rice, candies, etc. According to the dimension of the dowry, it is possible to understand the economical conditions of the two families. Afterwards, the bride's family must invite the broom's family to drink wine, get to know the relatives. Later, the guy will ask for the girl's "horoscope". The night before marrying the girl, the guy must ask one of his friend to be "bestman" (or protector). On the day of the marriage, the bride's sister make jokes, they colour with soot the bestman's face, they tease people, etc. After saying goodbye to his family – usually late at night or early in the morning, the bride goes to the broom's house. Once in front of the broom's family house, the

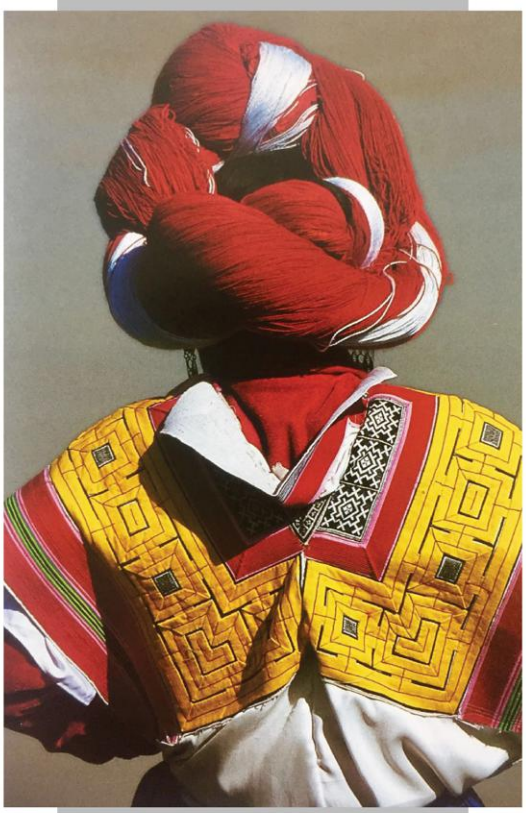


Fig.10 Small flowers group

broom's family must set up a fire, which is symbol of prosperity. When the time is auspicious, the bride can finally enter the house. The bride must accept the coking set from the broom's family ladies, a to symbolize that she will take care of the household. She will afterwards sit next to the fireplace. The wedding usually takes two days, and only afterwards the bride and the broom can finally meet. But they cannot live together until all the guests are gone: only then they can start their normal life together.

Fig.11 Small flowers group

1.3.2.9 Mourning and burial – Miao families' badai

Miao people's burial ritual is a very unique Badai ritual. One day before carrying out the dead, the road to the burial place must be freed from ghosts and spirits, in order to prevent the dead from being trapped by them. The Badaizha cast spells on the road to free it from spirits. The following day, once carried the coffin till the burial place, they play gong and drums, while the Badaizha use whips to scare away pigs, goats and other evil spirits. The coffin is buried according to the Fengshui: once decided the direction, the Badaizha perform a dance to attract the souls to the coffin, and also their Yin soldiers.

1.3.2.10 Miao people's taboos

Miao people are all over the world, and every place has its own taboos and superstitions. Miao people from Huayuan, before the liberation, still used to divide the land in neighbourhoods and to call them according to the old way: for example, Jiwei, Shuanglong, Shilan were called respectively li. Many are the rules and taboos to observe in Miao culture, and this is even truer on festivities, weddings, building constructions, funerals, etc. In order to avoid unpleasant situations, an outsider coming to the village should be aware that:

1) It is forbidden to step over the cast iron tripod, which is in the fireplace and it is used to set fire. According to the legend, the tripod is an ancestor who protects fire and has transformed into the shape of tripod. Whoever stepped on the tripod, would be disrespectful towards the ancestors or the house owner.

2) It is forbidden to sit on the fireplace. On the fireplace there is a central column, called "Hanggao" by Miao people, and considered a place for ancestors: it is where Miao people's elderly would sit, while young people and children are prohibited to sit here. Guests are usually not allowed to sit here, unless they are explicitly invited to do so from an elder member of the family. It goes without saying that, in this place, it is not allowed to be loud, or use bad words, unless you really want to make the ancestors angry.

3) It is forbidden to move the "dragon stone". In Miao houses' central hall, there is a stone wall, under which you can find a "dragon hole", which cannot be moved: if moved, the dragon will get scared and flee the house, and the owner, no longer under the dragon protection, will encounter misfortune.

4) Until parents are in good health, it is forbidden to wear white handkerchief, which are considered of mourning worn by children when their parents die.

Fig.12 Small flowers group

Fig.13 Miao people in Hanglai

Fig.14 Miao people in Hanglai

Fig.15 Miao people in Hanglai

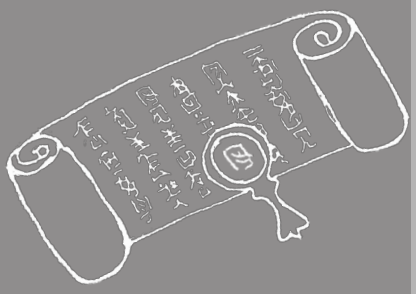
5) The fireplace is usually on the left of the central hall: it is set into the wooden floor, in a hole excavated for the fire. Between the fire and the wooden floor there is about one feet distance. In this "fire hole" there is an iron cast tripod, used to cook. Except for weddings, funerals, celebrations, banquets and other special occasions, normally everything is made around the fireplace. When few people are home, the food is covered with a lid and the family eats around the fireplace. When guests come over and more than on dish is cooked, plates are put on a table next to the fireplace. In winter, all vegetables are cooked in one big pot, cooking while eating. The fireplace is smoky day and night, there is always hot tea and hot water available, which are stored in cans next to the fireplace. The smoke is so much, that the wooden walls and columns of the house get black over time: it is possible to guess the age of a building simply by looking at the colours of its walls. Although this may not be aesthetically beautiful, on the other hand the smoke protects the house walls and columns from bugs. Above the fireplace usually hang meat, dried vegetables, spices, and generally things that can be smoked by the fireplace smoke. Around the fireplace we find chairs, all made according to Xiangxi Miao art craft tradition. Local people are very hospitable and love to have guests. When a guest comes over, they sit all around the "fire hole": they grill meat, while they sing, or chat, or cook, or drink wine.

The fireplace is so important in Miao culture that there a few rules to respect. The fireplace must be aligned to the axial pillar. The upper part is a place of honour called "hanggao" by Miao people, it is considered the place where the ancestors' spirit live, and therefore only the elderly (grandparent's generation) are allowed to sit here, and people cannot of course fart here, because it would be very disrespectful towards the house owner. One of the three feet of the tripod must be in the direction of the axial pillar's place of honour. The tripod is a treasure for the Miao. According to the legened, once upon time there were three brothers, tall and strong, every time there was a problem, they would always spare no effort and gat it solved. One year, the tribe fire got extinguished (si spense), and the village living condition got back to the primitive age. The three brothers climbed down the mountain and, risking their own life, they went to other villages and managed to steal their kindle material. When finally they got back to the village and started making fire, all of a sudden a heavy storm with thunders and lightning broke in the sky. To protect the kindle material, they stayed close tight around it, so that it would not get soaked. After a very long while, the storm was finally over. Everyone came down to celebrate the three brothers, and they, smiling, distributed a little of kindle material to every family. Miao people have not forgotten the three brothers' story, and, next to the fireplace, they used to put three wooden piles to remember them. The three wood piles used to be changed every month, but today they have been substituted with a tripod. There is also a song to celebrate these three brothers. This is why it is strictly forbidden to put one's feet over the tripod to get warm: it is considered so disrespectful that it could even start a feud to be revenged for one generation.

2

Research Objectives

by Germana Isacco & Chiara Menna



It is here explained the aim of this research, which is to propose a theoretical approach, strictly connected with an architectural strategy to develop Chinese rural villages, which focuses mostly on enhancing local culture and empowering local economy through promotion of tourism.

Being two double degree students, the first focus of the research is how to approach a totally different culture and to propose a solution that would combine our background as italian architecture student with this different reality that helped us to grow and broaden our horizons with an experience which is uncommon compared to the basic research work. John van de Water says in one of his interviews "You can't change China, is China that changes you". By keeping in mind those words, before proposing a solution, we first try to see problems from the local perspective, by "removing our clothes and becoming Chinese between the Chinese", going on a field trip, interviewing the local people and studying the local culture. The thesis tends to not limit itself to a theoretical part of paper work and design, but also to focused actions, starting from the field trip, to participation to conferences to promote the research and volunteering work. In general, the deeper aim of this research, is to propose a theoretical approach, strictly connected with an architectural strategy to develop a Chinese rural village. This approach focuses on enhancing local culture, ameliorating the life of the inhabitants by providing basic needs for everyday life and empowering local economy through the promotion of a sustainable tourism.

The key principles of this are mainly three. Firstly The research follows an holistic approach in order to understand the village in its overall. Holism is the idea that systems and their properties should be valued as a whole, not as a collection of parts. The rural village is thus considered as a complex system, a whole where its pats, synthesized in architecture, people and landscape. This whole is governed by an organic order that makes the parts harmonious to each other. This means that the site survey does not limit itself to the catalogue of the buildings, analysis of their parts and, in general, of the physical elements of the village. The village thus, should be seen as a whole substance, formed by the above mentioned elements. The research, in fact, goes in deep by examining the intangible aspects of Hanglai, by understanding the local culture, how it influence the every day life of the village, and also how this latter affects its economic system. The choice of holism, indeed, is connected to the fact that this concept is very well embedded, still in modern times, in many aspects of Chinese culture, for example in the acupuncture or in the landscape scroll painting.

From this come the second main focus, which is the respect and preservation of the Genius Loci, which can be also intended as local identity. The holistic research approach is helpful to realize that the Miao traditions are very strong in the village, and to fight against the tendency of loss of identity in the Chinese rural areas, the respect of local features is needed. This include a minimal impact on the overall architectonic image of the village and preserve its inner beauty, through an "archipuncture strategy", focused not on implementing a new huge community center, but by intervening in the existing rural fabric, for example in abandoned buildings. The research also focus on the respect of human scale, to keep the impact minimal also on what concern the invisible image of the village, such as the life of the inhabitants.

Thirdly, the locality is considered also for what concern the availability of

resources and building materials and the respect of the landscape. The design, indeed, focuses on ameliorating the building conditions through details that are not necessarily visible at first glance, like implementations of the existing building technology that take into account the availability of local resources.

3.1

Survey on the village scale

by Germana Isacco

Hanglai Village is a small village composed by around 50 wooden houses, builded in a "hearth" shaped valley, crossed by a river that ends in a huge cave. In the village the life quality is really low: there is no current water, no electricity, toilets or showers. Lot of houses are abbandoned beacuse adults and teenegers moved to the near cities to find job opportunities. The flat land is coultivated with rice, the main aliment of their diet.

The survey were entirely done by us: we draw the first planimetry of the village, measuring all the houses and the streets.

For the survey was crucial the translation from the Miao dialect, to Mandarin Chinese language, then to English done buy the two Fllows of Serve for China.

3.1.1 Introduction

Hanglai Village is in the Xiangxi Tujia and Miao Autonomous Prefecture, an unique prefecture that with the other thirteen prefecture-level cities form the fourteen subdivision of Hunan Province. This Autonomous Prefecture as an area of 15 462 km^2 and a population of 2.5 million. Hanglai village is in borders with Fenghuang ancient city to the north, La'er mountains to the south, close to Caohai lake on the west and to the east, Hanglai is 42 km away from the Huayuan, the county main city and also 60 km from Fenghua Yidongren airport.

Fig.1 Hanglai earth shaped valley
28°20'36.00"N, 109°22'14.66"E

The village is about 50 wooden houses located in a "hearth" shape valley with a river that pass through to end in the cave and then proceeding underground. The oldest house was build 100 years ago, but the villagers said that the first group of families moved here at the end of the Qing Dynasty[1] due to the positive condition of the site according to the Feng Shui theory and then they started to shaping the slope of the mountains to create the

terrace to cultivate.

Looking the village with a drone or from the tallest peak of the surrounding can be easy to identity Hanglai with this description of Hemudu, another Miao village: "In my eyes, the ancient "stilt house" style of Miao village architecture is a perfect system: that mountain, that river, that tree, that house over the water, that man, they are all perfectly integrated with each other. Here, architecture is not just an architectonic construction, but it's a social, economic and cultural ecosystem, where everything is related to everything and mutually dependent on everything. It's an integration of 3 elements: the sky, the land, the man, that creates this beautiful space[2]" . The beautiful identity of this place is due to its untouched condition, infact there are not many sign of modernization such as renovated concrete houses, public building with a monumental looking or infrastructures elements. The village is situated in a subtropical climate, with monsoon and very humid weather. The site is about 880 metres above sea level, the average yearly temperature is 11.8 °C, while the average annual precipitation amount is 1145 ml. The temperature is quite pleasant, in fact the coldest month is February, when it goes -3°C maximum. The raining season is between April and May.

Fig.2 Hanglai Village, bird view

3.1.2. Population

Hanglai village is divided in an upper and a lower part and comprehend 142 families, 558 inhabitants, of which over 95% are Miao. There are 13 people among them that are member of the Communist party. There are 42 families that are counted as living "in poverty conditions", but they are distinguish in three level of poverty, one living with 90 RMB/person/month, one 100 RMB/person/month, one 120 RMB/person/month[3] – in total 436 people hold a "financial subsidy" card. The last data report made by the local government define 78.13% of the population as being poor, but looking at the actual conditions of the village the percentage is likely to be close to 90 so the result is a general poverty condition. Those registered as "financial subsidy" card holders usually are ill and therefore unable to work, they do not have any way to earn money or equipment for disabilities. The villagers have a strong community sense and organize themselves giving to different people different responsibilities and roles. The head of the village is Long Zaiqi, the branch secretary is Ma Zingzhong, the accountant is Ma Jianwen, the person in charge for women's conditions is Ma Jialian, the general manager is Long Delin, the construction manager is Ma Delin. Since 2013, the Bureau for the development of poor areas has implemented new policies to improve road conditions and in 2014 were approved new projects for housing renovation. The village has no cultural plaza, no public building or area for entertainment or relax, no public events held on fixed and cyclical dates. Cultivation is mainly of corn, paddy rice, flue cured tobacco, soybeans, youcai (a kind of lettuce), but plough land surface is very limited, production is only for local use, moreover wild animals at times may

1.The Qing Dynasty, officially called the Great Qing, was the last imperial dynasty that ruling China from 1644 to 1912 to be succeeded by the Republic of China.
2. Pu Xiaoyi, 2017.
3. In euro, it would be 11,4 € - 12,7€ - 15,24€, since 1 RMB is 0,127 € cent.

spoil the fields, leaving the village with no food supplies for the year to come. The land is divided in small lots, often in deep gorges on the mountains: the only way to transport things is walking along the mountain paths, carrying everything on the shoulders, which require a considerable amount of human workforce. Most of young people in the village move out to find a job, leaving their buildings empty. The buildings abandonment rate is severely high

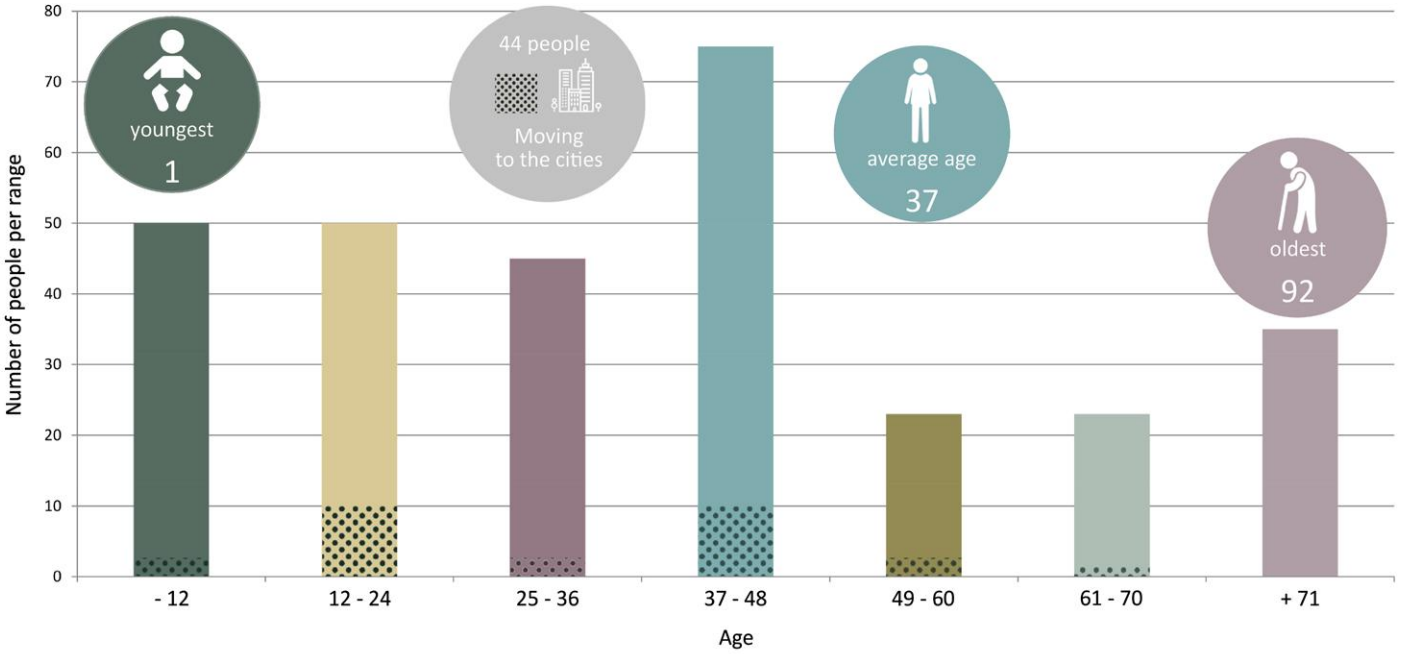


Fig.3 Population datas

in the lower village, while in the upper village since 2016 middle aged men e started coming back to the village. Breeding pigs, cattle, bamboo rats are activated started only in the 2016.

3.1.3. Physical feature

The landscape is typical of karst[4] typography, with massive limestone caves and profound underground rivers. The conformity of the ground is an high plateau, mainly hilly with rice fields terraces. The entire village surface is slightly over 15000 mu among which 3500 mu[5] are covered in forests, and only 538 mu are arable land.

On the north-east side of the village there is a quite large natural stone forest, made of bizarre shapes and extravagant forms, with bending roads, junctions and ravines, mostly covered in vines and climbing plants: it looks like a natural maze, not yet opened up and spoiled by tourism. It can be compared with Stonehenge for the size of the stone, but the disposition is more irregular. The rocks can be used for practicing bouldering and it's quite suggestive just walk in between them, playing hide and seek, or contemplate the light that filter in between. In the east part of the village there are cliffs, partially occupied by grottos and caves of different seize, four of them are

4. Karst is a topography formed from the dissolution of soluble rocks such as limestone, dolomite and gypsum. It is characterized by underground drainage system with sinkholes and caves. The most notable karst areas in the World are: Nullarbor Plain in Australia, Yucatàn Peninsula and Chiapas in Mexico and of course Suizhou, Guangxi and Yunnan in South of China.

5. One mu is equals to 1/15 of a hectare, so 666, 7 m2.

enough large caves to be visible at distance.
The main cave is a natural excavated grotto: it is Hanglai cave, massive, so deep that its shadow can be easily seen from the satellite picture. It has never been explored completely. The entrance is a rock wall 60 m tall, where can be practiced rock climbing. It is warm in the winter and fresh in the summer, it has with a natural water pond and stalactites, so it is a beautiful scenery. Hanglai cave is also called the "brigands cave" because in 1948 there was a group of bandits who used to hide here. The heads of gang were Zhou Zikang and Zhou Xinwu and the gang counted almost 80 people. This is another sign that the main room of the cave is enough big to guest lot of people. Zhou Xinwu and his wife were killed by the Liberation Army in this very cave, while Zhou Zikang managed to escape, the other brigands surrendered and supported the North Korea cause against the US invasion.
Once, inside Hanglai cave there was a deity temple, built at the beginning of the 20th century: a wooden statute of the deity could be found inside, and it was meant to protect the village people and preserve peace. According to the villagers, inside the cave traces of the temple are still visible, and people from near and far away villages come here to offer sacrifices to the ancestors, however, due to the "destroy the four olds" campaign, they have been destroyed. However, villagers still today perform a few rituals during the Spring Festival, like burning paper to the ancestors in order to have peace, wind and rain for the village all year round. In front of the main cave there is a massive stone obstructing the entrance, so is difficult to find it if you do not know how to recognize the traces. Drinkable water for the village is collected directly from the springs on the top of the surrounding mountains and bring to couple of squares in the villages thanks to tiny pipes that have very low pressure, just due to the gravity, so it need a really long time to full a basket. The water quality is pure and with a very low mineral level. There is a spring of water also in the cave but due to this oral story that keep being pass on, the villagers are not that confident to enter in the cave daily.
The village rises in the middle of a very rich and florescent flora that includes kiwis, wild bananas, bamboos, camellias, which is a sign of how uncontaminated this environment is.
As for wild animals, we have bamboo rats, wild boars, wasps, wildcats and many wild birds. Villagers do not spoil nature, besides there is no factory nearby, which allows for an ideal preservation of this natural habitat. The river is not big, it just 3 m of width but is still dangerous for the inhabitants because its banks are 2m tall stones walls without any sort of protections. The villagers rebuilt the banks in an artificially way because during the raining season the natural once where not enough to contain all the water from the wally. During the other months the water level is so law that there are no fishes there.

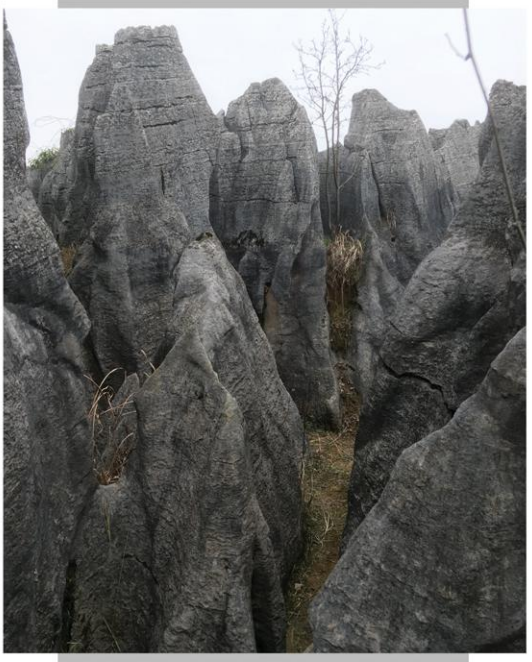


Fig.4 - 5 Stone forest

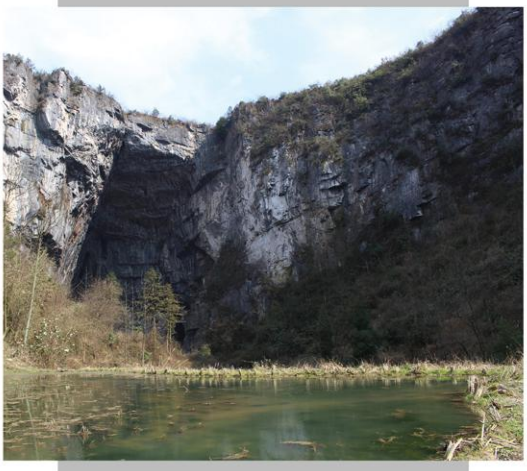


Fig.6 Main cave

3.1.3.1. Feng Shui and sustainable design

Today has become common hearing about sustainable design or green design to talk about the interaction between the man-made environment with the natural one. Sustainable design is the philosophy of designing the

build environment to comply with the principles of economic, social and ecological sustainability[6] . A sustainable design has to accomplish its goal based on an holistic approach to eliminate the risk of having a negative environmental impact. The aim is always reach the harmony of the system rather than just maximize one goals, that can be the economical profit for instance. Since three decades the designer society is overusing this word to adding to the new project a positive meaning. Everything need to be green and sustainable to be modern, but at the end the principles of this typology of building mostly following just the simple common sense of the people rather than the last scientific research. These principle so are not necessarily new invention, what can be new is just the technological devices to apply it, but the main idea behind is based on ancient know how of the people and can also find reeds in the Feng Shui approach to the build environment. The Feng Shui is an intuitive matter involving site selection and the spatial organization. It is a traditional, cultural philosophy, even if it seems an uneasy mix of common-sense and superstition[7].

The primitive knowledge of Feng Shui was based on the observation from three sources: astronomical phenomena, natural phenomena and human behavior[8]. To understand the similarity of sustainable design with the Feng Shui principles can be illustrative compare them. The main concept of Green Building emphasizes " the inversing efficiency with which buildings and their sites use water, energy and material; and reducing building impact of human health and the environment, through better siting, design, construction, operation, maintenance and removal through the complete life cycle[9]". The Green Building is defined as "forms of progress that meet the need of the present without compromising the ability of future generation to meet their need[10]" . Dong and Zuehl define 5 concepts for sustainable design concepts are: constructivism, circular design, energy efficiency, balance between natural and build environment, thinking global and buying local. The sustainable concept includes many elements that can be summarized with the figure n°7.

Feng Shui is an ancient Chinese knowledge that aim in creating an harmony between the people, the nature and the build elements, and has guide the Chinese construction techniques for thousands of years. During the Warring States (480-222 BC) there were established three basic Feng Shui philosophies are: the theory of Qi, the theory of Ying and Yand and the theory of Five Elements. Later more principles were addes: the unity of heaven and human, the harmony among universe, earth and human energy in both the physical and the invisible form know as Qi.

1- The theory of Qi: To explain this theory is impossible to not talk about Daoism, infact Qi is the essence of the Daoism that was established at the end of the Zhou Dynasty[11] . Qi[12] means "breath", and it is the cosmic spirits

7. Wangbdo, 1999.
8. Feuchtwang, 1974
9. Office of Federal Environmental Executive, 2003
10. Brundland, 1987

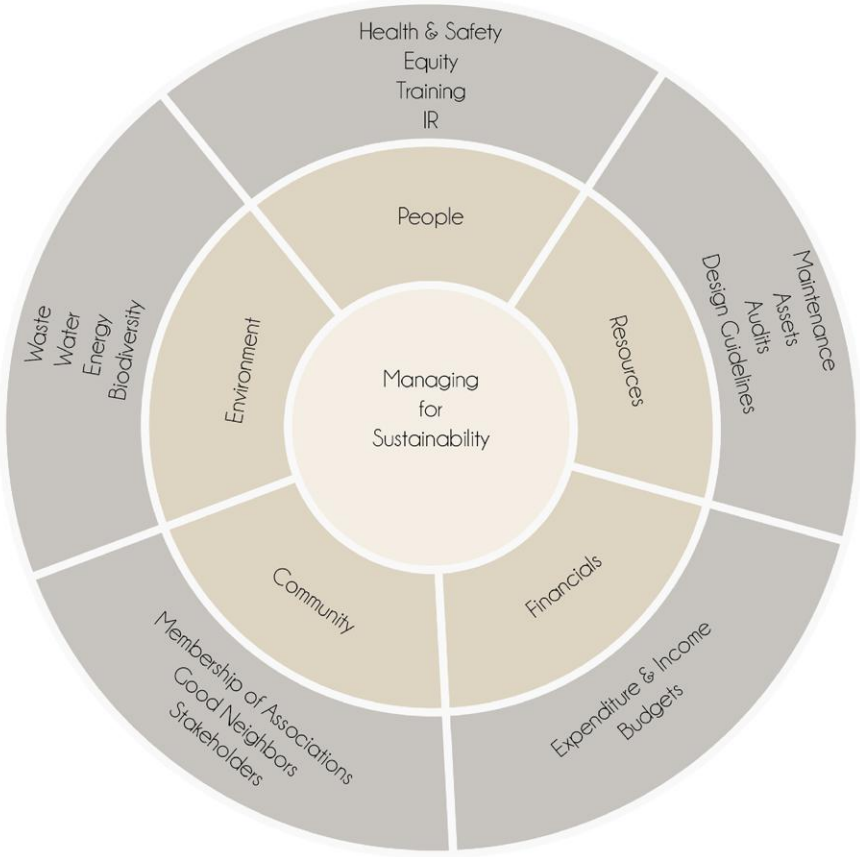


Fig.7 Envarionmental Sustenaibility

that vitalizes and infuses all things, giving energy to human beings, life to nature, and growth to plants[13] .It is a vital energy that flows through the forms.
2- The ancient Chinese based on observation of the phenomena of the nature (such as sun and moon, light and dark, day and night, man and woman..) believed that every element on the Earth has an opposite. They called these two opposing parts: Ying and Yang. This theory is explain in Book of Changes[14], one of the greatest philosophical document in the Chinese history. Yin, that can translated as shade, is the passive principle in nature (dark, cold..), on a human level is femininity also the realm of dead. Yang, which means light, is the active principles exhibited by light heat, masculinity and realm of living.
3- The 5 elements cycles, that are 5 fundamental groups of substances: fire, water, metal, wood and earth. The mutual relationship between them are based on natural phenomena and can be productive or destructive cycle. In the productive cycle can be read as follow: the wood lights fire, fire burns into ashes (earth), earth 8contains minerals (metal), metal melts into liquid (water, water grow planta (wood). In the destructive cycles can be observed that earth absorbs water, water extinguish fire, fire melts metal, metal cut plant (wood), wood retains earth.

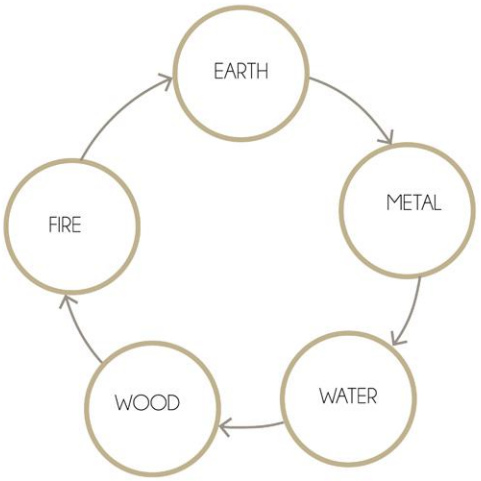


Fig.8 Productive cycle

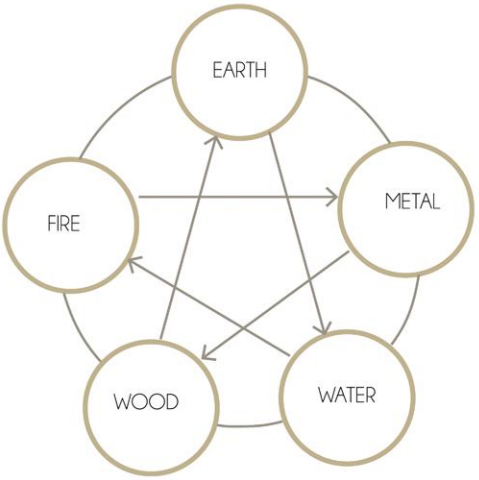


Fig.9 Distructive cycle

11. The longest Chinese Dynasty: 1046 BC – 256 BC
12. Qi or ch'i (traditional Chinese 氣, simplified Chinese 气) is believed to be a vital force forming part of any living thing. Qi translates literally as "breath", "air", or "gas", and figuratively as "material energy", "life force", or "energy flow".
13. Skinner, 1982.
14. Yi Jing (The Book of Changes) written in the Zhou Dynasty.

There are other two fundaments of Feng Shui more recent:
4- The Form School model approach based on the "Five Geographical Secrets", the parameter to evaluate a site. They are namely Dragon, Sand, Water, Cave and Direction, that combined with the Four Emblems (the green dragon, white tiger, black tortoise and red bird) produce the classic Feng Shui model, that can be represented in a diagram of spatial organization. The first is called Dragon and it referred to the mountains ridges, these are the most auspicious symbols in traditional Chinese mind. Recognize which is the tallest peak is the first step to do to recognizing where the dragon begins and ends. The peak is regarded as the ancestor, and the lesser prominences the forefather, great grandfather and grandfather.

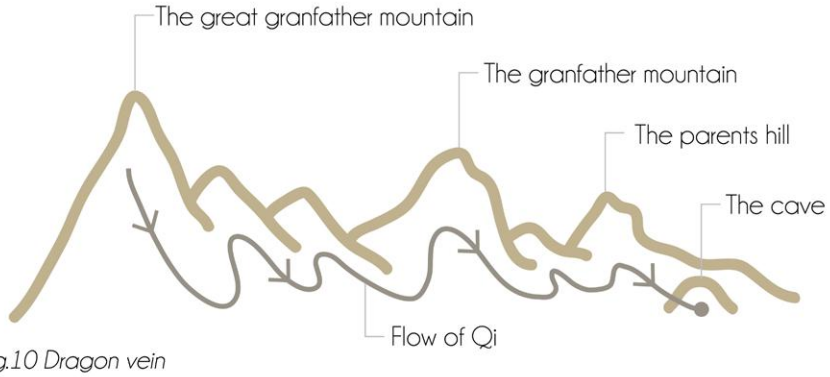


Fig.10 Dragon vein

The dragon, with all his crests, end at the hill of parents, and descend to the location of "Cave". So higher is the peak and longer is the ridge, the more favorable the site is. The Qi flows with the vein of the dragon and is accumulated in the flat place where the dragon stop and the watercourses meet. The Sand means the enfolding hills which symbolize the surrounding environment of the site the protects the "Cave" from strong wind. There are four categories of Sand, called Four Emblems: Azure Dragon, Red Bird, White Tiger and Black Tortoise, according to their mutual position the site can be more or less favorable. The third secret is the Water that represent the physical and visible flow of Qi, so a curved shape of meandering water is one of the best sign of Qi accumulation. The fourth secret is called Cave and is the Feng Shui spot of the site, which is the final goal and the best location, as bigger it is as much Qi energy can accumulate. The last secret is the Direction or "deciding the orientation", and is to determining the orientation of the buildings of a site. These five factors form a single process and they can't be consider individually.
5- The balance between Inner Form (interior) and Outer Form (exterior). Outer Form is location of the site, topographical conditions of the site and it's shape. The inner is layout of building, elevations the elements of building.

Fig.11 Outer and Inner form

The principles of the Feng Shui known by the people in Hanglai are related with the physical form of the site and the analysis of its surrounding to detect the subtle flow of Qi. Hanglai Village, is a really positive place in term of Qi energy accumulated, and this is way the first families moved here hundreds of years ago.
The comparison of Sustainable Design with Feng Shui Concepts show that

the concept of constructivism translates well in the principle of harmony between universe, earth and human in Feng Shui. The ideal environment for Feng Shui can be represent by three circles and the way they intersect and overlap can be found in the sustainable design as social contexts, environmental and human.

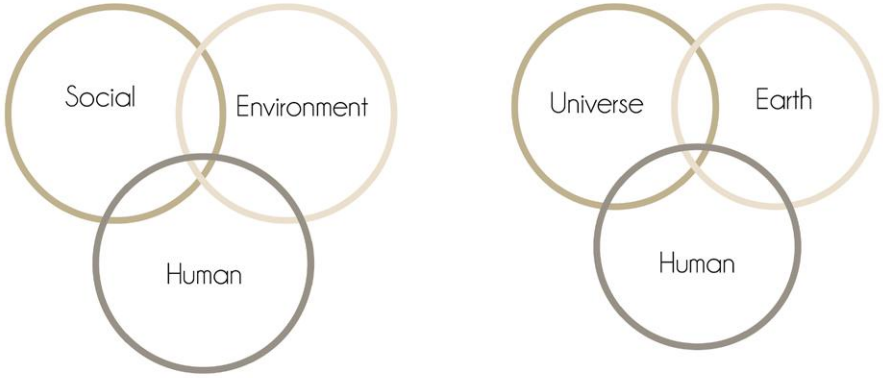


Fig.12 Comparison of thr Principles of Green design and Feng Shui

The second principle of Feng Shui is the productive and the destructive cycles of five elements, which is similar to the circular design. The balance between Yin and Yang , matches with the concept of sustainable design of balance between natural environment and the built environment.
It is clear nowadays that scientific methods of analysis and logical reasoning can never fully explain the whole realm of natural phenomena, and has been recognize the interdependency and holistic nature of the world. Westerners have realize that the principle and practices of Feng Shui could contribute to the effectiveness of the built environment, considering anthropology, ecology and architecture.

3.1.3.2. Artificial elements of Hanglai Village

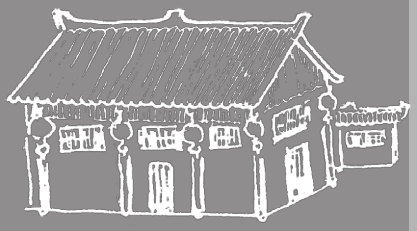
Excluding the houses that will be describes in the following chapter, the artificial elements of Hanglai Village are not many: in fact, we can consider just the roads and the square. The only asphalted road is that one to access to the village from the city and it ends in the parking square at the beginning of it. It is almost 3,5 m width but is not easy to follow because of several hairpin bends and the high slope, so just normal car and a minibus for 9 person maximum or an ambulance can pass. From this square start the main stone road of the village that has just been renovated by the government, as can be read on the memorial stone: "Project of financial support for poverty alleviation: renovation of the pedestrian road. Value: 60 000 RMB. March 2014". Even if is the main road is just 1.5 m width, still enough to let pedestrian, pigs and cows to pass here. The other roads that reach every houses are more narrow and mostly just in rammed earth. Usually, roads follow the mountain precipices and gorges. Streets in the village are very irregular, they look intertwined as tree branches: from the main road many secondary other roads depart, going initially straight and then bending and going up following the mountain shape. There is a street leading to any single house, and, since Miao follow the mountain in building houses, creating streets is not difficult, as they follow the natural paths and ground state conformation. Next to these roads there is often open small sewerage canals.

Fig.13 Hanglai river banks.

3.2

Architecture

by Chiara Menna



In this section is analyized in detail the original Miao house. As every type of vernacular architecture, the Miao house is holistically tied to its natural and cultural context, adapting itself to the topography and local avaliability of building materials and to the Miao minority's cultural tradition. For example, it will be explored a typical comparison that this minority does between their dwellings' nterior spaces and the organs of the human body. The cultural component in the house it is so importan -even more than the technological one- that Miao people "modify" their homes according to superstitions and beliefs.

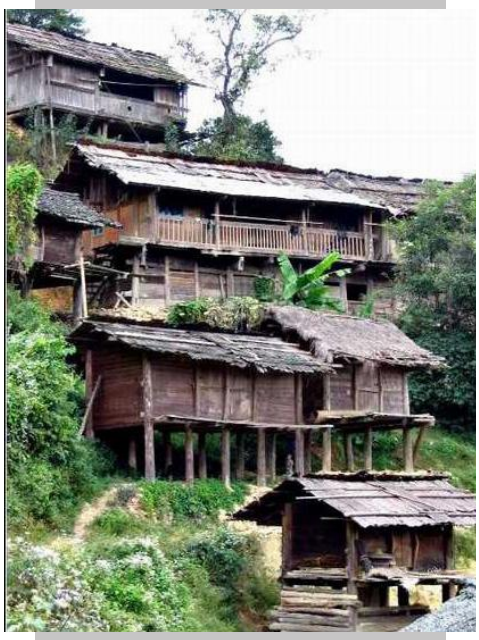


Fig.1 (above) A Miao stlit house and (below) a Miao house in Hanglai village.

Miao people live, normally, in sites that present very difficult geographical conditions. Nevertheless they managed to build their houses in an appropriate way, coexisting with nature, exploiting its strength to build a good environment and optimizing it for production and living. Miao people normally like to live near the mountains, and such kind of settlements, near the mountains or in narrow valleys, are a symbol of how they have protected themselves and their culture overtime[1]. Most of Miao settlements are built in tight rows and follow the natural shape of the mountain. Miao people, indeed, try to balance their settlements with the surroundings trees, stone walls, gorges, water surfaces, to create an harmonious natural picture. This reflects on the *Nuo* belief, an animist cult based on worshipping nature. Architecture and nature both live together and mutually benefit and prosper from each other because the former is never invasive but modeled according to the geography of the location, bringing little environmental impact. For this reason, and also to get a positive *Qi* from the mountain, Miao people traditionally built their houses on slits, instead than at ground level. The Miao house is, indeed, traditionally called *Diaojiaolou*, translated as falling feet building, because of the very steep slope where normally such dwellings are built. To start building a *Diaojiaolou*, Miao people carve into the slope a double step foundation. The stilt house is normally multistory: the first floor serves to keep sundries or animals and has a grass covered wall, usually made of bamboo and mud; the second floor contains the living quarters, with the exterior corridors; the third floor is used as a storage. Houses in Hanglai village, though, do not respect this traditional way of building. Considering the topography of the village, located in a valley formed of rice paddies and gentle slopes, the houses are not on slits, but built on a normal platform foundation, and have, in most of cases, just one story.

"Architecture must be born from and inside nature and be in harmony with its surroundings, architects need to reflect on nature, use natural materials and consider the needs and feelings of men". With these words, Frank Lloyd Wright is referring to organic architecture, which deploys itself by being a realistic picture of human society. The organic architecture he is mentioning is created when the architect gets rid of predefined structure, plans it according to the use but mostly to the landscape, climate, local construction techniques and availability of materials. This description matches with vernacular architecture and in particular with Miao architecture that, as every type of regional architecture is organic since it is fully relatable to its physical and non physical context. This full relationship that vernacular architecture has with its sociocultural and physical context is the proof that holism can be found also in the villagers' common sense, in the most remote village of China.

3.2.1 Catalogue of the buildings

The lower part of Hanglai village is composed of 56 dwellings. Six of these buildings are abandoned, in most of the cases because the family living there moved in the city or for decaying conditions. One of these abandoned

1 Pu Xiaoyi, *Chinese Vernacular Buildings*, Yale center Beijing, 2017.

houses, in fact, is the oldest building in the village, being built more than 100 years ago. Some of those houses are used for additional functions, for example the number 12 is also used as an informal cigarette store, the 21 is a gathering space for women doing embroidery training and the 14 is a sickbay, being the doctor's house.

Village map with numbered buildings (see catalogue table at p. 65).

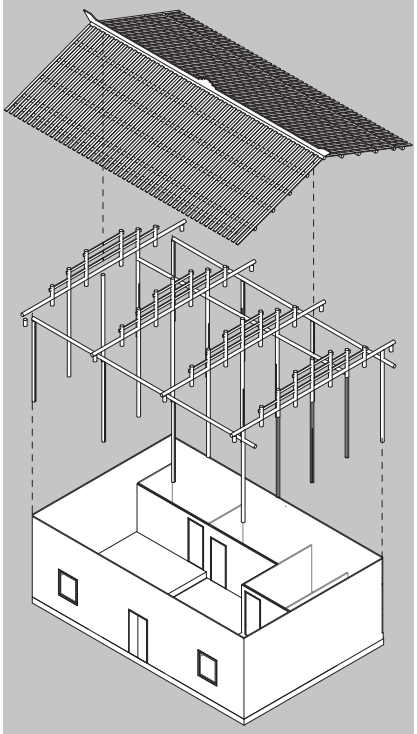


Fig.2 Exlpoded axonometry of the Miao traditional house.

Fig.3 Contemporary reproduction of the traditional mortise and tennon joints typical of the traditional Miao house.

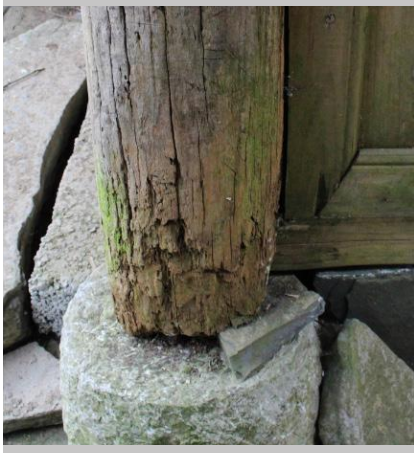


Fig.4 Detail of a stone foundation-pillar joint.

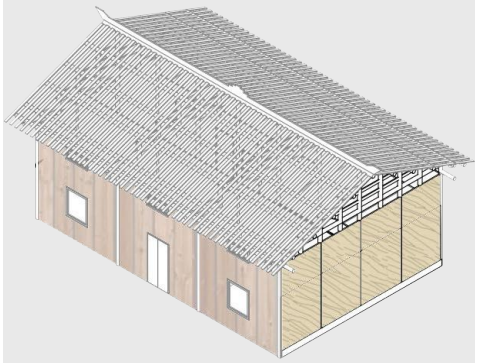
3.2.2. Features of the house

Such type of Miao house is called "Five pillars, four rafts, three rooms"[2], because of the type of lightweight structure, dividing the interior in three main areas. Almost every building in Hanglai follows this traditional Miao architectural style and only 3 buildings, are entirely made in concrete or present additions made of prefabricated materials. Every component of all the other dwellings is made of local materials.

The main material for the roof's bearing structure is wood and is built in *Chuandoushi* style, translated as column and tie, a type of lightweight structure present in other vernacular Chinese dwellings. All the elements are connected by an intertwining play of mortise and tenon joints, that reveals an excellent construction skills of Miao in building. An interview with the local construction master revealed that the *Chuandoushi* structure in Hanglai's houses, follow three different sub-styles, where the difference between these three is that the dimension of every vertical element in the roof's structure is related to the horizontal ones through a ratio, which is different for every sub-style. For what concern the outer envelope as well, the main material is local wood, or other organic material, according to the different cases. For instance, if the family owning the house is rich, the outer envelope is made of cedar wood planks; if that is not the case, wood planks are used only for the front and back facade, while a wattle-and-daub technique is used for the sides. In general those techniques give the house a quite thin envelope. Inner partitions are also made in wood and are connected to the structure through interlocking joints. The floor and foundation, instead, s are originally flattened local limestone and in some houses, when is clear the intention of separating the central room from the dining room and the kitchen, the flooring of the latter is slightly elevated and made in wood.

The roof is the building element that give the typical image to Hanglai village. Being the clay tiles black, they make the house pop out from the green or brown landscape formed by the surrounding mountains and rice paddies. In the old times such tiles were produced by the villagers, while now they are prefabricated and purchased in the township. An average of 10.000 tiles is needed to make a roof. In all the houses the roof is overhanging to protect the fragile materials composing the envelope and on the ridge there is a typical decoration consisting of two tails and a central ornament, which is different in every house. Such shape, though, is not just a decoration, It defines, in fact, the orientation of the house, since the two tails at the edge are meant to frame one of the peaks of the surrounding valley and help inform the aesthetic contemplation of the nature. In fact, looking at Hanglai's map, it is possible to notice that the houses follows three main orientations, according to the three peaks surrounding the valley. In addition to this, the shape of the roof's ridge is traditionally a metaphor of two dragons fighting to gain access to the treasure of the house, which is represented by the central decoration. The symbol of this duality of the dragon, which, together with the central jewel constitute a trinity, dates back to the most ancient times

2 Pu Xiaoyi, *Chinese Vernacular Buildings*, Yale center Beijing, 2017.












and is present in many other early vernacular and official architecture in Asia. This symbol can be interpreted as the true conception of life according to Chinese culture. In China, in fact, people's lifestyle present always a duality of qualities, standing as the two dragon fighting, but at the same time Chinese people as a nation as well as individuals are part of a pattern of a complete and uniform culture. Moreover the decoration here analyzed is not just "art for art's sake", but serve to slightly accentuate the architectural effect of the building.

For what concern the openings, every house have only two windows on the front facade. Normally they present a wooden lattice as a decoration and as a medium of shading and wooden shutters. In the poorest families' dwellings this lattice is the only way to protect the interior of the house, since the windows are not provided with a glazed panel. The door is as well on the front facade, paced in the exact center, and is normally made as a whole piece of wood.

The construction process of the house is quite simple. The first step is to assemble the structural frame with the pillars on the ground. Then the assembled structural frame is lifted up and put on the foundations, if those have been already prepared. The most common procedure, indeed, is to prepare the foundation plateau after the spacing between the pillars on the long side of the house have been decided. This happens because Miao construction masters never build starting with fixed measures or a final blueprint and the villagers prefer a more flexible construction way because of superstitions. Studying the site according geomancy and Fengshui sometimes is not enough to secure luck to the family, so the measures of the house are settled on the basis of those numbers considered lucky in Miao culture. After the measures are decided, the foundation are prepared and the pillars are laid down. After this process the tiles are placed on the roof and the inner space is enclosed with envelope and divided with partitions.

The use of the building techniques above mentioned, together with the economical conditions of the families, bring with it comfort and lifestyle issues related to the house. First of all the house's only source of light is two 1 sqm windows in the front facade, which implies very dark rooms. Those conditions made some of the old women practicing embroidery getting blind. Such kind of openings, together with the presence of an open fire as only source of heating implies also very smoky interiors. The only way in which the smoke manage to leave the interior space is through the air gaps between the tiles. The choice of too fragile materials for the envelope and the absence of climate control devices, instead, bring to thermal discomfort during winter, because the envelope does not have insulating properties, and during summer, because of inadequate ventilation. Moreover, the high humidity characterizing the local climate brings mould problems to the wooden components of the house and in the worst cases damages the bearing structures. Lastly, the absence of a proper sewage system and running water pipe system leads to unhygienic conditions for what concern the bathroom. None of the houses, indeed, is provided with a conventional shower, and the toilet is just a hole in the ground placed in the animal shelter.

Fig.5 Diagram showing the roof as a device for orienting the house towards the peaks surroundng Hanglai village and as a metaphore of two dragons fighting for a treasure.

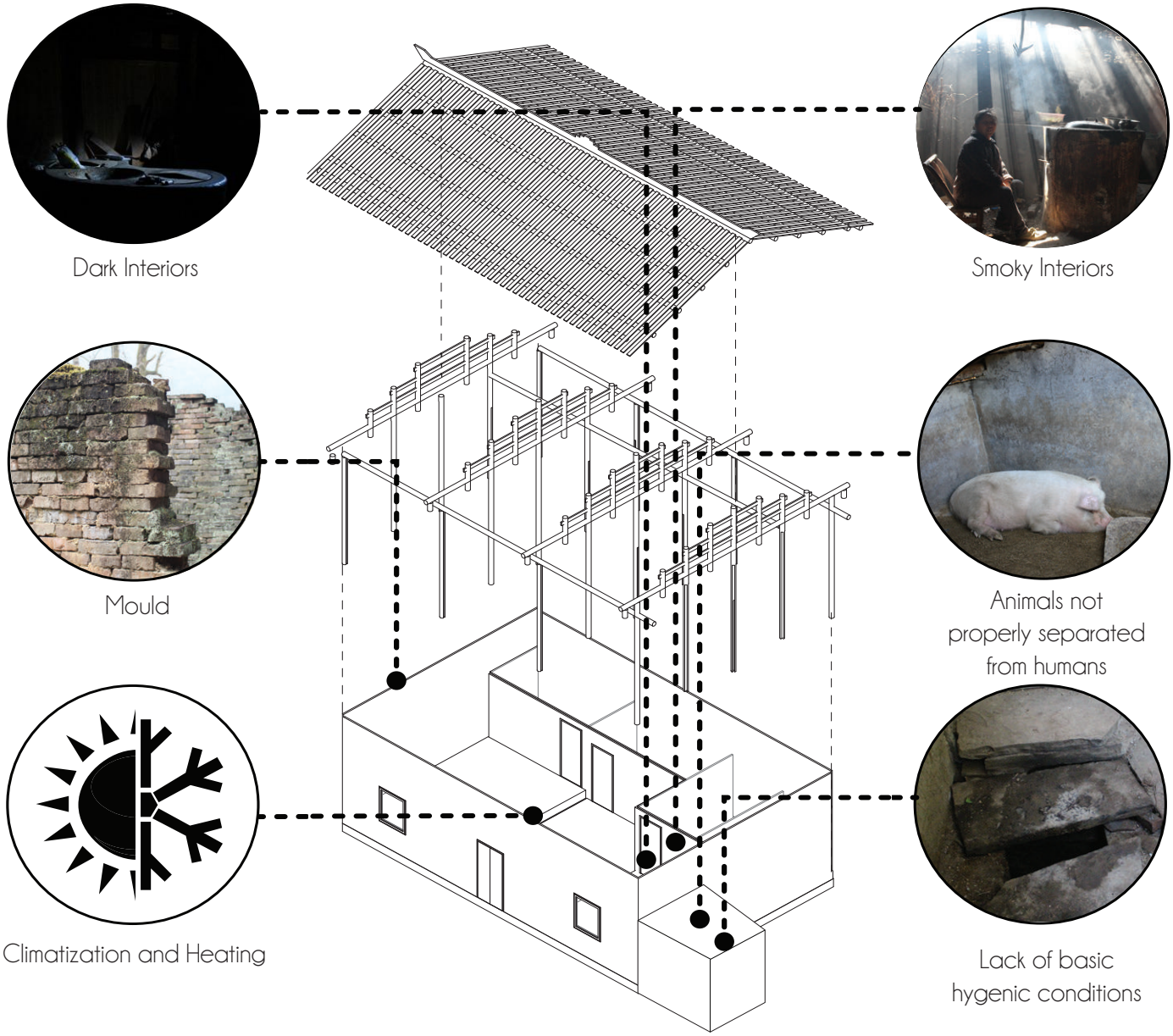


Fig.6 Miao house main issues.

3.2.3. Historical analysis of the elements of the houses

By Germana Isacco

The element that characterized most the Chinese dwelling and determine the organization of the space is the structures. A common characteristic is that the wooden structure support the weight of the roof while the walls are just "curtains" to divide the interior space from the outside. In fact when Liang Sicheng, one of the greatest Chinese architectural historians, define the three fundamentals components of Chinese buildings, he mentioned: the foundation, the pillar and beam skeleton and the pitched roof, but not the walls. The typology of structure is based on the common denominators jian, kaijian and jia, that are different spatial units. A jian is the fundamental measure of width and is define as the span between the lateral columns or pillars that constitute a bay. When the building is small the jian can constitute a single room. The term kaijian describes the horizontal compartmentalization space across the facade, while the depth of a building's bay is called jia.

The base of the building, is of course the foundation, and in the traditional Chinese houses can be just based on compacted earth, or can slightly raise on a solid foundation made of earth, stones or bricks. As the wooden structure is independent also the foundations of the pillars is separated from the base and consist on a shaped stone, called pedestal, that can have different forms and patterns. This element has the function of avoiding the transmission of moisture to the wood, that is an expensive material and so help to preserve.

The wooden skeleton can be differentiate in two basic framework system: tailiang or pillar and beam, and chuandou or pillar and transverse tie beam. The chuandou are more suitable for earthquakes area because the pillars are not anchored to the ground, so they can absorb better the horizontal forces. The main characteristic of the tailiang that differentiate it from the chuandou is that only the pair of pillar in the corners support a perpendicular beam (liang). This typology is mostly diffuse in northern China. The central peak of the roof marks the middle line of the double sloping roof, that can be either symmetrical or asymmetrical. To hold each side of the roof two squat queen post are located upon a beam and are used to lift one or two shorter bean, that at the top of the structure hold the final post. The chuandou system is instead more common in southern China and is different because of three main reason: the pillars support directly the roof purlins; the number of pillars is greater, the horizontal tie beam members are mortised directly into the pillars to form aa matrix. The weight of the roof arrived directly to the ground though the purlins that rest on the pillars. Another important difference is that chuandou can easily accommodate the additional structure necessary to sustain the overhang roof necessary to protect the fragile walls made in wood or earth, especially in the raining areas. The chuandou also requires a smaller diameter of pillar, 20 or 30 cm can be enough, and complex joinery, while for the tailiang depend only wooden dowels and wedges to ensure a snug fit.

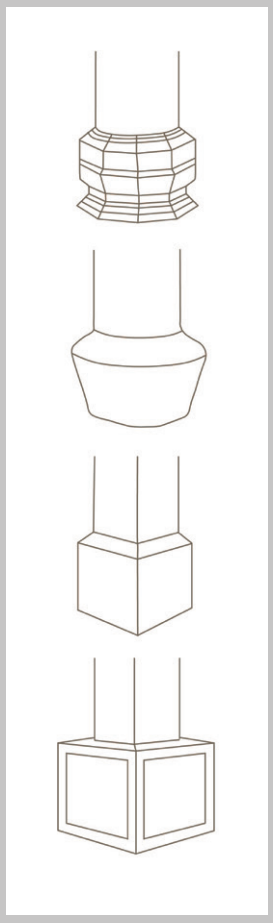


Fig.7 Different types of pedestal

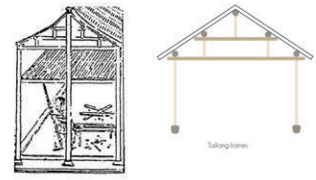


Fig.8 Tailiang frames

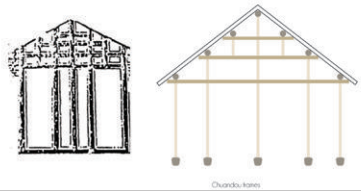


Fig.9 Chuandou frames

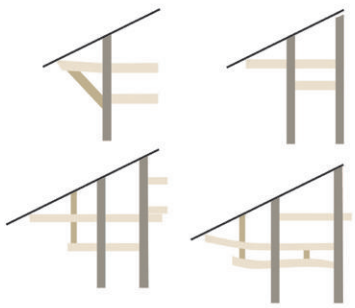


Fig.10 Mortise and tennon of Chuandou frames

The roof is the element that no matter how poor is the family it always has some sort of decoration or particular details often related to local legend, so it says a lot about the culture of the place. Also for the roof all the formal differences can be summarized in four main categories: yingshanding, xuanshanding, sizhuding and xieshanding. The factor that differentiate these different roofs is the different connection of the gables with the underpart structure. The yingshanding is the type diffuse in northern China, infact this name means "firm mountain", and is more suitable to limited rainfall areas. The ridgeline at the peak pf the roof has always some ornamentation. With this category can be included also the matouqiang because it does not have a roof overhang, and is identify by a gable walls that rise in steps above the roof lines. The xuanshanding has an overhanging gables with purlins that extend beyond the end walls, so the gable wall is partially protected. The sizhuding is structurally a less complex hipped roof while the xieshanding combines gable and hipped gable and has four sloping surfaces and is used mostly in religious buildings.

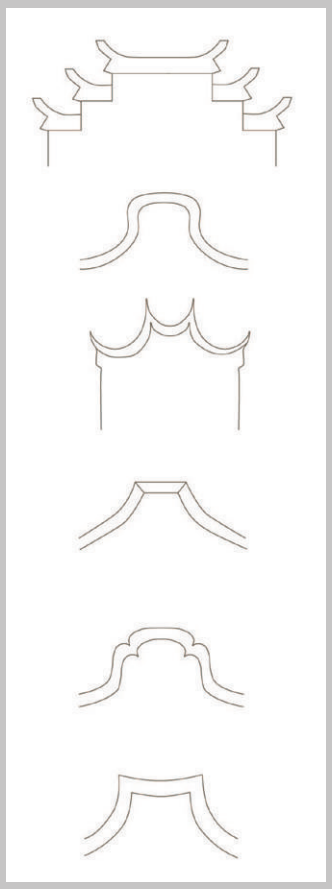


Fig.11 Different endwalls of dwellings

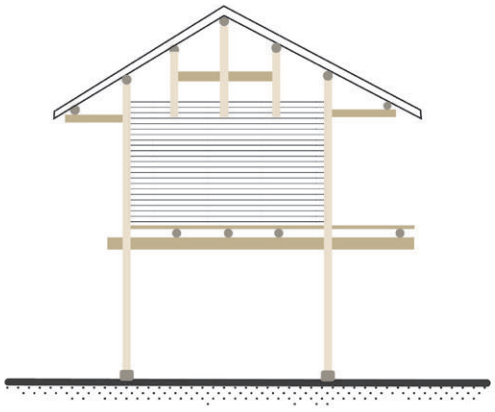


Fig.12 Grain silos and airing frames

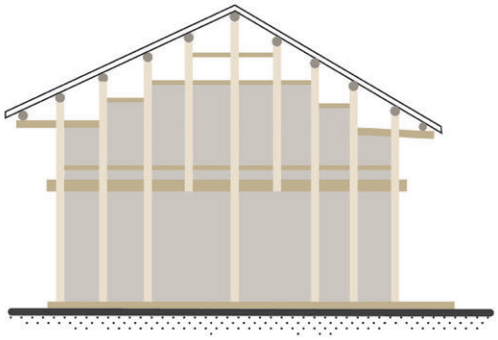


Fig.13 Dwellings of Yangdakai Stockade in Longli, mud wall house

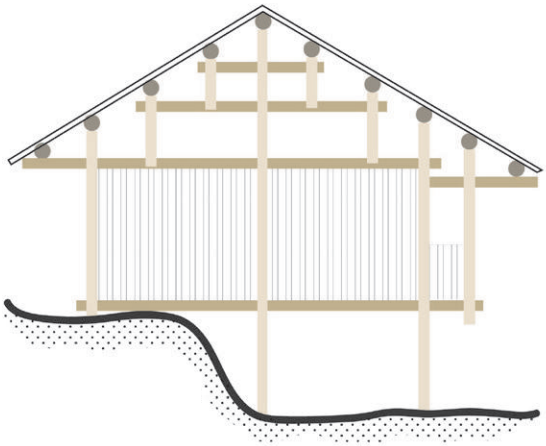
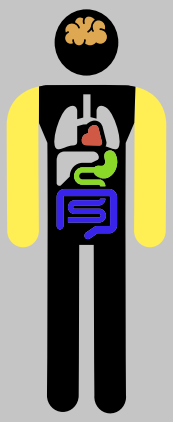


Fig.14 Dwellings of Xiayan Stockade in Jianhe, half stilt house



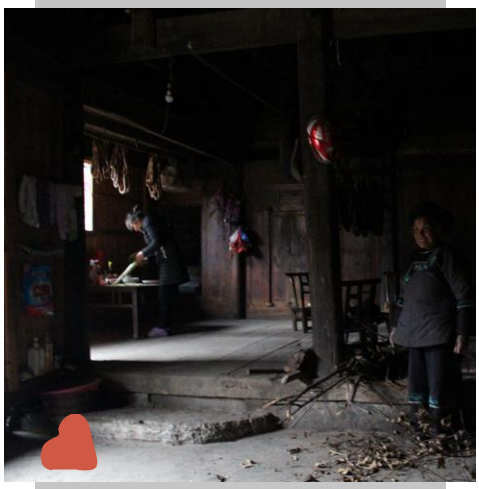


Fig.15 The central hall as the hearth

Fig.16 The two fireplaces (living room and kitcen) as the stomach.

3.2.4. Inner space: the house as a metaphor of the human body

During Renaissance, Da Vinci draw the Vetrurian man, establishing a relationship between the measures of the human body and the measures of architecture, making the body and its parts the metric unit of architecture. Even Le Corbusier believes that man's body can be used as measure unit for a harmonious architecture. The idea of Harmonious beauty born from combining human body with architecture, is also present in the Miao vernacular dwellings. Many of the villagers, indeed, describes the rooms forming the interior space of their houses as the various organs of the human body.

The inner space, besides being quite free thanks to the structural type, is divided into three functional zones related to daytime activities: the central hall, the dining room and the kitchen. In the Miao house, everything is organized around the central entrance hall. This is the sacred place for the family and on the wall facing it, it is usually possible to find a shrine of family ancestors with their pictures and sacrificial offerings. Sometimes, together with ancestors' pictures, is possible to find a portrait of Chairman Mao, and when some family members are teenage kids, some idol's posters. The central room is not only a place for activities in the family, but also for visitors and guests from outside: spacious and normally double height space, it constitutes a unique space with the dining room, just divided from that through a step. So, like the heart pumping the blood to make it flow allover the body, the central hall is the hub of the house, redirecting the flow of people in every space of the house.

On the sides of the entrance hall there is, to the left, the dining room while, to the right, we find the kitchen. The location of those rooms and the fact that normally, living room and entrance hall are not divided by any kind of partition, allows a continuum, where the normal daily activities can be done smoothly, allowing the inhabitants to move easily between the "day" rooms in the front of the house. The kitchen, instead, is sometimes separated with partitions form the entrance hall and living room, in order to preserve the intimacy and privacy of the house, dividing its public and private sphere. Those two areas, have something in common: both rooms contain a fire place. According to the tradition those fireplaces can be compared to the stomach and intestines, most used and smoky places in the house, since, as it is possible to imagine from the villagers' life style, none of the houses is provided with modern kitchen appliances or heating stoves. In the exact center of the dining room is possible to find an open fire, which means a fire place without chimney. The dimensions of this spot of the house is normally 1x1 m and is placed directly on the wooden floor, surrounded by stones. The fireplace is sacred, as it is where the family gathers during meals or other times and in fact for Miao people represent the idea of home, but also the main device to get warm or cook food, when not too many dishes are served. It is usually where the villagers spend most of their time, since, those who can afford a tv, place it in front of the fire.

The real stove is the fireplace located in the kitchen, by having three source of fire it acts as a real kitchen appliance and it is mostly used when the

family have to prepare food for many guests. As it is possible to understand from what mentioned above, Miao people attach much importance to fire, because of the natural setting they live in. This element is essential for heating and cooking food, thus a fundamental part of Miao housing, but since the main material of the house is wood, it is very important to prevent fire hazard. For this reason, traditionally, every day in Miao villages, people go from house to house to remind to put off fire. Who fails to do this, have to pay a fine which amounts to 120 jin[3] of raw rice, 120 jin of meat, 120 jin of wine and 120 jin of vegetables.

The spaces for day time activities are divided through wooden partition from the bedroom, which are quite small since they are used just to sleep, so they need only to host the bed. The ceiling of such enclosed rooms is normally lower, to create a sort of attic to have more space for storage or other bedrooms in case of a big family. When the house is big enough to provide one, the attic is compared to the head, since it serves to store goods and provide nourishment to the family, while, as the shoulders, the bedrooms are on the side of the house, connected to the central room, the torso of the house.

The animal shelter and the toilet are, traditionally, considered as the intestines, usually connected to the kitchen through a door, so that the animals can be fed easily, without leaving the "clean" part of the house. The partition separating the two rooms, allows animals and people to live close, yet separated. In many houses, such space is built as a concrete brick addition, supposedly because the family managed to get extra money to purchase animals but their home did not provide extra room for breeding.

In some houses the overall volume have a retreat in front of the main door, which can be defined as a grey space[4] of the house. This idea points out the interaction between inside and outside. It is possible to consider a gray space, indeed, this retreat, but also all the lanes in between the houses, covered by the overhanging eaves of the roof. The central idea of a gray space is the coexistence: interior and exterior, architecture and nature, human and nature. It is a sort of intermediate space, like a third kind of space comparable to the *engawa*, the Japanese veranda[5]. This is materialized in the *Diaojiaolou* in the balcony on the suspended part of the house and in the very versatile interior space. The interiors, indeed are divided according to the user: a living level for human on the ground floor, a storing space for objects on the upper level and a breeding space for the animals on the lower part or on the side. Animals, humans and object coexist, yet are independent in their own space. Circulation spaces, here intended as gray spaces serves as connection between these three types of areas.

Fig.17 The bedroom as the shoulders.

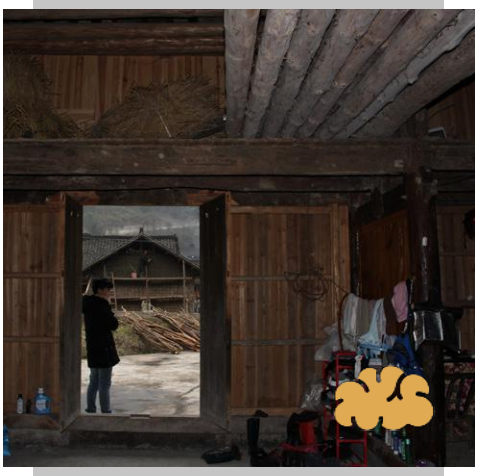


Fig.18 The attic as the brain.


Fig.19 The toilet as the intestines.

3 Jin is a Chinese measure unit. One Jin is equal to 500 grams.
4 The concept of gray space has been theorized by the Danish architect Ian Gehl, as a space that is neither open, nor close, where interaction between people happen. (Pu X., 2017).
5 Kisho Kurokawa, 1955.

Fig.20 Paper amulets.

Fig.21 Plastic fishtail.

3.2.5. House and Superstition

Miao building techniques still preserve a strong bound with the tradition: from the preparation of materials to the replacement of damaged elements, everything has its own rituals together with many taboos that must be observed. Related to this, *Nuo* cult's related believes and superstitions bring some modifications[6] to the house, according to the needs of the family. Most of the villagers put a paper amulet designed by the *Ba Dai*, the priest of the village, having different drawings and writings, but normally in a shape of a human figure. This is used to bring good luck and safety to the family. In the same way other families place a plastic fish tail on the main door. Another modification usually made by the priest is placing bamboo sticks across the roof's purlins in order to make a newly married couple having a kid. A common feature always present in the house, not counting as a modification, is a tiny mud dome popping out from the floor of the entrance hall. Under this shape is placed a bowl containing cinnamon bars, also supposed to bless the family with health and good luck. To pray for money, instead, in some houses near the entrance door there is a bowl containing joss sticks.

For what concern the house itself, considering the kind of material used, repair and maintenance of the various building components is needed. Before repairing an house, the villagers always ask advices to the geomancy expert living in the upper part of the village who by consulting the geomancy wheel and *Feng Shui* principles, suggest which period of the year is most suitable for repairing an house. Connected with this is the fact that the only building component that cannot be replaced is the ridge truss. This elements, in fact, being the back bone of the house, stands also as the back bone of the family so is considered like the most important component of the building. The ridge truss is replaced only when is highly damaged and constitutes a risk for the safety of the dwellers, and its replacement is preceded by a religious ceremony.

6 Such kind of actions are defined "modifications" by the translator of the interviews.

N°	Material	Width	Length	Hight	Other
1	organic	8,3	12,5	6,5	Owner wants to renovate
2	organic	8,6	15,7	5,2	
3	organic	7	12,5	5,6	
4	organic	6	8	3.3 (lower part)	Abandoned, now used as storage
5	organic	6,2	12,6	5,2	Fish tail on the door
6	organic	9,2	13,1	7	Abandoned, now used as storage
7	organic	8,9	13,1	6,4	
8	organic	9	17,4	6,5	Wine producer
9	organic + brick addition	8,5	8,3	4 (lower part)	
10	organic	9,2	12,5	5,1	
11	organic	9	12,4	6,5	
12	organic	9	13,2	6,5	Masha's home
13	organic	8,7	10	7	
14	organic	8,8	13,2	6,5	Doctor's house
15	organic	8,3	13	6,3	Small garden to grow vegetables in front
16	organic	8,3	11,5	6,5	
17	new wood	9	13	9	
18	organic + brick addition	8,3	12,7	6,1	
19	organic + brick addition	8,3	12,6	6,5	
20	new wood	8,4	13,4	7	Renovated last year
21	organic	9,2	16,8	7,2	Embroidery training
22	organic	8,3	12,8	7,2	
23	organic	9	12	6	
24	organic	8,4	13,7	6,5	
25	organic	4,5	8	6,3	
26	organic	9,2	11	7	Balcony with new wood added later
27	organic	8	12,7	6,5	Solar panel on the roof
28	organic	8	11,3	6,3	Family of 7 people
31	organic	8,4	11	6,5	
36	organic	9	11,5	6,5	
38	organic	7,6	12,7	6,5	The whole family moved to the city
40	organic	8	12,6	6,5	Drum players
43	organic	8,3	10,6	6,5	

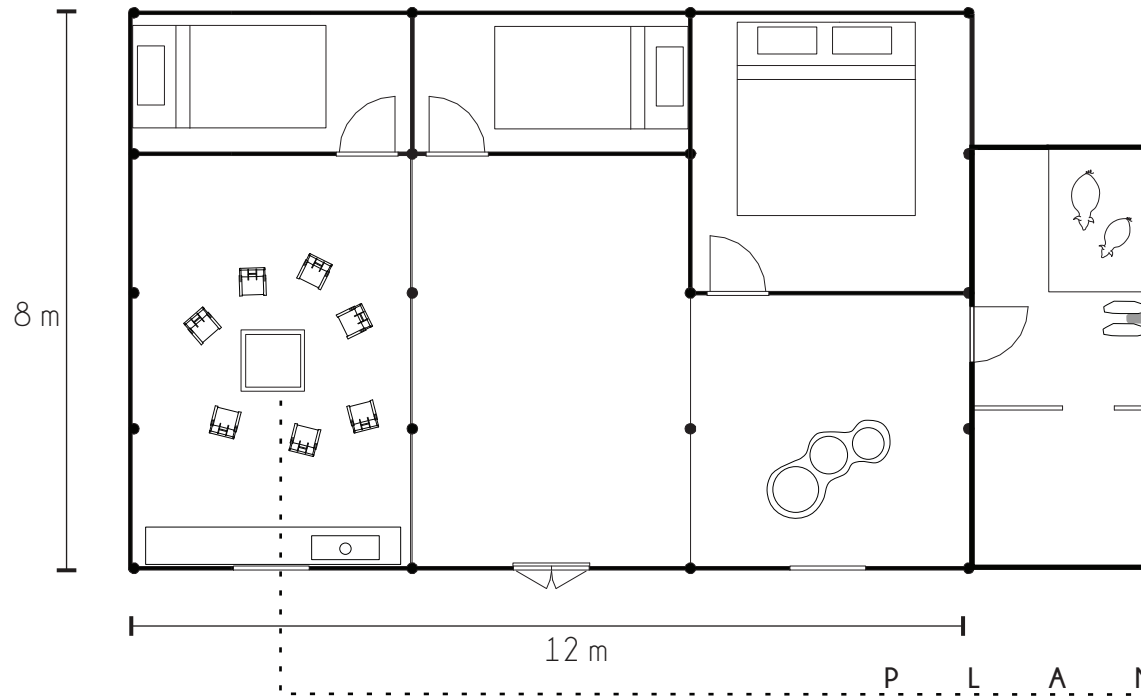
* Organic= Outer walls in wood on the main façade and soil+straw or bamboo on the side façade

Tab 1. Synthetic catalogue of Hanglai village's dwellings and their main features.

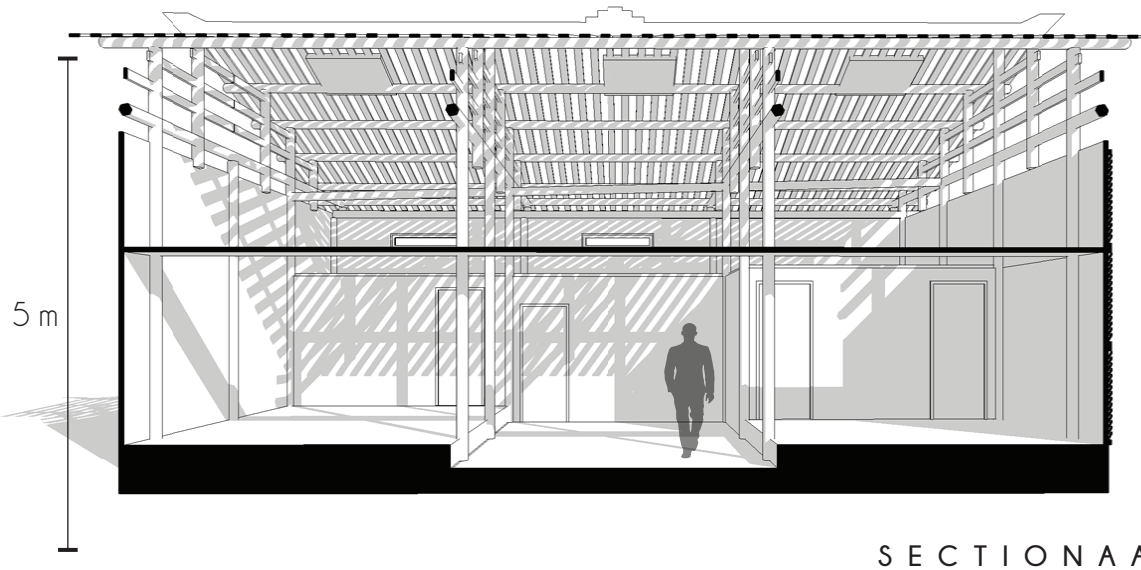
REAL MEASURES VS SUBTLE MEASURES

The construction process of a Miao house never follows a fixed drawing. The dimention of the bearing structure are always adjusted in a way that is equal to a so called "lucky number". Miao people, indeed, believe that this way of building will help the family's fortune. To this real mesures, is related all the subtle one, that are not really visible at first glance. Subtle measures are all those dimentions that relates to the villagers' everyday life, for example the way in which people arrange the furniture in the house, the location of the fireplace or of the "family shrine". The commonalities theese kind of measure is that they allow to understand deeply the relation of Miao culture with villager's lifestyle and how superstition related to Nuo belief is still very important and considered in everyday life.

R E A L M E A S U R



P L A N



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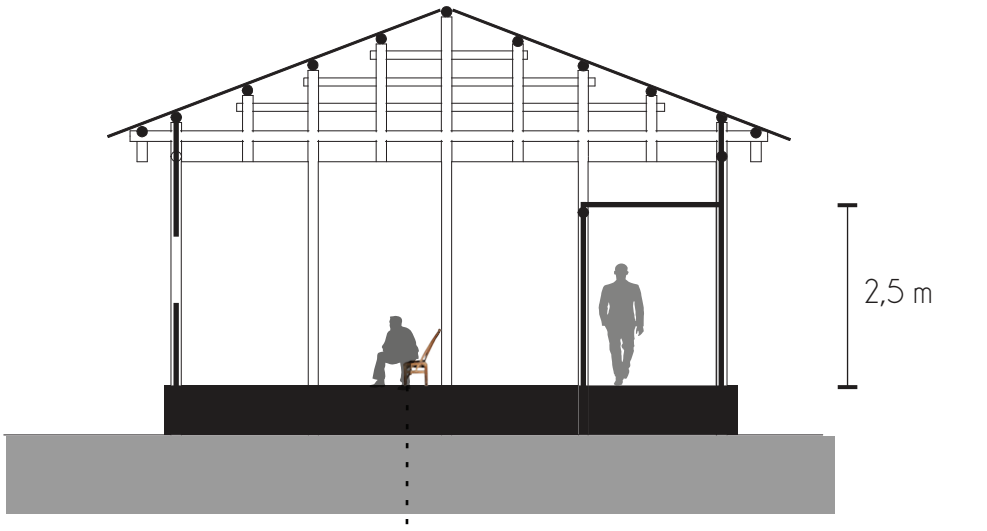
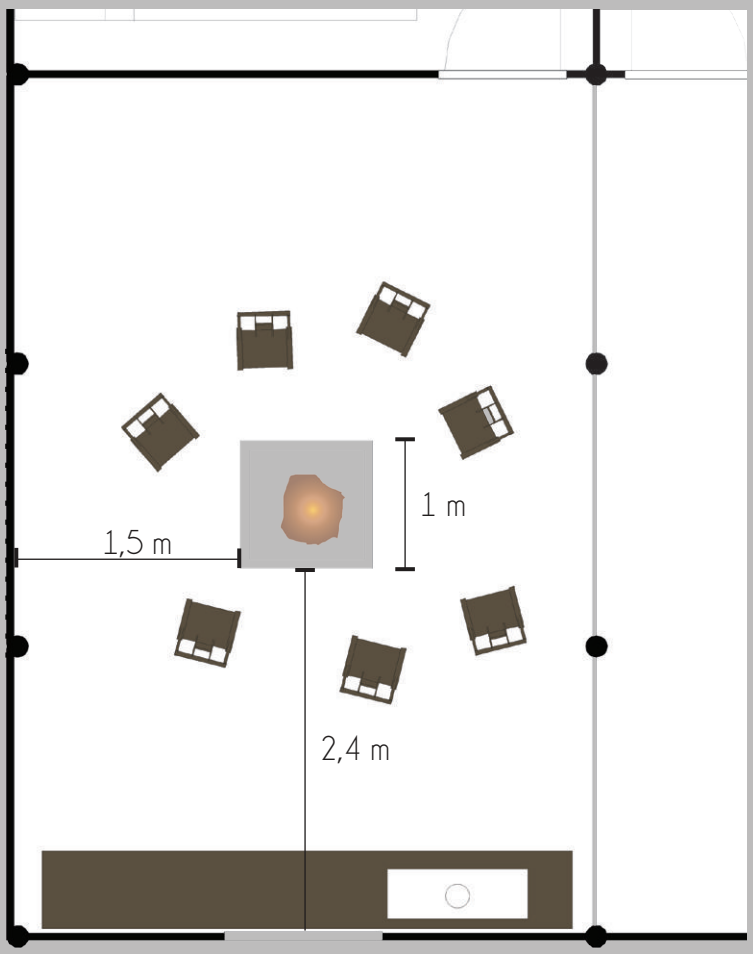


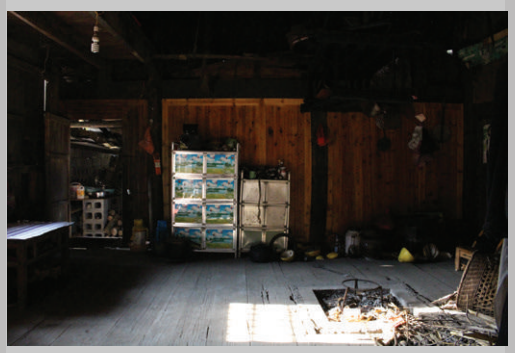
S E C T I O N B B

SUBTLE MEASURES



FIREPLACE

FAMILY SHRINE



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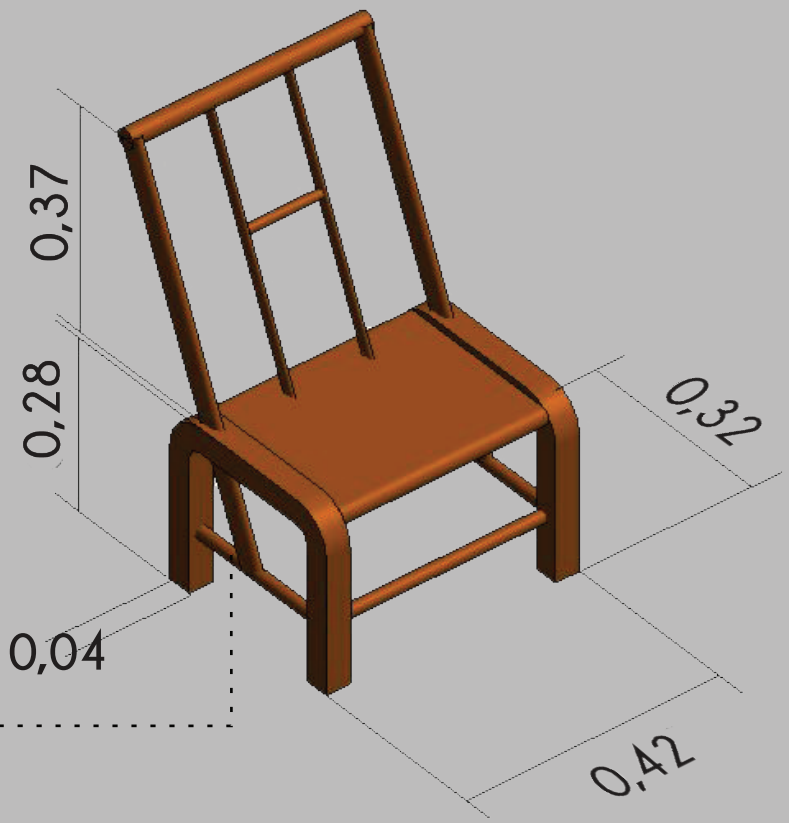

MIAO FURNITURE

HANGLAI AS A MOVIE

Here is presented a sequence of pictures, synthetizing the itinerary took during the first day in Hanglai , to understand the village through our eyes.


















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4.1

Strategy case studies on village recovery

by Chiara Menna

A recovery project should not limit itself to the mere architectural intervention, as it might only lead to install one single purposeless alien space ship. especially if the aim of the recovery is to keep the local identity, defining a village scale strategy is important and can lead to improvement of local economy and life condition in a more efficient way than a single community center can do. For this reason in the following paragraphs are illustrated two cases study, Sextantio diffused hotel in Italy and Cang Dong village recovery project in China. Both projects focuses on the same type of strategy: recovery of heritage and economy through sustainable tourism.

4.1.1. Sextantio: a diffuse hotel in Santo Stefano di Sessanio, Abruzzo

The choice of analyzing an Italian case study is due not only to the authors' nationality and familiarity with the case study's context, but mostly to the fact that Italian rural and historical villages has been affected by similar issues as the Chinese ones. Since the 90s many professionals and academics enquiry on different recovery strategies for the architectural heritage located in Italian rural and mountainous villages, which after the 50s has been endangered by abandonment, caused by mass migration to urban areas, development of new production ways and concentration of wealth mostly in the city. The common thought in Italy, is that architectural heritage and the related settlements are the holder of story of a huge variety of communities. So their recovery and valorization is fundamental, not only in order to preserve the identity of such places and local people, but also to set new sustainable economic development models, respectful of the local heritage, resources and environment.

To achieve this, the best typology to develop is the diffused hotel[1], which have become recently a widespread strategy when it is about to redevelop an Italian rural village through tourism. The diffused hotel's main feature is easily adaptable to a rural settlement, since it offers a model of horizontal distribution of the rooms, rather than a vertical one. The rooms are, indeed, spread around the village and not located in one single building. Another main feature of the diffused hotel is that it is normally managed by a single person or entity, for what concern supply of services related to tourism and accommodation. This alternative type of hotel makes not only the rooms themselves, but also the whole village, together with its traditional shops, restaurants, and other facilities, part of the touristic experience[2]. The living units, moreover, are characterized by a recognizable style, coherent and respectful of the local identity. The authenticity of the accommodation is also given by the close relationship that the diffused hotel have with the local culture and environment. In order to achieve this, the diffused hotel enhances the local identity, making it the main focus, in a way that it is never lost and always preserved. This close dialogue of the accommodation with the local environment and culture makes the visitor temporarily a part of the village's life, rather than just a tourist. For this reason the diffused hotel becomes a successful recovery typology, when installed in a community where the traditions are still strong and part of the everyday life. In this way it can also make the village itself more attractive in the framework of a more sustainable tourism, since normally this kind of places are not a mainstream destination for the basic tourist coming to Italy.

In general it is possible to see that when a diffused hotel is successful, it

1 "The diffused hotel give the opportunity to the visitor to experience the local lifestyle, through a non-seasonal tourism, that foresee a facility open all-year-round. This also means that the success of a diffused hotel is directly related to the quality of the local lifestyle. If the village is welcoming, then also the diffuse hotel will be so. On the contrary if the village is not easily accessible, there are more economical risks. In any case it is a catalyst that contributes to make the lifestyle of a place more interesting, built a network between real estate owners and manufacturer, stimulates the birth of small shops and in short give an impotant contribution to fight against the abandonment of rural and alpine villages". (*Touring club italiano*, July-August 2014).

2 L. Klarmann, *Rivitalizzazione dei nuclei storici minori, l'esempio dell'albergo diffuso*, Tesi triennale Politecnico di Milano, (2014).

brings an higher life quality to the villagers, since in most of the cases 5 things happen: increase of tourist numbers; increase of real estate value; rediscover of traditional arts and crafts jobs; increase of income and of workplaces because of the involvement of local workforce, and appearance of new commercial activities in the community; redevelopment of agriculture and food supply chain[3].

The Sextantio diffused hotel, in Santo Stefano di Sessanio, is one of the most successful diffused hotel in Italy. The project aims at the redevelopment of this middle age village in the Gran Sasso mountain, in central Italy, where its peculiar architecture has become the strength of the whole project, together with the mountainous landscape.

The majority of the buildings has been built during the XII century and the main material used is white calcareous stone, that creates visual homogeneity besides the stratification of the various architectural style accumulated in the village overtime. The arrangement of the dwellings, like in every village of Italy's central provinces, follows the topography and has stayed untouched overtime. It is still possible to find also terrace fields, which underline the importance of agriculture for the local villagers. Starting from the XX century, the industrialization in the nearby cities and the consequent crisis of agriculture, make villagers leave Santo Stefano more and more. Besides this, since it has not been victim of urbanization, the village kept untouched his close relationship with the surrounding environment.

The idea of turning the abandoned buildings into a diffused hotel, has been introduced by the entrepreneur Daniele Kihlgren, who funded Sextantio through private investments. The intervention aim to an high quality tourism oriented towards history, tradition and culture. The philosophy behind Sextantio mostly consists in recognizing the value of the heritage to be redeveloped, since it carry a very clear identity that is intended to be preserved, in respect of the place and the people that inhabited it. The building techniques used here are as close as possible to the original ones, not only to achieve an higher level of integration or for a restoration intervention that would result correct from a stylistic point of view, but also because it is through this type of intervention that a long lasting conservation of tradition is achieved. The restoration used in Sextantio is philological, which means that the added parts and all the interventions in general are meant to be distinguishable form the existing[4]. The actions on the buildings, in fact, focus on keeping the original volume, using recycled or recovered building materials and furniture as much as possible. Moreover the interventions on the abandoned dwellings removed the incoherent parts belonging to the 60s and 70s to revive the original value. The guidelines for the architectural recovery, which has been followed also by private owners afterwards, focuses on preserving the original volume, the amount and size of the openings, partitions and where it is possible, even the original function

Fig.1 View of Santo Stefano di Sessanio.

Fig.2 Map of Santo Stefano di Sessanio. The highlighted buildings are the ones hosting the diffused hotel.

Fig.3 The interior of a room.

Fig.4 View of The tower surrounded by some buildings, it is possible to grasp that the tower has been renovated besides the intervention is not too invasive and beld with the original architectural style.

3 L. Klarmann, *Rivitalizzazione dei nuclei storici minori, l'esempio dell'albergo diffuso,* Tesi triennale Politecnico di Milano, 2014, pp. 16-25.

4 L. Klarmann, *Rivitalizzazione dei nuclei storici minori, l'esempio dell'albergo diffuso,* Tesi triennale Politecnico di Milano, 2014, pp. 16-25.

of the various rooms.

Following the same conservative and respectful approach, the interior of the rooms and the various facilities, take inspiration from the ones of the local vernacular dwellings: poor and rough but welcoming. Even the furniture is indeed recovered from original pieces, which contribute even more to give a vernacular feeling to the interiors. The bedsheets, since their recovery has not been possible, have been crafted following the original local embroidery techniques. Nevertheless the interventions take into consideration the modern requirements for living comfort, by inserting furniture that through its contemporary design give an harmonious clash with the rough interiors and hiding high tech equipments. Together with the architectural interventions, there has been a process of analysis of the local traditions and folk, a very important element in order to recover local identity. All those local traditional arts and crafts such as embroidery, sewing and wood work has thus been reintroduced in the village.

Fig.5 The interior of a room. It is possible to see the clash between the minimal design of the bathtub and the rough feeling of the rest of the room.

Following this strategy, Sextantio proved that the strong cultural component of the diffused hotel represent a more economically successful model, than other projects that just aim at the redeployment of historical villages, by building new invasive architecture for tourist facilities that destroys the relationship between architecture and environment.

Together with accommodation, the renovation in Santo Stefano di Sessanio brought other facilities in the restored building, all more or less related to tourism:

- Craft stores: the main domestic art and craft is mostly sewing and embroidery, but also wood work is practiced;
- Restaurants, directly connected with local farms, which produce all the ingredients used in the local dishes served;
- The winery, where is possible to taste local salami, ham, cheese and of course wine;
- A brewery, where local alpine herbs are turned into herb teas or liquors;
- Ensemble in residence, an orchestra that organizes seasonal concerts;
- Conferences rooms;
- Common rooms;
- Spa and beauty center.

Fig.6 The diffused hotel's restaurant.

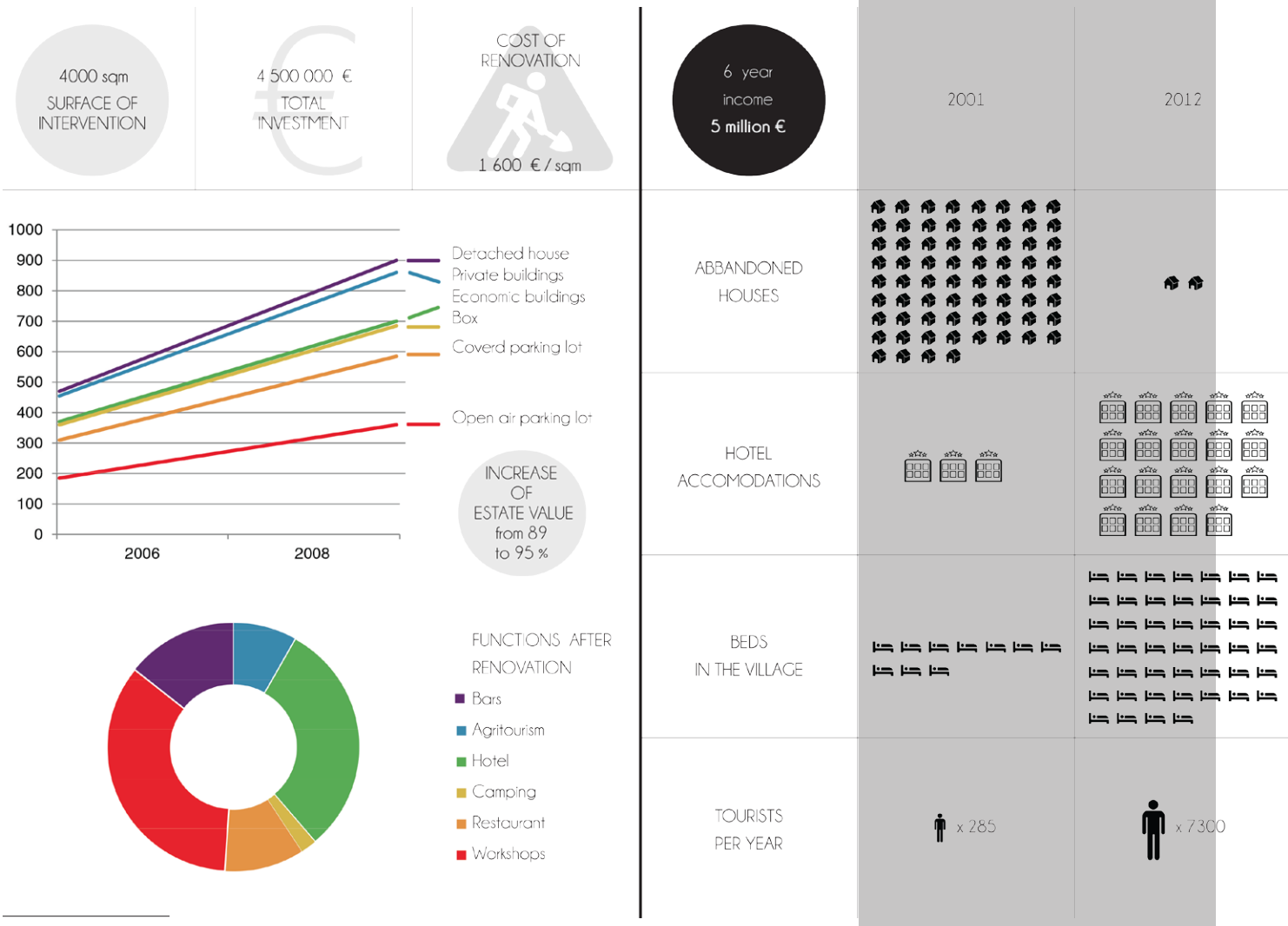
The project had a positive impact on the village and its nearby territory on the economic point of view, mainly for what concern four aspects. First of all tourism incremented exponentially. In 2001 touristic development was basically none, with 75,5% of housing being abandoned or not used[5]. 10 years later, the amount of accommodation for tourists grew and among this Sextantio is 30% of the rooms[6]. Secondly the real estate registered an increase of 90% of its value[7]. Thirdly, the tourism brought an increase of the employment rate. This has been due not only to the new jobs positions in the field of touristic accommodation, which increased of more than

5 Sextantio s.p.a.
6 Sextantio s.p.a.
7 Agenzia delle entrate.

30%8[8]but also thanks to the rediscovery of ancient crafts and jobs, such as wood master, blacksmith, weaver, renovator, which in turn has encouraged tourist to buy locally crafted objects. Finally the impact on agriculture has been positive as well, since the locally grown grains are used to prepare bread and pasta that are served in the restaurant, and there has been the reintroduction of sheep breeding for the production of the wool.

The interest in this case study, is not in the architectural typology conceived in order to recover the existing, but mostly is the touristic strategy adopted and its positive impact on the local economy, proved by datas. On the one hand, the starting condition of Santo Stefano di Sessanio and Hanglai are quite similar: both of them are threatened by abandonment because of urbanization of the nearby areas; the local economy mostly consist in breeding and agriculture; the landscape and natural heritage is a big potentiality for both villages, as well as the cultural heritage. This makes Hanglai a perfect starting point for a sustainable, high quality tourism, based on an authentic cultural experience, considering the strong presence of the Miao minority and its traditions. On the other hand, the diffused hotel, as a typology, is not really suitable for Hanglai village for three main reasons. Firstly, even though many inhabitants left the village to work in the city, their parents and kids still live in their houses. There are, thus, not enough abandoned buildings to install tourist accommodations and related facilities. Secondly, besides the fact that tourism would greatly contribute to boost the economy of the

Fig.7 An old lady doing embroidery.



8 Sextantio s.p.a.

Tab.1 Economical advantages brought by the diffused hotel in Santo Stefano di Sessanio.

village, is first needed to ameliorate the life condition of the villagers and to provide them basic services and infrastructures. Thirdly, the accessibility conditions of Hanglai are limited, consequently less visitors will be able to reach the village at first, and thus not many rooms are needed.

4.1.2. Learning from China: Cang Dong village

Villages are an indispensable component of heritage in China and lately, more and more community development projects are being implemented as a way to preserve them. In order to keep the traditional villages and their heritage there is one action that is fundamental in every recovery project: community involvement. This, which have to be implemented in the process from the very beginning, is important because the villagers are the ultimate stewards of heritage (V. Michael, 2016). Heritage, especially in the case of ethnic minority villages, is more than buildings and landscape, but as seen in previous chapters, includes in most of cases the intangible component of folk and habits which are still very important in the local daily life. It has been acknowledged that when dealing with a traditional village and its recovery, the real challenge, when the action wants to enhance the identity and with it the traditions of the village, is to make sure that the next generation is actually willing to carry those traditions and habits that might be seen as antiquated - for example embroidery in the case of Miao villages. For this reason villagers' participation is very important from the earliest stages of the project, so that they can express their opinion on the designers and conservators' ideas and bring a critical dialogue which can lead to improvement to the project.

In China, this direction towards traditional villages conservation and recovery has been taken starting from the late 90s. In particular the community involvement approach is embodied in the Burra Charter (1999)[9]. In short the document set heritage conservation as a process made of four main steps: identify, evaluate, register and treat. As it is possible to understand, the participatory aspect is the catalyst for this preservation process, as it is on the villagers the honor of identifying what according to them is worth preserving. For a rural village, the real boost for the economy is, indeed, not tourism itself, but being attractive for the next generation of villagers, because consequently young locals will contribute to make their community survive instead of abandoning it.

This kind of strategy is necessary when one of the stakeholders involved in the design is someone not familiar with the local culture. In China the loss of identity of the villages and the lack of respect towards the villagers' lifestyle and habits is not always only due to the rapid development of the tourism sector, but also to the stakeholders involved in the process, which in some cases means foreign designer, but in other can also mean the local or central authorities. For the former, it is because everywhere in the world, different cultures value different kinds of heritage. It comes consequently that

9 "while experts may know best about specific approaches to conservation, intangible heritage and the techniques of making places are resident in living cultures and living communities". (V. Michael, "The Challenges That Remain" in *Traditional Chinese Villages bulletin*, vol.3, March 2016,pp. 8).

Western designers do not always have a clear understanding of the real needs and intentions of the villagers and thus participation and community meetings are necessary in order to have a successful project. For the latter, no matter of all the policies and funds sponsored by the government for village renovations, the authorities are in some cases blind and do not want to understand the real conditions of villagers. From this is possible to guess that the lack of heritage knowledge of ordinary people and lack of respect from decision makers are key issues in the conservation and development of heritage in China. Public participation can not only help to overcome such issues, but also be a great help for what concern the heritage management itself. In other words, the involvement of the community do not limit itself in the first phases of discussion before the recovery, but continues in making the villagers the main actors in the project, which means in the actual heritage management and economical development of the village[10]. This is what happened in the conservation and development project for the heritage in Cang Dong village, located in Guangdong province. The project began in 2010 and since then it received many recognitions, such as the UNESCO Asia-Pacific Cultural Heritage Conservation Award of Merit[11].

Fig.8 Cang Dong village.

Fig.9 A traditional house.

Cang Dong village, has been founded by the Xie family about 700 years ago. The presence of this clan is still perceivable, since it is featured in the architecture itself. The village presents two ancestral halls dedicated to the two Xie brothers, who split the village in two parts, combined with local schools reflecting the Confucian patriarchal system that the villagers still respect. There is a Feng Shui pond, a bamboo plantation leading up to a Feng Shui wooded hill past a village shrine, an old banyan tree and an old water well. The village has also a community hall and both traditional and newer dwellings. All the above mentioned features are set in an agricultural landscape[12]. The main interest in Cang Dong village is that, besides showing the typical Southern Chinese village life and culture, its architecture embodies both Asian and Western features, being Cang Dong hometown of many overseas Chinese. It is possible to notice the harmonious dialogue of western and eastern features, originated by overseas Chinese who came back to their hometown, in the *Diaolou*[13].

Fig.10 Some villagers doing some construction works in front of two Diaolou.

10 "The main purpose and soul of conservation is to understand the place that people lived. It is not just about conservation of beautiful historical buildings, but also about the pride and self-identity of local people, and the practice and presenta- tion of their lifestyles". (Tan J. "A Pilot Project for Heritage Conservation and Development: The Cang Dong Village of Guangdong Province", *Traditional Chinese Villages bulletin*, vol.3, March 2016, p. 33-42).

11 "Using a multi-pronged approach, the project to establish the Cang Dong Heritage Education Center has helped to reverse the gradual abandonment of this once prosperous farming community in Guangdong province. Located near the Kaiping Diaolou and Villages World Heritage property, the village contains noteworthy architectural typologies dating to the Ming Dynasty which the project has selected for conservation, resulting in the sensitive restoration of two ancestral halls, a defensive watch-over and the Furen Temple. By designing an outreach program targeting youth, the project has helped to raise awareness and concern about local heritage among the younger generation. The commendable efforts of community members, patrons and conservationists have realized an ambitious new vision for the revitalization of the village" (UNESCO, 2015).

12 Cang Dong project website

13 "At the beginning of the 20th century with the fall of the Qing dynasty, there was a period of some lawlessness in Guangdong with the rise of local power-brokers and a prevalence of opportunist bandits. It was a time, too, of some natural calamity and flooding. Many of the Chinese overseas had accumulated substantial wealth but had retained a concern for their home villages. Some saw that

Fig.11 Canadian university students in a cultural workshop in 2015.

Fig.12 Canadian experts visiting Cang Dong in 2015.

The building recovery follows two main restoration principles. The first one is the minimum interference criteria, in order to respect the authenticity and integrity of the original buildings, maximizing the retention of the original style and using traditional materials and processes. The second one is the principle of reversibility, used to make sure that the restoration work do not destroy or contaminate the original building (Tan J., 2016). Like in Sextantio, not only original building techniques but also ancient furniture has been used to enhance the traditional atmosphere. Obviously some buildings have been slightly modified in order to suit modern needs. In this process community participation has been a key element, since only local villagers experienced in crafts and building construction were involved in the repair works.

The development goals of the project are numerous and do not limit themselves to the mere recovery or economical aspect. First of all is to enhance the pride of being a Cang Dong villager. Recovering Cang Dong does not mean just to conserve the beautiful historical buildings and eventually reuse them, but also to engender in the locals a sense of belonging and self-identity, through the practice and preservation of their lifestyle and traditional culture. This is not only meant for people currently living in Cang Dong, but also for the overseas Chinese descendant from this area. Consequently the project can provide a bridge and networking opportunities between Cang Dong, neighboring villages and overseas Chinese. The second aim is to educate ordinary people, mostly students and young tourists in heritage conservation, and through this achieve continuity of local culture. To make this even broader, the recovery project wants also to provide an actual field study for scholars involved in overseas Chinese history and their hometown research.

A key element for the project has been, thus, the establishment of the Cang dong Heritage education center. This center enables people to explore and experience the indigenous village way of life in its many aspects and to learn about culture and heritage conservation. It carries out research and provides informations on the history of the area, its inhabitants and their traditions, as well as those who have emigrated and the reasons for the emigration. As mentioned above, the locals participate in the management of the center by offering guided tours, which, containing personal anecdotes, which give to the visitors a more authentic and original cultural experience.

In order to achieve such goals, the project do not limit itself to tourism, but embodies also an important educational side. The heritage education, has an important role in redeveloping the village economy, by using the model of the social enterprise, all of this in respect of the local community, history and way of life. The learning happens through various activities, like visit to UNESCO sites, lectures about the local culture and heritage preservation, participation in local farming, local food preparation, interaction with locals

by building large defensive structures at their village, they could help those who still lived there. To do this, a few returned to live, and some visited long enough to establish the buildings before returning overseas, and some just sent money back as this was as much as they could do. The latter never made it back, but left their wives and families to guard the grand buildings, even until today. These fortified multi-story towers were known as Diaolou.". (Cang Dong project website)

and their daily life, environmental awareness activities, cycling along the Guangdong greenway, appreciation of folk activities and so on. In this framework the recovered buildings are meant to host education related facilities, located in the clan houses together with a bed and breakfast type of accommodation.

To conclude, the success of Cang Dong project is due not only to the peculiar heritage elements included in the village themselves, and the overseas Chinese culture, but by the touristic strategy that, in a similar way with Sextantio, encourage the visitors to become an essential part of the village and its survival and have as ultimate goal to make them aware of heritage conservation and make them discover a new culture.

4.2

Vernacular architecture: an aswer to the problems of scarcity and low life quality

by Germana Isacco

Designing in the world's least developed regions, like most of China's country side is compleatly different from what we have been experience in our studies. In this typology of project, the focous is not only in the quality of the design itself, but more in how much this building will be able to change the people's life for the better. in this case the architect need to deal with low resourses, low budject, low technology and often with a vague idea of what need to be done. So we took as case studies architects that we had the opportunity to meat personally during this Double Degree: Alejandro Aravena, Frencis Kere and Anna Heringer.

Fig.1 Wooden House, Gressoney, North Italy

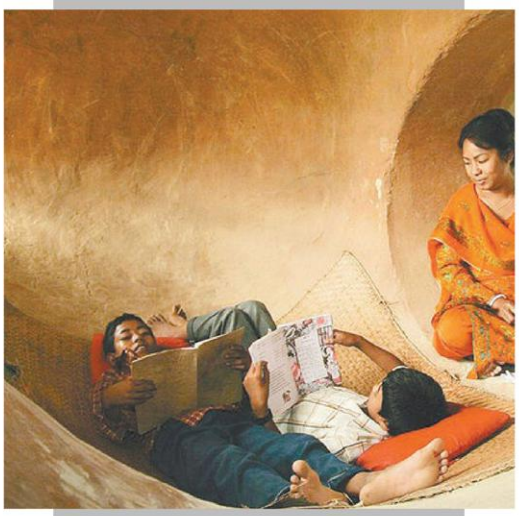


Fig.2 Sassi di Matera, South Italy

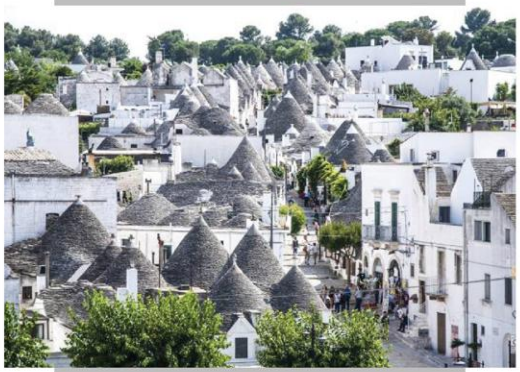


Fig.3 Trulli of Alberobello, South Italy

Vernacular architecture is the architecture style that based the design on the direct answer to the local needs, through the use of local materials and the traditional building techniques. The word vernaculus in Latin means "domestic, native, indigenous", in fact Bernard Rudofsky define this kind of buildings as Architecture Without Architects in the 1964. The vernacular buildings are sustainable themself, thanks to the uses of local materials and the adaption to the climate. It was the regionalism, instead of the globalization, that creates the different architecture types that can be find around the world. Considering only Italy, for example, from North to South, there is a vast differentiation of the architecture proceeding with different landscape. In fact in the Alps there are wooden mountain huts, in Basilicata the Sassi of Matera and southern in Puglia, the Trulli of Alberobello, with the characteristic cone shaped roof. The common sense of the people that generation after generation lived in the same place allowed to reach a deep knowledge of the territory that led to the construction of dwellings that perfectly match with the environment.

Even if this typology of building always exist, during the last centuries it was discarded by the academic architects that were dealing more with the esthetic of the architecture, and ended up buildings that pop up in the surroundings. The several styles that followed each other were different point of view on the arguing about which shape, materials or approach use to solve better the functions. The history of Architecture is full of examples of buildings related to the ego of his creator: the architect, rather than the local needs. That's because in the developed countries all the basic needs where already solved so the design attention could shift more on other aspects, instead than just solving the problems in the esiest way. Building in the world's least developed regions is of course completely different and require that the designers take care of other elements to having sustainable and successful project. These elements, as written by Peter Ozolins[1], can be the followings: the culture, with its values and practices; the unique building culture of a place, with its building materials, skilled labor and building practices; endemic and widespread poverty; high unemployment and underemployment; limited skilled labor; resource-poor clients; mild climate and continuum of outdoor to indoor space; minimal energy use; passive means of cooling-heating are often adequate for comfort; lack of government-provided security; lack of utilities and transportation infrastructure.

The necessity of change the direction of the architecture design was pointed out by Massimiliano Fuksas, who curate the 7th Venice Biennale in the 2000. He launched the challenge "Less Aesthetics, More Ethics", to suggest the architects rebalancing the priorities and address issue beyond the aesthetic. The responsibility of an architect should include more than just the visual impact of their design, especially the social, political and economic impact of their building in the surroundings. Architecture when is based on an holistic design and take care of all these aspects create buildings that are not just walls and roof but real solutions to change people's life for the

1. Peter Ozolins, 2014.

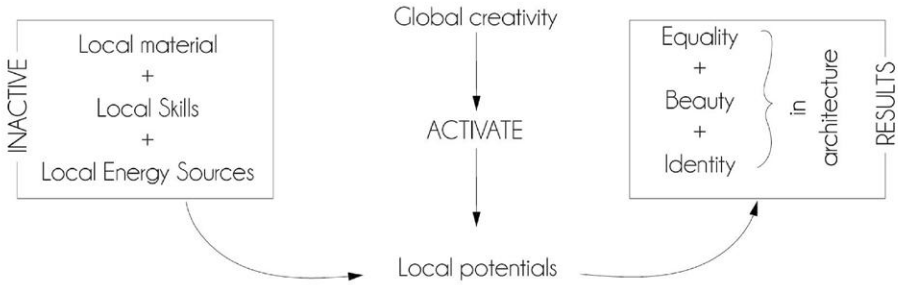
better. For Fuksas ethics and aesthetics are mutually dependent; good aesthetics, in the form of beauty, leads directly to a good life, in the form of an ethical society, and equally that ethical society is the necessary context for the context of good aesthetics. Infact as long as aesthetics can be equated with ethics, more aesthetics results in more ethics.
Starting from this provocation some architects in the XXI century were inspired to design vernacular architecture based on the principle of low cost and low technology, that does not look unnecessary costly. Anna Heringer, Francis Kéré and Alejandro Aravena are the case studies chosen[2] to inspire the design method use in the renovation of Hanglai Village.

Fig.4 and next - Anna Heringher and Meti School

Anna Heringer is a German architect, graduated in Linz, Austria, that started her work experience as volunteer in Bangladesh in 1997. Here in the 2004 she found the topic for her Master Thesis: "School: handmade in Bangladesh" and after dealing with fund raising and other legal issues, she managed to see her design build in the 2006. The building was different from that one she submitted in her thesis because of the fundamental role played by the community in the project, so at the end also the name of it was different: METI Handmade School. This school was design with the aim that buildings can create beautiful and especially meaningful human collective space for living, in order to improving and evolving the lives of the citizens itself. Anna Heringer defined three element that has to be used to build something with this high moral goal in a underdeveloped country:
- Local materials are essentials to cut down the transportations and the materials costs. The local materials are not just more economical they are also more robust and they will resist better to the clime there. In the school in Bangladesh she used the earth, the bamboo and the straw. Using the local materials means also that the people know how to get, use and maintain them, and this aspect connect with the second element:
- Local skills. The architect cannot take care of all the whole process of the design so it is necessary that the designer renounce to perfection to include more people in the process. The drawings has to be done in the site and need to change a lot during the process, so the architect should not get attached to his first view. Using the local skills is a way to pay the people's work, so the money are not consumed for the building cost, that is reduced to the bare minimum but given direct to the people. Using the local people forces will help the process of appropriation, so at the end all member of the community can say what they have done in it.
- Local energy sources: often the common machines used in the constructions site and also an high voltage electricity cannot reach these remote sites. So the architect should consider every energy sources, that can easily be just the people and the animals force. Building a rammed walls by hands, for instance, require lot of hands work and for an architect being part of this

2. This choice is due to the fact during our time in China we had the opportunity to attend a lecture of Kere and Heringer, and then later have a short discussion with them thanks to the introduction of our mentor Li Xiadong. Kere was infact invited in the Architecture School at Tsinghua, Anna was presenting in the Beijing Design Week with Martin Rauch. Talking to Aravena, we have the chance to attend his lecture during the World Design Summit in Montreal.

Fig.5 and next - Frencis Kere and Gando Primary School



effort, make him realize how much energy there is behind that wall. In this way the architect will give more importance to a wall, that is much more than just a line in AutoCAD that u can easily delete and move.

Starting from these three elements Anna defines a formula to design context specific projects, that are not just standard solution: adding the global creativity and the technical knowledge of architects that comes from somewhere else. The creative touch of the designer she add in the METI School is the sphere shaped room of the reading or relaxing space. Since the wall is made of earth was easy to model it, so she thought of creating a volumes that will help the kids to relax, because of they will have the instinctive feeling of be in the maternal uterus. Another elements that she chose was using colored doors and curtains to give the building a more friendly aspect. So local materials, skills, energy with the global creativity, will develop the local potentials to create more quality, beauty and diversity in the design. Her commitment to this kind of architecture was recognized worldly with the Aga Khan Award for Architecture - 2007 and with the Global Award for Sustainable Architecture - 2011.

Another interesting example is Francis Kéré, he was born in Burkina Faso and he was selected to be the first child of the village send to the school. The opportunity of being the first student changed his life. All the people in the village used their savings to support him, and they didn't want him to forget about them never in his life so before he left they marked his forehead on the right with a big scarf. There is a tradition in Burkina Faso saying that each member of the family is responsible for the well-being of all of the others. Each individual is indispensable for the survival of the community. If one member leaves the community in search of a better life, he has to compensate for his absence by giving something back. The Kérè's education was the base for the village development. He became an architect in the Technical University of Berlin, and as Anna he organized the first raising campaign before finishing the university. In fact, he collected a small amount of money through his classmates and friends and he came back to Africa. His projects in Gando are really successful: loved by the inhabitants of the village and prizewinners. To mention just the main: Kéré won the Aga Khan Award for Architecture – 2004, the Global Award for Sustainable Architecture – 2009 and the Gold Global Holcim Awards – 2012. How he manage to achieved such great success with his design? Because the architect role in all this development project was only helping the people to help themselves constitutes the basis of all the projects they need. Kéré brings in Gando technical knowledge that they never seen, so even if they know him, they were

skeptical about the validity of what he was suggesting with simple sketches. So often he had to demonstrate with 1:1 scale models. Another key is the community participation, as he said: "Only those who are involved in the development process can appreciate the results achieved, develop them further and protect them." The men manufacture the clay bricks, lay the foundations, build up the walls and install the roofs. The women beat the clay floors and plaster the walls. Every morning for a whole year, the children bring a stone for the foundations on their way to school. Participation creates a sense of identification and motivation, and this leads to the project being valued, preserved and further developed. He use really low cost solution to improve the comport in the buildings: like a bucket of water under a bench near the window so that when the water evaporate, the vapor enter, or vase use as opening to let the warm air go out of the roof. The main material cost is clay that is really abundant in all the region so the buildings are so easy to replicate. So the key of his success is that with simple smart idea an architect can change people's life for the better, can improve the life quality and the customs to develop the community.

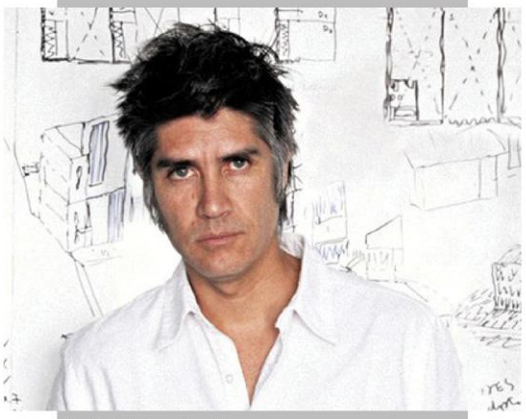


Fig.6 Alejandro Aravena

The last case study is about the Chilean architect from Santiago that with his public housing unit in Inquique reached a great success, because he manage to solve a complex problem with a simple solution. The architect involved in this is Alejandro Arevena, who trust that "the more complex are the problems, the more they need for synthesis. If there's any power in design, that's the power of synthesis itself[3]".
As Anna Heringer realized during her experience in Bangladesh, architects has to use and consider in then building process the people capability of build. She left some simpler task to the local people, like choosing the creating the doors, the windows frame or the shading grid in bamboo, instead Aravena went way more far from it. In fact, considering the limited amount of money and time, the architecture design could take care of all the square meters design needed to be done, so he found a really innovative solution: build just half house and leave the other to be completed by the owners. In this way they provide in the half house they build the infrastructure that the people need, and leave them the freedom to finish the design as they prefer. The result, is indeed a really bottom up elevation, where each unit is unique. When Arevena curated the 15th Architecture Biennale in Venice, in the 2016 he reconnected the exhibition with the earlier mentioned Fuxas's goal, infact his title: "Reporting from the front", was a call to the design society to open more their field of interest. The object of the exhibition infact want to highlight how positive outcomes have been achieved through the design which link need - awareness - opportunity - choice - execution in a way that leads to a result where "architecture makes the difference". Aravena said that architects should not be interested in architecture as the manifestation of a formal style, but rather as an instrument of social and political life, challenges us to assess the public consequences of private actions as

Fig.7 Maria Reiche

3. Quotes from TED Talk, Rio de Janeiro, 2014.

Fig.8 and next Quinta Monroy Social Houses

a more fundamental level. The choice of the expression "Reporting from the front" was inspired by to the following story:

"In his trip to South America, Bruce Chatwin encountered an old lady walking the desert carrying an aluminum ladder on her shoulder. It was German archaeologist Maria Reiche studying the Nazca lines. Standing on the ground, the stones did not make any sense; they were just random gravel. But from the height of the stair those stones became a bird, a jaguar, a tree or a flower". Aravena thus expressed his hope that the Biennale might offer a new point of view like the one Maria Reiche has on the ladder to those standing on the ground.

The curator's proposal is therefore twofold: on the one hand we would like to widen the range of issues to which architecture is expected to respond, adding explicitly to the cultural and artistic dimensions that already belong to our scope, those that are on the social, political, economic and environmental end of the spectrum. On the other hand, we would like to highlight the fact that architecture is called to respond to more than one dimension at a time, integrating a variety of fields instead of choosing one or another."

Aravena carrier reach the top with the winning of the Pritzker Prize in the 2016 and the Global Award for sustainable Architecture, 2008.

During is conference in Montreal during the World Design Summit he gave suggestion to how define "participatory design". Firstly, it is necessary to get the right questions, not the right answer. The point is not giving the pencil directly to the people, it would have been inefficient and unfair, architect have been studying and they obviously know more. Then talking with the people help the designers to establish priority, in the underdeveloped countries infact there are never enough money and time to do every things it is necessary in one time. Last but also really important involving the people from the beginning of the process to give the architect the license to operate, because have the legal permission is different from be legitimate.

These case studies are similar approach in how to deal construction in undeveloped countries, how to be an architect that can change the life and the future of a place through his building, that so are not only nice volumes, but have an important social meaning.

5.1

Local materials

by Germana Isacco

Local materials are the resources that the inhabitants of the village can easily find in the area of the village or in the nearby city and that do not require expensive and complex processing processes. In fact even if they come from the city, like the tiles, they are handcraft and not industrially made. These materials are typical of all the houses in the village and define the image of Hanglai. They can be defined as belonging to the local vernacular architecture. The local materials are certainly sustainable but require improvements to improve the living comfort of the villagers.

5.1 Local materials, how people use them, advantages/disadvantages

In Chinese language, "TuMu" means "construction" which literary means by definition "work of earth and wood". The word presents the cultural understating of the construction as purly from its basic materials of clay and wood. The traditional architecture built its frames from wood based on a rammed earth bases or platforms srounded by timber wall covered with plastering layer of adobe that can also be found over the roof tiles. Bricks and tiles were standerly found in constructions where a superior finish was required, as mentioned in the Yingzno Fashi.

5.1.1 Wood

Wood is a natural organic material that is affordable and highly used by the locals. It is one of the core elements that has been in the essence of the Chinese architecture, and a very distinctive in its usage. The unique usage of the wood as a structure material especially in the roof form the distinctive form of the traditional Chinese dwelling. The contemporary manufacturing and processing of the material have varied and accordingly that had an influence of the existing usage. The locals use sheets of wood with 2 cm thickness to form wall and floorboards. While for the structure, it takes the form of wooden studs. The boards and studs are brought all the way form the near city.

The poor characteristic of the wooden panels makes it as a very poor conductor to the outside climate. The seasonal temperature in the village drops dramatically during the winter that it requires a high efficient insolation to worm the poorly heated indoor spaces. Due to the humid weather and moisture from the earth and rain the life span of the material, shorten dramatical-

Fig.1 Map of people of China

ly. The poor installation knowledge of the locals and the lack of the proper water proving coating over the wood panels makes the material inefficient after a while of fixing it. The natural erosion elements can be caused also by organic creatures such as worms. The tiny creatures penetrate the surface of the wood and help to speed the erosion process from inside.

The cost of obtaining and maintaining this material could be minimal and within the affordable range. It can be easily considered as a sustainable solution since it does not require carbon emission while manufacturing and transportation. While obtaining and manufacturing wood consider to be an advantage the properties of the wood need to be reconsidered according to the regional climate and building technique. Wood can be considered a harmonious material that fits with the surrounding environment. Increasing the efficiency of the material and make it more suitable to the current usage and life of the locals can be managed by reconsider the usage of the layers and by paying more attention toward the properties of the material so it can be used where it fits.

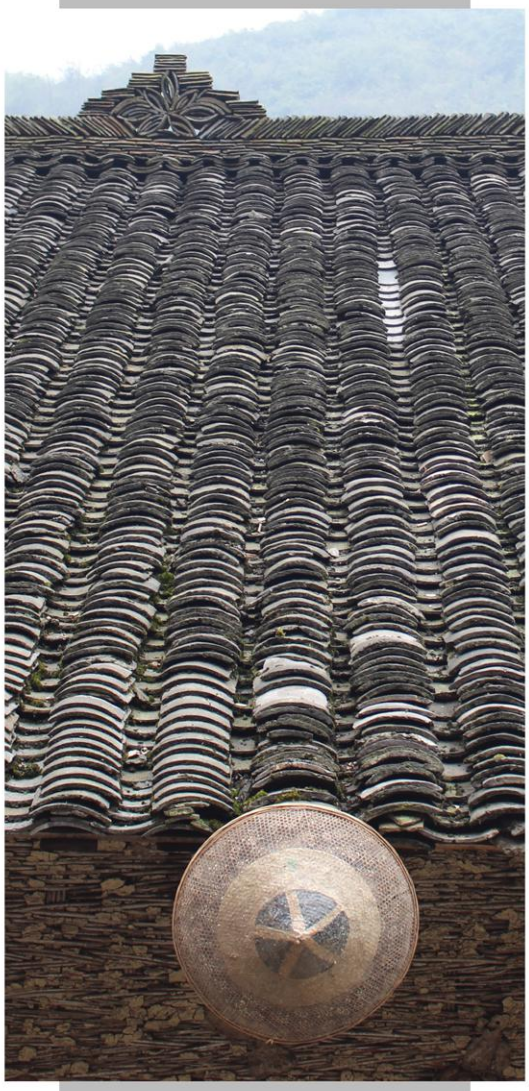
While trying to adapt the vernacular architecture, wood would perform structurally well. The solid studs forms a great bearing columns, beams and joints for the structure skeleton. The strong compression characteristic is due to the microstructure of the cellular fibers that builds the wood. The wooden skin covering the space should be not include the exterior wall but can include the roof and ceiling. That is due to the previously noted sensitive characteristics of the wood toward the erosions that helps to drop its performance and weaken its properties.

5.1.2 Stones

Stones have a very high density that builds its strength and high compression characteristics. The stable and fixed molecular structure of the stones makes it immune toward erosion in compare to the organic materials. The High density of stones makes it heavy in which it gives that material its stability and challenges to be held over another material. The cost of the material is minimal due to the availability in the local surrounding and yet mobilization to the construction site is challenging due to the distance from the stone caves to their village. The local usually need to move the stones over the shoulders and carry it in which it would be only efficient for short distance.

The local usage of stones can be noticed in the paving of the roads and mobilization networks in the mountains. Also can be found in the floor of the services area. The unique properties of this material makes it perfect for the structural foundation. It can bear high compression forces from the structure and maintain its stability. Nevertheless will not be effected from the moisture in the soil.

Stones also fit perfectly as a skin for the building, its strong resistance to the climate condition like rain help to increase the life span of the building. The thermal insulation of the stones are very high that can help to keep the heat inside the space and isolate it well from the outdoor climate if it was used as exterior buffering wall for the structure.



5.1.3 Tiles

Tiles traditionally made of earth, formed after mixing with water, finally gets its shape after dried under the sun, and turned into a hard-wearing mass by fire. Production of tiles was a specialized process and the technology was preceded by pottery craftsmen that inherit it for a very early period. The supply of the roof tiles for th whole town comes from a nearby pottery factory. This gives a unified identity and color to the whole roofing system to the town. Nevertheless, this also help to make it affordable and available as a core building element fot the roof tops of the village structures.

The tiles used for the roofing system are placed over of the wooden structure and gives the building its unique visual character but unfortunately, they lack the proper roof isolation from the outside climate. Maintaining the tiles in the design development will grant the preservation of the local identity while the installation techniques might be adjusted and developed to make it more effective, in terms of climatic isolation.

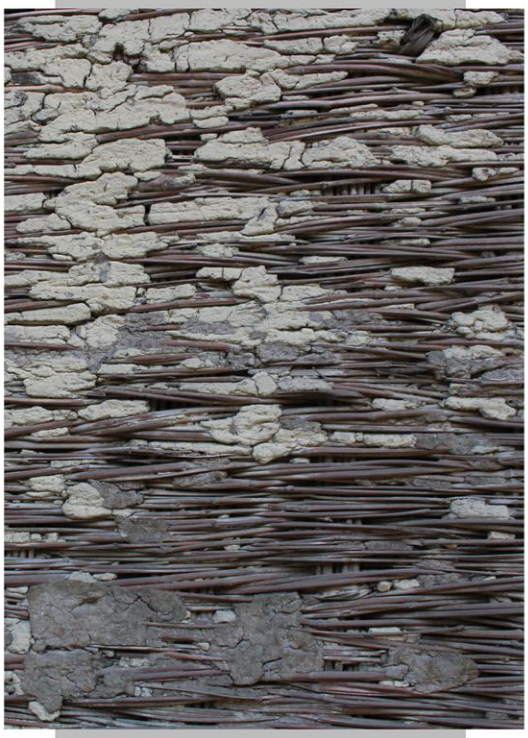
5.1.4 Organic Materials

The local buildings and houses have an organic based side covering that does not have any function related to the structure. The skin forms function layer is made out the materials that is within the domain of the local context such as reed and silt. Those materials are mixed together with some portion of tiny stones and used to coat and form the elevations of their houses.

The color properties of the composite make the building blends perfectly with the surroundings. The ecstatic also exceeds the color and help to form

a texture for the final product that is rough and in its nature it express the nature of the surroundings . The economic value of those material is minimal and the sustainable value is very high thus it is based on the agricultural production waste and the earth elements that the area is full off. the organic material have a medium length life span of five years but it takes some time for the villagers to be able to weave the reed together into interlocking pattern. The disadvantage of the material is that it requires periodical maintenance and replacement . The material also is very light so it does not help to carry the weight of the building and barely carry its own. The light weight and poor construction technics that the villagers adapts create also a pours surface that leaks the heat out of the building during the cold winter and work as a poor insulation in the hot summer.

The simplicity of the composition and the affordability make this local use of the organic material a strength point if it construction usage developed to fit the climatic and the structural function required to sustain the life quality.



5.2

New materials, techniques and solutions

by Chiara Menna

The materials and building techniques to be implemented in the new architectural intervention in the recovery of Hanglai village have in common ground to be natural, non standardized materials. The use of this kind of material is sustainable for Hanglai both economically and environmentally. For the former because locally sourced non-processed materials do not need to be purchased; for the latter, consequently because the lack of need of standardizing the raw material to make it usable for building, lower the waste and the overall carbon footprint of the architectural intervention. Moreover, the building techniques proposed are reinterpretation of existing vernacular techniques, which means that villagers without any experience in building can be involved directly in the recovery process.

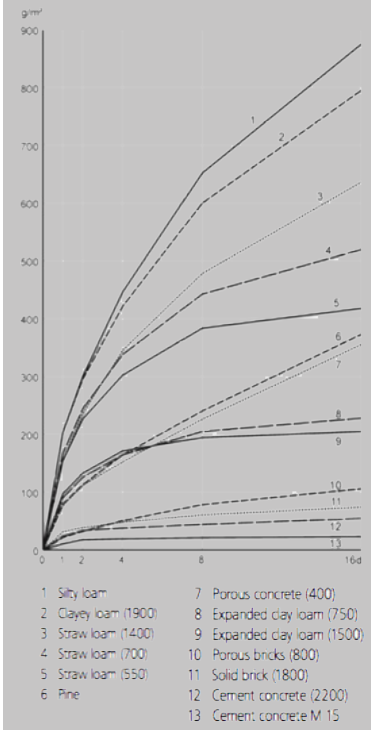


Fig.1 Absorption curves of a 11,5 cm thik interior wall with two sides exposed at a temprature of 21 C° after a sudden rise in humidity from 50% to 80%.

5.2.1 Building with Earth

The interest in building techniques using earth, has been growing in the past few years. This material brings with it, indeed, numerous advantages that makes it suitable for building in underdeveloped areas, or places characterized by scarcity of resources and difficult accessibility. Moreover the construction process for this kind of technique, do not require specials skills or experienced workers, which make possible to fully involve the villagers in the recovery of Hanglai. The main advantages of earth as construction material are the following:

1. Earth can balance air humidity, by absorbing or desorbing humidity faster and to a greater extent than any other building material. This happens without the material becoming wet losing its stability or exceeding its equilibrium moisture content[1]. This property makes the earthen wall keeping the relative humidity of indoor space almost constant, thus producing healthy living conditions[2].
2. Loam, being an high density material, have a high thermal capacity and it becomes ideal when it is needed to store solar heat gain by passive means.
3. Earth allow to save energy and reduce environmental pollution, as it is a material that can be sourced locally almost everywhere in the world, on the construction site itself, for example when doing excavation works for foundations. The fact that loam do not require transportation, reduces drastically the carbon footprint of the building. Moreover loam is unlimitedly reusable if soaked in water, never becoming a waste material.
4. Owing to its low equilibrium moisture content and its density, loam conserves the timber elements or other organic materials that remain in contact with it by keeping them dry. Similarly loam can preserve small quantities of straw mixed into it, provided that loam keeps a density higher than 600 kg/m3, otherwise it may lose its preservative capacity due to high capillarity of the straw, when used in such high proportions[3].

Building with earth, though, being not a standardized building material, requires some precautions. In fact, according from where earth is dug out, its composition may differ from site to site and it might be ùnecessary to modify its composition to solve determinate issues:

1. Earthen walls shrink when drying because of water evaporation used to prepare the mixture. Moreover shrinkage may make the loam wall susceptible to frost. To prevent this phenomenon, it is necessary to change the grain distribution and thus minimize the clay content. This can be achieved by adding aggregates such as sand, or different kinds of natural fibers.
2. Loam is not water resistant and must be sheltered against rain and frost, in particular during its wet state during construction. So it is necessary

1 "The equilibrium moisture content is the maximum humidity that a dry material can absorb, for loam is about 5%-7% by weight" (G. Minke, *Building with Earth*, Birkhauser, Base 2009).
2 G. Minke, *Building with Earth*, Birkhauser, Base 2009.
3 G. Minke, *Building with Earth*, Birkhauser, Base 2009.

to protect earth walls with roof overhangs, damp proof courses, appropriate surface coating, since when in contact with water they swells and weakens. It is also necessary to protect building elements made in earth from the humidity coming from the ground. This is why most of the earthen wall have stone raised foundations.

3. Earth is not good as thermal insulator as is not too porous. This issue can be solved as well with natural additives, which can be straw or animal fibers. Such elements, in fact, lower the density of the material by increasing its porosity.

Fig.2 A bajareque wall cracked because of shrinkage.

Earth is used in Hanglai in the traditional Miao house as wattle-and-daub. For the new intervention, the type of technique implemented is similar, consisting as well in a wet loam infill in skeleton structures. The loam is thrown on an interwoven mesh of bamboo sticks, which constitutes a formwork. the mesh is made in two layers, interior and exterior. Larger bamboo posts are placed as a reinforcement, whose diameter is supposed to be bigger than 7 cm. Such posts have to be 50 cm apart from each other.

This type of earthen wall is originally a vernacular technique called *bajareque*, and is traditionally used in subtropical areas of south america. The new earthen envelope implemented in Hanglai's architectural intervention, would have a type of loam containing cut straw in a small percentage, to ameliorate the insulating properties, but also in order to not compromise its thermal capacity and heat storage. As well, in order to make the envelope work as a passive heat absorber, the wall is made thick in order to increase its thermal absorption properties. The foundation of the *bajareque* wall should be 70 cm above ground level, with a damp proof course on top of the foundation wall.

Fig.3 Bajareque wall with lime infill.

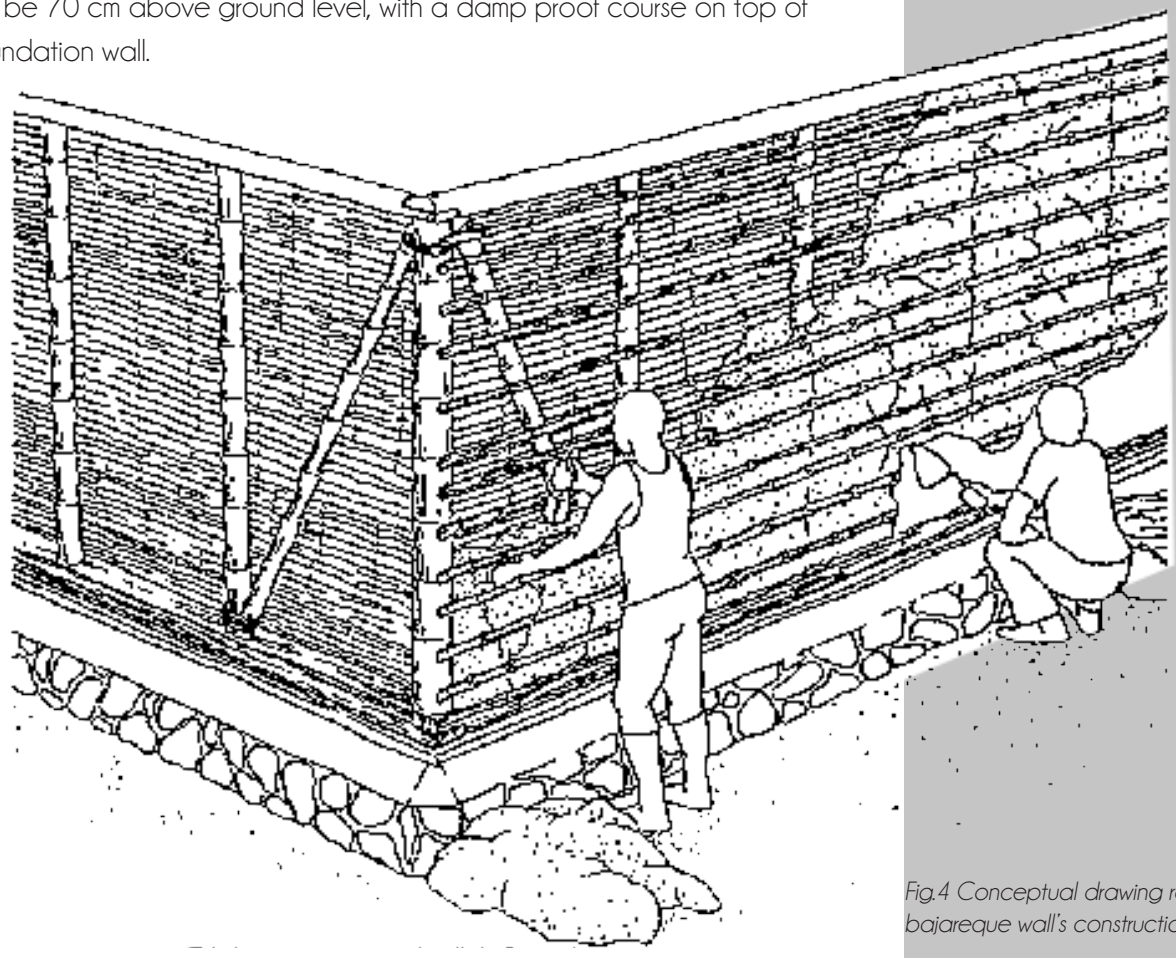


Fig.4 Conceptual drawing representing bajareque wall's construction process.

Fig.5 Bamboo skeleton of a bajareque wall.

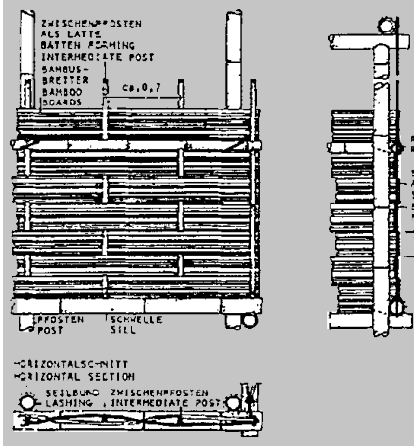


Fig.6 Weaving style for the bajareque's bamboo skeleton.

Fig.7 Straw bale wall.

5.2.2. Building with Bamboo

The use of bamboo, as mentioned in the previous paragraph, is connected with the *bajareque* technique. It is, indeed, possible to find bamboo as a reinforcement of adobe walls in Latin American vernacular architecture. The interest in introducing this material, as well as for the earth, is connected to the locality, since bamboo is often used mostly in humid and tropical climates and among the 1200 species discovered, 750 exist in Asia and China itself have 6 million of hectares of bamboo forests. (Iobovikov et al.,2007) Moreover, as well as loam, bamboo is easy to handle, do not require too much industrial processing to become usable as a building material and thus can allow the villagers to build outer walls entirely by themselves. The use of bamboo bring with it many environmental advantages:

1. Bamboo, have a very low primary energy, 300 MJ/m3, compared with wood, which takes 600 MJ/m3 (Janssen, 1981). Moreover being it a lightweight material and considering that the raw bamboo stick do not need too much processing to become usable in building construction, the overall ecological footprint is very low[4];
2. Bamboo grow more rapidly than wood, making it being usable as construction material only after 6 years and producing more dry biomass per hectare;
3. Thanks to its rapid growth, bamboo can also sequester from the atmosphere more CO2 than a tree;
4. Thanks to its dense network of roots, bamboo planting helps to avoid soil erosion due to rain and flooding. For this reason, considering that Hanglai is hit by an heavy rainy season every year, installing a bamboo forest would not only be an advantage to source building materials, but also to maintain the soil of the riverbanks and of the mountain intact.

Besides this, bamboo is not traditionally used by Miao people as a building material, but more for crafting objects like mats or baskets. In the new intervention, as explained in the previous paragraph, will be implemented in the outer envelope as a part of the *bajareque* wall.

5.2.3 Building with Straw

The last material introduced in Hanglai renovation process is straw. As well as for loam and bamboo, straw can be locally sourced in Hanglai, thanks to the presence of numerous rice paddies. Straw bales are, indeed, made from a waste product. Once the edible part of the grain has been harvested, the stalks often become a disposal problem for farmers. By bailing the straw, new life is given to the material[5]. The raw material derived from rice harvesting, then, it is easy to process and handle even for unexperienced builders. This, moreover, imply as well that straw bale have a low embodied energy, as it require very little processing for manufacturing and no energy for transportation. Other advantages of building with straw are the following:

1. Straw bales have a very high insulation power, which can reach R values around 30 W/Km. The thicker the wall, the higher the value it is.
2. Straw bales are 100% biodegradable. They normally last for over 100 years if properly maintained and when they have to be replaced they can simply be plowed back in the earth[6].
3. Properly constructed walls made from straw bales have proven to be

4 G. Minke, *Build with bamboo*, Birkhauser, Base, 2012.

5 http://buildingwithawareness.com/the-pros-and-cons-of-straw-bale-wall-construction-in-green-building/ (consulted on 3rd of February 2018).

6 http://buildingwithawareness.com/the-pros-and-cons-of-straw-bale-wall-construction-in-green-building/ (consulted on 3rd of February 2018).

more flame retardant than conventional wood-frame construction. This is because bales are dense and tend to just smolder when the ignition source is removed[7].

For the above mentioned reasons, straw bales will be mostly implemented as an insulation material on the roof, floor and North-facing walls. Nevertheless, considering the humid climate of Hanglai, precautions have to be taken to preserve straw bales from damp, as it might cause the straw to rot. Consequently, the core of the wall or roof, as well as the joints roof-wall, wall-floor and between straw bale wall and earthen wall, have to be protected with a damp proof layer. Moreover it have to be taken in consideration that moisture might raise from the soil; for this reason, the stone foundation plinth, as well as for the earthen wall, have to be placed 70 cm above ground level.

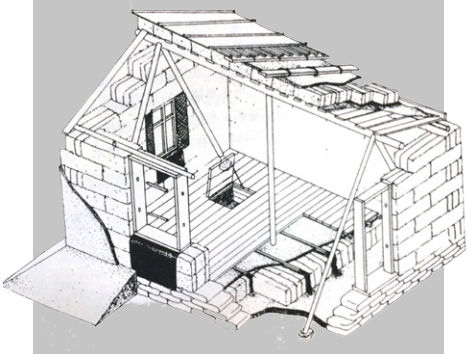


Fig.8 Axonometry of a straw bale house. it is possible to see thaat straw bales constitute the main material also for floor

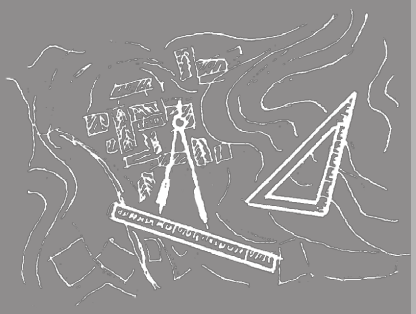
Fig.9 Straw bale wall being plastered with lime render.

7 "fires are caused by hay that was baled too early with high levels of moisture still in the crop. The fires start when that moisture creates heat by decomposing the hay and then the hay flares from the heat of the decomposition inside the bale. Straw is baled when the crop is dead and dry, usually around 8% moisture content by volume, so no interior decomposition occurs.The fact of the matter is that barn fires are caused by hay that was baled too early with high levels of moisture still in the crop. The fires start when that moisture creates heat by decomposing the hay and then the hay flares from the heat of the decomposition inside the bale. Straw is baled when the crop is dead and dry, usually around 8% moisture content by volume, so no interior decomposition occurs." (https://www.strawbale.com/straw-bale-fire-resistant-southern-california/ consulted on 3rd of February 2018).

6.1

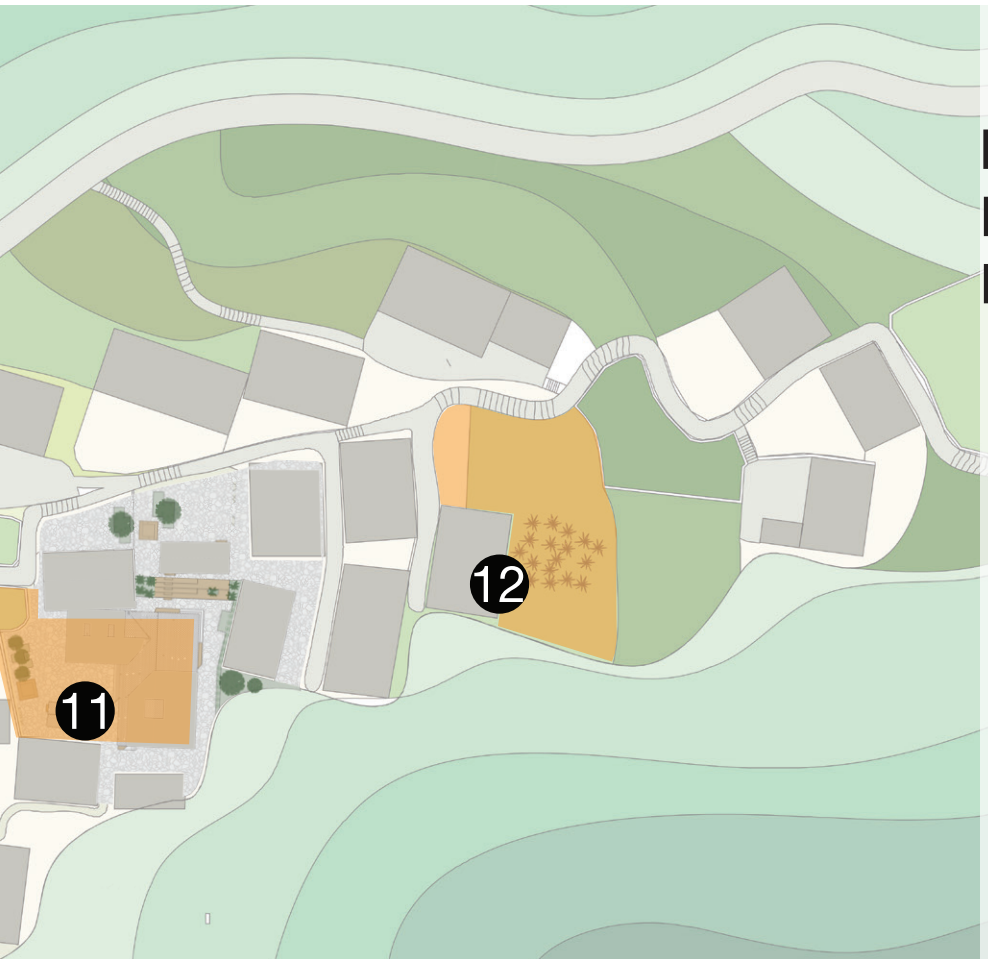
Masterplan

by Germana Isacco &Chiara Menna



The recovery strategy for Hanglai village have mainly three focuses: villagers, tourists. and ecosystem . The interventions related to the villagers concern two different design levels: a landscaping level (e.g. squares and meeting points) and an architectural level (e.g. Prototype for house renovation). Their aim is in general to ameliorate the villagers quality of life. The strategy for the tourism mostly refers to a sustainable tourism which will not threaten Hanglai's authenticity in its future development. It will be focused on the discovery of the Miao culture through practical workshop and sports like Rock climbing.

1 COMMUNITY CENTER
2 HOUSE RENOVATION
3 R I V E
5 SFC VOLUNTEERS OFFICE
6 P L A Y G R O U N D
7 G R E E N
9 CHILDREN'S LIBRARY
10 A R C H I V E S
11 EXHIBITIO



HANGLAI RECOVERY PHASES

The main idea for Hanglai village recovery is a masterplan concerning renovation at a scale of the whole village, which foresee two different phases of realization. Considering their current living conditions, the first phase will focus on providing all the necessary and urgent function to the villagers. In this is included a community center that can host public meetings and serve as a training room for young villagers, provide sanitary services, but also functions related to tourism, like accommodation for visitors, workshops... Together with the community center, the masterplan foresee a prototype for house renovation, as a test on how to upgrade the housing to acceptable living conditions without invasive alterations. This will serve as a first catalyst for Hanglai's economy and to collect enough money to lead to a complete renovation of the village on the third phase, which consist in three main points: (1) restoring the traditional dwellings, adapting the house renovation prototype to the 50 buildings; (2) implementing accessory functions such as greenhouse, exhibition gallery and children's library; (3) providing adequate public spaces to the villagers by designing a public amphitheater and a playground in place of the existing junkyards.

R B A N K
I H O U S E
N GALLERY

4 TOILET,SHOWER,SICKBAY
8 OPEN-AIR DEHORS
12 OPEN-AIR AMPHITHEATRE

6.1.2. Strategy on renovation and archipuncture

The Masterplan previously illustrated is thought in the framework of a recovery strategy which takes into consideration three main focuses under its two phases of realization: the improvement of villagers' life conditions, tourism, and ecosystem .

Ameliorating the villagers' life conditions is the main priority of the recovery. This is reflected not only in the house renovation prototype, meant to provide the whole community with dwellings complying with more proper life conditions, but also in all the other interventions, which cover different scales, from the landscaping one to the architectural one. Every intervention is meant to happen in respect of the original architecture, landscape, but also of the local cultural traditions, since they are still alive in the villagers' daily life. Bringing a better quality of life, can be achieved through very simple actions, because most of the times the necessities identified by designers are not the same as the actual needs of the villagers. The community do not necessarily need to have a new dwelling with contemporary furniture or a complete sport facility to have a better life,.

The strategy for what concern tourism mostly refers to a micro or sustainable tourism[1] which will not threaten Hanglai's authenticity in its future development, unlike other touristic places in China. The tourism will be focused mostly on four main activities: the discovery of the Miao culture through practical workshops, regarding embroidery, calligraphy and basket making; tasting the traditional local products such as smoked meat and corn wine; an agriculture experience concerning rice harvesting; Sports such as rock climbing, since Hanglai is located in a valley with a 60m high cave, perfect for climbers of every level. Moreover, a rock maze located 30 min by foot away from the village, make Hanglai a good place for hiking as well. All this will be reflected into architecture by implementing a new community center in the village, hosting functions related with the above mentioned activities and services for visitors, such as accommodation. In order to enhance tourism, an event planning has also been thought. Together with the existing festivals already celebrated in Hanglai, such as the spring festival during Chinese new year, other events are implemented such as film festivals, traditional drum concerts and international rock climbing competitions.

The ecosystem is taken here into consideration as a whole of the physical features of the village, like its environment and resources. The design take into consideration the scarcity of primary sources of energy, running water and also the limited availability of building materials in order to make the level of embedded energy and the economic impact on the village as low as possible.

The renovation, to be as complete as possible, should foresee interventions concerning different design scales. The first one is the landscaping scale, which concern, for example, the riverbank recovery, meant to make the

1 'All tourism activities of whatever motivation – holidays, business travel, conferences, adventure travel and ecotourism – need to be sustainable. Sustainable tourism is defined as "tourism that respects both local people and the traveller, cultural heritage and the environment". It seeks to provide people with an exciting and educational holiday that is also of benefit to the people of the host country.' (Fien et al, 2010).

river a pleasant and safe public space, including a place for people to wash clothes. Secondly, the interventions at the architectural scale, focus mostly on implementing new public functions in abandoned buildings or introducing them into the new community center. While the community center will be explained in the following chapter, for what concern the former there are mostly five new functions implemented in the village.

- An office for the Serve for China volunteers, including accommodation for the fellows working in the village. This function has been foreseen to be implemented during the first phase since volunteers from NGOs can help the villagers with the management of the community center and of all the touristic activities;
- Public Toilet, Shower and Sickbay. The first two functions are foreseen for the first phase of recovery, being urgent services necessary to improve the overall hygienic conditions. A sickbay has, moreover, been dislocated from its original location, the doctor's private home, to the main arrival square of the village, in order to have a more comfortable position in case of emergency;
- Children's Library. Considering the position of the elementary school, located in the upper part of the village, and the absence of a proper place for the children to play, it has been thought to take advantage of an abandoned building located in a relatively central position to place a facility entirely dedicated to the young villagers;
- Archives. This function will be implemented during the second phase, to accommodate the eventual need of storing documents related to villagers' meeting or other official papers in a place easily accessible;
- Exhibition Gallery. Assuming that, during the earliest stages of Hanglai's recovery, the tourism will contribute to promote more and more the local arts and crafts at a wider scale, an exhibition gallery is placed in the oldest building of the village.

Thirdly, interventions at the urban scale concern the redeployment of all the empty spaces in the village, previously defined as "squares", into proper public spaces:

- A playground, including a basketball field and some machines for outdoor daily exercise;
- An open-air deck, which can be used for leisure, meeting or any kind of social activity in the open air;
- An open-air amphitheater, mostly thought for traditional performances during spring festival or other local holiday, like singing, dancing and drum playing, but also for open-air meetings and other activities like watching movies, small concerts...

Finally there is the scale concerning infrastructures, conceived to improve the village under the hygienic point of view and how to use and reuse natural resources without damaging the environment with waste like in the present situation. This intervention's main elements are a system for rainwater harvesting in order to reuse it for flushing toilets and gardening, a natural depuration system of black water through reeds, to release water depurated from solid waste in the river; a system for heating, involving the kitchen stove

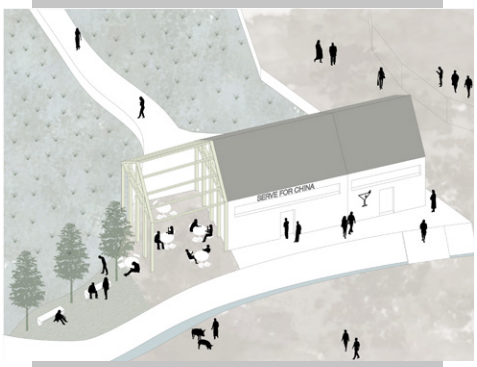


Fig.1 Axonometric view of Serve for China Office.

Fig.2 Axonometric view of the green house.

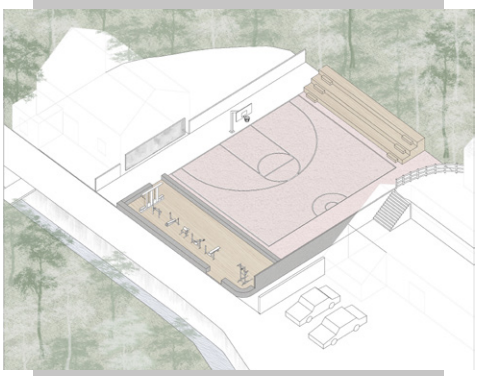


Fig.3 Axonometric view of the playground.

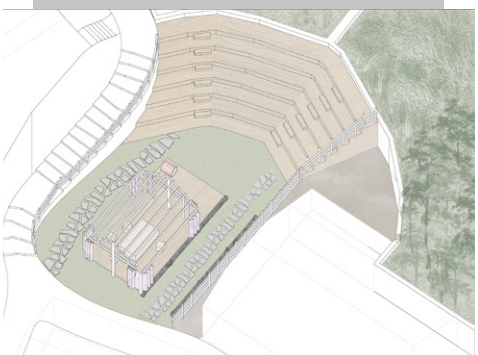


Fig.4 Axonometric view of the amphitheatre.

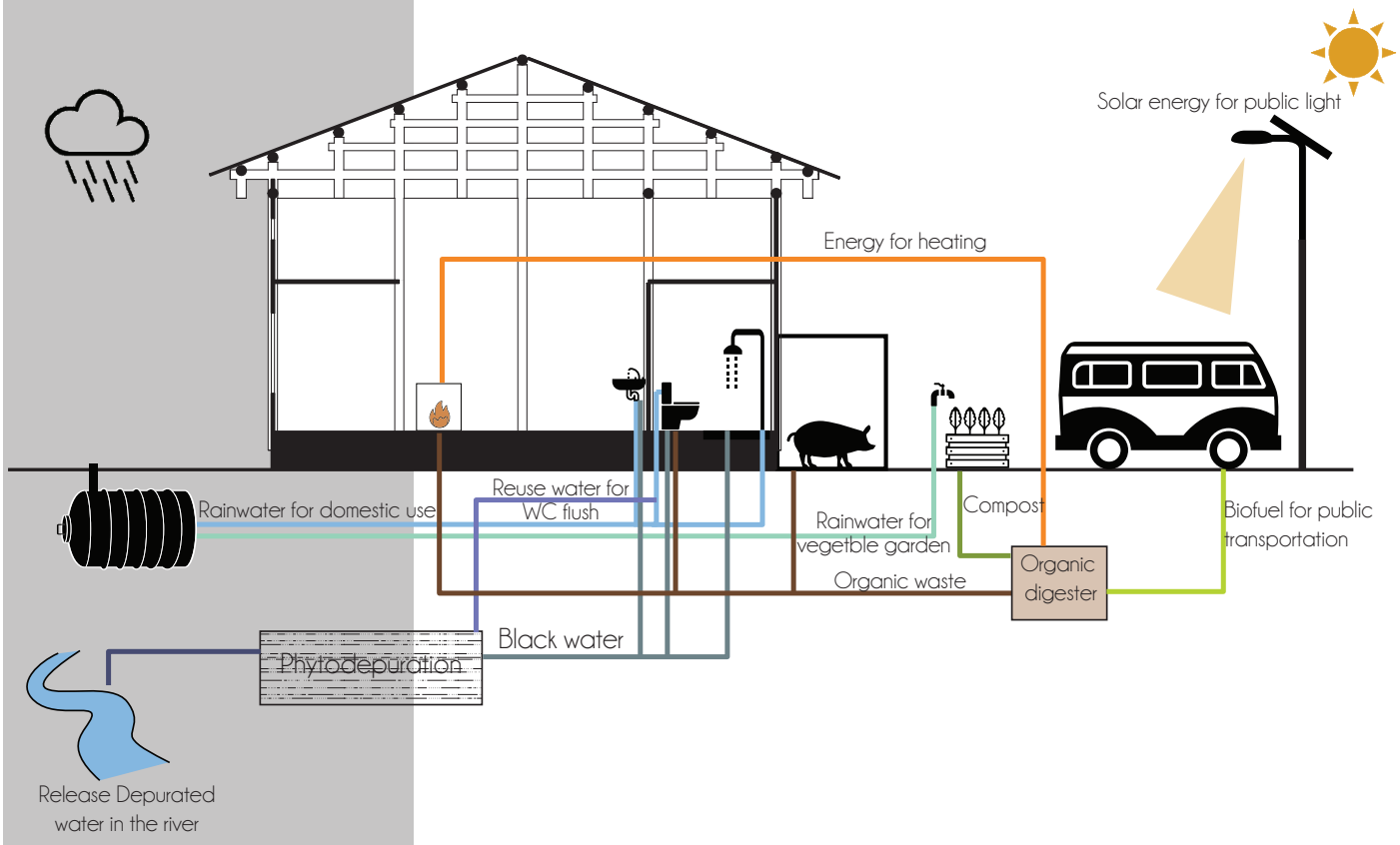
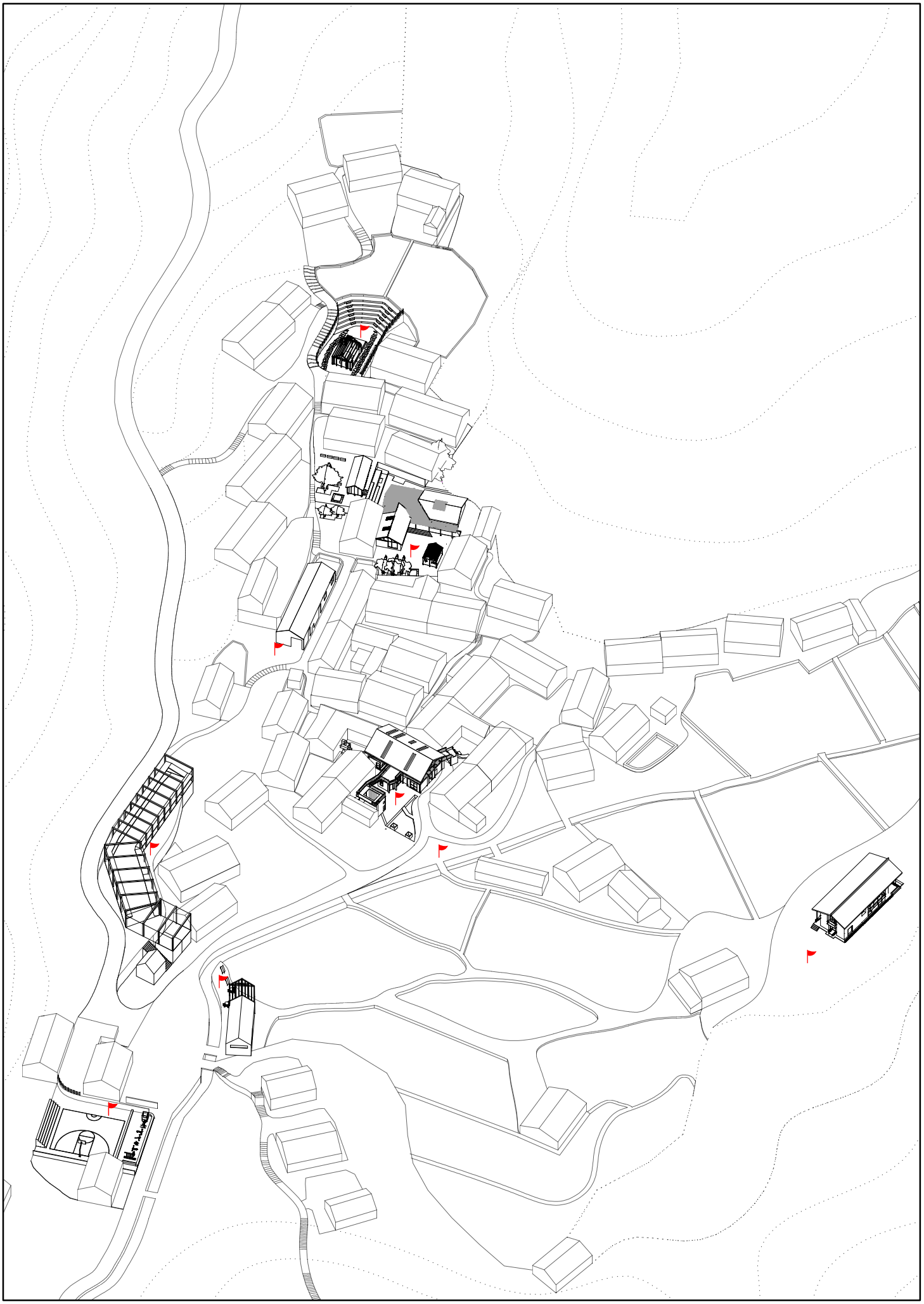


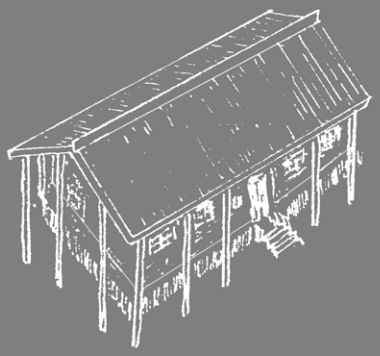
Fig.5 Suistainable system concerning reuse of resources.

as a main source for hot water, heating bedrooms and living rooms; and finally a system to treat organic waste, which can be reused for compost or fuel for fire.

From what explained above it is possible to say that an important aspect of Hanglai recovery masterplan is that it is conceived to change the village through what prof. Li Xiaodong defines as *archipuncture*. *Archipuncture* comes from the words architecture and acupuncture and stands for a type of intervention restricted to a limited area, which is though meant to revitalize not only its site, but all the surroundings. In the same way, Hanglai recovery masterplan foresee design interventions in small and different parts of the village to ameliorate Hanglai as a whole, instead of simply installing a new and huge service center. This type of intervention has been chosen in order to respect the human scale of the village, since it is what makes Hanglai so authentic, compared to other places in urban China.



6.2



Community centre

by Germana Isacco and Chiara Menna

The main catalyst for Hanglai's renovation process is the Community Centre. Our main concern also has been keeping the identity of the place and preserving the unique beauty of this vxillage. To achieve this we decided to use local materials and building techniques that can react naturally to the flow of time. We wanted this building to really be owned by the villagers, so to enhance the participative aspect, we involved them as the first actors in the building process through an assembly. They suggested us to locate the building in the right part of the valley, since there was available land and a nice view of the peak with the rice field on the opposite side. Even though the function of the public building is not related to residential architecture, we decided to start from the local dwelling and then modify it accordingly. First we took the typical wooden structure and we repeated it on a longitudinal axis to form the covered space. This area is slightly elevated above the ground to allow ventilation. Like the traditional Miao house, we divided the covered space into three parts and cut the volume under the roof in the front and in the East side to have a semi open area. So we have a veranda with a nice view where the villagers can sit, relax, and meet with each other. Then in the middle we have a multifunctional area that can function as a meeting room, a training room for teenagers learn life skills, and for the elders to work on embroidery. This space will also host the practical workshops for tourists. On the other end of the building we have a two storey space on the ground floor there is a kitchen, tasting area for local products, public bathroom and showers and on the first floor accommodation for tourists. Using our knowledge about the local resources and vernacular building techniques, we implemented the latter to solve problems, related to living comfort. Considering the location of the village and the scarcity of resources for building materials, most of the techniques make use of natural materials available near-by, such as straw, reeds, clay and bamboo.

6.2.1 Architecture Design: comparison between traditional local house and new design

6.2.1 Architecture Design: summaru of the new design features and elements

6.2.1.1 Site analysis

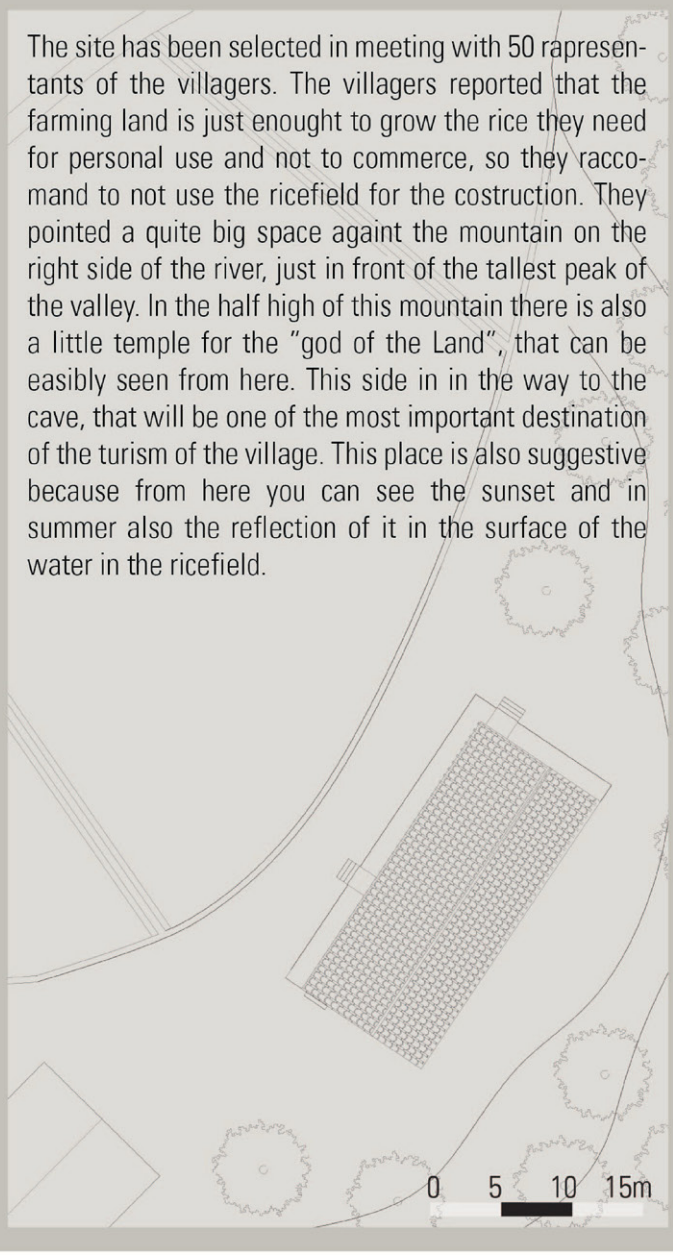
Problems of the site:

main elevation to North
humidity
cold winter
hot summer

Advantage of the site:

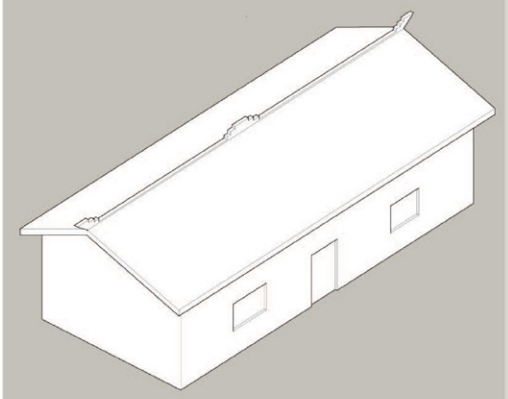
public land
on the way to the cave
good view on the peak

The site has been selected in meeting with 50 rapresentants of the villagers. The villagers reported that the farming land is just enought to grow the rice they need for personal use and not to commerce, so they raccomand to not use the ricefield for the costruction. They pointed a quite big space againt the mountain on the right side of the river, just in front of the tallest peak of the valley. In the half high of this mountain there is also a little temple for the "god of the Land", that can be easibly seen from here. This side in in the way to the cave, that will be one of the most important destination of the turism of the village. This place is also suggestive because from here you can see the sunset and in summer also the reflection of it in the surface of the water in the ricefield.



6.2.1.2 Volume Concept

NOW

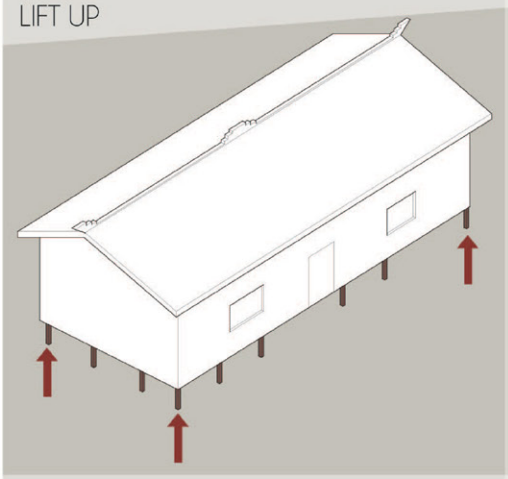


DESCRIPTION

Even though the functions of the public building are not related to residential architecture, the genesis of the volume starts from the traditional Miao dwelling, so that the new building will not impact too much on the harmony and on the general aspect of the village. In fact the new building will not pop up, and from the distance it will not be possible distinguish that is something different.

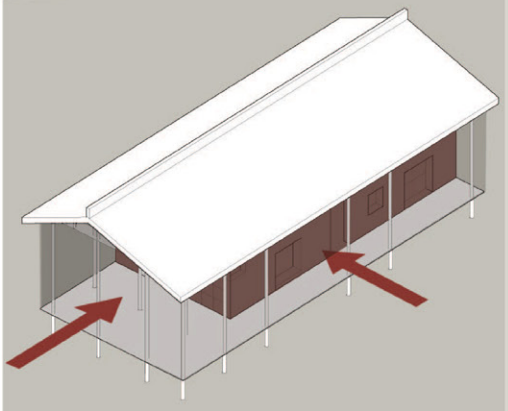
REFERENCE

LIFT UP

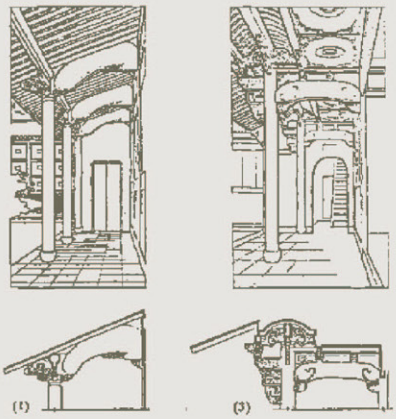


Taking inspiration from the dwellings in southern China and in South East Asia, the volume is slightly lifted up from the ground to allow ventilation and to preserve the floor from the moisture. The houses on raised platforms exist since long time in China, in fact we can founf this typology of building rappresented in the pictogram, starting from the orecle bones of the Shang dynasty.

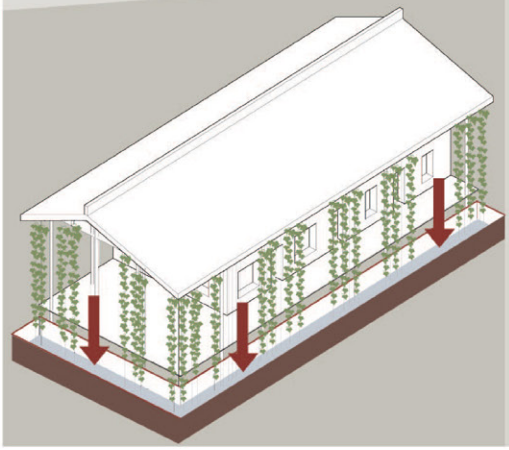
PUSH IN



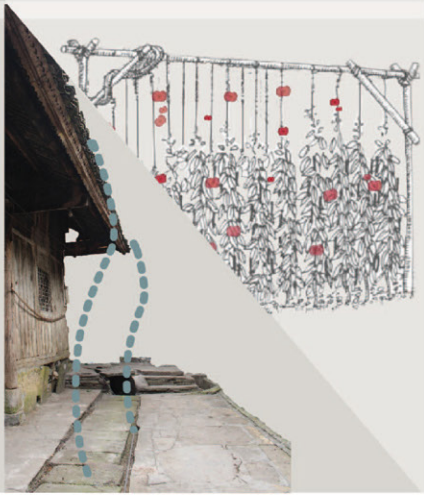
The volume is then push in on the main elevation to have a covered porch and also on the East side to have a semi open deck. This operation will create a public covered space where the villagers can meet in the shadows during the warm season, and protect from the rain in the humid one. This element was existing in the traditional dwellings, just not in Hanglai beacuse of the poverty conditions.



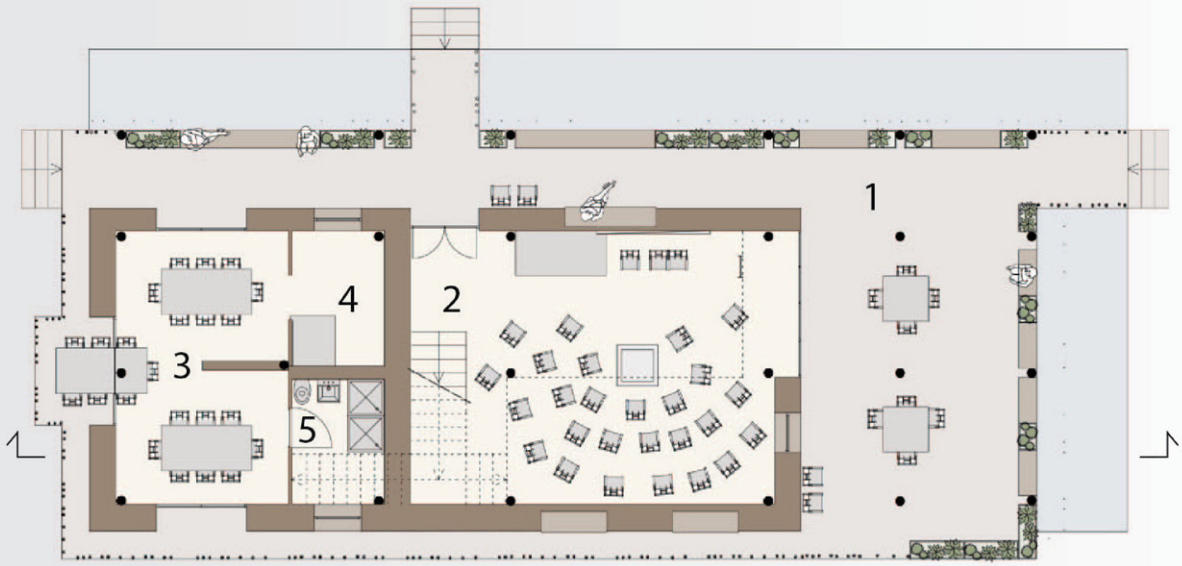
GROW IT + SINK IN



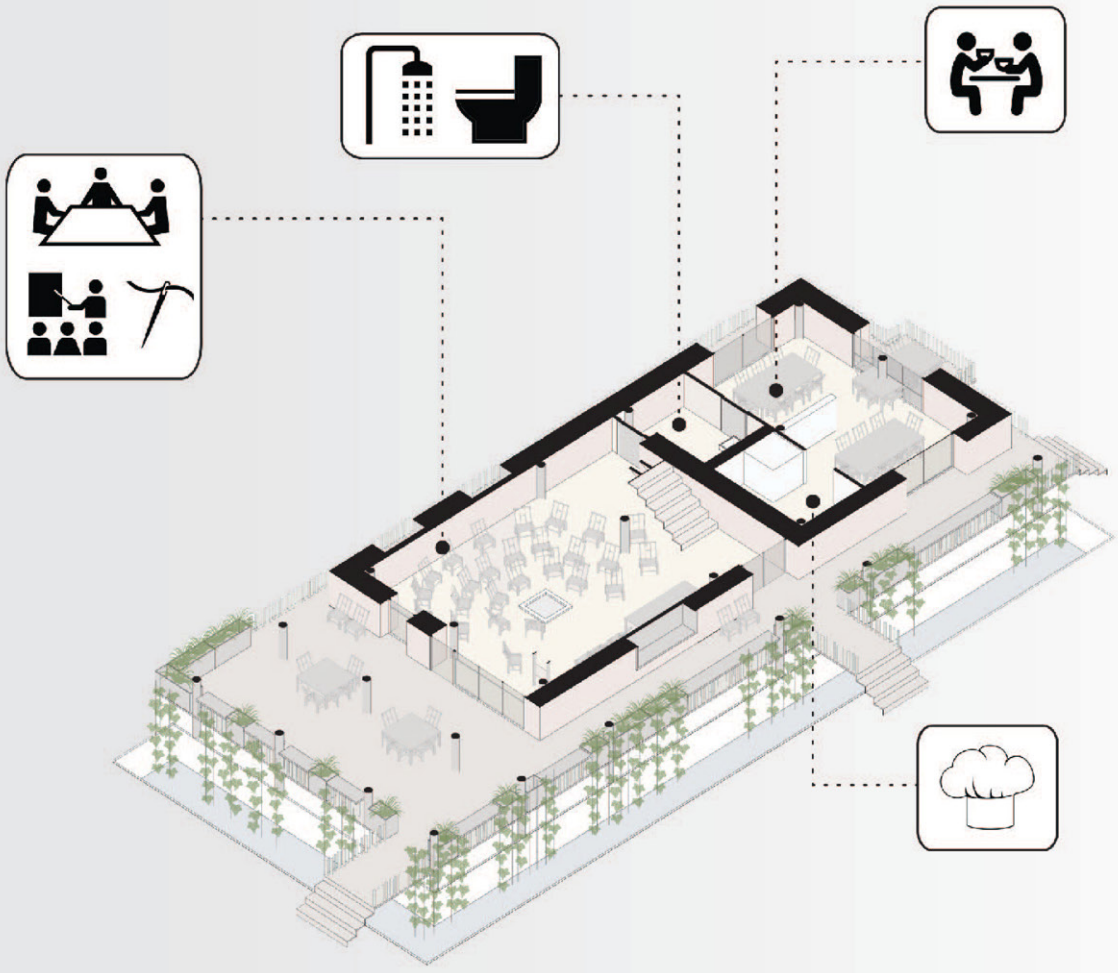
The volume is enriched with some natural elements like ivy in the front and East side to provide shading. This device has been inspired by the Italian gardening technique for growing tomatoes. Another natural element added in the building is water, through a pond in the front and East side, meant to collect rain water, from the roof, so the water fill still fall from the roof as it is now.



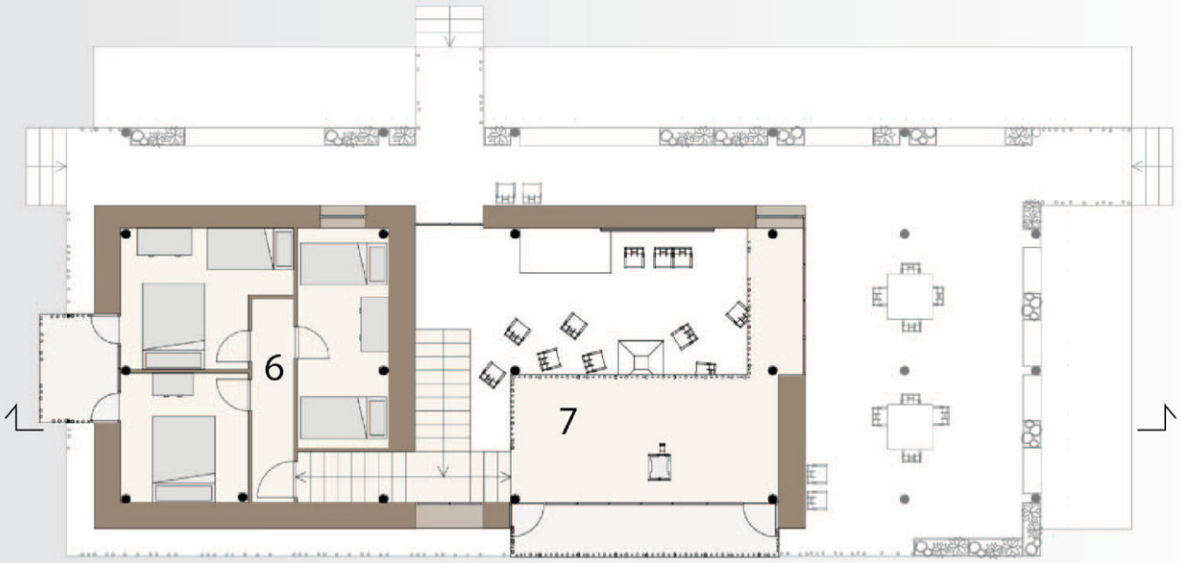
0 | GROUND FLOOR



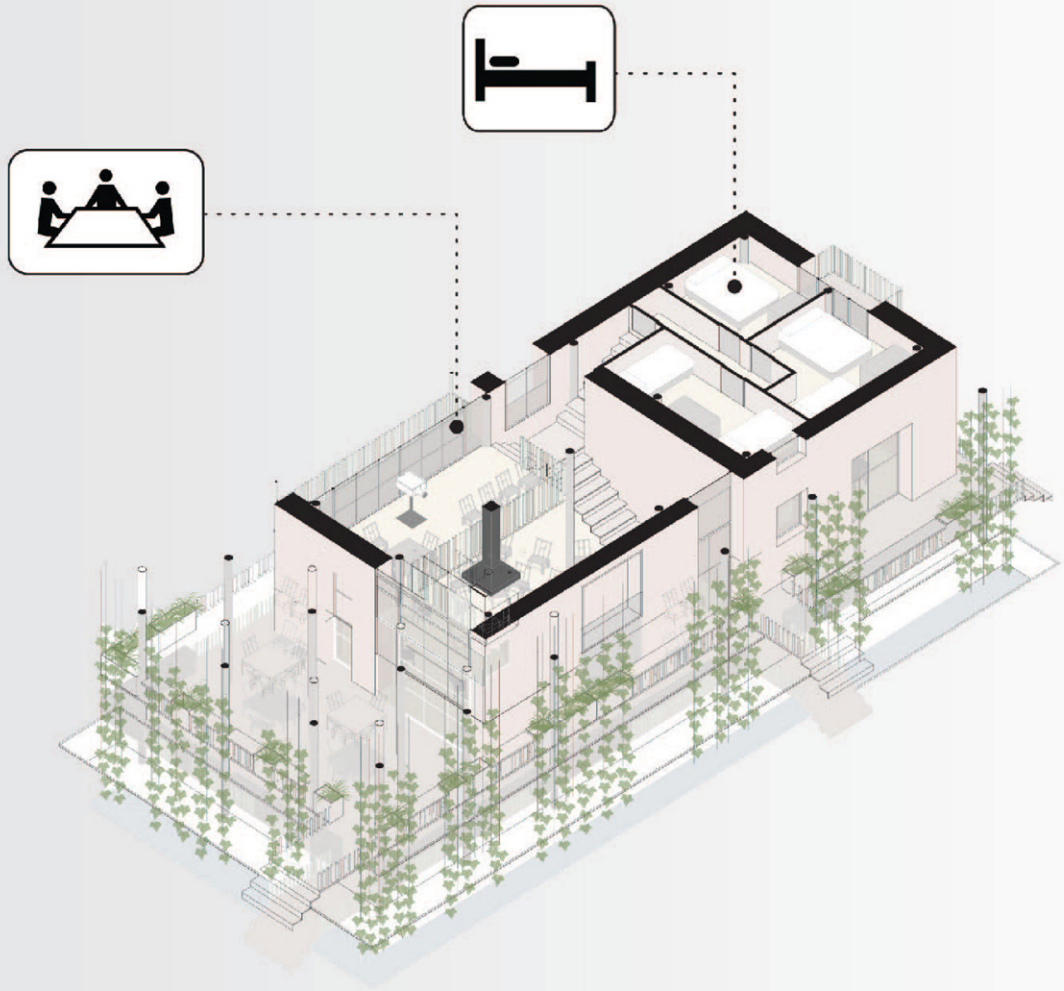
1. Veranda 2.Meeting room | Workshop
3.Dining room 4.Kitchen 5. Bathroom



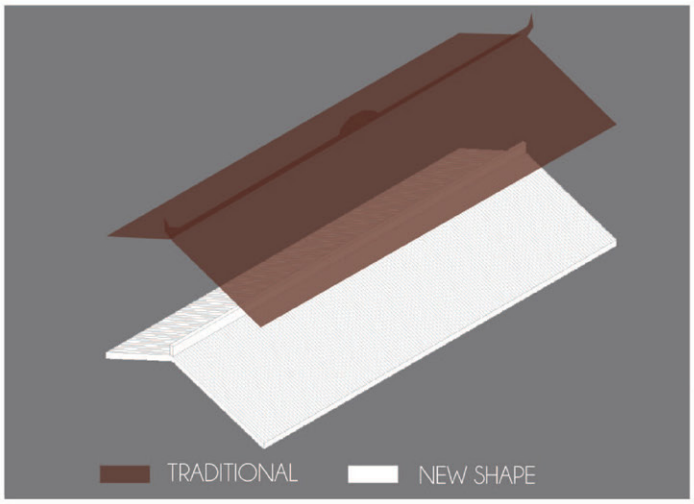
1 | FIRST FLOOR

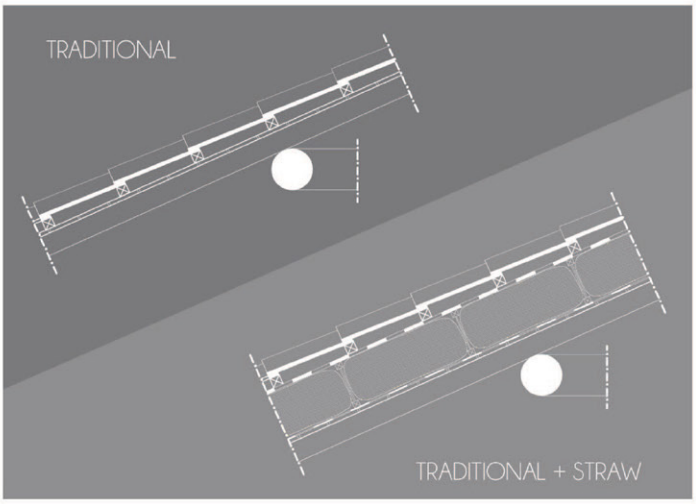


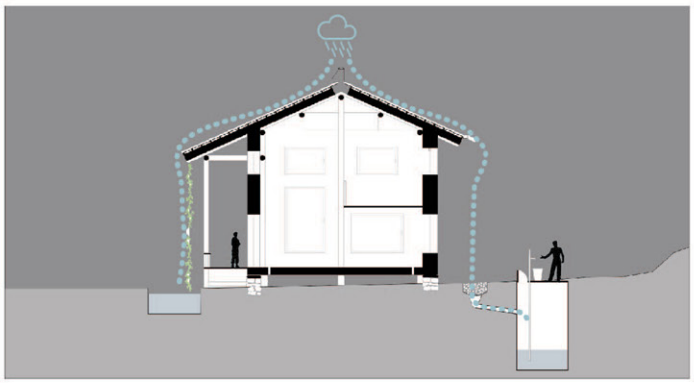
6. Accomodations
7. Mezzanine

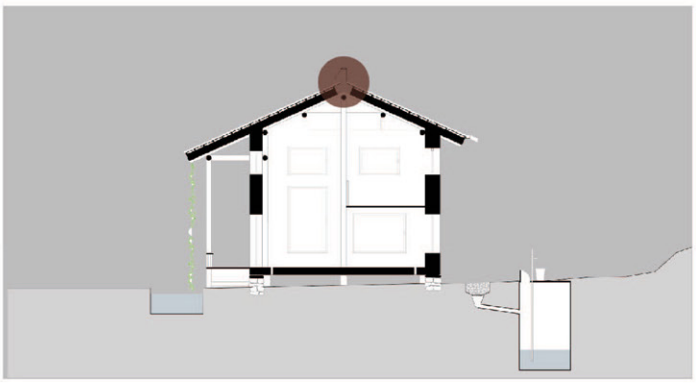


6.2.1.4 Roof

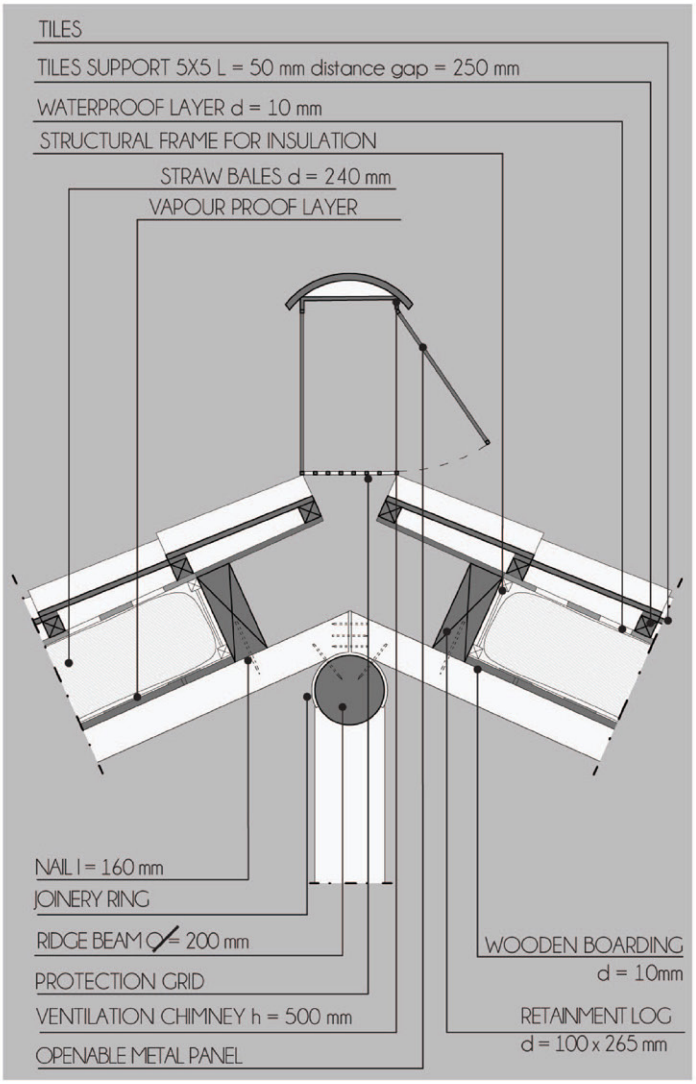




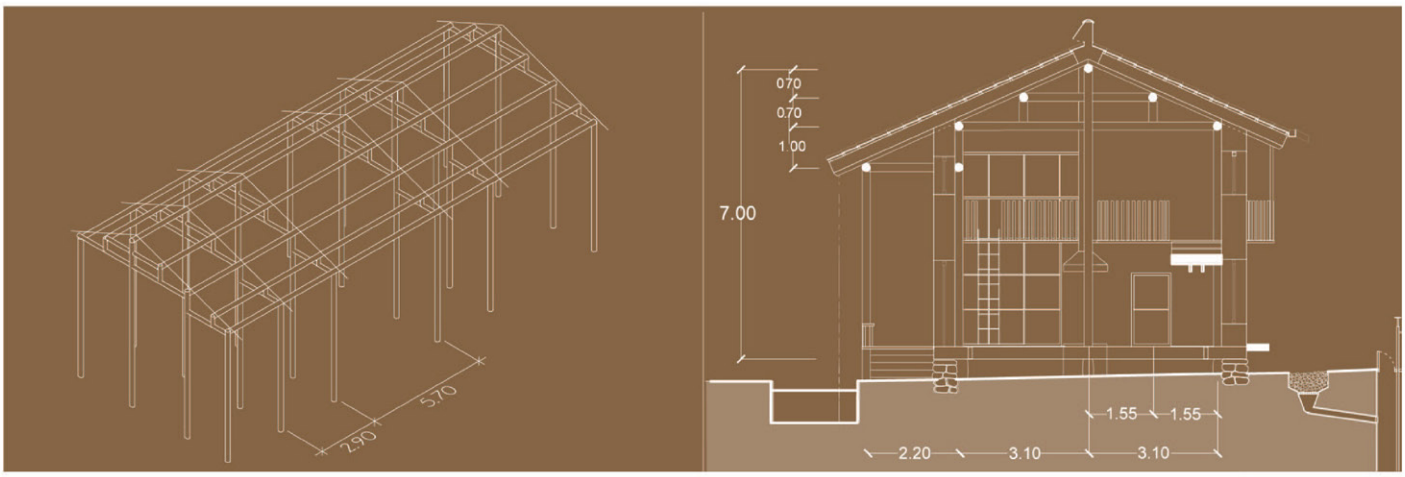


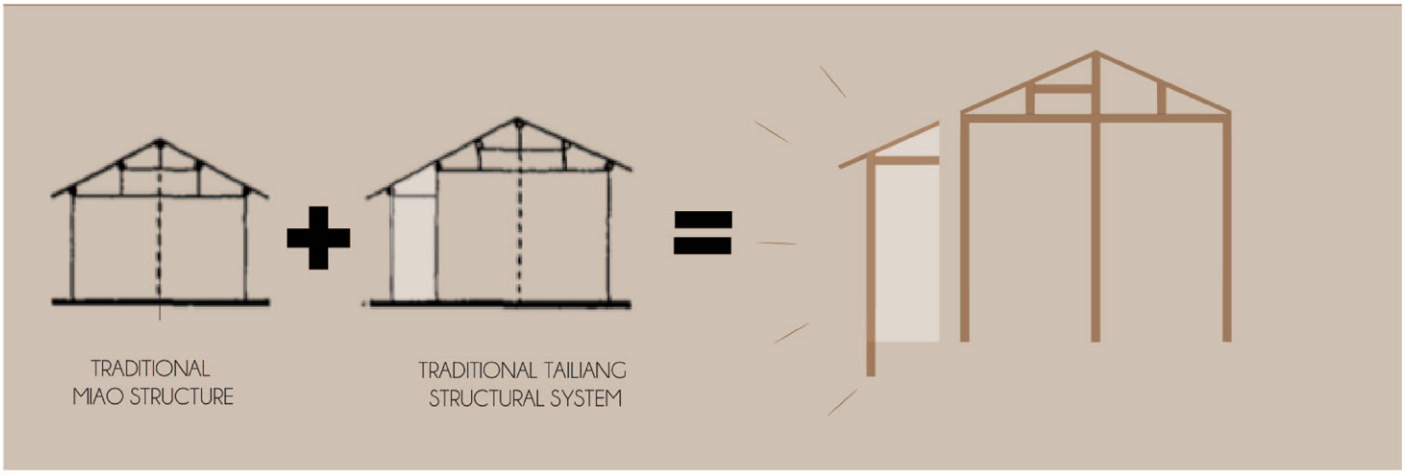


The technique used for the roof is a re-adaptation of the original one. In fact it keeps the original tiles to not impact too much in the overall image of Hanglai and at the same time its thermal properties are ameliorated with rice straw bags. The overall shape is the same as the original one. In fact the eaves overhangs from the building in order to protect the outer walls from the rain. While in the original roof the rain water is directly dropped on the ground, the two eaves present two different technique for rain water collecting. On the front side the rain falls from the eave directly onto the water basin, being redirected by the metal wires on the facade. On the back side, instead, a gutter lead the rain water to a drainage which depurates it from solid components through a system of grids. This water is then collected in a well and can be used by the public building's users for domestic users or gardening. Finnally the ridge takes the same shape of the traditional "dragon-shaped" decoration, since it hosts a chimney for natural ventilation.



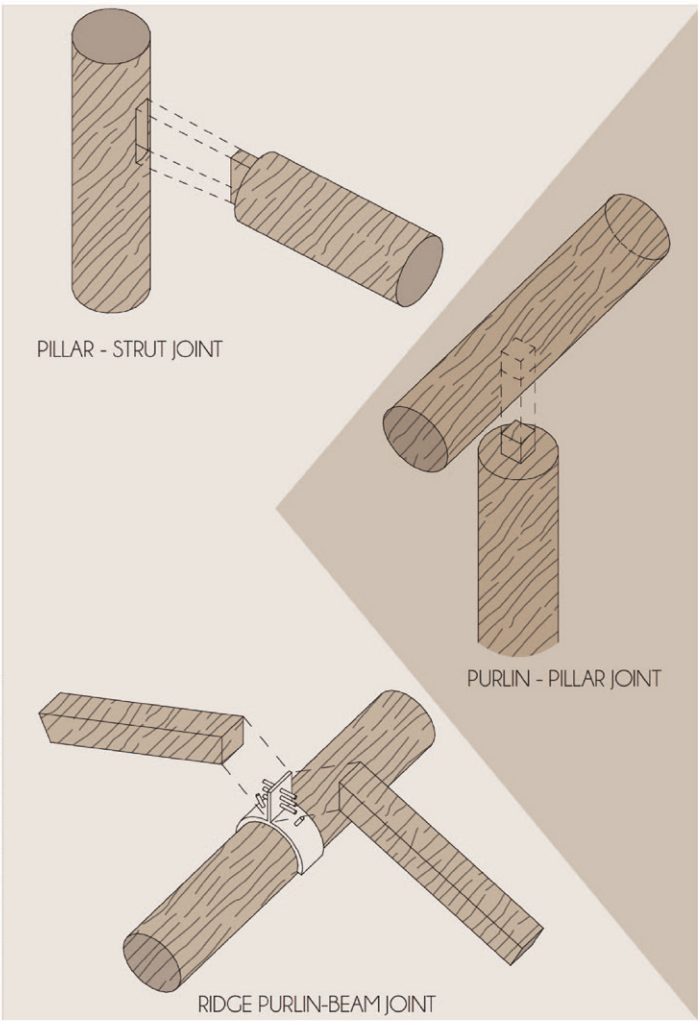
6.2.1.4 Structure



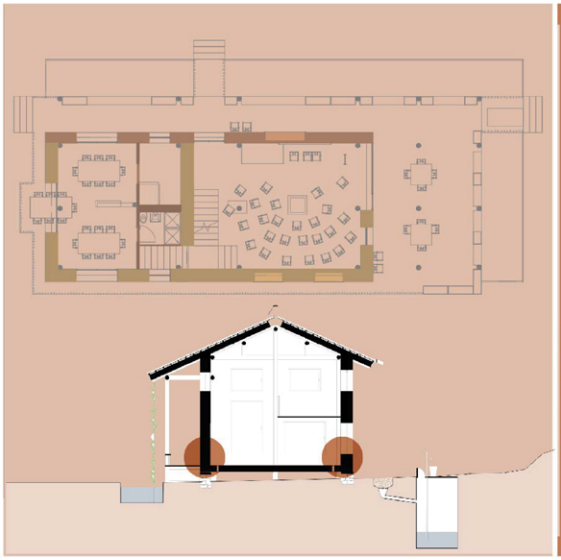


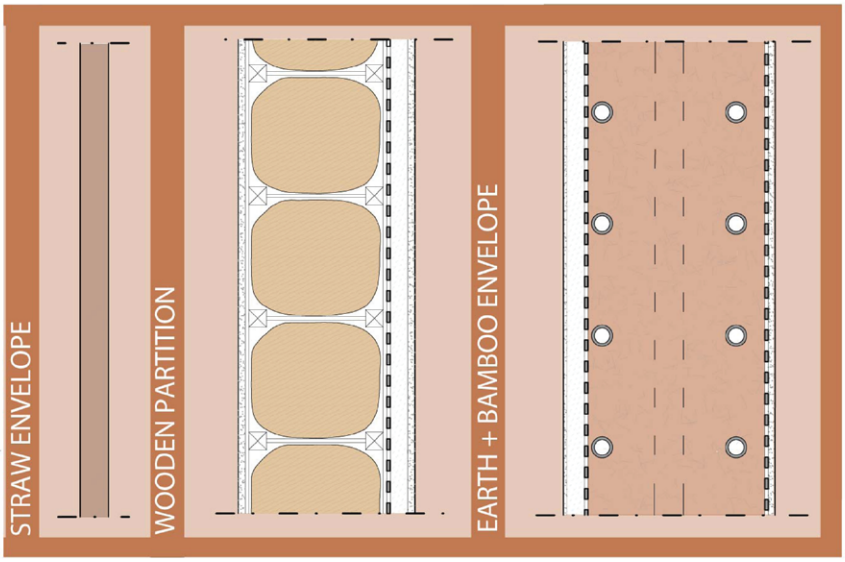
The bearing structure is a wooden post and beam frame that take inspiration form the Miao dwellings' one. While the original structure is simmetrical, the building's one is implemented with an additional pillar to one side to make space for the veranda. The space is articulated in 6 arches. Each arch is composed of 3 pillars, 2 struts for horizontal stability, two hangers and 6 purlins, which bear the roof's beams. The joinery is made mostly by mortise and tennon, exept for the joint between the ridge purlin and the roof's beams, which is made through a metal ringh and nails.

An important caracteristic of the structure system is that the wooden structure support directly the roof, and the wall are curtains walls just to separate the interior from the external space. So right now those are really thin and not performat in term of insulations, in fact the project focus on improving these element with out changing the structural system.

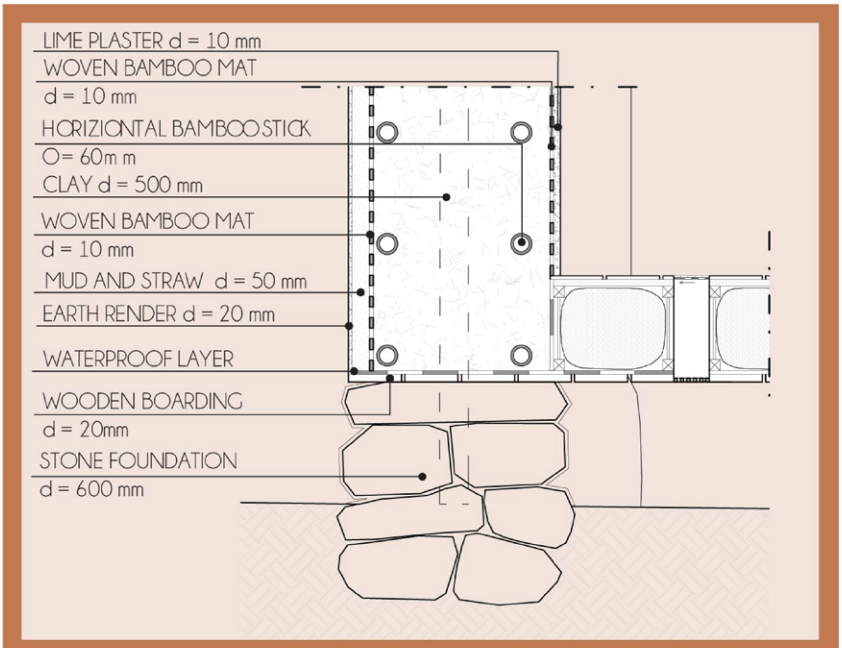


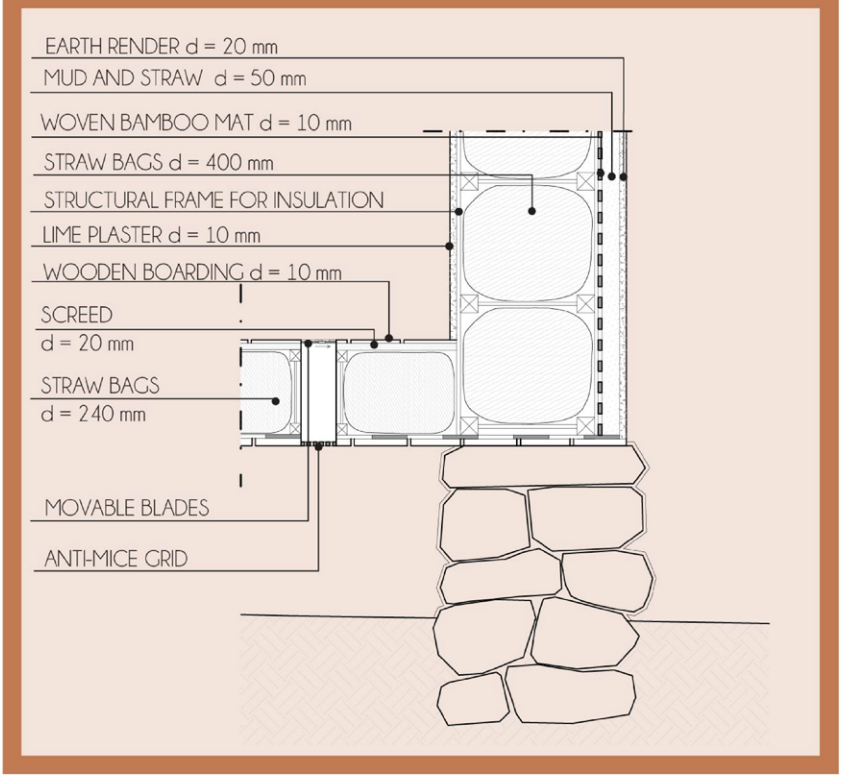
6.2.1.4 Walls



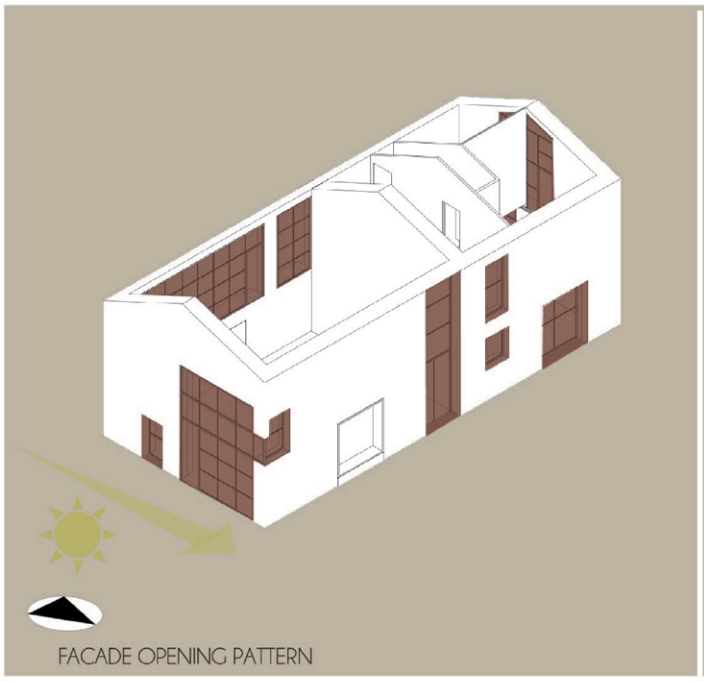


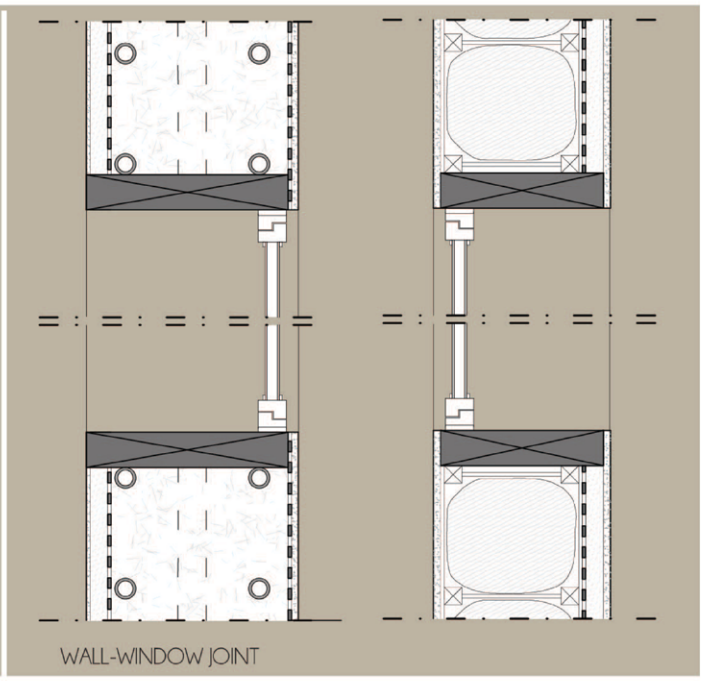
Three typologies of walls can be idientified in the building. For the outer envelope, beacuse of the different climatic conditions of a different orientation, two types of thechniques are used. The North side wall is made of strow bags, in order to have less heat loss. For the other envelope walls, an organic technique has been used, by taking inspiration from the side wall in clay reeds mat in the traditional Miao dwelling. This type of façade is really thin and fragile so it does not increase the terma properties of the envelope. Plus the clay and reedd mat is easily demagable. So considering the great availability of bamboo on the nearby areas, the mayority of the envelope is constituted by a bajareque, a technique normally used is South America, which consist basically in a bamboo formwork containing rammed earth. Apart from being easily buildable by the villagers, the bajareque is a good technique for what concern thermal comfort, being the wall very massive. This wall is then covered with a layer of clay and straw, that serve as a natural insulation. The coating on both sides is made from an organic render or plater to give the typical raw feeling of the vernatucal architecture. FInally the internal partitions are made with simple wooden panels, like in the existing Miao dwellings.

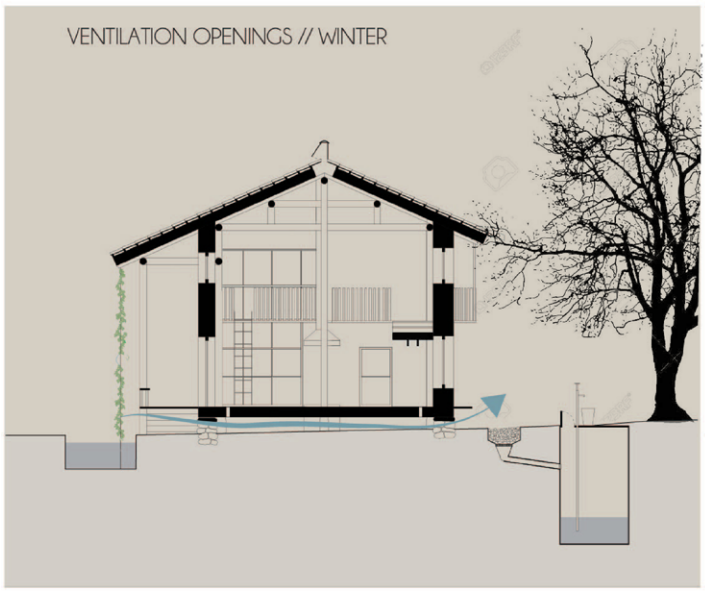


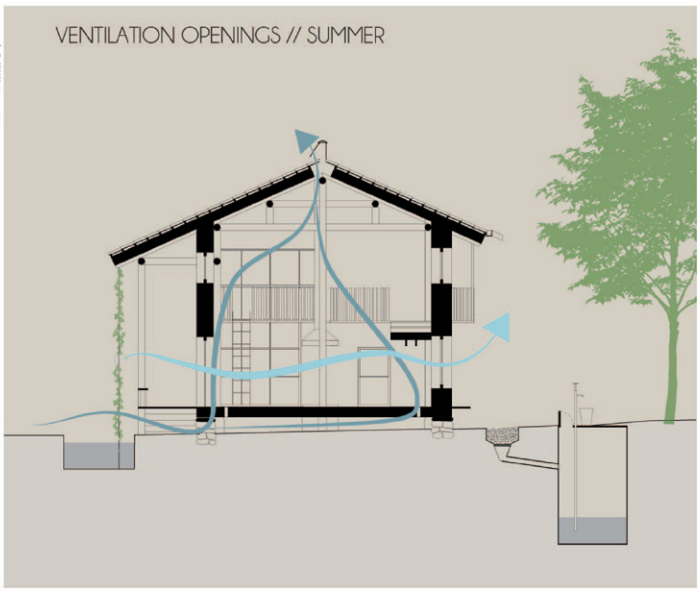


6.2.1.7 Openings

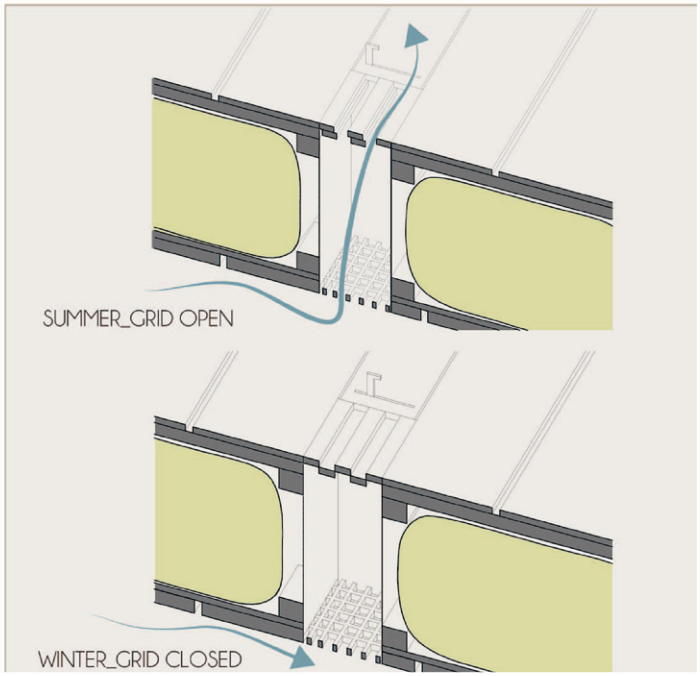




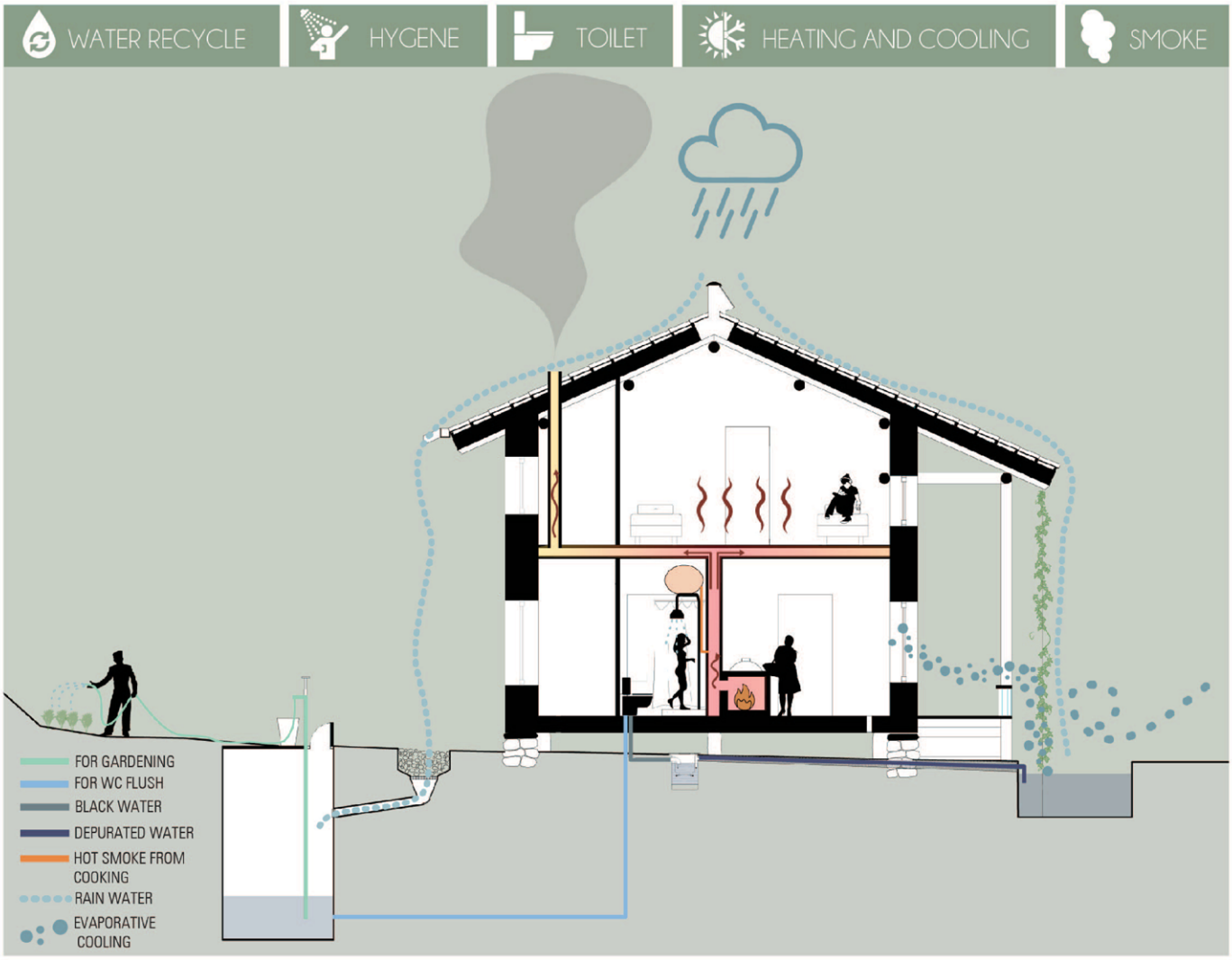


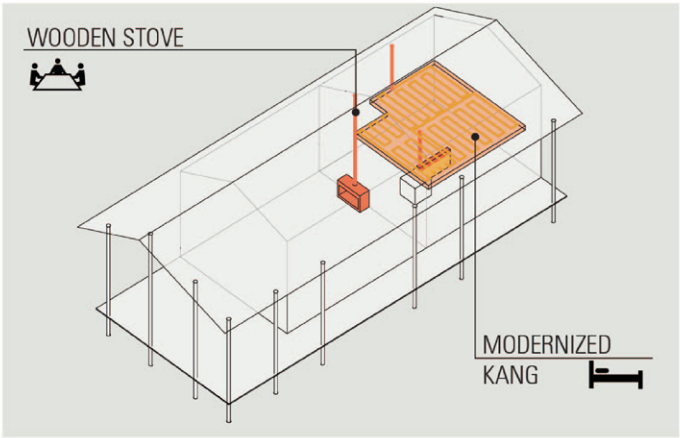


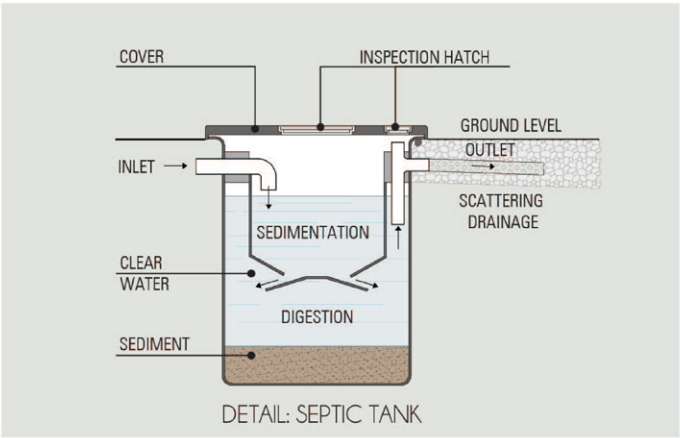
By Openings, in this analysis, are meant all kinds of "holes" in the building envelope, so windows and ventilation grid or chimney. For what concern the window, they are double glazed with air gap and a wooden frame. Their size varies according to the orientation of the façade, so they get progressively bigger towards the South East and the peak.
For what concern the ventilation grids, they are located on the floor. They are equipped with movable strip that allow to open or closed the grid according to needs of ventilation. The air that enter from theese holes is then expelled from the ventilation chimney on the roof. This one is also equipped with openable metal panels in order to not let cold air in the building during the winter.



6.2.2 Technological and green system







DETAIL: SEPTIC TANK

In order to save as many resources as possible a system of recycle focusing on water and heat has been thought.
For what concern the latter the idea is to use the heat generated from cooking to heat the bedrooms and the water for showering. This is a of readjustment of the kang system, which consist in taking the hot smoke from a cooking stove and using it to heat living areas. Here the smoke is redirected through a series of channels and a chimney to the upper floor, where the flooring has a sort of pipeline that allow the smoke to flow in it and heat every room. Then the smoke is exhausted outside through another chimney.
For what concern the rain water, on the front side the water is collected in a water basin, it also contribute to cool down the building during summer through evaporative cooling. On the backside inste the rain is collected in a drainage that through a system of grids separates the water from solid components and then lead it to a well. From it the villagers or the users of the public building can collect the water for domestic use like gardening or toilet flush.

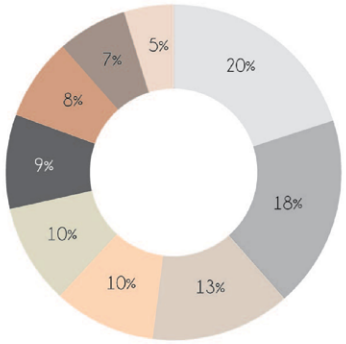
6.2.3 Economical menagment and cost estimation

This bill is made with the help of the villagers that tell us the local prices of the materials and the labour costs. The materials are taken from the site it self and if is not possible to the nearest city, in that case we check the unit price from Taobao.cn.

	Category	Element	Unit Price [RMB]	Unit Price [€]	Quantity	Units	Total price [RMB]	Remark Subtotal in euro [€]
CONSTRUCTION	Demolition	Flattering earth	20	2.6	700	m^2	14000	
		Cleaning	200	25.5	10	n° workers	8000	10 workers x 4days x 200yuan7day
	Construction	Sewage and drenage pipes	45	5.7	20	m	1200	for diameter 110 pipes D8 - D10
		Stove pipes	55	7.0	30	m	1650	for diameter 50 pipes D5
		Pond digging	40	5.1	60	m^2	2400	
		Septic tank	2000	255.3	1	per piece	2000	
		Electricity lines	25	3.2	300	m	7500	
		Water pipes	35	4.5	5	m	175	
	Finalization	Waterproofing	20	2.6	70	m^2	1400	
		Tiling (only workers fee)	30	3.8	50		1500	
		Stainless steel wires	50	6.4	21	m	1050	
	SUBTOTAL						40875	5217
BUILDING MATERIALS	Roof	Tiles	60	7.7	230	m^2	13800	
		Undercourse	40	5.1	230	m^2	9200	interior ceileing
		Straw for thermal insulation	5	0.6	55	m^3	330	cost of mould proof product
		Header	70	8.9	220	per piece	15400	structure to hold the tiles
		Metal ridge and gutter	120	15.3	44	m^2	5280	
		Waterproof layer	20	2.6	23	m^2	460	
	Subtotal						44470	5676
	Structure	Stone foundations	50	6.4	3	per piece	150	free local stone + concrete
		Wooden column	1000	127.6	24	per piece	24000	lenght 6m - diameter 20 cm
		Main wooden beam	1000	127.6	23	per piece	23000	lenght 6m - diameter 20 cm
		Wooden beam	600	76.6	12	per piece	7200	lenght 6m - diameter 12 cm
		Apron piece	250	31.9	12	per piece	3000	lenght 6m - diameter 5 cm
		Joints	50	6.4	66	per piece	3300	
	Subtotal						60650	7742
	Walls	Rammed earth	/		150	m^3	/	
		Straw for thermal insulation	5	0.6	30	m^3	150	cost of mould proof product
		Clay	50	6.4	6	kg	300	need 25 m^3, 0,25 kg weight of 1 m^3
		Bamboo waved mat	10	1.3	504	m^2	5040	
		lime plaster	40	5.1	10	kg	400	need 8 m^3, 0,20 kg weight of 1 m^3
		Waterproof layer	23	2.9	406	m^2	9338	
		Bamboo stick	20	2.6	25	per piece	500	stick 6 m long
		Undercourse	87	11.1	230	m^2	20010	
	Subtotal						35738	4562
	Opening	Window/m^2 double glazed	800	102	143	m^2	11400	33 window of different size
		Outside doors	1500	191	3	per piece	4500	
		Interior doors	500	63.8	8	per piece	4000	
		Ventilation openings	8	1.0	200	per piece	1600	
	Subtotal						21500	2744
	Floors	Boarding	250	31.9	80	m^2	20160	
		Straw for thermal insulation	30	3.8	30	m^3	900	
		Stairs	3500	446.8	1	per set	3500	
		Waterproof layer	23	2.9	250	m^2	5700	
	Subtotal						30260	3863

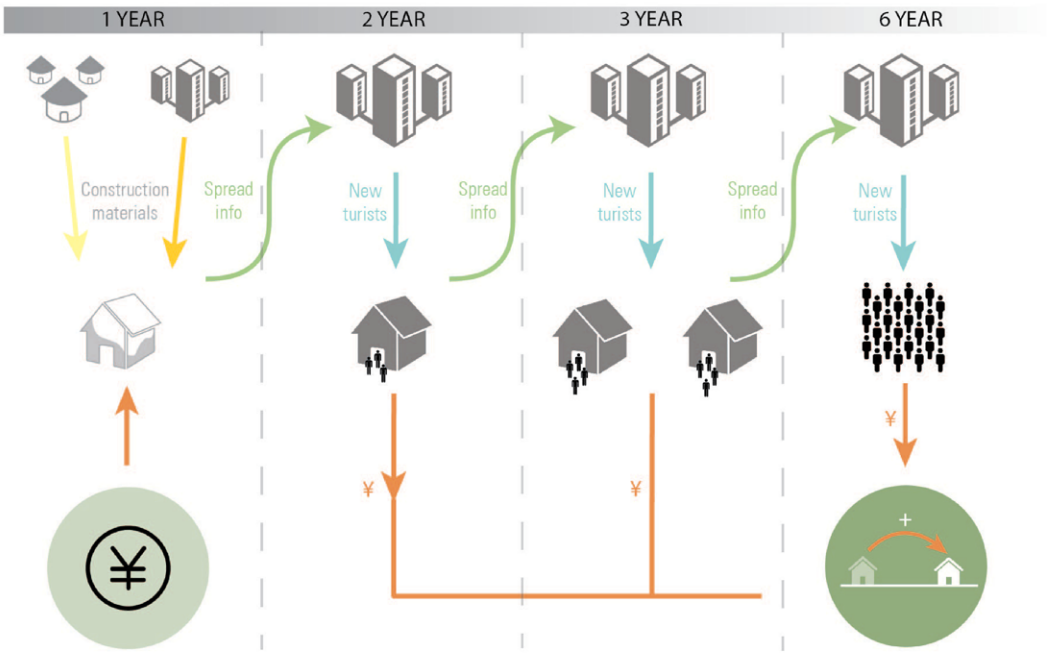
BUILDING MATERIALS	Furniture	Chairs	400	51.1	74	per piece	29600	
		Small tables	300	38.3	8	per piece	2400	
		Workshop big tables	600	76.6	2	per piece	1200	
		Double bads	1850	236.1	2	per piece	3700	
		Single beds	1000	127.6	3	per piece	3000	
		Wardrobe	700	89.4	3	per piece	2100	
		Wooden board for benches	10	1.3	70	m^2	700	30 cm width - 5 cm tichkness
		Bamboo sticks (50 cm height)	30	3.8	25		750	stick to hold the board - 6m long
	Subtotal						43450	5546
	SUBTOTAL						236068	30133
OTHERS	Equipments	Boiler	8000	1021	1	per piece	8000	
		Shower	350	44.7	2	per piece	700	water spray
		Stove	1500	191	1	per piece	1500	
		Toilet	500	63.8	1	per piece	500	
		Lamps	100	12.8	15	per piece	1500	
		Projector	300	38.3	1	per piece	300	
	Subtotal						12500	1596
	Labour		200	25.5	10	n° workers	60000	
	Transportation		1000	128	1	per time	10000	one big truck full
	Connection to power supply		8000	1021	1	per time	1000	
	SUBTOTAL OTHER						83500	10658
SUBTOTAL (CONSTRUCTION + BUILDING MATERIALS + OTHERS)							360443	
Unexpected cost (25%)			/	/	/	/	90111	
TOTAL							450554	57510

unexpected	90110
others	83500
structure	60650
roof	44470
furniture	43450
construction	40875
walls	35738
floors	30260
opening	21500



The cost analysis summary highlights that the equipments are the most important cost, since these technologies are not avaible in the village and they require industrial processes.The other costs follow in a logical and predictable way, according to the hierarchy of the building elements: roof, structure but then you there are the furnitures instead of the walls. The walls are mostly costs zero, because the materials arrive from the site. The cost per sqaure meter is about **2000 RMB/m²** (the total area considered for this calculation is 235 m^2).

The business plan is based on a a first investment to buy some of the construction materials and start the building process. Then to develop the village the income will be generated by the sustainable turism. It is panned that year by year the amount of the turist will grow thank to the spreading of the news so after 5/6 years will be necessary adding a new building to guest more people. The economical value of this project is more about the added value that the building will bring to the community, rather then the direct money income.



7.1

The wonderland in - between

By Germana Isacco

The design renoveted an abbandoned traditional dwelling that tend to be closed, by making a plan the integrated the library with the adjacent squares, in this way it was possible to create a strong relationship between the building and the local society. The open road/like space, covered with the original roof, supported by the exhisting structures, can be considered as a "urban engawa". For the people of Hanglai, walking in between the wooden colums, will be like walk in the forest.

"Covering a roof over an in-between space, the space becomes the engawa of the city."
Sou Fujimoto,
Fuke Nursery School,
Shiga, Japan 2013

7.1.1 Children as clients

During the site survey what impress me more than the general poverty of the village, was how the children were passing they childhood. All of the villagers were born, grew, got married and buried in Hanglai completely isolated from the modern world. During this process the children cannot just be kids, they are involved in adults errands just after they start to walk. The education system since the Hokou Status of all the villagers is farmer is left to their sensibility and not controlled by the government. For luck, there is an old teacher, that after she was retired from her work in the city she decided to move in the countryside and established a sort of school on the peak of a mountain. Teacher Ma gets up to work at 5.30 am, walking for an hour through the mountainous road to reach the school and preparing the breakfast. Ma is teaching there since 1998. The school consisted in a wooden room, with a fire that she use to cook and warm up the space in winter. The students are from both from the Upper and the Lower Hanglai. That ones that are in the Upper part of the village live really near the school so for them is really easy to reach, instead the children who lived in the Lower part need an hour of walk, along a steep path also quite dangerous.

While we were in Hanglai we followed the kids up to the mountains to spend a day with them and see how the school was organized. We noticed that the path was really difficult for the youngest, so that the older brothers need hold them in some parts where the step where too high. Talking about the school: it is a only classroom so kids from different age are all together and there is no a real lesson, but the teacher gives different assignments to each

of them and then she corrects them. It seems more like an "after school" place then a real class, and it last till the afternoon: 4 or 6 pm according to the season.. So when we come back after the survey and we need to develop a strategy to develop Hanglai: the first though was designing a Community Centre to guest the fellows of Serve for China and developing a sustainable tourism, but after that my attention was focus on giving back to the children their childhood. So the client of my design are the children also because they were that one who always follow us to observe what we were doing during the survey. I wanted to give them a place in Hanglai were they could be only the kids that they are, with no dangers or dirtiness, but only playfulness and beauty.

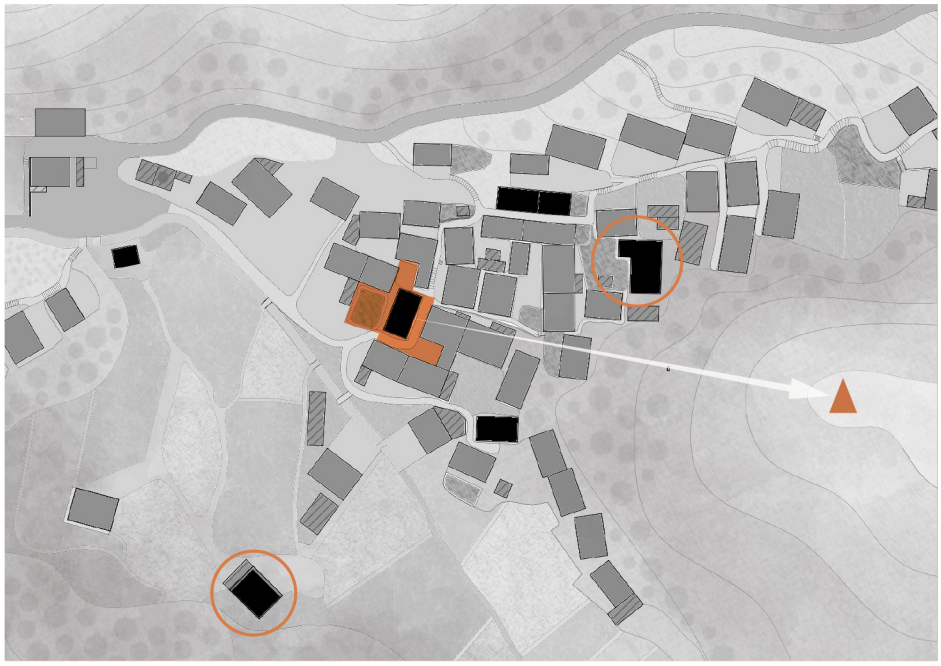
7.1.2 Not only a library

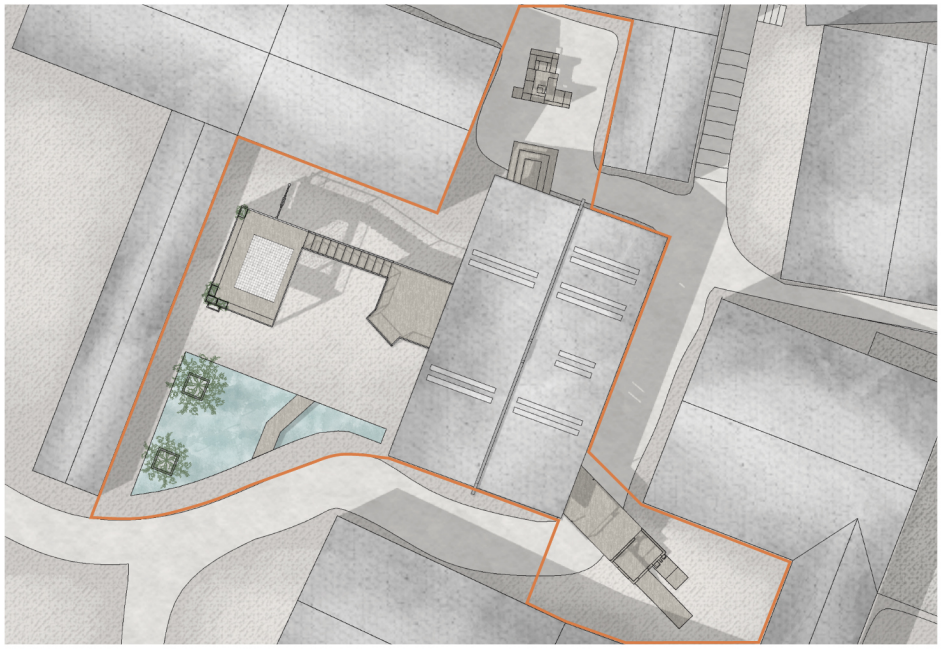
After I decided to design a building for the kid, the second question was about which functions will be the best. It could not have been only a enclose playground, because of the limited resources it would appear as useless. Since the first years of a child are the most important to developing properly his brain, the main aim of this building should be "education". Because of the difficult situation in the Chinese countryside, it is impossible to plan that a proper school with teachers and classrooms will be build, so the more realistic solutions can be a "library". A library that can be run directly by the villagers with the help of the fellows of Serve for China, where kids can do much more then only reading. Since it will represent the kids World it would need to satisfy all their needs: so playing, drawing, running and so on.

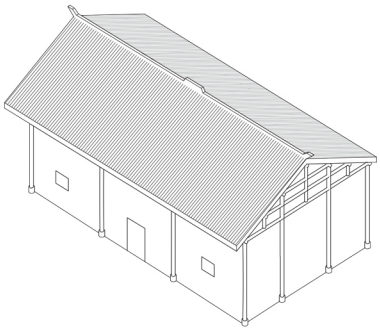
7.1.3 Choosing the site: "in-between"

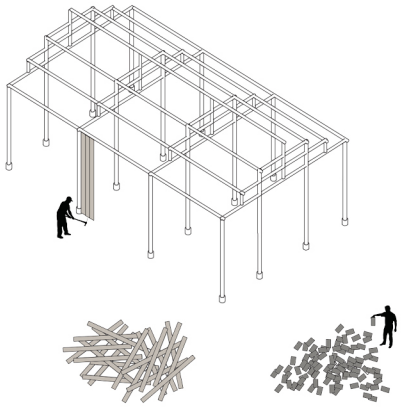
The location of the library needs to be in the lower part of the village so that the children can easily reach it whenever they want to meet other friends, and can be also comfortable for the grandparents check on them while they are playing. In the center of the village there is a large an high house completely abandoned, because the owner moved in the city to work five years ago and never come back, but is really good conditions in terms of roof and wooden structure. I addition this house is located in between 4 squares and along the main pedestrian roads of the village so the flows around this site are several. The majority of the children in Hanglai live also in the houses nearby, just for coincidence. Another important point is that the building is perfectly oriented to frame with its roof decoration the highest peak of Hanglai, so this suggestive view can be used as a potential to design the public space around the building.

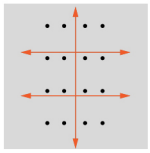
The building with be expanded in the directions of the surrounding squares to connect them and to activate the space that now is just used as junkyard or by the chi-

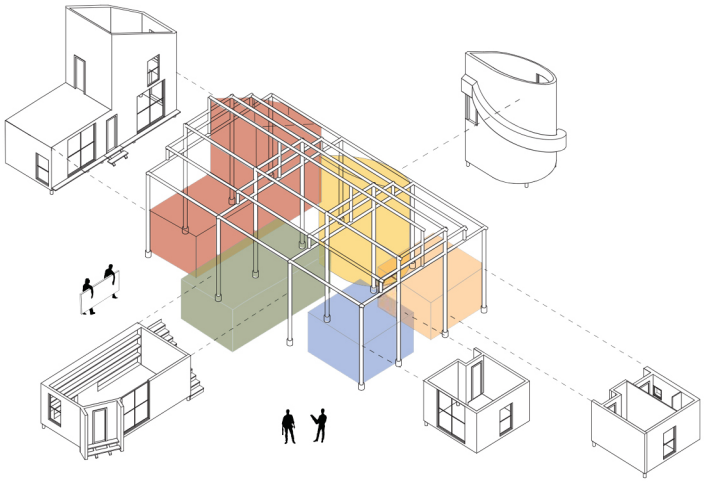


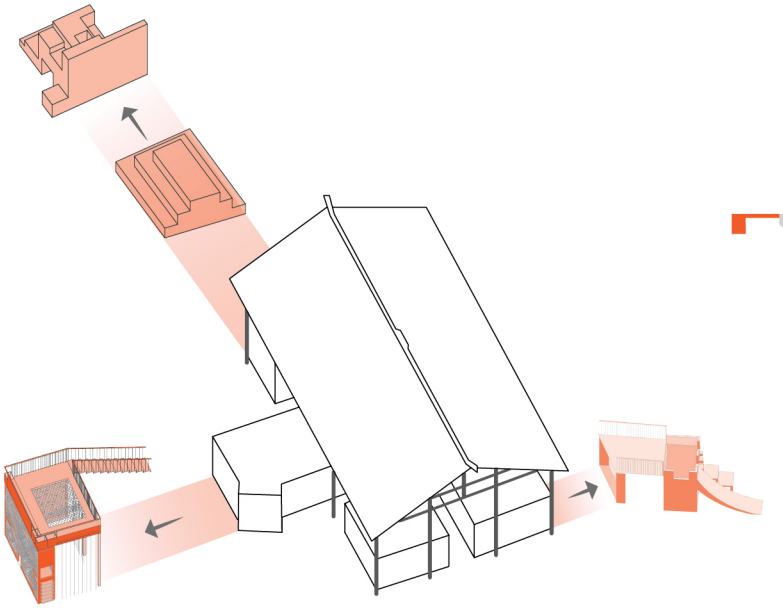


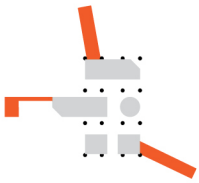












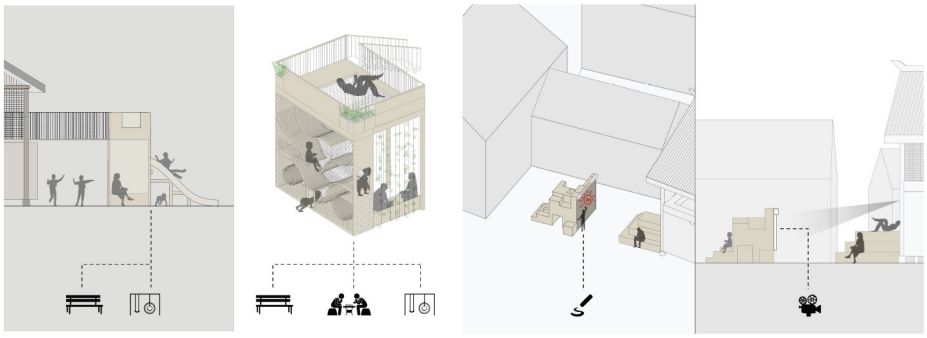
ckens. The spaces so are basically unused but they have potential to become "places". About this difference between space and place, Aldo van Eyck wrote in the 1946 in his City as Playground: "Whatever space and time mean, place and occasion mean more. For space in the image of man is place, and time in the image of man is occasion. How can people make space their own and create a subjective "sense of place"? The transitory playground was 'place' and 'occasion' combined". For Aldo van Eyck architecture has to facilitate human activity and promote social interaction, without defining perfectly all the activity that can be done, but creating place where several things can happen, stimulating the creativity.

The "in-between" is a concept used by Martin Buber to talk about the relation of the playground with the urban environment, through incremental adaption instead of the tabula rasa approach of modernism. So a place is the "realm of in between", where people can meet and doing things thank to the design that is add to the empty space

The design of the volumes is shaped based on the exhisting building wooden sturcture and will define the new flows of the area. The design, as said is not

about a standing alone building but will involve also the sourroundings. The main square that face the Library is that one on the West, because is from here that all the people need to pass to go in their houses more in the North. This square has a small pond to divide the yard from the road where also cows pigs and chikens are passing, in a way that can be easier to keep it clean and free from the animals. Then there is a small engawa, so a semi open pavillion, where people can sit and kids can play in a sorth of vertical maze. The main purpose of this pavillion is creating an easy view on the peak, going up to ist roof. On the North there will be a "Movie Square", thank to large steps people can gathering togheter and talk or whatch a movie, projected on a sclupture in the middel of the square. The sculpture can be climb by the kids to have fun and they can also draw on it with chalks, as they aare doing now on the walls of some houses. On the East there is a sling at the end of a small bridge that pass above the pedestrian street, so poeple from the first floor can go down here instead of the opposite sqaure if they want.

The name "Wonderland

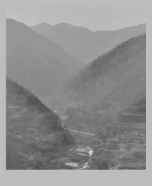


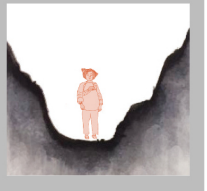
in-between" is refer to the feeling that the building will give to the childrens who pass throught it on their way home: thanks to the colors, the small scale of the volumes or the severals stairs and toys, they will wonder that they can have lot of fun here. The parents will wonder a better future for their children and this is happening not in another city or village but just, in – between their traditional houses.

7.1.4 Open up to create connection

The library is design as an hub where the children can study while their realtives meet to talk. To achive this purpose the traditional Miao dwelling need to be adapted to the new function. An aspect that is really important for the Miao people is the relation with nature and how many of their daily activities are i the open air. Following this priority that nature has in their life: the village can be consider as a forest and the building as a tree. The people walk in it moved by their istint, so they meet in the space between the trees and they stay up on a brench to rest. The chinese character "xici", that mean "to rest" in in pittogram rappresent a men sit down with the back again a tree.

In library the people need to be able to move like they move daily in the valley: going up to the mountains, going inside the cave and passsing through the rock of the the Rock Maze. It will not be just a big unique room as is the school now, but will create several spaces with separation both on the ground level both in the high. The building will have an undefined



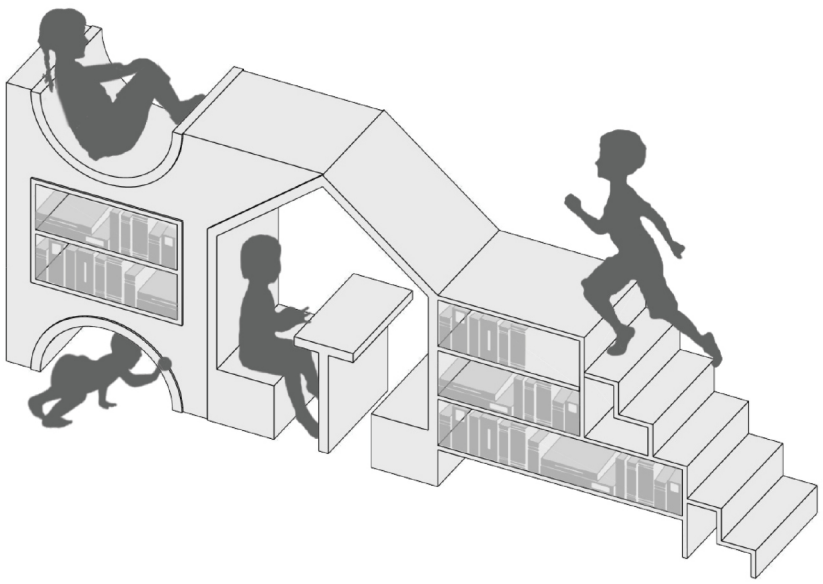


border between inside and outside as in it now in the traditional dwellings. Infact, the walls of the house in Hanglai are not load baring, and they can hold only their own weight, while the roof is supported by the structure. In this way the walls do not need to be there for the stability of the house their are just a division ftom the enclose space to the outside, and can be consider curtain walls. The Japanese arhcitect Sou Fujimoto, while was describing his project House of Gradiation of the 1995 said: " Need to be re-define the most fundamental concept within architecture: the demarcation of inside and outside space, not simply by a single wall, but by somehow manifesting the gradiation of this change itself as a tangible territory".

In the library the ground floor is divided in 5 volumes and the corridor in between are public gallery for the poeple to pass. On the upper level the building is a big open space, compleatly open up, with no walls, interrupted just by the colums where kids can jump on the net or run on the floor. From this floor they can go up to see the peak on goind down to the ground level or to the close square by two slides. It will be a veranda where people can spend time during the raining season or be protected by the sun during the warm summer.

7.1.5 Remove, Save and Reuse

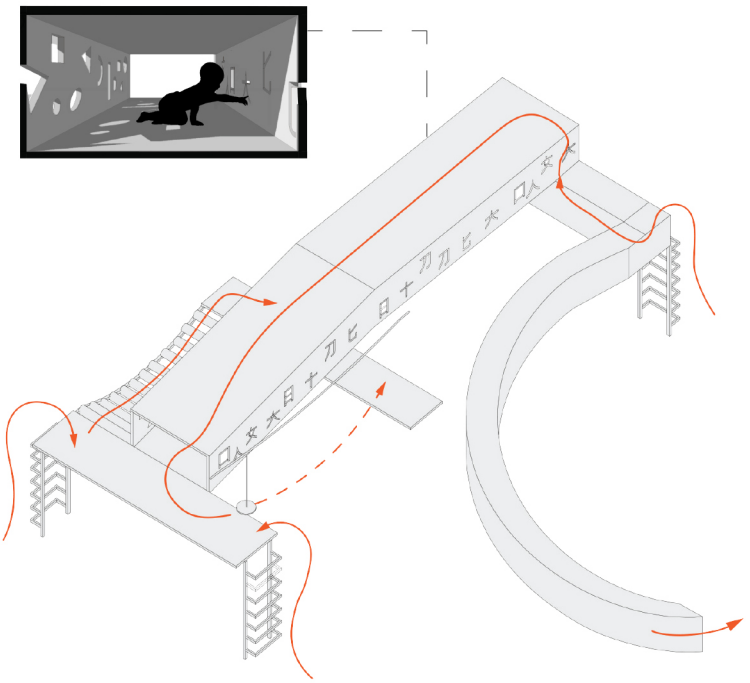
The restauration of the old house can be explain by few steps. The first intervention is about removing all the tiles, checking the demage ones and then store them on the site; same need to be done to the wooden boards of the walls. They are in good conditions and can be remove but later on reuse so that the old patina of the time will be keep on the surface of the building. In this way the scheleton of the building, so the wooden structure will be compleatly show and can be easy now to consolidate and replace the demage parts. Then the different rooms of the ground floor can be build, reaised from the floor to isolate better the interior space, and to preserve the wooden walls.

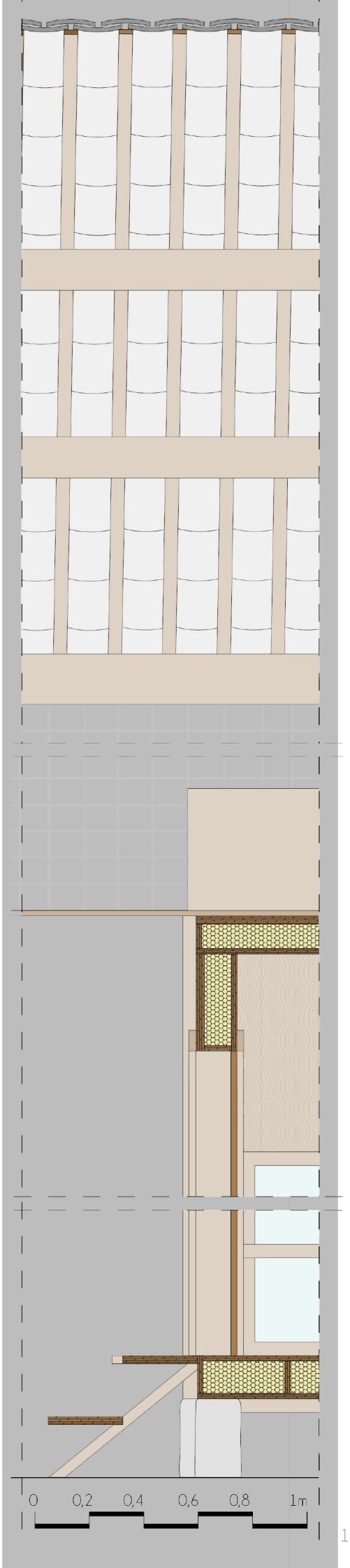


The walls of these boxes are made by a wooden sandwich, compose by new paintedwooden board in the interior side, a layer of insulation and then on the outside there will be place the old wooden boards. The last step is about building the urban fourniture in the sourroundings squares and fixing the safe net to connect the volumes in the first floor to create an unique floor and also in between the stucture, instead of the removed walls. Creating two floors was possible because the hight of the building was 7 m, beacuse is has attics to store the grain.
Another reuse of the tiles that has some broken part is building shoes case that will be fixed as shelf on the walls near the door of each volumes, in this way will be easier to keep the floor clean.

7.1.6 The taching method define the space

As said before this building is not only about reading books but more about learning different skills and playfulness, so need different spaces for all these functions. Firstly, let's see which can be the teaching method the suit better with the needs of Hanglai Community.
- Indipendence: since there will never be a teacher for each class or activity the children need to have more autonomy then the normal school. They will be allowed to learn autonomously in a secure and stimulating evironnment from older children and the aduls will be more a supportive guidance then a rigid direcctor, who higives tasks. Being free to move aroround, discover and create their games on their own will satisfy the children strong passion for exploring. The childrean will have a continuous heuristic experiesncrience both of the building both of the single fornitures, also design with this approach. In addition, the children of Hanglai are much more active, courious and brave of the kids we are use to see in our Western cities, beaucse they are living in the countryside and they are use to explore, so they will



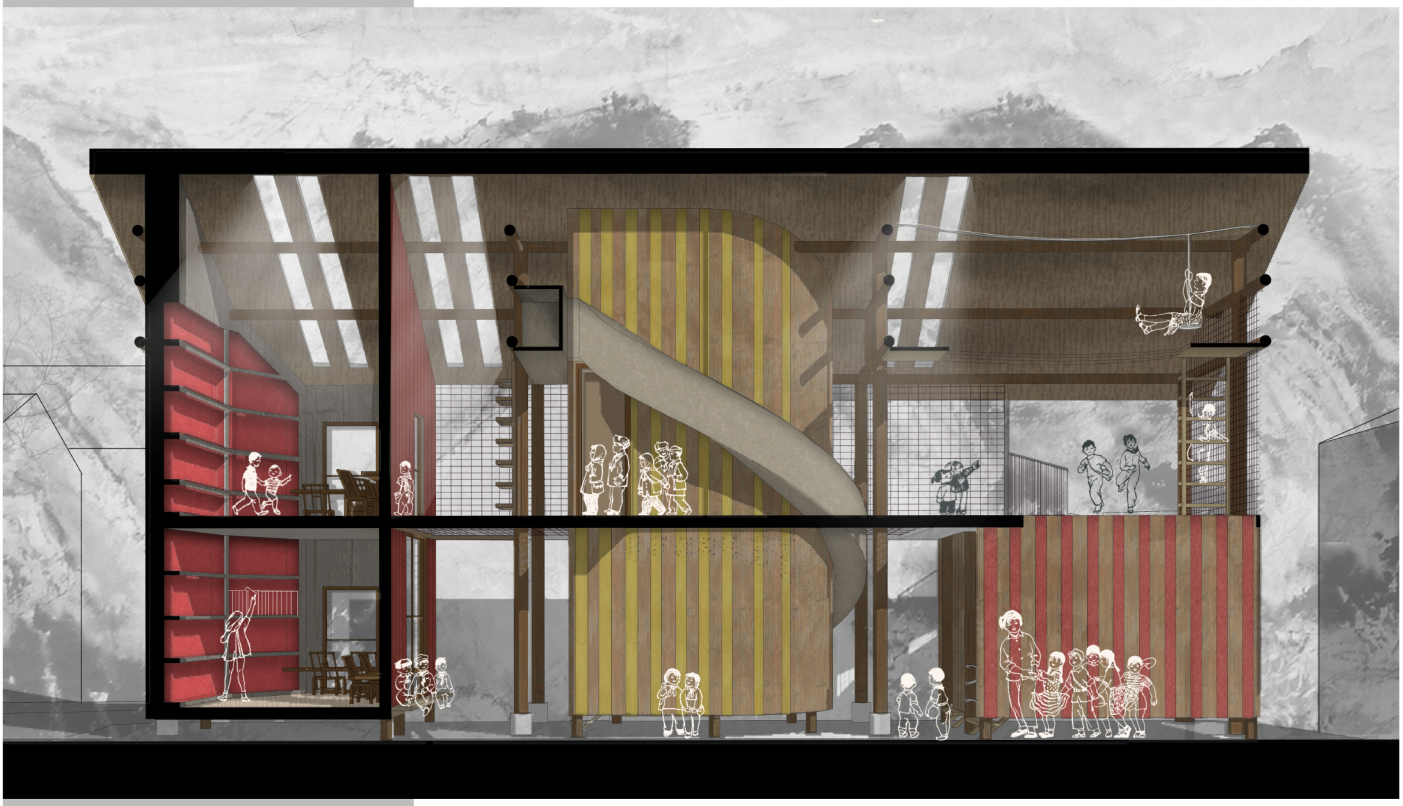


love more difficult path and toys. The Library is a safe place where kids can run aound with out needed an adult to block his choice saying „don't touch that, don't go up there, stay there, be quite etc". The way the older kids or the adults will volonteering teaching to the students is with setting an example, aclear demonstration. The children are really good in repet other peopel actions.

- Executive skills: an important focus of the Library is to develop severals skills of the children. The activity they can do are organized in different rooms that have also diffferent shape, to help them to recognize. From the North there is: the red double floors rectangular volumes, that is the core of the library with the book cases and the table to read them. Is dividede in two floor to divide the Chinese book, from the Chinese ones. There on the west side there in anothere rectangular volume, with the same size but just one floor where they can practice music: so playing the traditional songs or singing. The other double high volume is a cilinder where they can practice drawing and painting in one floor and on the other calligraphy. Then another one smal box of one floor is for handcraft workshop, so modeling the clay and start using the wood. The last box is half used as bathroom and half is a archive and storage but olso a room where they can study or doing homework is small group pf two people.

So each room will have different materials, texture so that the environment will stimulate also other sences then just the sight. These rooms are olso more bright then their dark shouses they are used to, because of the big opening placed in each classroom. The veranda is lighted by glass tiles replace above the paths.

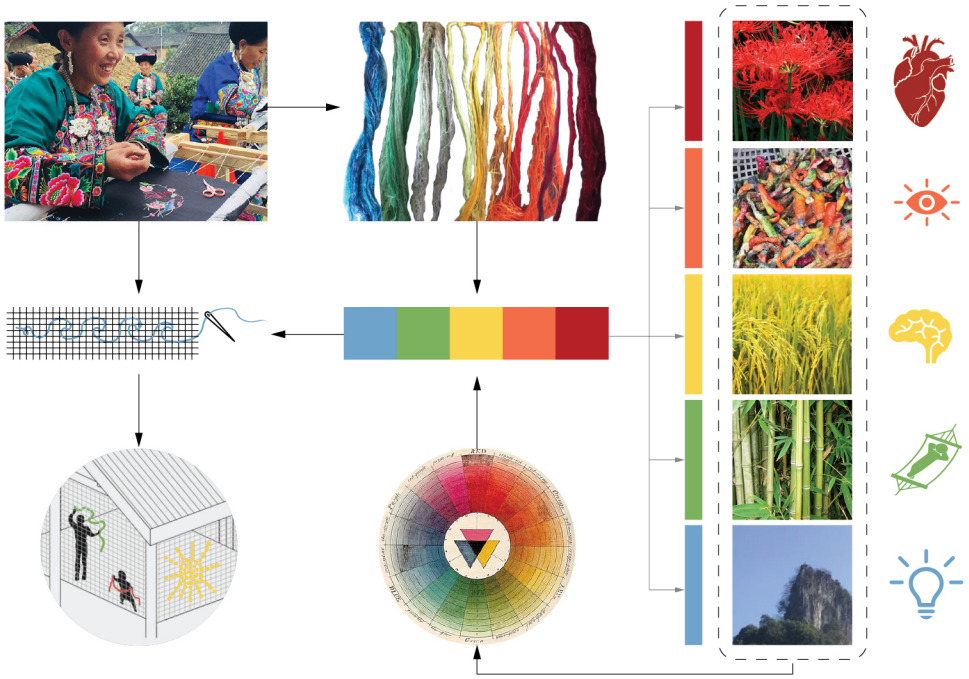
- Daily reality: to develop the respect of the space they are using is good that the children are involve in the daily chores, like cleaning and reordering at the end of the day. In these day they will be more helpful also at home beacuse they have learn how much effort need to be done to keep everything in order.

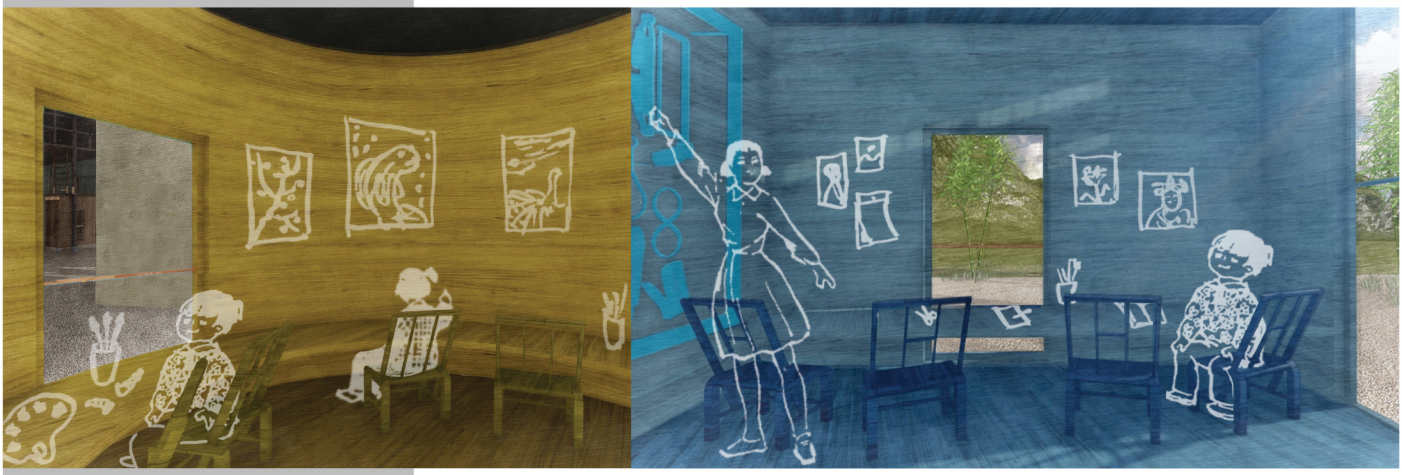


All of these principles are based on the Montessori Method of education, developed by Dr. Maria Montessori, an Italian pedagogue that in the 1907 was the first who suggested a child-centered educational approach, less rigid then the traditional classroom. She wanted to develop a child personality in his whole. The school should not be only about learning contents but develop also the physical, social, emotional, cognitive capability of a child. The Montessori School's are still exhisting today and they are based on: a mixed age classroom, a different choice of activity that child can do on their own within a prescribed range of options, a discovery" model, where students learn concepts from working with materials, rather than by direct instruction, specialized educational materials often made out of natural, aesthetic materials such as wood, fabric, clay rather than plastic and last but also really important freedom of movement within the classroom.

7.1.7 The colors of the valley

As mention in the previous description both in the indoor and outdoor space there is a specific use of colors and materials to stimulate the cildren and help them in wonder for the better. As Anna Heringer did in her school in Bangladesh with adding some colored doors and curtains to the brrammed earth walls, using colors help the building to touch the feeling of the people and make more easy for the building to be appreciate and welcome by the locals. That beacuse as Goethe wrote in his "Zur Farbenlehre" (La teoria die colori): "You need to have seen the color, no better you need to be looking at it to understand how magnificent can be this fenomenal full of energy". Different colors give to the eyes and then to the body a different physical reaction, so they can are use in different rooms of the library that have different purpose:
- Red: increases enthusiasm, stimulates energy, increse blood pressure, encourages actions and confidence, provides a sense of protection. The tone of



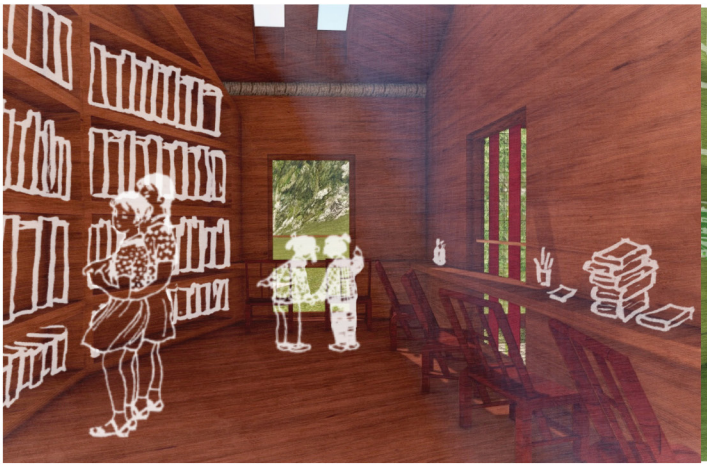


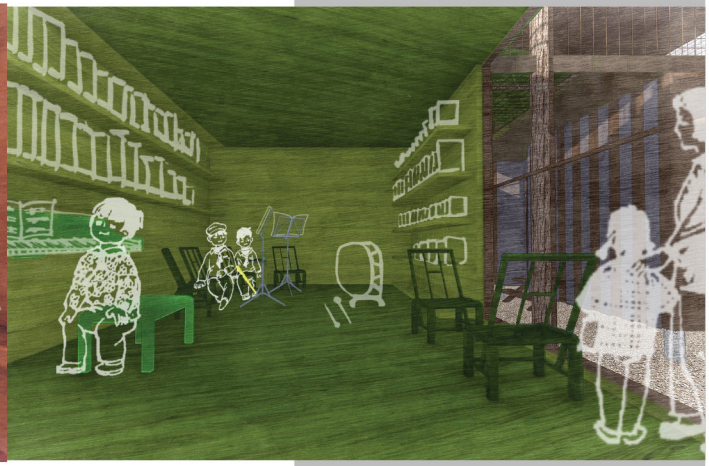
red used in the reaing room come from the chilli pepper that the farmer graw in Hanglai's fields.

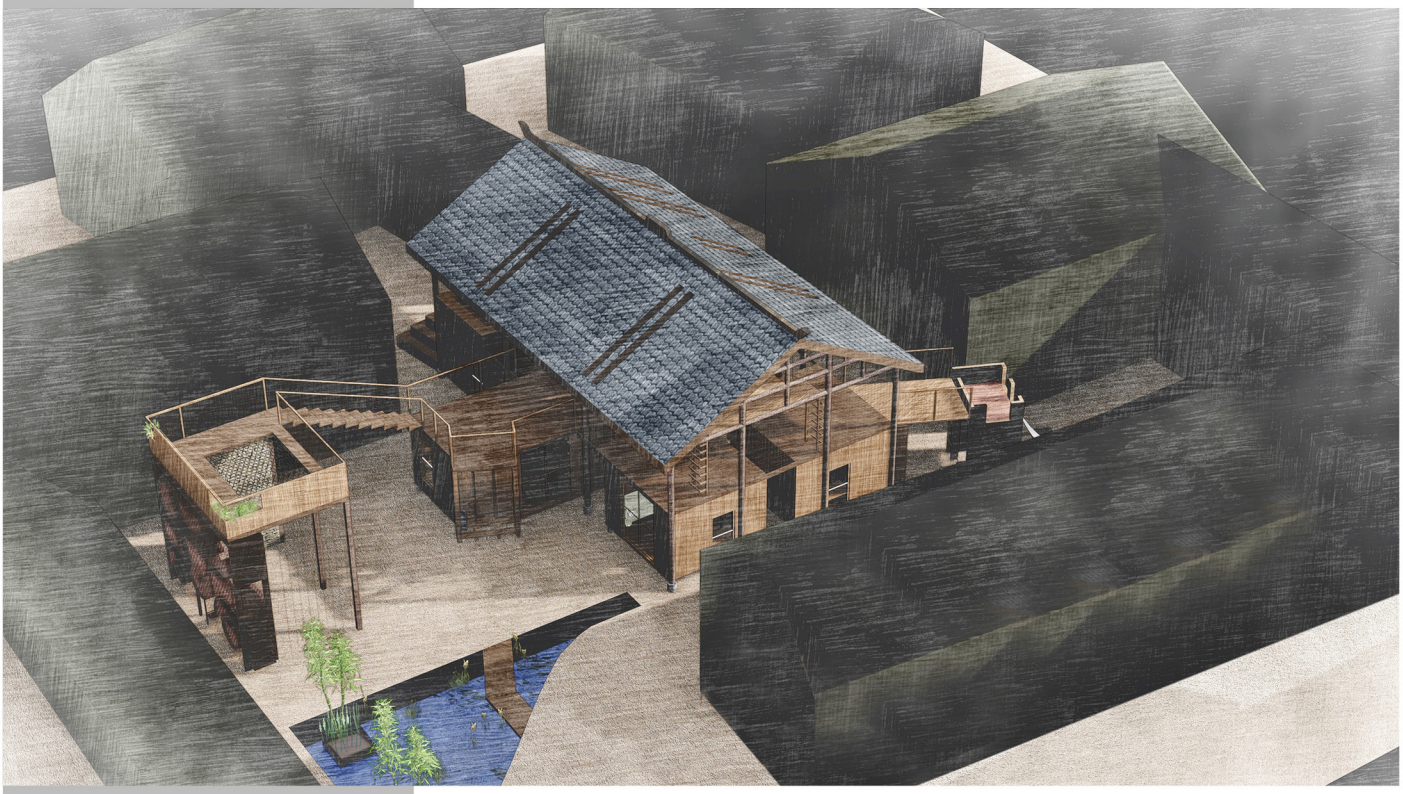
- Blue: Calms and sedates, cool, aids intuition so it will be use in the workshop where students need think intelligently to solve problems and build what they want. The blue is the colors of the sky also refected in the water of the ricefield when they are filled.

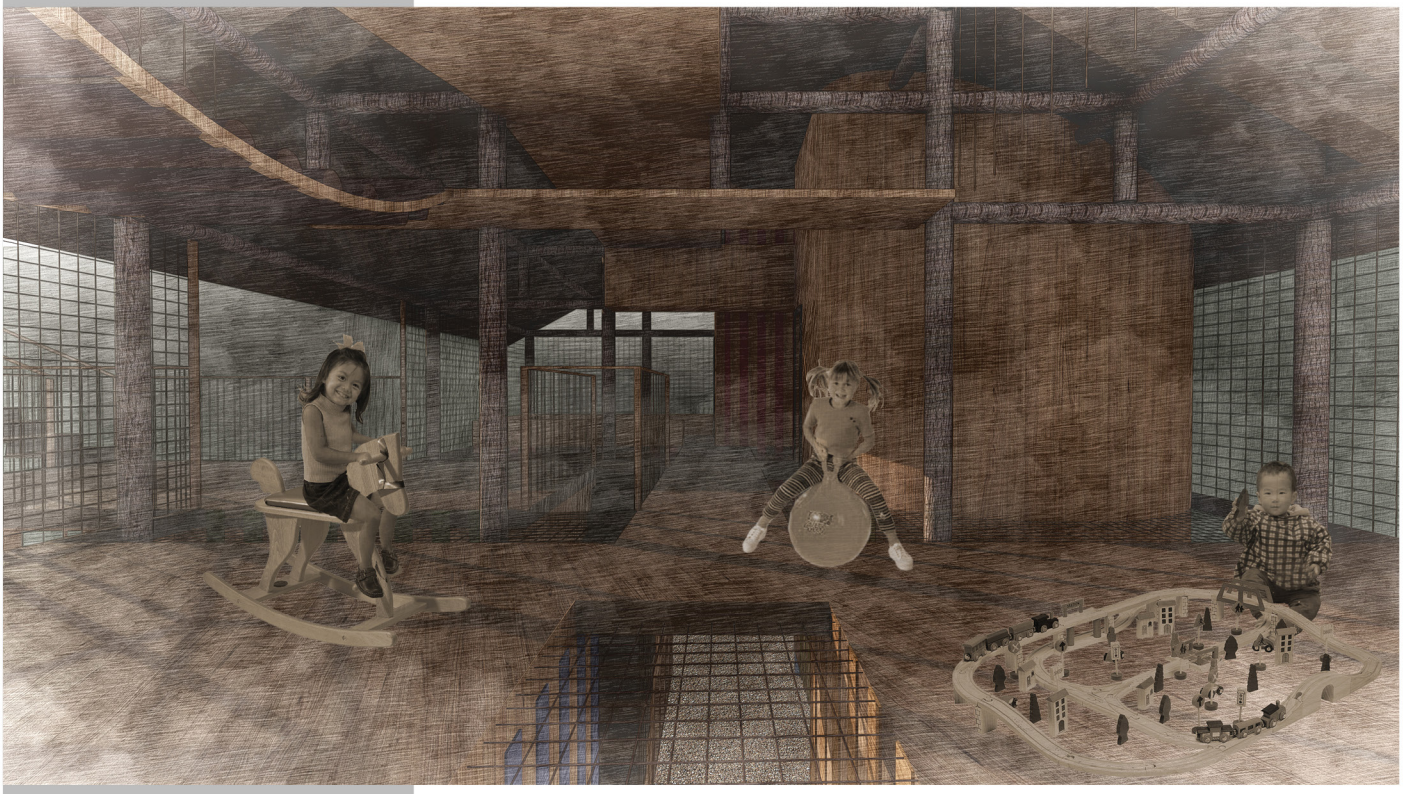
- Green: Soothes, relaxes mentally as well physically, helps alleviete nervoussness, anxiety and depression, offers a sense a sense of renewal, self – control, and harmony. It fit weel in the music rooms because the kids can relax and play instruments and enjoy the music. Green is of curse the vivid green of the bamboo leaf.

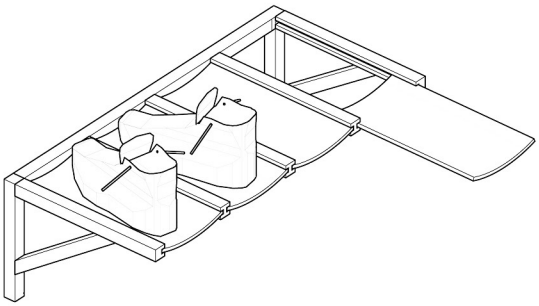
- Yellow: Stmulate mental process, nervous system, aactivate memory and encourage communication. So is apply to the wall of the rooms od of the calligraphy and drawing room, becaus ehere first kids need to be concetrate to to the best that they can in the hard task of memorize chinese chararect. It is really important also encorages communications because is important for the children practice in talking about their feelings about what they draw. Yellow is the color of the mature rice at the end of the summer.

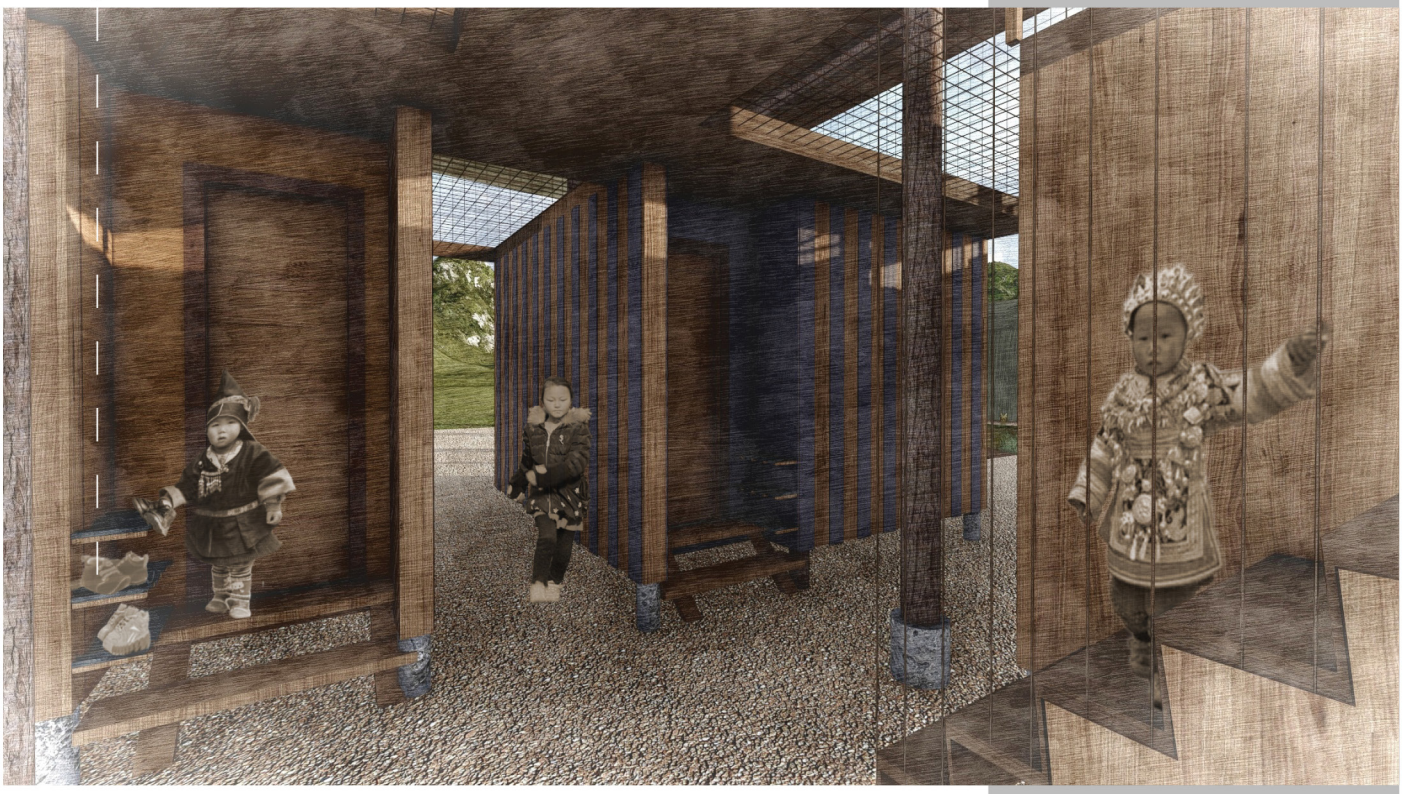










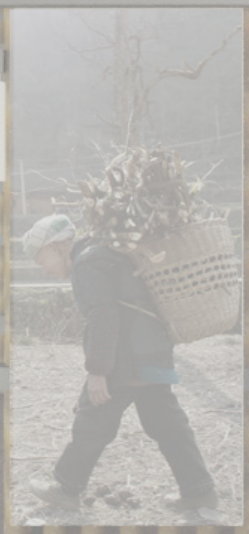


7.2

MiAZe, Miao art Maze

by Chiara Menna

"A place where people flow through like waterfall. Simultaneously being a place where people sit, gather and spend time"
Sou Fujimoto, Layered plaza, 2011.



MiaZe is the art gallery, where traditional Miao art and craft and contemporary art meet. The exhibition gallery, placed in the oldest building of Hanglai is articulated in three main rooms, each one hosting: traditionally crafted miao objects, contemporary art inspired by Miao culture and a pavillion, derived from an old woodshed, for temporary exibition for object crafted during the cultural workshops organized in the community center. The first two areas are hosted in the abandoned building and divided by a semi open space, which connect the two squares surrounding the building and make the public space fluid and active. The exhibition is articulated around a maze, formed by bamboo stick partition, which is meant to recall the rock maze near Hanglai.

Fig.1 The rock maze

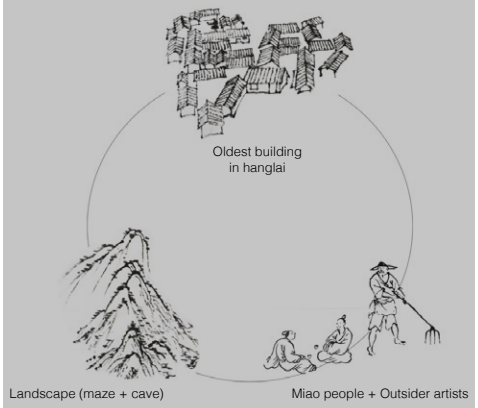


Fig.2 Armony between landscape, humans and architecture is well expressed in the traditional Chinese painting. In MiAZE, art is indeed placed as a balancing link and meeting point between theese three categories

Fig.3 The Oldest building in hanglai (1, in the mapin the next page)

7.2.1 Introduction: Why Miaze

Miaze stands for Miao Art maze, and is meant to be an exhibition gallery where the Miao traditional arts and crafts and contemporary art meet. The building, indeed, is meant to host personal belongings of Hanglai inhabitants, most of them crafted by the villagers themselves -such as silver jewels, Miao clothes or other pieces of embroidery, bamboo baskets, calligraphy painting etc... The art collection is not just this, though, since the gallery showcases as well contemporary art pieces inspired to the Miao traditional culture. Together with this, the permanent collection is accompanied by a temporary exhibition concerning the objects crafted during workshops by tourists, or students as assignments for special educational activities organized in partnership with schools or universities.

The idea of implementing the collection of traditional objects with contemporary art inspired by Hanglai's tradition and culture, comes from two main reasons both related to the fact that, according to the masterplan, the gallery is implemented in the village during the second phase of recovery. As the first phase will bring visitors to Hanglai, them in turn will spread the word about their experience, which will attract more visitors, and the attention of artists that might be willing to showcase their art pieces in the village. In the same way Chinese and international educational institutions with art, architecture or heritage concentrations might be willing to organize joint workshops with Hanglai village to make students practice and learn about Miao crafts and then showcase the products as a temporary exhibition.

7.2.2. Concept Idea: The Maze

The intervention concerns the oldest building in Hanglai, and for this reason, the design of Miaze art gallery is meant to not limit itself as a leisure place for tourists, but also to be symbolical for the villagers. For this reason and also considering the diversity of the objects that would be showcased, the core idea is to embed in the architectural design the concept of harmony between architecture, people and landscape. The first one is represented by the intention of using vernacular building techniques, to recover the original Miao building that take into consideration the local availability of resources and architectural style. The second one, stands not only for the Miao people, represented here by their crafted and sometimes personal objects, but also to the foreign artists and visitors. The exhibition gallery, in a similar way to the community center, is meant to bridge these tree category of people together. Finally, the landscape is physically embedded in the architecture, by taking inspiration from the rock maze to articulate the exhibition path and the partition used as exhibition devices, and from the cave for what concern the niches sculpted in the envelope, used as display for objects. As in the miao house all the spaces occupied by the different users -humans, animals and objects- are linked together through the gray space, here this type of space is evoked and created as a third type of semi-open space, linking architecture the art it contains and the maze itself with the public life, going on in the surrounding open air squares, becoming itself a core of public life, always animated with activities.

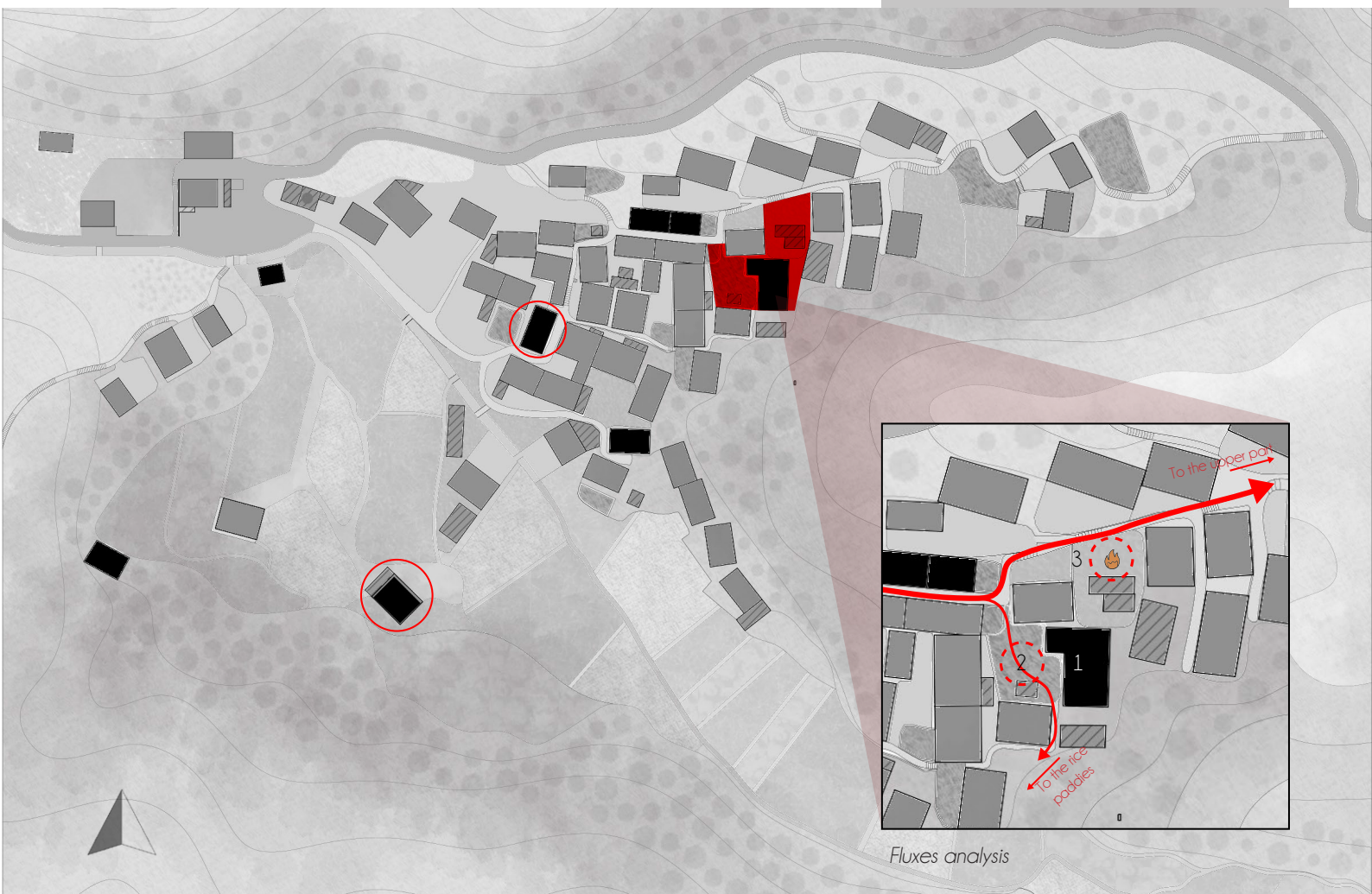
7.2.3. Location and Site analysis

Miaze is located in a central position in the village, and as mentioned before is implemented as a recovery of the oldest building in Hanglai, which according to the interviews to the villagers dates back to the 19th century. The site is located in between two squares, each one containing a woodshed in very bad conditions and surrounded by inhabited houses. The main facade of the abandoned building is facing West on one of the squares, which is currently not used. This latter is located 1.5 meters below the other square, placed North East to the building, and is currently used to burn dead branches. The building is also located next to the main East-West axis of Hanglai village, and next to another alleyway, leading to the rice paddies. The fluxes related to these two roads, give to the building a huge potentiality in terms of location, as well as the two squares giving opportunities to the design to not limit itself at the architectural scale, but also engaging the urban design and landscaping.

Fig.4 Hanglai's oldest building, being abandened, is used to store wood and its wooden elements (strutural and not) are in decay.

Fig.5 Burning reeds in one of the squares (3).

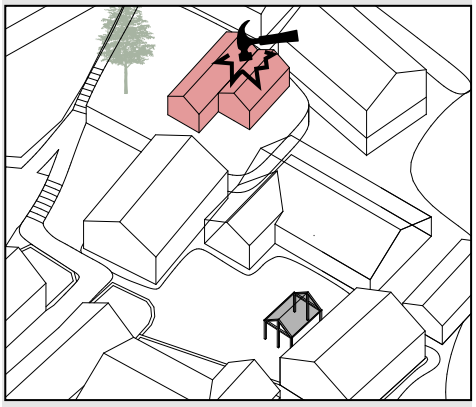
Fig.6 A wood shed in the square in front of Hanglai's oldest building (2).



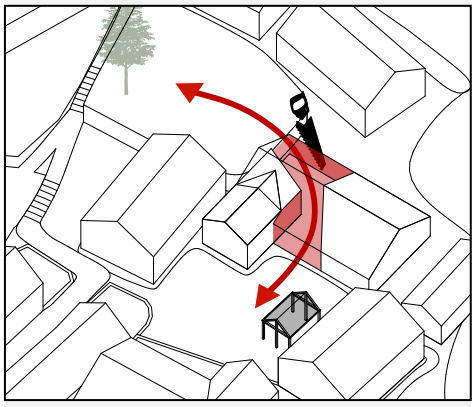
Fluxes analysis

7.2.4. Spatial Generation

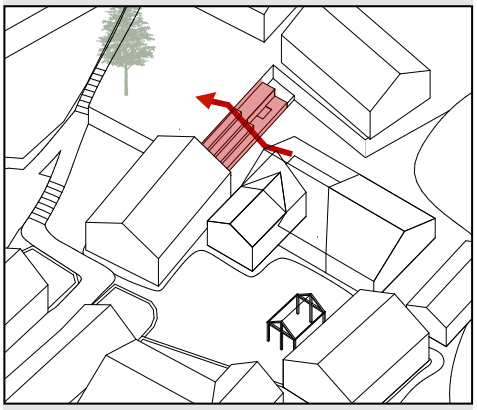
The main idea around the spatial concept focus on exploiting the fluxes to shape the volume of the building and the new public space. This happens in mainly 8 phases. (1) The first thing to do is demolishing the woodsheds placed in the squares, and (2) to cut through the existing abandoned building, in order to create a new flow possibility between the two squares. In this way the cut divides the building in three parts: two enclosed spaces and a semi-open grey area, which is where the flow is supposed to happen. (3) In order to make the flux effective, the next phase is to overcome the level difference between the two squares through steps, which are meant to be not just a circulation space but contribute the public space to be fluid, offering a pleasant place where to sit, meet people or watch performances. (4) After shaping the public space, at the architectural level, the abandoned building's cut volume is lifted up from the ground of about 70 cm in order to avoid mould problems and facilitate ventilation. (5) The volume is then further sculpted in order to meet space requirements. In this phase, the left wing of the building is expanded towards the southern square, while the other volume is pushed in to create a porch right in front of it. (6) Considering the height of the original building and to make the semi-open part of the building more alive, steps are modeled on the left wing. (7) The overall design is further enriched by renovating the woodsheds, making the smaller one, in the southern square, a semi-open pavilion, and the bigger one a glass pavilion. (8) Finally, the public space, both open and semi-open, is enriched with greenery, to make it more pleasant.



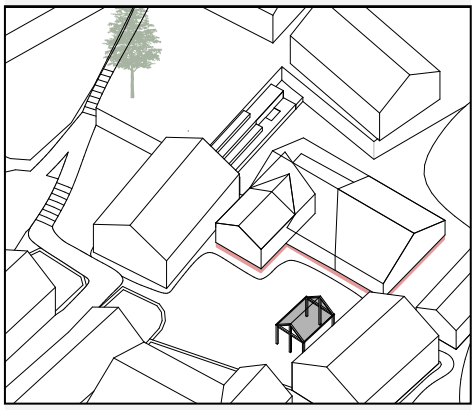
1 Demolish



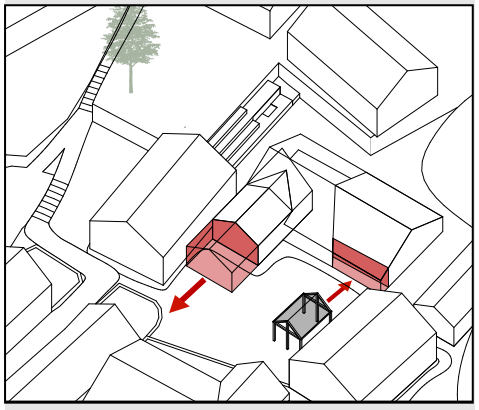
2 Cut through



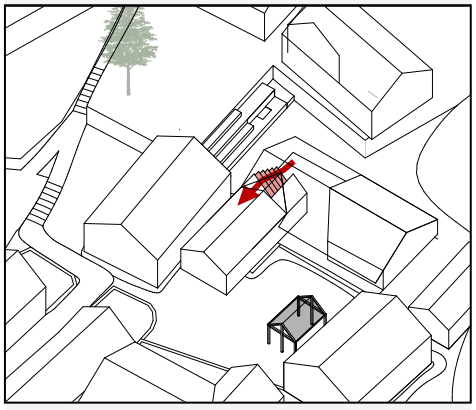
3 Expand public space



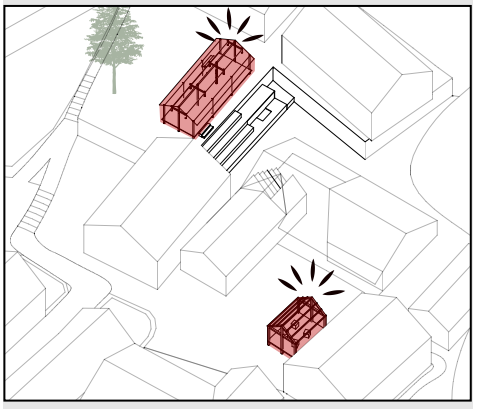
4 Lift up



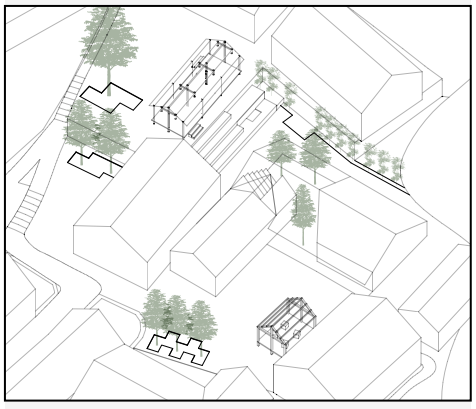
5 Sculpt the volume



6 Add Levels

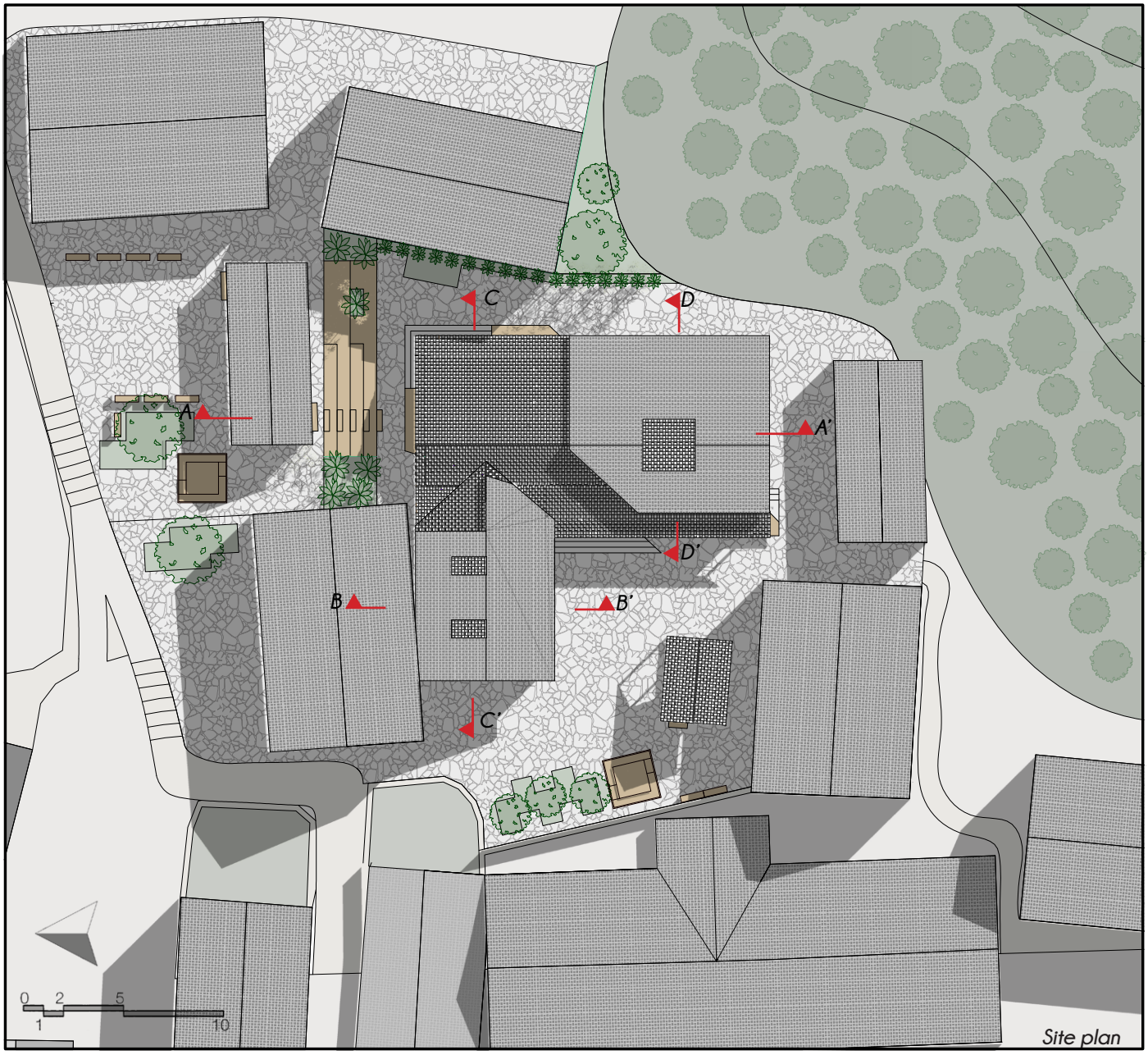


7 Renovating woodsheds



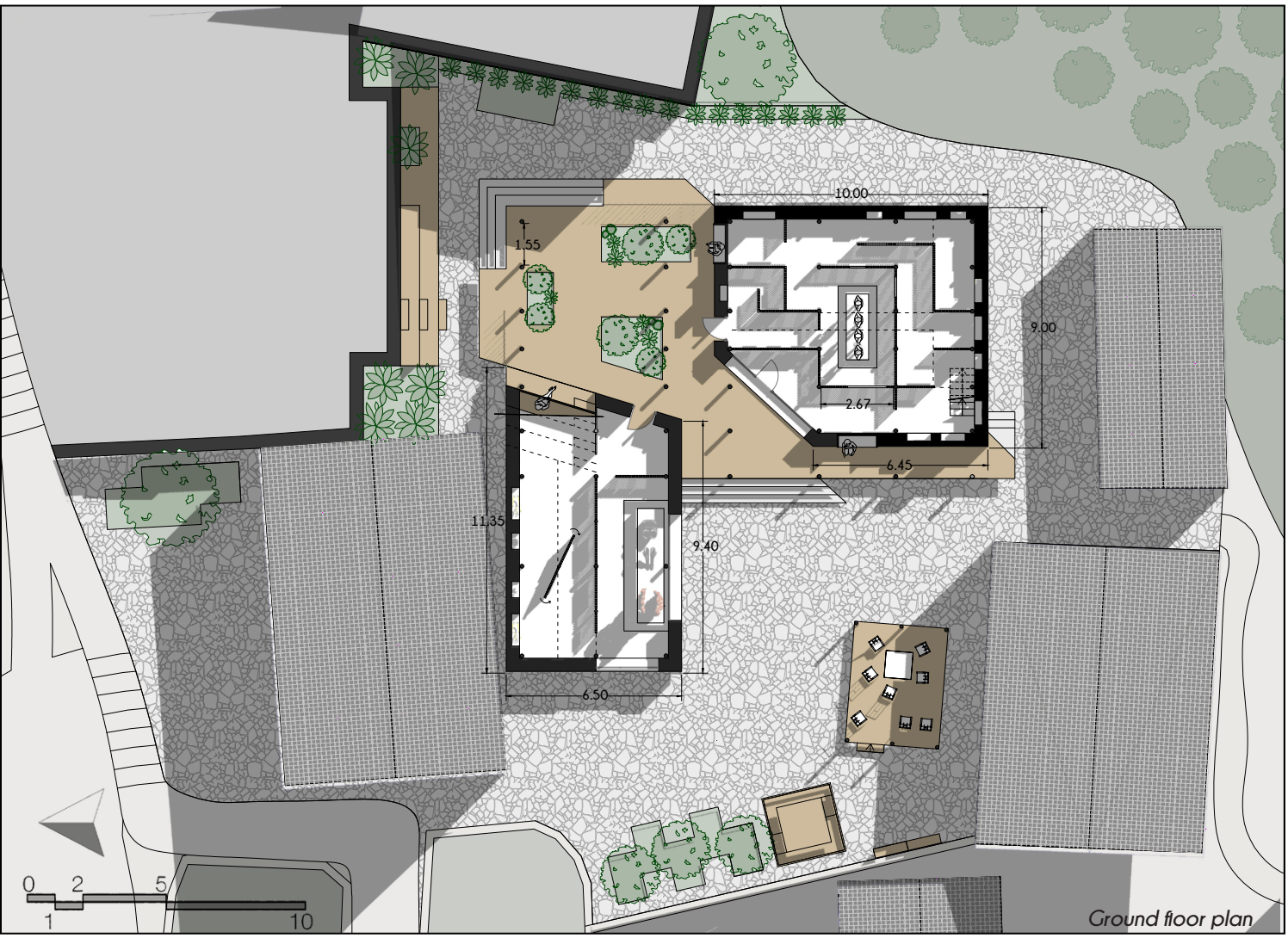
8 Insert Greenery

Perspective section AA'

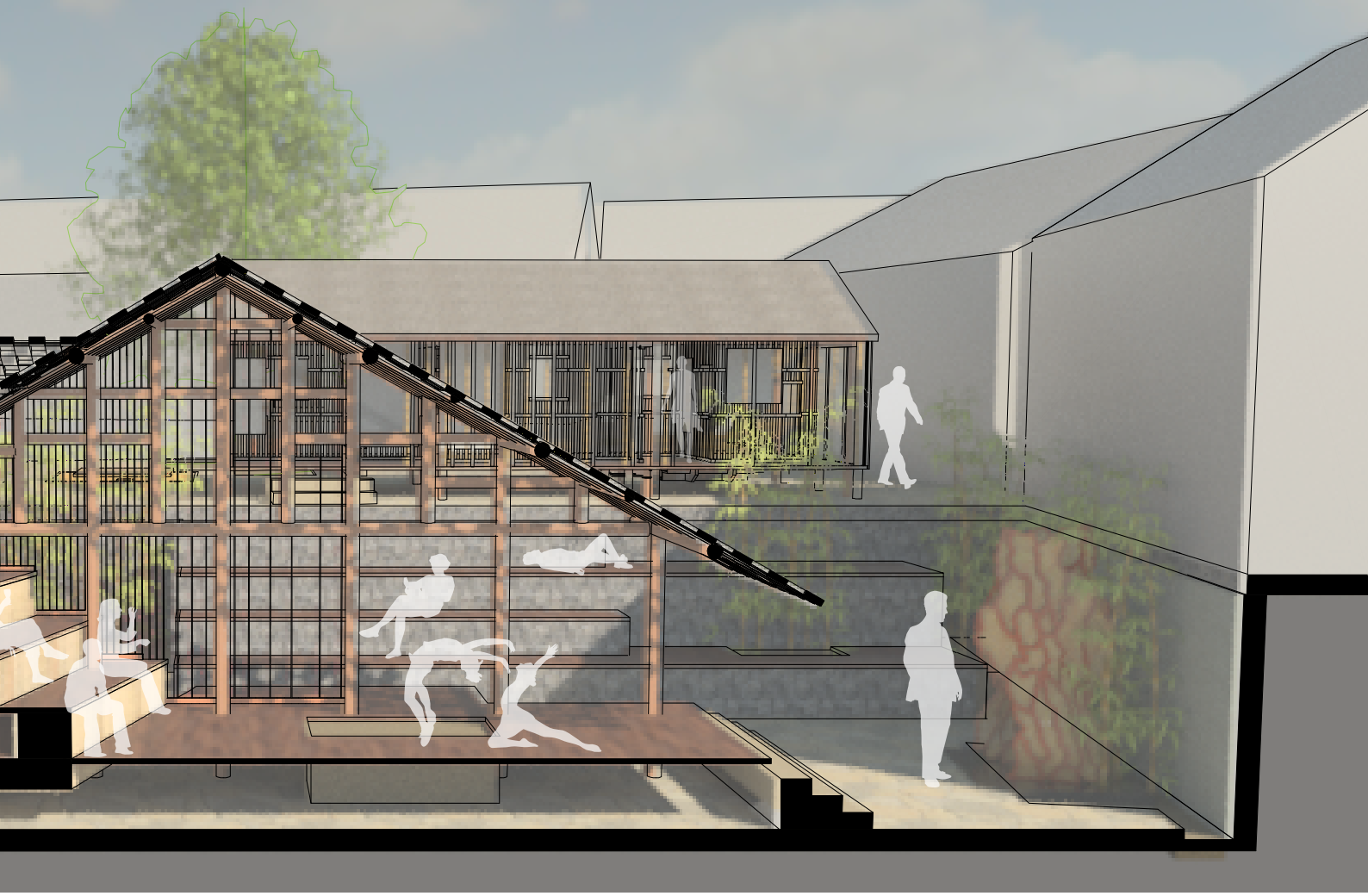


Site plan

Perspective section CC'



Ground floor plan

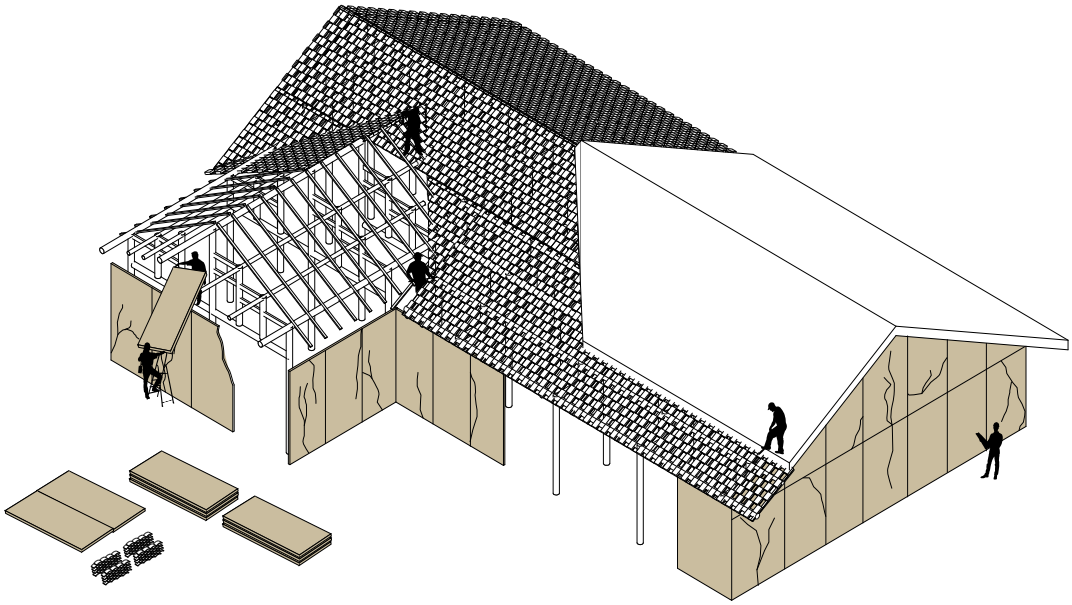


Mezzanine floor plan

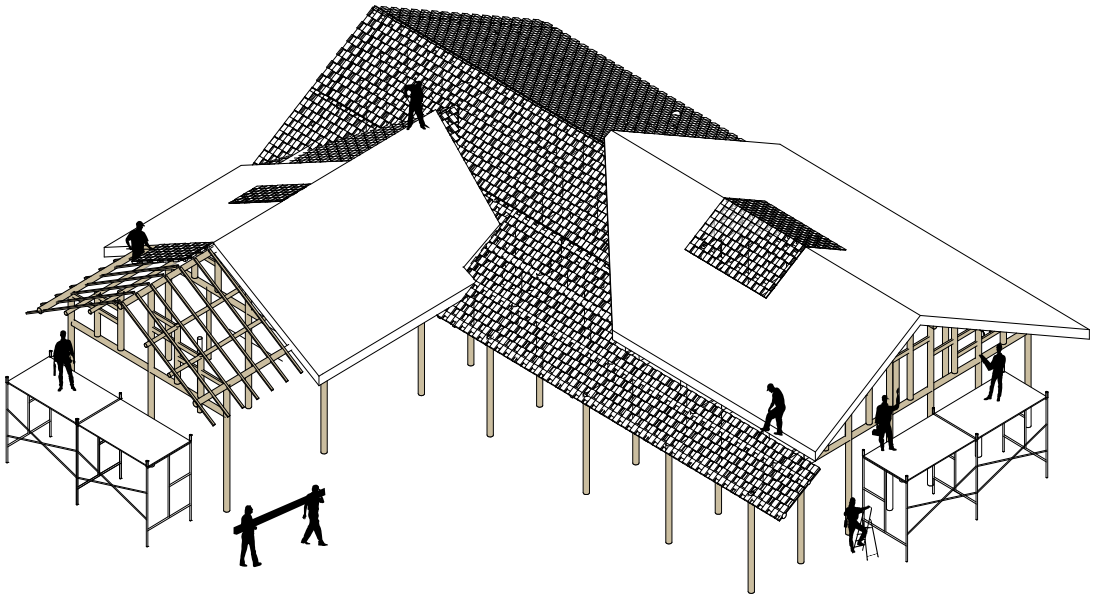
7.2.5. Build in the built: how to deal with the existing

The main feature of this intervention is the fact of renovating an old and damaged dwelling, built with traditional techniques, by giving it a new function. This means that the renovation process is not limited to a mere restoration. In fact, through a critical reinterpretation of vernacular techniques, the original building is implemented with new elements to solve existing problems. Moreover, in order to fit in a proper way the function of exhibition gallery, some actions, such as the expansion of the original volumes, are necessary. In general the aim is to not modify the volume visibly with added parts or by adding extra floors, but maintaining the original bearing structure and roof tiles, and then sculpting the volume in order to have an architecture that do not clash too much with the surroundings.

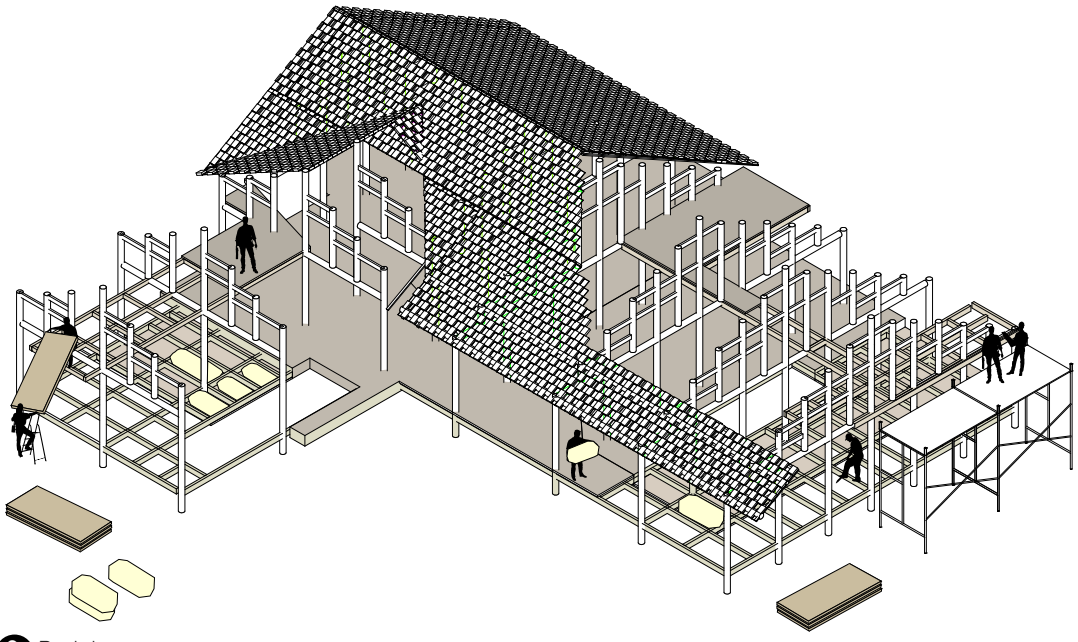
The recovery and the actions on the existing building follows 6 main steps. The first thing to do is to remove the existing outer envelope and partitions. Such elements, are in fact wooden panels that, being 100 years old, are now highly damaged by the weather and bugs, so are not reusable for architectural purposes. The same thing is done with the flooring. Finally, some of the clay tiles covering the semi-open space are removed, in order to obtain an alternated pattern. After this, the damaged elements of the bearing structure are reinforced or replaced if



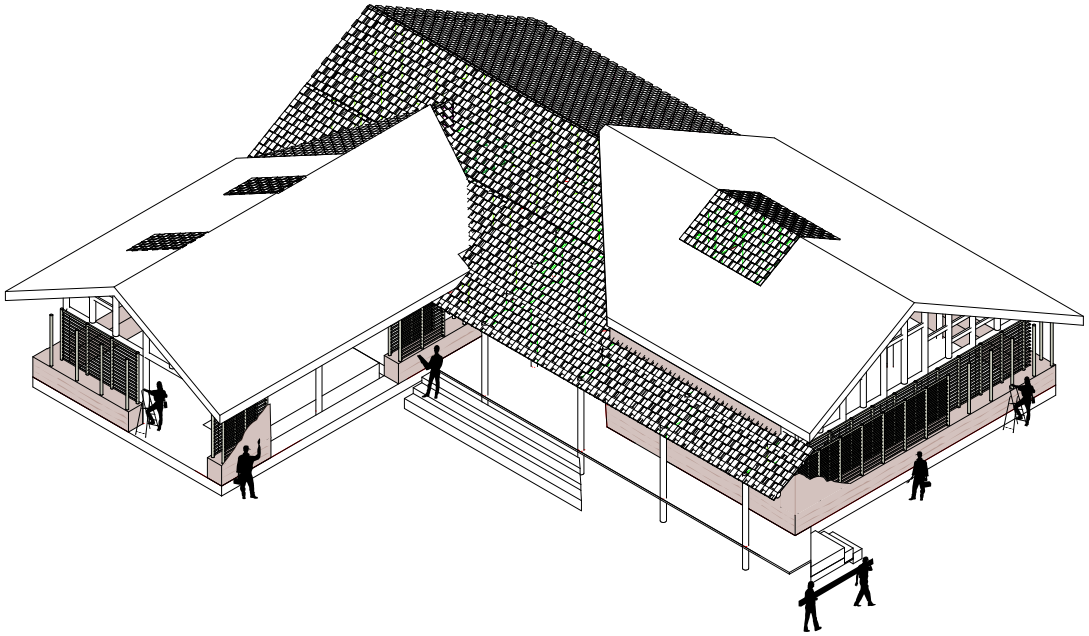
1 Remove wooden envelope and extra tiles



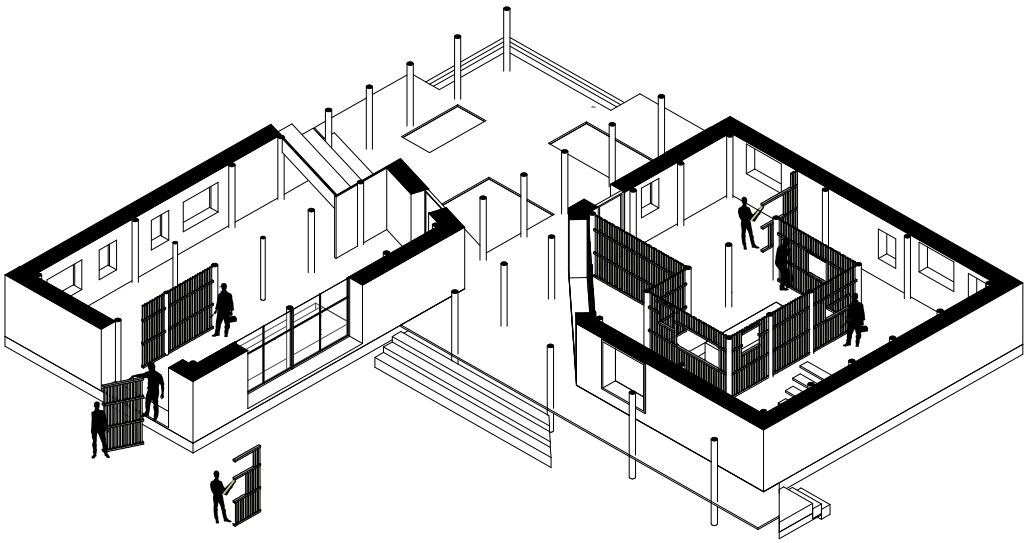
2 Reinforce wooden envelope and extra tiles



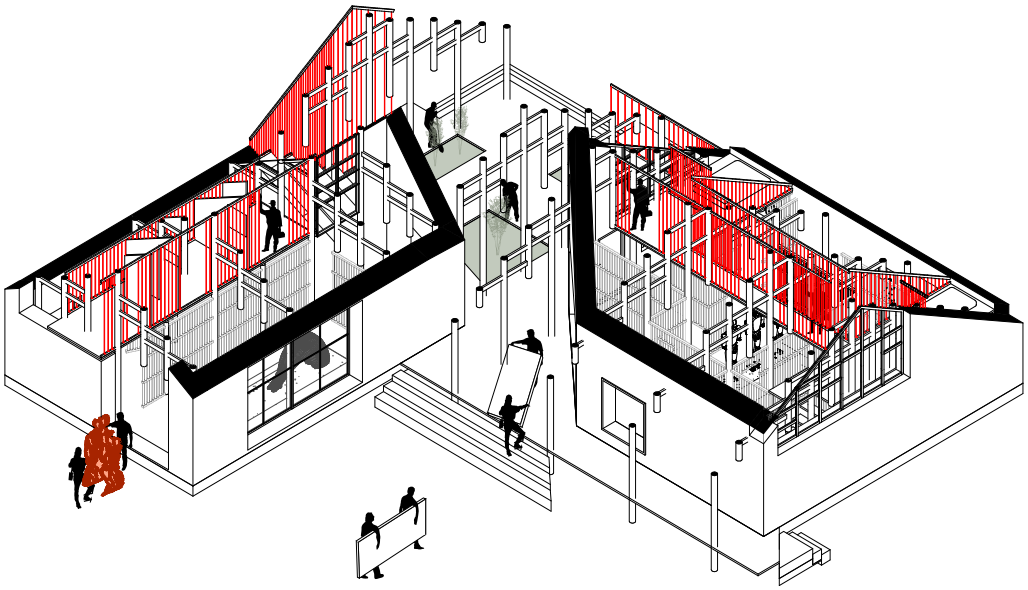
3 Building new flooring



4 Building earth envelope



5 Assemble maze partition and add glazed surfaces

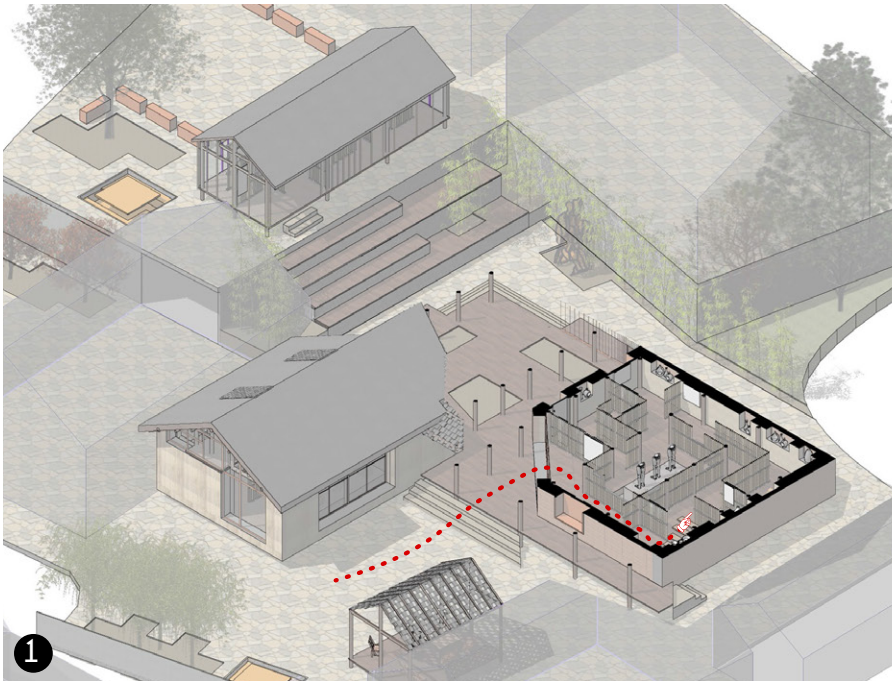


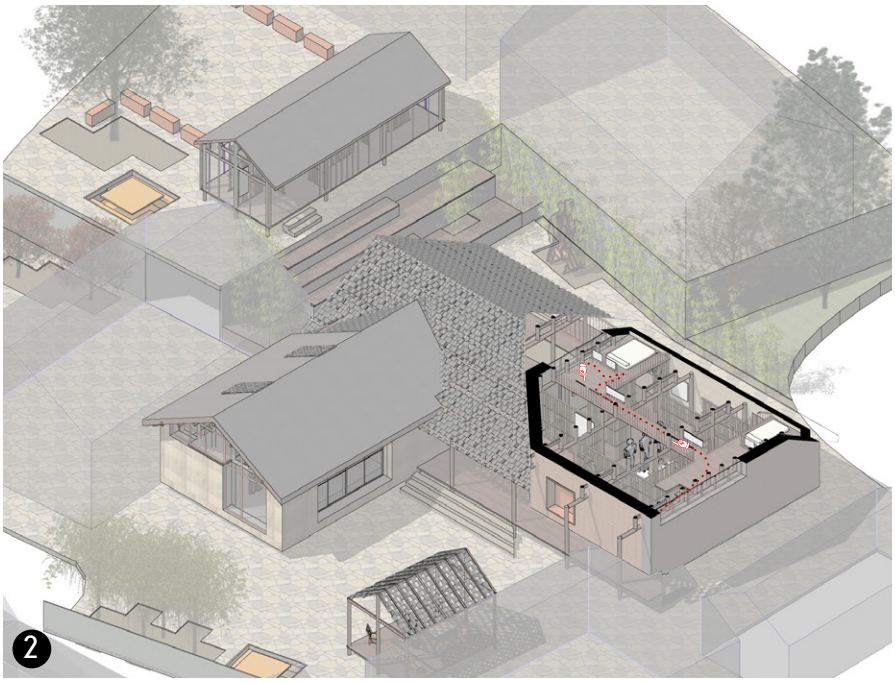
6 Assemble wire parititions, setting up exibited elements and plant vegetation

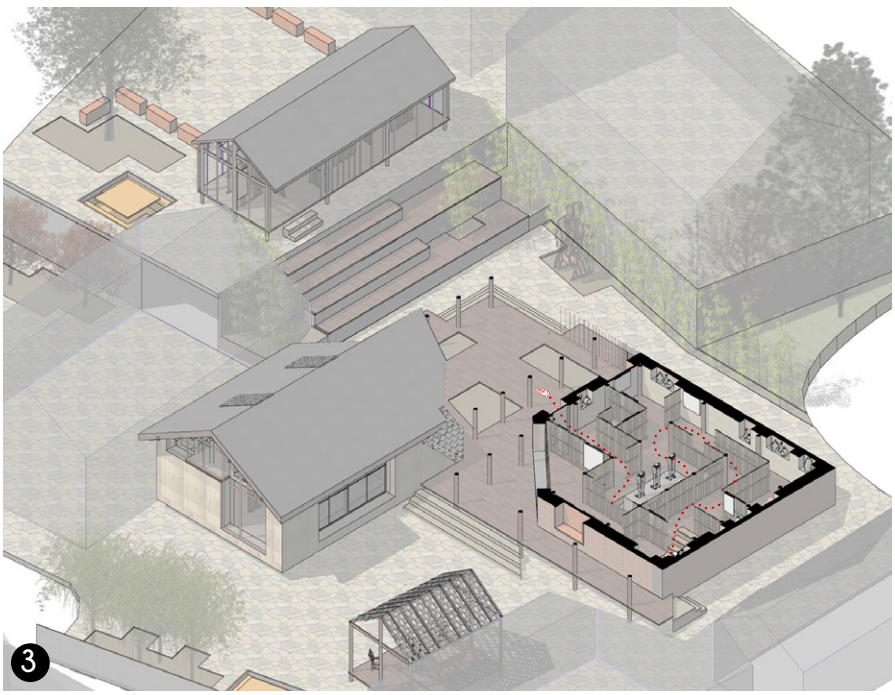
their structural capacity is highly compromised. Since, as mentioned earlier, the left wing of the building is expanded, some additional structural elements are added. Moreover during this phase, glass tiles are added to fill the blanks of the alternated tile pattern created on the semi-open's space cover in the previous phase. The third step consist in building the new raised floor, the flooring for the mezzanines with all their additional structure. After this, the outer envelope of the two volumes is built. During the fifth phase, the maze bamboo partitions are assembled outside and then placed inside the volume, the lighting equipment is built and finally the envelope is completed with all the glazed surfaces. The final phase consist, obviously, in placing the art works, assembling the wires partitions that are used in place of railings on the mezzanines, and plant some vegetation in the gray space.

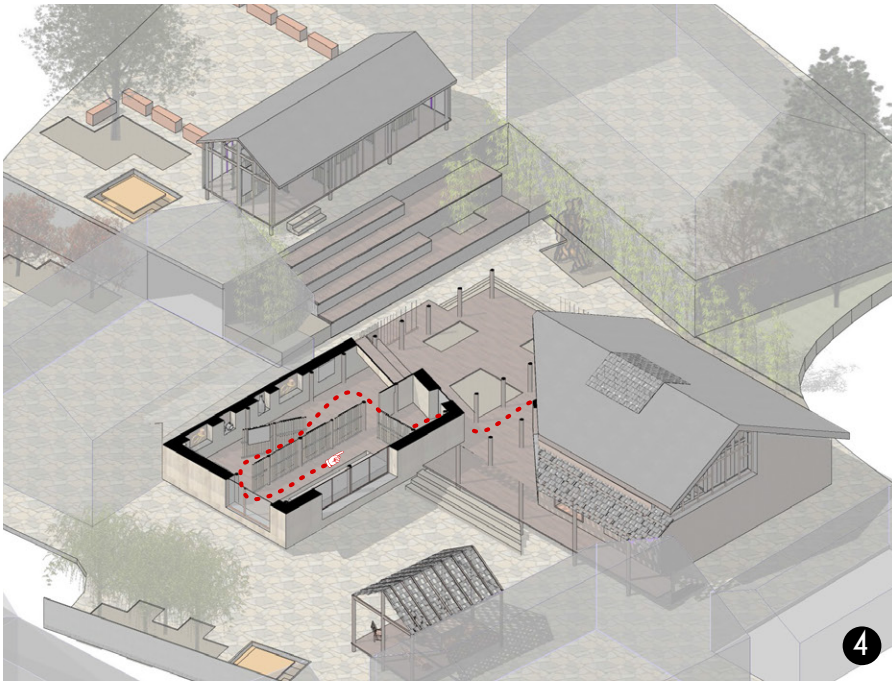
7.2.6. Space design

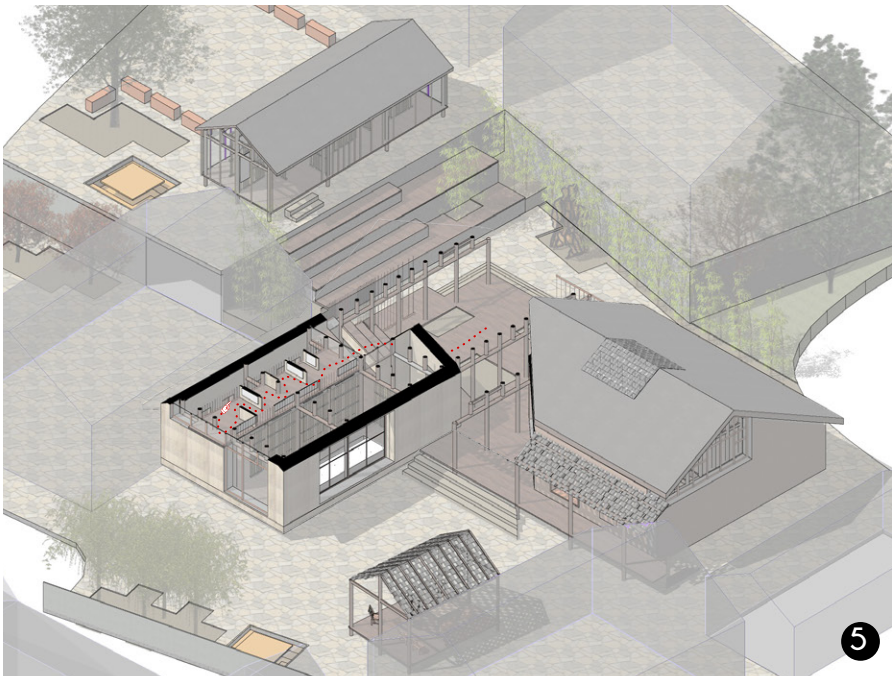
As mentioned earlier, the exhibition gallery is articulated in two volumes, placed under the existing roof and separated by a semi-open gray space, placed on a raised wooden deck, in order to be at the same level as the other spaces. The roof portion covering this space is composed by the original tiles of the abandoned building, alternated with glazed tiles. This choice had been made in order to make such public space more pleasant and also to have the possibility to grow plants in it. The stone steps that creates continuity with the Western square paving, lead to the porch in front of the first part of the exhibition, the one hosting Miao arts and crafts objects. As soon as accessing the room, the visitor can experience the "art maze" by walking trough the bamboo stick partitions that are used as exhibition devices. At the core of the maze, the visitor can find, placed on a solid concrete platform, the highlights of the exhibition, some mannequins wearing Miao clothes, crafted by hand by the old ladies of the village. Considering that the height of the existing building allowed the presence of an attic, this volume present some 2,1 m high platforms, connected with a footbridge, from which visitors can either observe the showcased items from another perspective, or relax on the mattresses placed on the North side of the volume, where the height is not enough to make the space usable and watch some videos and short movies, obviously about Miao culture. As protection device for the attic, instead of regular railing, full height red fabric wires are used. The choice of fabric wires has been made in order to recall Miao embroidery, the main craft that made this minority famous in China and also around the world.

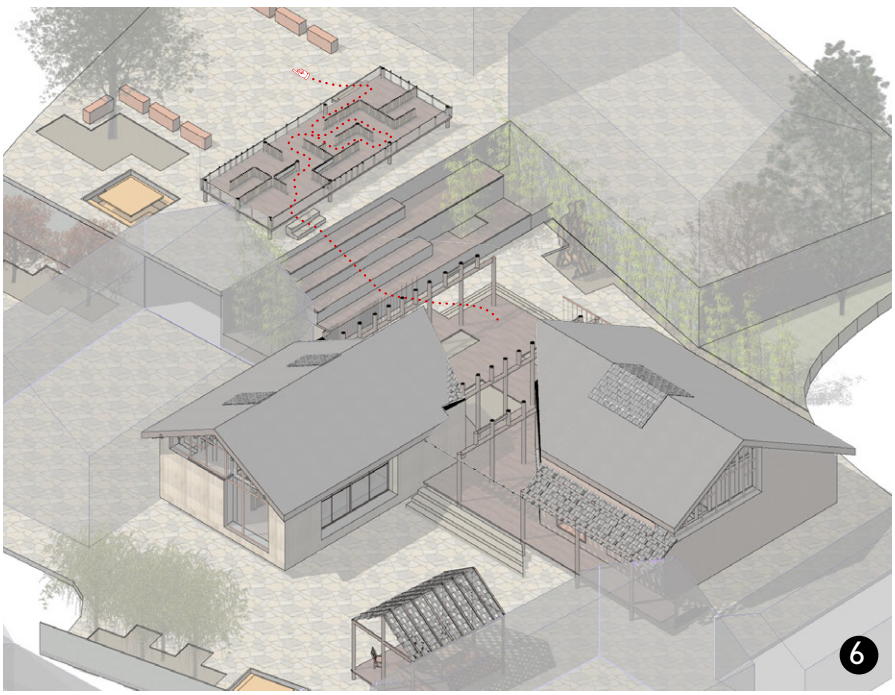






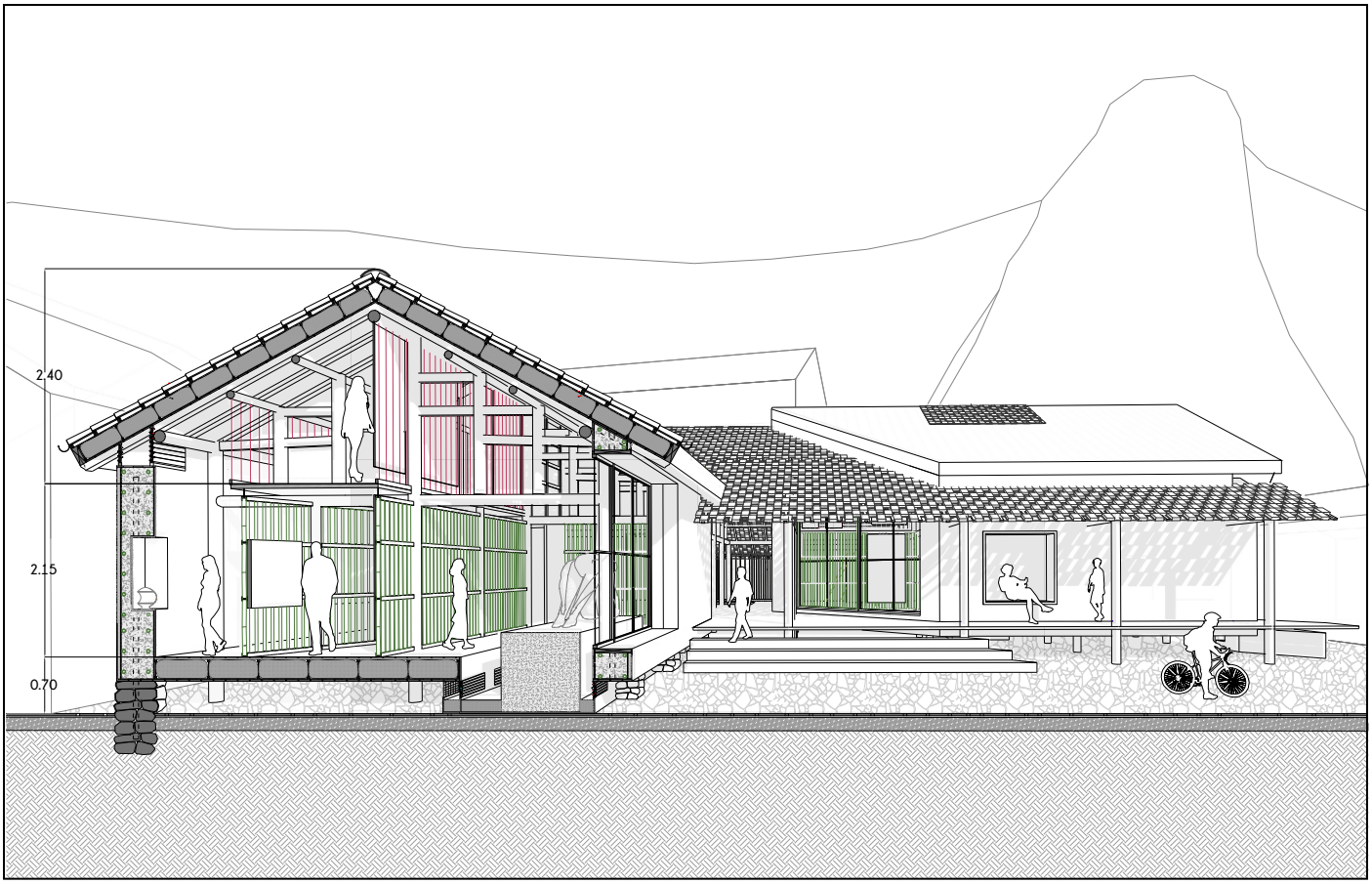




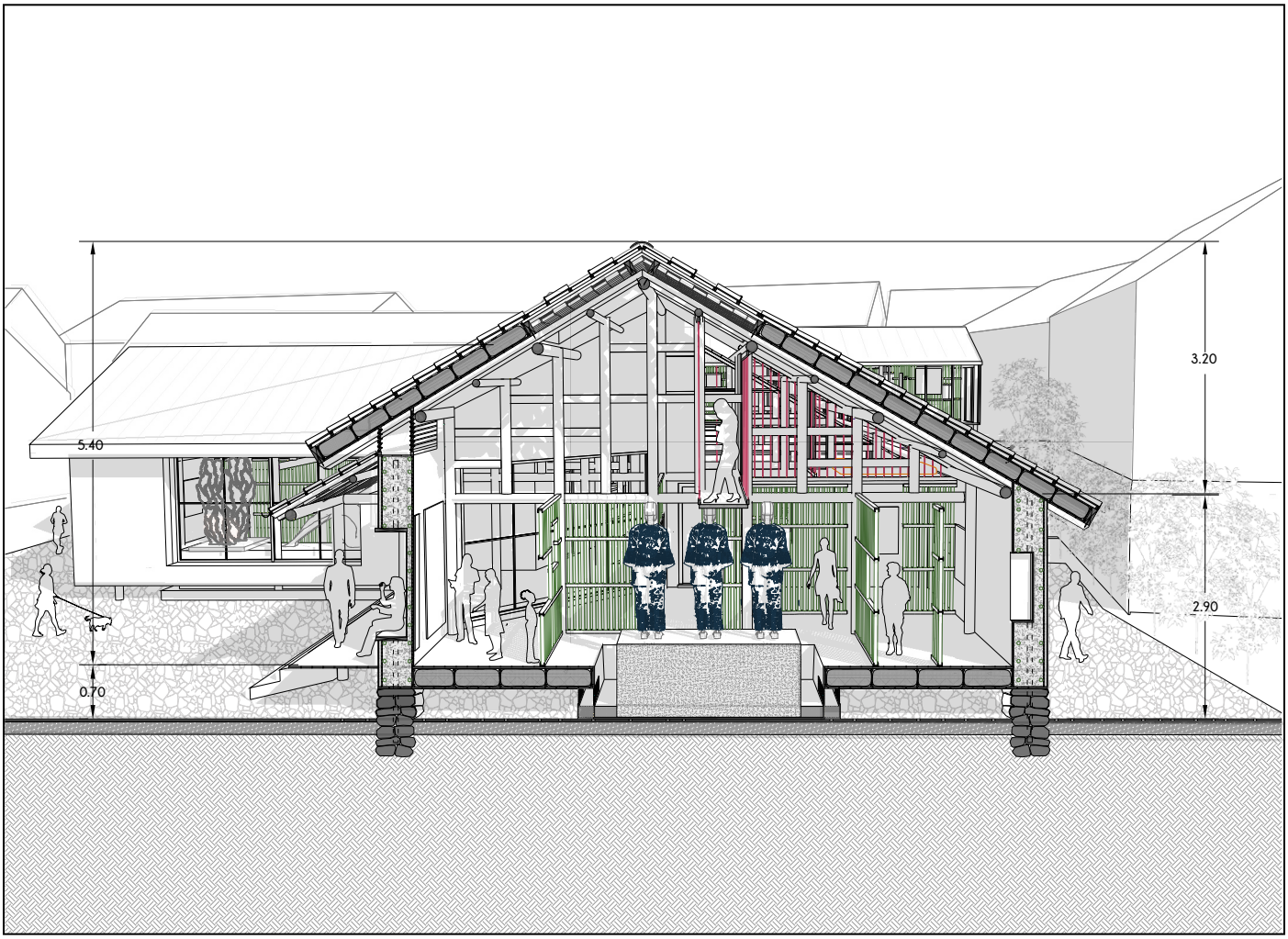


Once the visitor manage to free himself from this first maze, he find himself in a grey space, the semi-open deck, where he can take a break in one of the niches sculpted in the earthen envelope, or go to the second part of the exhibition, showcasing contemporary art inspired by Miao culture. In a similar way to the first part, this volume present the same displaying devices, such as niches sculpted in the envelope, bamboo stick partitions and, on the side towards the square, a platform with the highlight of the exhibition. This latter, moreover, is placed near two big glazed surface, that allow to see partially from outside the sculptures exhibited. This, in a similar way as the bamboo stick partition, is a scenographic device that gives hint of what is showcased in the gallery, without entirely showing it, in order to attract the visitor's attention and making him willing to discover more. Like the first part of the exhibition, this volume present as well a mezzanine, accessible from the outer steps.

After getting out of the exhibition room, the visitor can step out from the main building and through the wooden steps reaching the northern square, where the glazed pavilion obtained from the renovation of a woodshed form the last part of the gallery. This space, in fact, is meant to host the temporary exhibition for the workshops' best works. As well as in the main building, the bamboo maze is present, but here, the light coming through the glazing and filtered by the bamboo sticks, give another atmosphere and different value to the showcased objects.



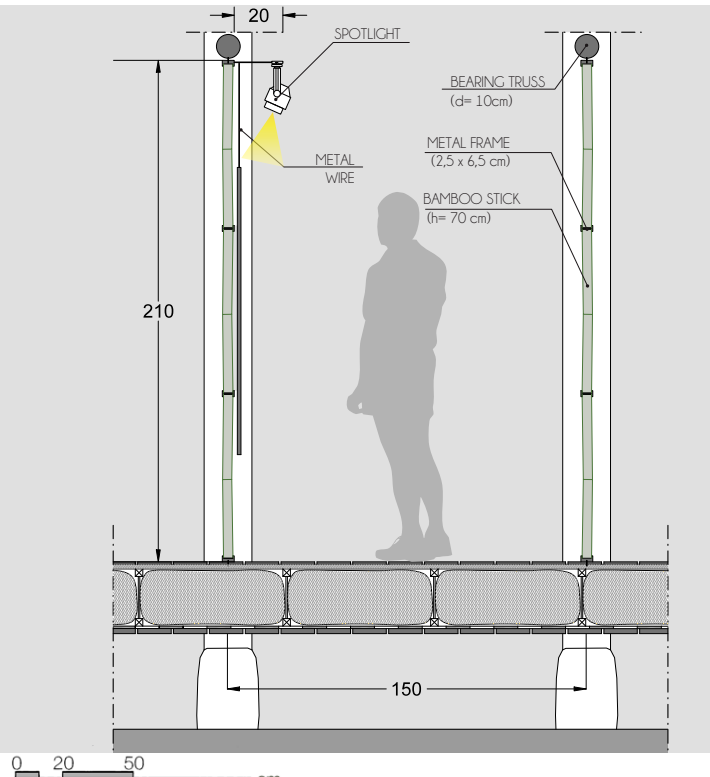
Perspective section BB'



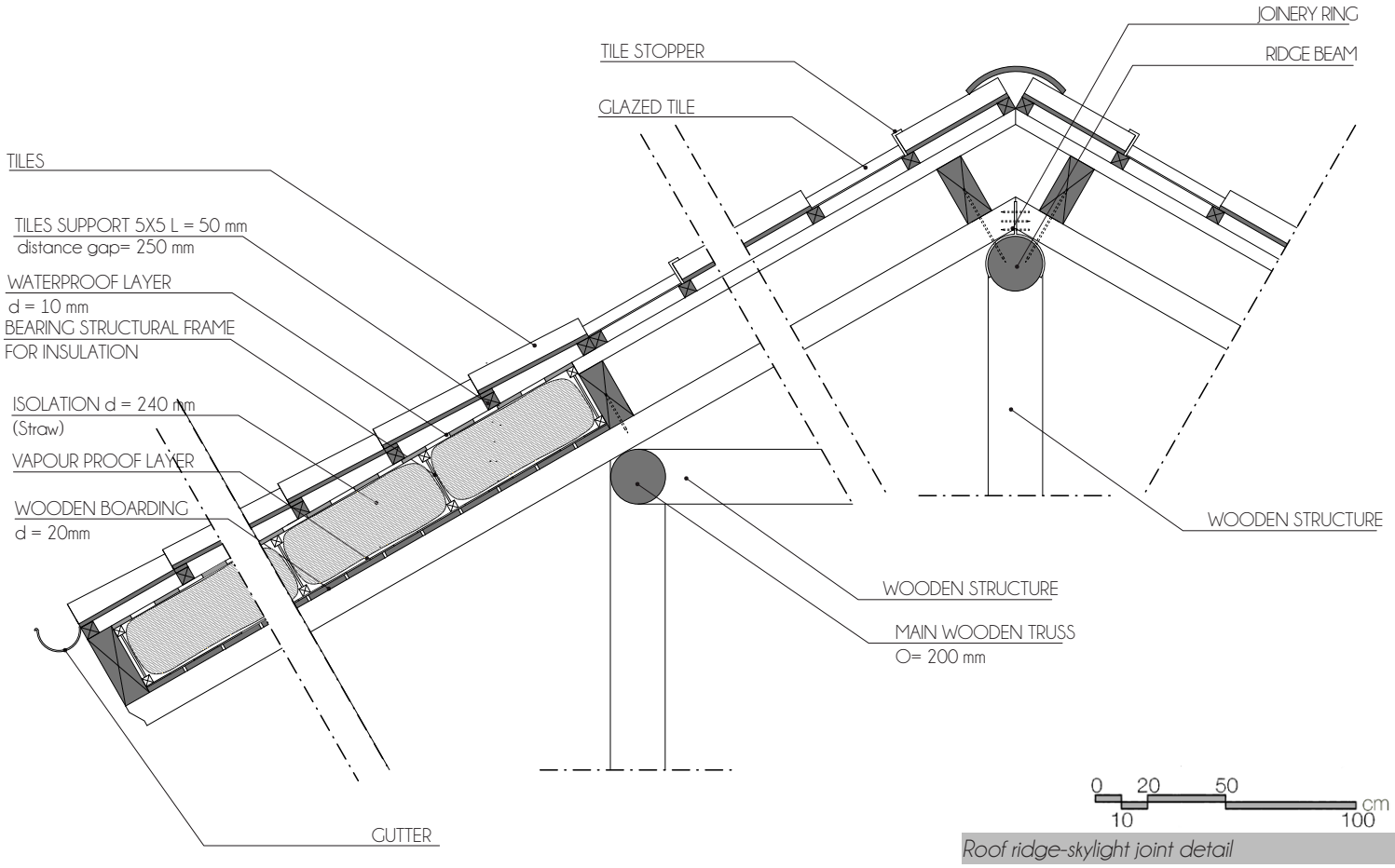
Perspective section DD'

7.2.7. Technology

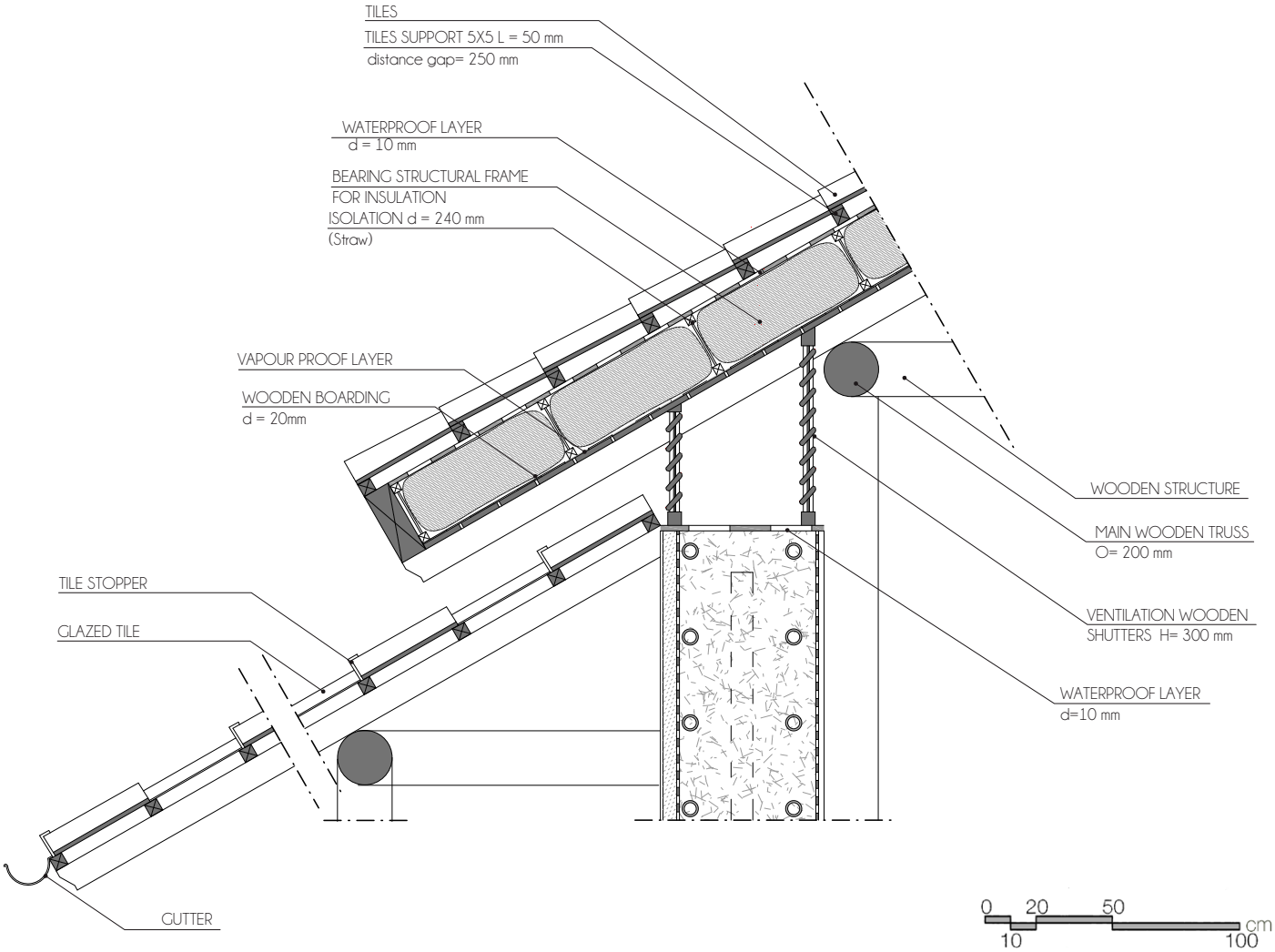
The building techniques chosen, like those in the community center, take into consideration the local climate and scarcity of resources. In this regard, for example, the partitions used as exhibition device in the maze, are made of small bamboo sticks stuck in between a metal framework. The choice of bamboo instead of wooden sticks, is indeed mostly due to the local availability of bamboo. For the same reason, like in the community center, the outer envelope is made following the bajareque technique. To take into account climatic issues, insulation has been implemented in the roof and in the floor through straw bags. This kind of technique, in fact, is cheap and the material is easy to get. The straw is here put in a bag placed in a lightweight framework that compose the roof's -or floor- core. The roof covering the enclosed volumes, moreover, keeps the original clay tiles in order to not alter too much the overall image of the building and to not clash with the surroundings. On the other hand the canopy covering the semi-open space, alternates glazed and opaque tiles. Having the two portions of covering two different stratigraphies, since the half opaque half transparent one do not have any kind of insulation, they are not connected to each other. The actual roof, in fact, overlaps the other canopy and is placed 50 cm above it, forming an air gap between it and the outer envelope. In this gap, two layers of wooden shutters are placed in order to facilitate natural ventilation. Finally another technique used to allow ventilation is, as said, the raised floor. Some of the exhibition devices on the floor are also used in this framework to allow a better ventilation. From the plan is possible to see that in each of the two volumes there is a gravel box area where a solid pedestal is placed, sunken in comparison to the floor. In the same way with the roof, in the gap between the gravel box and the floor are placed some ventilation shutter in the interior side and grids in the exterior side in order to avoid mice and snakes to enter in the building.



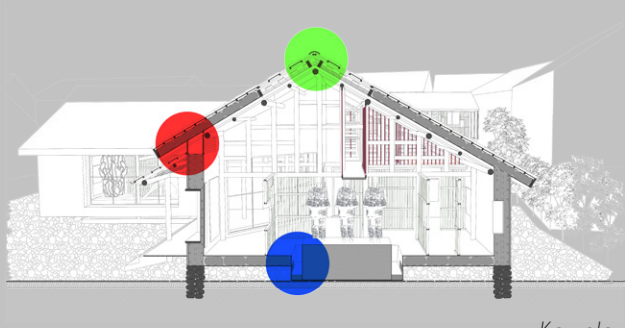
Detail of the bamboo partition used as exhibition device and its rendered view.



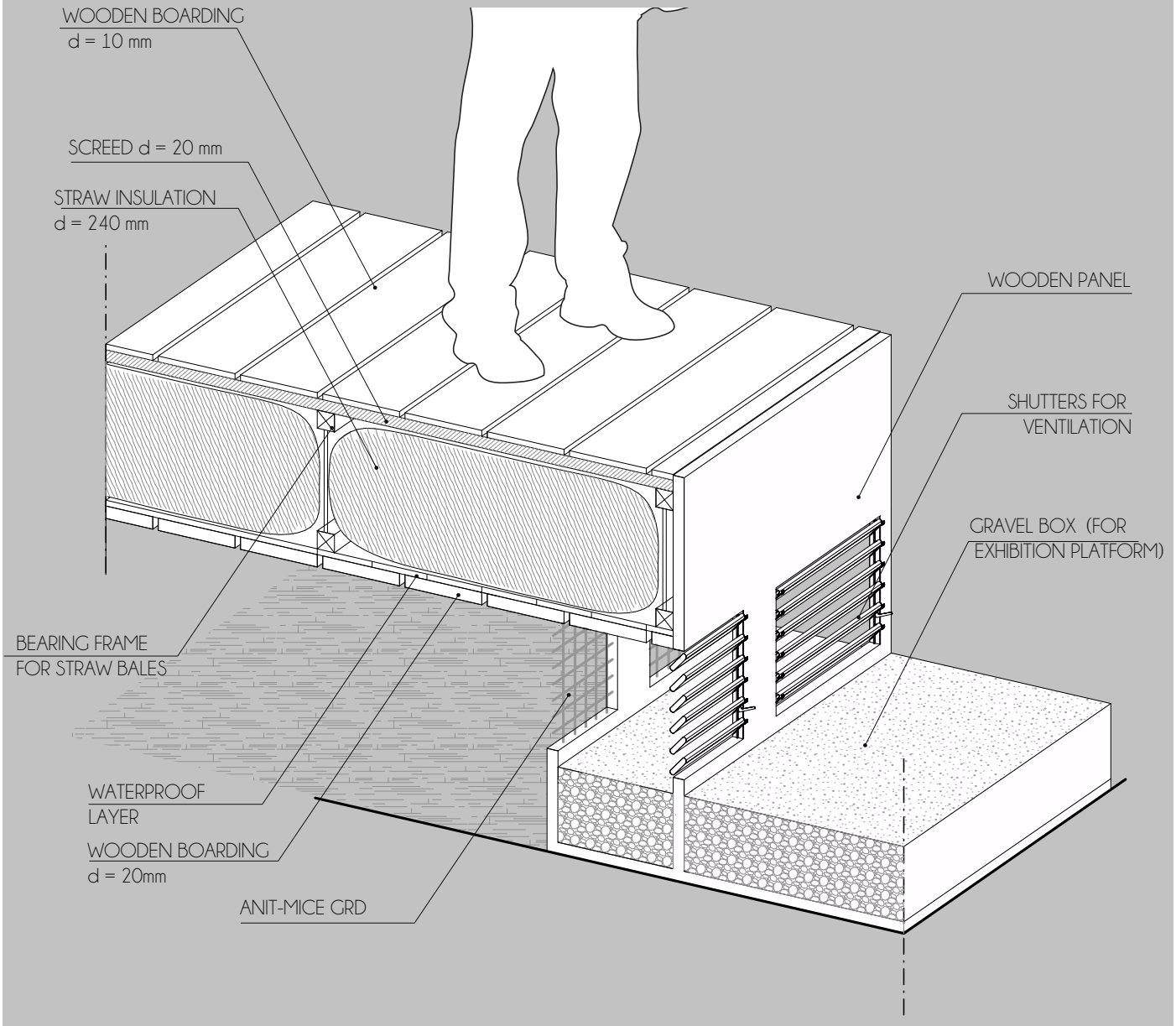
Roof ridge-skylight joint detail



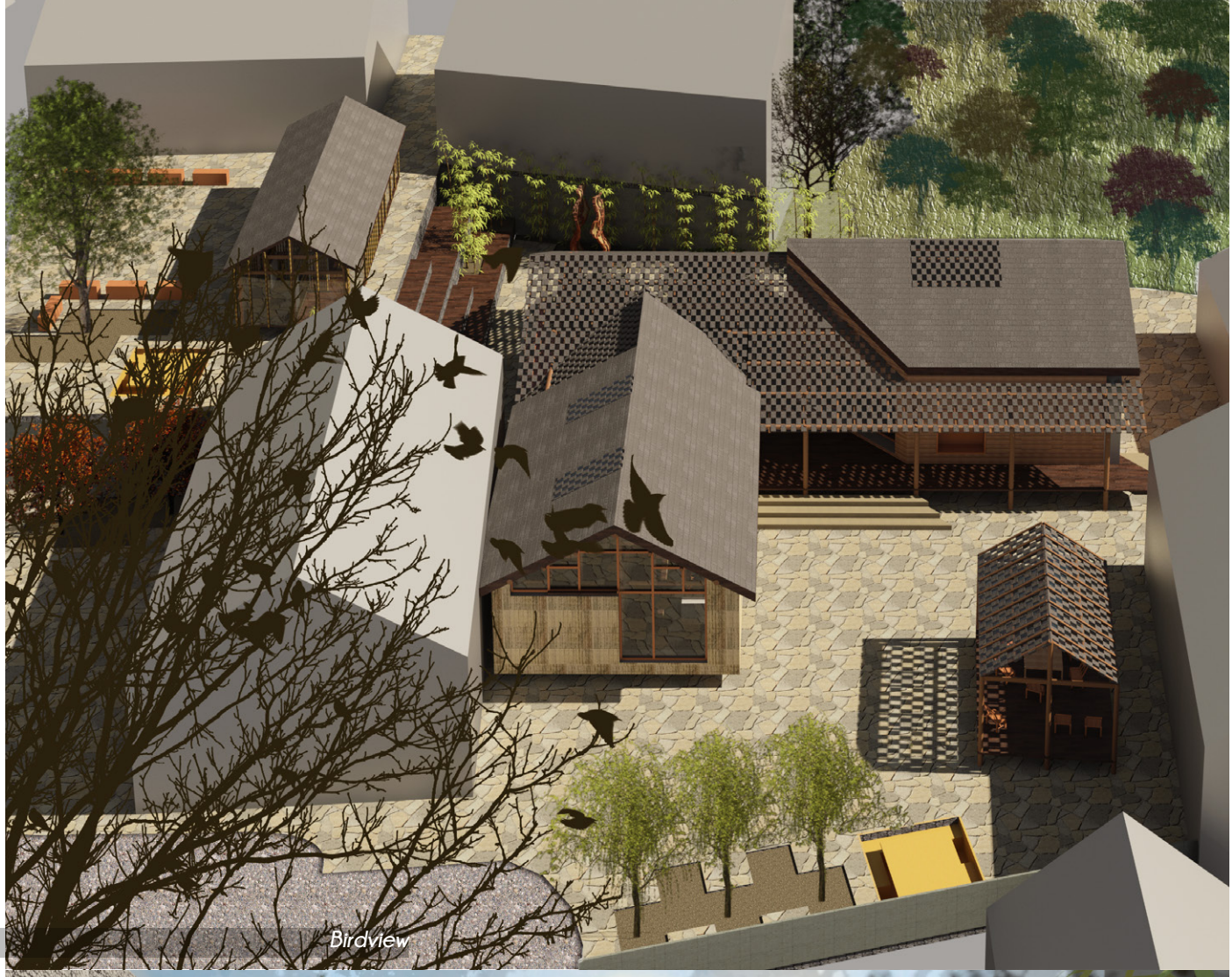
Roof-porch-wall joint detail



Key plan



Floor shutters for ventilation detail.



Birdview

The public space

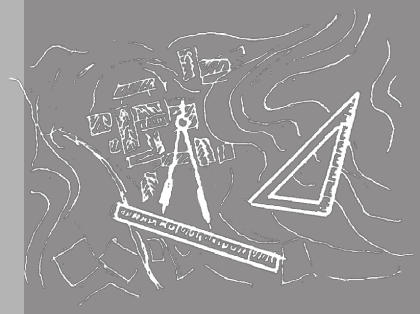
The Gray space

The higlights of the exibition

8

The real process

by Germana Isacco & Chiara Menna



The recovery for Hanglai village started not only as a theoretical work, but as a real project in collaboration with a local firm in Beijing, WEI Architects. Our involvement in the project lasted for six month and has only been possible thanks to the amount of informations we managed to gather during our first trip to the village. The real process is articulated around the work in collaboration with WEI Architects, which consisted in preparing presentation to look for investors, both public and privates; the collaboration continued then with SFC, after we managed to find funds by ourselves and tried to build the community center in the summer of 2017. Together with this there's our involvement in international competitions and event, such as the Lafarge Holcim awards and the World Design Summit in Montréal .

THE REAL PROJECT

The Hanglai recovery project has been developed from the beginning through a broad variety of real actions. Here all tose actions are synthetized in a chronological order, together with all the various actor involved, internal to the academic or professional field.

THE ACTORS

- G&C — Germana Isacco and Chiara Menna
- WN — Wei Na / WEI Architects
- LDY — Luo Deyin
- SFC — Serve for China
- LG — Local Government
- I — Investors
- CG — Central Government
- F — Serve for China Fellows
- LX — Prof. Li Xiaodong
- SY — Prof. Song Yehao
- HC — Hochang (Rock climber)

20 | 11 | 2016 — G&C, WN — CHOICE OF HANGLAI RENOVATION PROJECT AS THESIS TOPIC — Beijing

27 | 12 | 2016 — G&C, LDY — CHOICE OF LUODEYIN AS THESIS SUPERVISOR — Beijing

11 | 02 | 2017
19 | 02 | 2017 — G&C, F — SITE SURVEY IN THE VILLAGE AND MEETING WITH THE FELLOWS — Hanglai

24 | 02 | 2017 — G&C, WN, SFC — FIRST PRESENTATION TO SERVE FOR CHINA HEADS AND POSSIBLE INVESTORS — Beijing

04 | 03 | 2017 — G&C, WN, LG — DELIVER OF PRESENTATION TO GET FUNDS FROM HUNAN PROVINCE GOVERNMENT (LOCAL POLICY THAT FORESEE AROUND 1000K RMB T EACH VILLAGE FOR RENOVATION) — Beijing

10 | 03 | 2017
27 | 03 | 2017 — G&C, WN — SUBMISSION FOR LAFARGE-HOLCIM COMPETITION — Beijing

April | 2017 — WN — GOING FURTHER WITH THE DESIGN AND LOOKING FOR SPONSORS — Beijing

14 | 04 | 2017 — G&C — CONSULTING PROFESSORS AND PHD IN TSINGHUA FOR ISSUES RELATED TO INFRASTRUCTURE, BUILDING PHYSICS AND TECHNOLOGY — Beijing

G&C — EMBROIDERY NECKLACE IDEA PROPOSAL TO VILLAGERS

11 | 02 | 2017

19 | 02 | 2017

Because of some miscomunication between Wei Na, Chiara and Germana the presentation was not clear enough to the investors. Because of this the project did not get funds from the local government's

24 | 02 | 2017

Different approach between Germana and Chiara and Wei Na on how to develop the project. Bad schedule arrangement.

Miscomunication between the stakeholders. Na does not really include the two students or give news regularly about the state of the design and tries to include big investors looking for huge profit in the project,like Club Med

27 | 03 | 2017

The Hanglai recovery project had, since the beginning, a real aspect, happening at the same time with the theoretical research. The proposed theme for the thesis, in fact, is the result of a project commissioned from the NGO Serve for China to the Beijing based office WEI Architects. Thanks to the fellows of the NGO working in the village, it has been possible to make the survey more complete, by having a full experience of the life in the village, together with gathering of the basic informations for the theoretical study. Thanks to the complete report brought after the trip to the village, Wei Na, head of WEI Architects, engaged us in the real project. Because of this, exploiting connections in Tsinghua Universirty, the design part has been accompained with a series of small actions aimed at exploiting the village's potentialities and ameliorate the villagers' life. For example, we managed to contact one of the most famous rock climber in China, who went to Hanglai to survey the cave in order to open paths for rock climbing. Another remarkable action has been the design of a collection of necklaces inspired by the local embroidery, which

01 | 05 | 2017 – 04 | 05 | 2017 — WN, G&C — GOING FURTHER WITH THE DESIGN AND LOOKING FOR SPONSORS — Beijing

13 | 05 | 2017 — WN, SFC — YALE ALUMNI CHARITY EVENT — Beijing, Chaoyang park

20 | 05 | 2017 — SFC, CG — PRESENTATION OF HANGLAI RENOVATION PROJECT TO CENTRAL GOVERNMENT IN THE FRAMEWORK OF A BROADER EVENT REGARDING THE RECOVERY OF CHINESE COUNTRYSIDE — Beijing

15 | 05 | 2017 – 31 | 05 | 2017 — G&C, WN — PRODUCTION OF EXECUTIVE DRAWINGS FOR THE HOUSE RENOVATION PROTOTYPE — Beijing

20 | 05 | 2017 — HC — CAVE SURVEY FOR OPENING ROCK CLIMBING PATHS — Hanglai

31 | 05 | 2017 – 07 | 06 | 2017 — F, WN — WEI NA IN THE VILLAGE, MEETS THE CONSTRUCTION COMPANY AND SHOW THE ESECUTIVE DRAWINGS TO THEM AND THE CONSTRUCTION COMPANY — Hanglai

07 | 06 | 2017 – 18 | 06 | 2017 — G&C, WN — REVISING THE HOUSE RENOVATION PROTOTYPE DRAWINGS — Beijing

13 | 06 | 2017 — G&C, LDY — FIRST THESIS PROPOSAL — Beijing

July | 2017 — WN, G&C — LEAVE HANGLAI PROJECT — Beijing

10 | 07 | 2017 — LX, SY — SECOND THESIS PROPOSAL — Beijing

Engaging relations and meet possible investors without letting G&C know. Using the earned funds to obtain better model of the village than the one provided by G&C

No fund raised

Noone exept for the Government Officials and the CEO of SFC has been allowed to partecipate in that meeting. Thus noone really knows what exactly has been presented and the outcome of the event

No construction of the public building because of lack of funds

The measures fo the house chosen for the renovation prototype were inaccurate. Necessity to revise the drawings and adapt the project accordingly

Miscomunication between Luo Deyin and C&C regarding Tsinghua University's regulations regarding thesis.

and G&C

Lack of funds because of impossibility of providing a trustworthy business plan to investors. Besides this Wei Na keeps running her office and took charge of another commission regarding a renovation of a rural village.

are currently being produced by the old women in Hanglai and sold in shops in Beijing.
Because of the impossibility to get enough funds to start with the first phase of the recovery process, the housing renovation prototype, Wei Na withdrawed from the project. This stall led us to try, by looking for funds on our own, to collaborate with Serve for China and their fellows to build the public building by following the design proposed in our thesis. Among the fund sources, there is one allocated by the Japanese embassy every year for recovery projects in rural China. Being two foreign students external to the NGO, though, we had been forced to withdraw as well. Concious of the power of the experience, we did not stop at this point and willing to spread the word about the importance of volunteer design, we presented the advancement of our theoretical work at the World Design Summit iin Montreal.
After this experience we tried one last time to make the difference in real life, by applying, with the THUSA's accessibility department, to get the funds from the japanese embassy, to build a ceramic workshop, whose design follows the main concept of the public building proposed in the thesis.

23 | 07 | 2017 – 18 | 07 | 2017 — G&C, LX, F — ATTEMPT TO BUILD THE PUBLIC BUILDING ACCORDING TO THE DESIGN PROPOSED IN THE THESIS, MEETING WITH THE FELLOWS IN BEIJING AND COMMISSION OF CONSTRUCTION DRAWINGS — Beijing

24 | 07 | 2017 – 19 | 08 | 2017 — G&C, I — RESEARCH OF SPONSORS TO FUND THE CONSTRUCTION. ESTABLISHED CONTACT WITH THE JESUITS' CHIEF IN CHINA AND THUSA'S ACCESSIBILITY DEPARTMENT — China/Italy

20 | 08 | 2017 — SFC — INTRODUCTION OF A PROJECT MANAGER, INTERNAL IN THE NGO, IN THE PUBLIC BUILDING TEAM — Beijing

24 | 08 | 2017 — G&C, SFC — GERMANA AND CHIARA ARE EXCLUDED FROM THE PUBLIC BUILDING REAL DESIGN AND CONSTRUCTION PROCESS — Beijing

24 | 08 | 2017 — G&C — HANGLAI RENOVATION PROJECT SELECTED AS CONFERENCE TOPIC AT THE WORLD DESIGN SUMMIT IN MONTREAL — Beijing

16 | 10 | 2017 – 20 | 08 | 2017 — G&C — PRESENTATION OF HANGLAI RENOVATION PROJECT (THESIS) AT THE WORLD DESIGN SUMMIT — Montreal

Nov | 2017 — G&C, LX, I — ATTEMPT TO BUILD THE PUBLIC BUILDING IN SHAANXI PROVINCE, TURNING IT INTO A CERAMIC WORKSHOP, IN COLLABORATION IWTYH THUSA'S ACCESSIBILITY DEPARTMENT — Beijing

11 | 12 | 2017 — G&C — PRESENTING EMBROIDERY NECLACES' CATALOGUE IN STORES IN BEIJING — Beijing

21 | 02 | 2018 — G&C — COMPLETION OF THE THEORETICAL PART AND GRADUATION — Turin

Serve for China fellows try to figure out how to pay Wei Na's design fee. Difficult communication between the various stakeholders.

Miscomunication between the fellows and Germana and Chiara

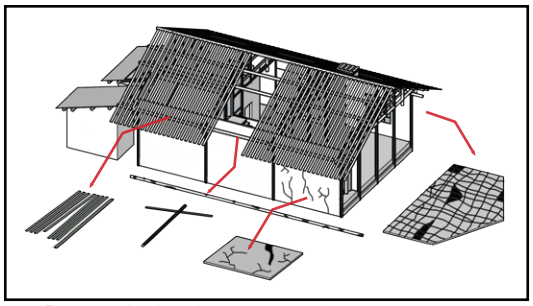
Serve for China does not agree with Germana and Chiara's schedule. Their proposed hierarchy would have been to make the project manager also the main designer, making Chiara and Germana's design for the thesis useless. Presumably, SFC do not trust Chiara and Germana as being students and external to the association

Difficulty of communication between the different stakeholders. Besides the accessibility department have direct connections with the funding source (Japanese embassy), the outcomes of the application for funds is unsure

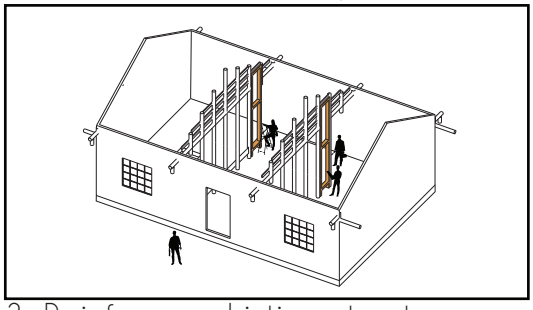
and G&C

HOUSE RENOVATION PROTOTYPE

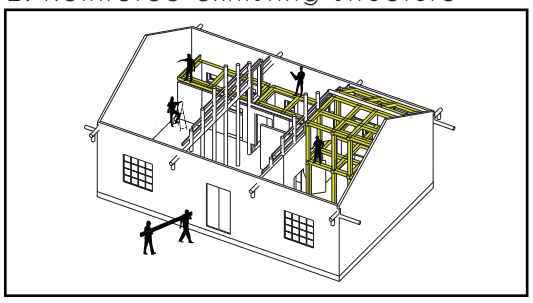
The design takes inspiration from Miao traditional house. For this reason the house is in full harmony with the nature, and the impact of the construction on the enviroment is meant to be minimal. The aim of the renovation is improving the life conditions of the villagers without changing their life style. It is, indeed, mantained the cultral gene of traditional Miao residence in a critical way, improving the envelope, while keeping the original space disposition and circulation. The design keeps the original wooden stucture and tiled roof and is implemented with modular straw panels, which creates "living box" inside the house, meant to be bedrooms or small studios. The choice of such panel is because of ease for transportation, construction, and cost reduction. The straw panels are used as partition for bedroom and improve the hygro thermic comfort of the users. Another aspect that the design took care of is the natural light and ventilation, by adding openings on the facade and skylights. The solution is adaptable to the different houses of the village .



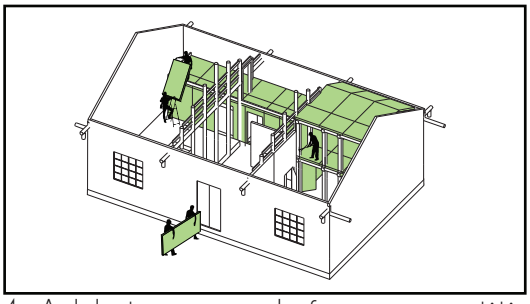
1. Demolish damaged parts



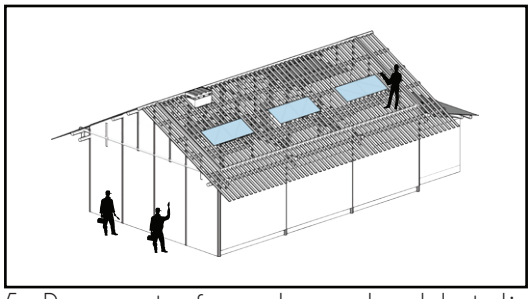
2. Reinforce exhisting structure



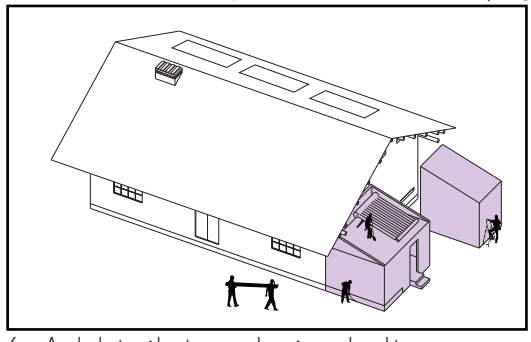
3. Build new structure for living box



4. Add straw panels for new partitions

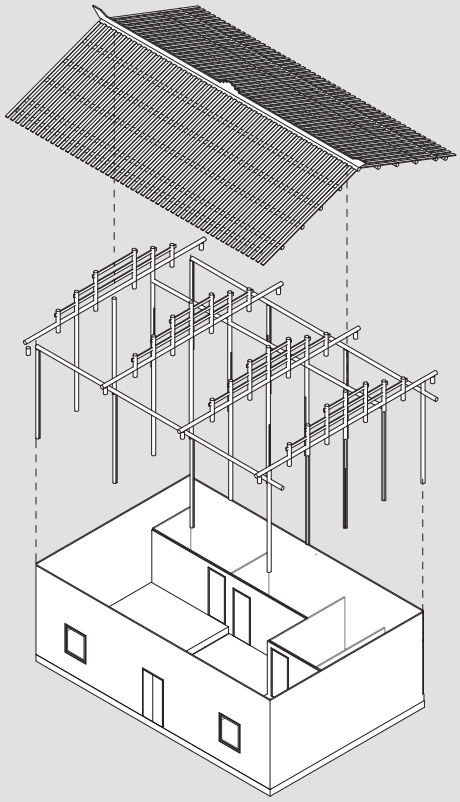


5. Renovate façade and add skylights

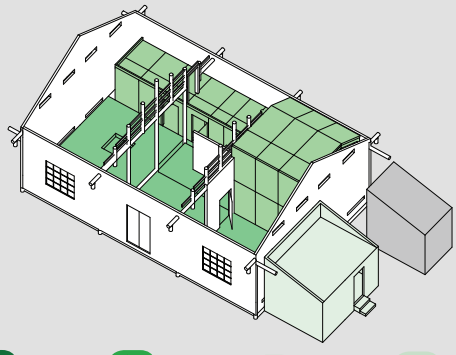


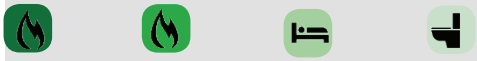
6. Add toilet and pig shelter

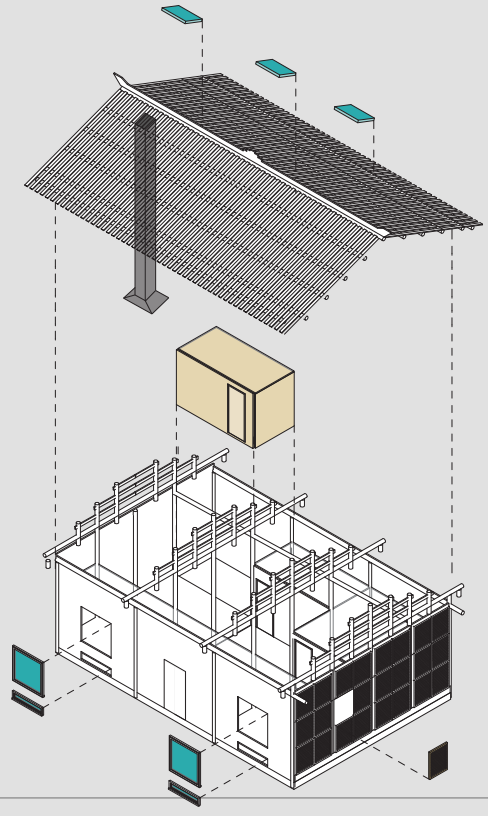
B E F O R E

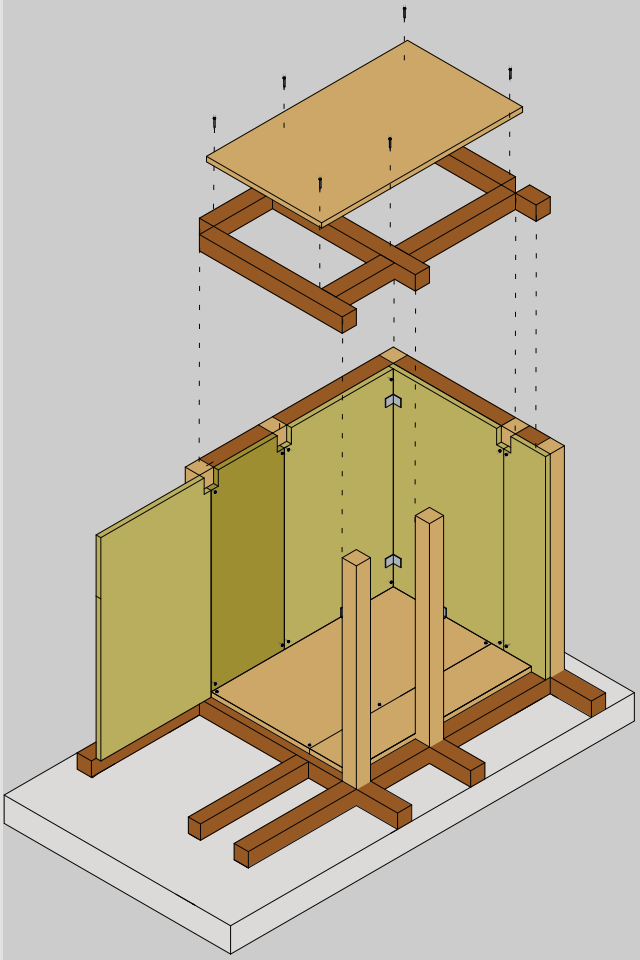


A F T E R

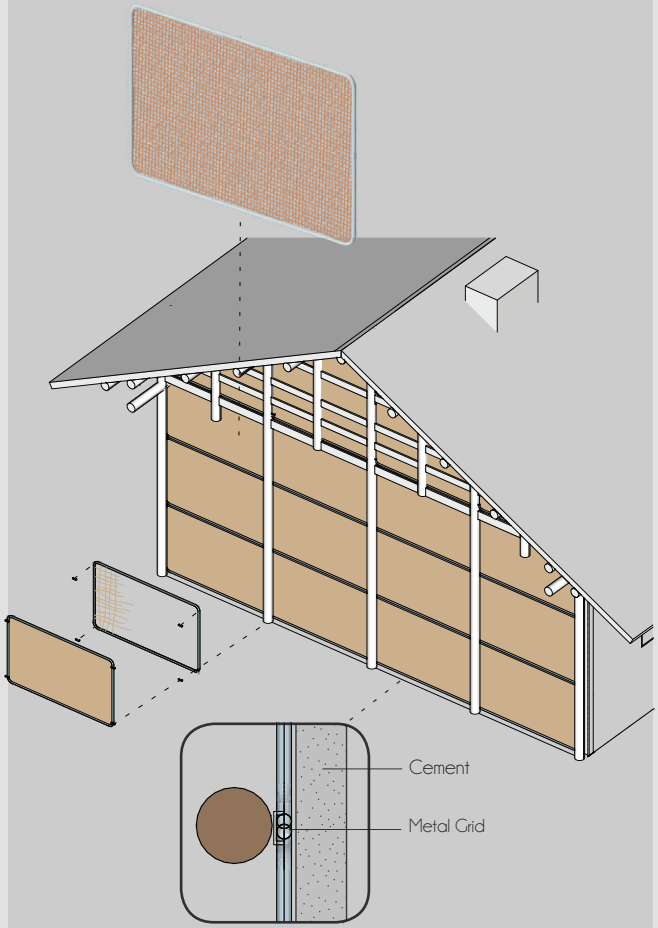




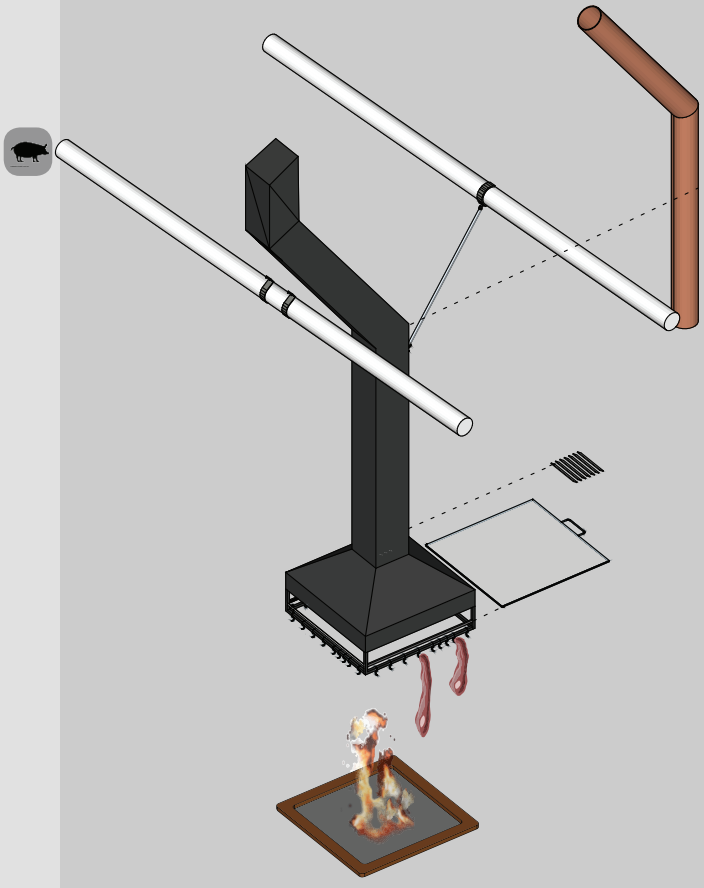




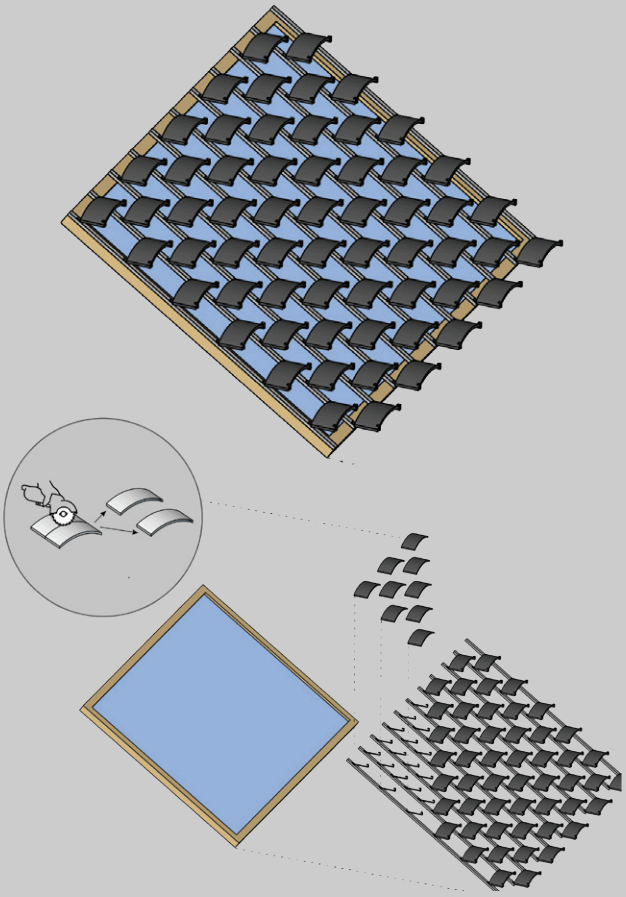
LIVING BOX



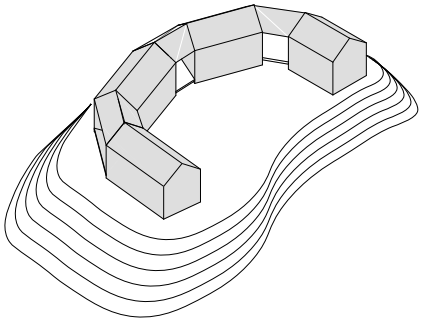
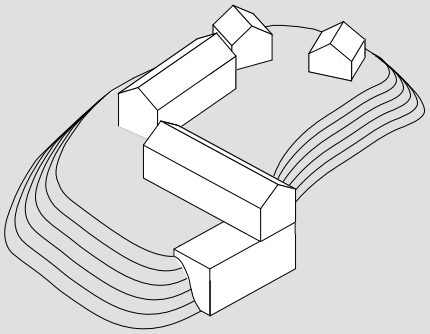
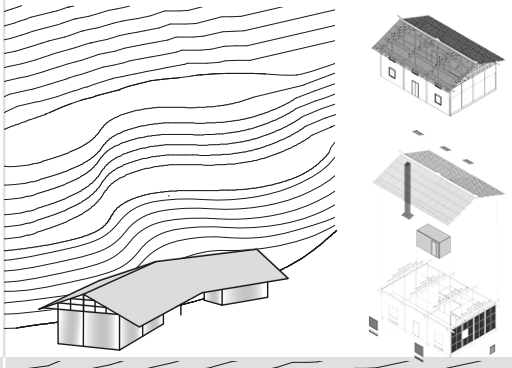
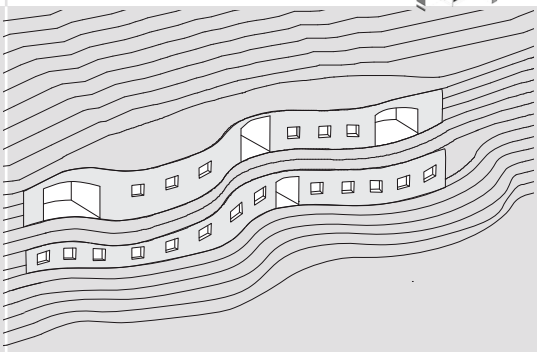
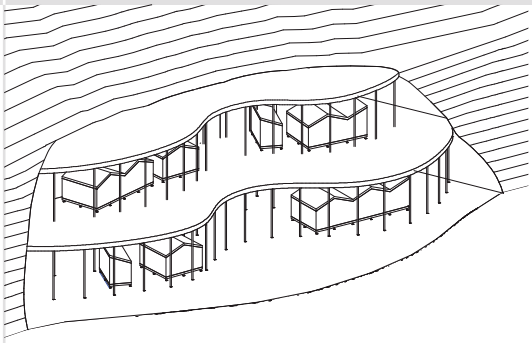
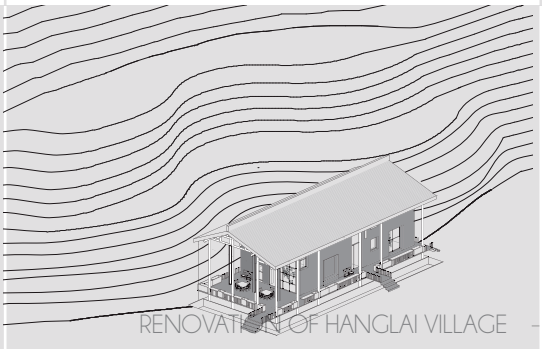
FACADE



CHIMNEY



SKYLIGHT

TIMING	EVENT	VIEW	DESCRIPTION
22 February 2017	1st review with Wei Na, just after the site survey		The site of the first draft of the community center building is located next to Hanglai's arrival square. The project consist in different rooms taking the shape of the traditional Miao dwelling, connected by semiopen "gray spaces". The building is arranged in a way to form a courtyard in the front, meant to host big gatherings of villagers and tourists.
22 February 2017	1st meeting Wei Na and Serve for China, for the real construction		The site is as well Hanglai's arrival square. Here thei idea is to dispose the various rooms, still separated in single buildings, in a way to recall a micro version of the village.
28 March 2017	Submission: La Farge Holchim 1.Public Building by Wei Architects 2.House Prototype by G.I and C.M		This version of the community center is located near the rice paddies, in one of the few empty plots there in order to exploit the good view of the peak. The main idea is to build a community center that protect the villagers with its big roof. Under it all the rooms, like library for kids, meeting room and workshop room are articulated. The volume is all glazed to allow to see the peak
28 June 2017	1st Thesis Proposal with Luo Deyin as Chinese mentor		The community center, being located near the rice paddies, have here a more organic form, which try to blend in the topography following the outline of the rice paddies. In order to blend more with the surrounding landscape the building have a green roof.
10 July 2017	2nd Thesis Proposal with Li Xiaodong as Chinese mentor		The community center's organic shape is here expressed on the porch that cover some smaller prefabricated units, which host the different rooms. The big organic roof, as for the previous version of the design, have greenery on it.
17 October 2017	World Design Summit, Montreal: "Going up to see better: An Holistic approach to save the country side"		The community center, in its final version has more contained surface, as it merge most of its functions -meeting room, training room, workshop room- in one multifuntional room. The building is a reinterpretation of Miao architecture and some other vernacular techniques, like the bajareque wall, are implemented. The idea of gray space is kept here, in the porch and the big deck.

CONCLUSION

China's rapid economic growth and the massive urbanization brought by that caused more and more the impoverishment of the countryside, since the distribution of wealth and resources became definitely unbalanced. This phenomenon, besides contributed to open up China to the rest of the world and create a middle class, contributed to the loss of identity of the rural villages, also through tourism. Moreover, the gap between urban and rural widened, since the villages could not keep up with the city's economic progress.

In the past decade, many architects designed in the Chinese countryside, in order to recover rural villages and make the villagers' daily life better.

Hanglai recovery project stands in this framework as a "second generation" village recovery design, because it is not only about placing one building hosting one or more public functions. Instead, it propose an holistic strategy through a masterplan that take into consideration not only the mere architectural issue, but also social, economical and environmental factor, aiming at designing through small interventions in the village "urban" fabric that respect the local identity.

The interest in this project has been how to apply the "Western eye" in the recovery of a village in a remote and inaccessible area of Southern China. The approach proposed, among the other things, aim at the preservation of the patina and the recovery of all the tangible and intangible heritage brought by the strong presence of the Miao minority in the village. This kind of strategy, definitely stands against the mainstream solutions imposed by the government, according to whom proposing to every village in China the same blueprint of an anonymous concrete house, is a synonymous of modernity.

The real aspect of the Hanglai project has been for sure the strength of this theoretical and practical research. Living day by day with the villagers for a week, experiencing their tradition and way of life, and not limiting the trip to the village to a mere site survey, has been a great motivation and catalyst for making the Hanglai project more than a thesis, but a sort of mission to ameliorate, even with small actions, the life of these Miao people.

This experience, thanks also to the participation to the World Design Summit in Montréal in October 2017, allowed to broaden our considerations on the importance of design as a change-maker in a social, cultural and economic way; in short, the importance of design as a tool to deliver a better quality of life, in particular in areas like Hanglai village.

"Design has a potent role in making, protecting, nourishing, enhancing and celebrating cultural heritage and diversity in the face of globalization [...] Design is an agent of change and a source of creative transformation, critical role of design to create a world that is environmentally sustainable, economically viable, socially equitable and culturally diverse. [...] everyone deserve to live in a well-designed world"[1]

1 Montréal design declaration, 2017.

ACKNOWLEDGMENTS

We would like to thank firstly our Italian mentor **Michele Bonino**, not only for being our advisor but above all because years ago he started to create this connection between Tsinghua University and Polytechnic of Turin, which made the Double Degree Program happening.

Thanks to the Double Degree we had the opportunity to spend one year and half in Beijing, where we met other people that have been really important for our education and personal growth, that we would like to thank as well:

Firstly, our Chinese thesis advisor professor **Li Xiaodong**, for guiding us throughout the research and design process and always providing insightful comments during the numerous reviews. Moreover to share with us his studies and researches about Chinese culture, through his books: *Chinese Conception od Space* and *Dancing Dragon*, two dense essential readings to design in China.

We would also like to acknowledge the other professors who provided us with invaluable advice during the course of this thesis, professor Song Yehao, associate professor George Kunihiro, and visiting professor Wei Na.

Wei Na and her firm, Wei Architecs, need a special aknowledgment, since thanks to her we found out about Hanglai Village and we had the possibility to work with her for months to try build the Community Center. Even if the process did not end up as expected because of complicated situations with the local government, it was really stimulating to participate with Wei Architects to the international competition LaFargeHolcim for Sustainable Architecture in Underdeveloped Countries and being part of a real construction process in a such complicated environment, like China.

We would like to thank Liu Sha for her continuous support, that started months before we arrived in China and continued daily for all our time there.

We would like to thank Kristen Li, a Chinese Canadian friend we met in Beijing, because thanks to her we found, apply and get selected to be speakers at the World Design Summit of Montreal. Presenting our thesis there has been, for sure, one of the most memorable moments of this last years. Moreover during this seminar we had the opportunity to listen and asking question to the lectures of Alejandro Aravena, Jan Ghel, Moshe Safdie and Philiph Morris.

We would like to thank Milena Lazzaretto for her linguistic support, for having translated books from Chinese to English that have been fundamental for our theoretical research.

Last but not least we would like to thank all the EPMA classmates for being supportive and positive during our time there. Being in a smaller class compared to the Polytechnic, work all together in the 5th floor in the Architecture building, made us feel home and they will be always our Chinese family.

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All drawings, schemes and photos are made by G.I and C.M.

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All drawings, schemes are made by G.I. Photos are taken by C.M and Fellows of Serve for China.

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All drawings, schemes and photos are made by C.M.

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