

## Chinese Rural Area Natural Resource Oriented Town and Village Cool Planning Practice

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### Abstract

The research discusses the rural area's 'refrigerator' role to the urban area. And choosing two real Chinese town and village planning practices which are both natural resource oriented, but they have different methods and strategies.

### Key words:

Natural Resource Oriented, Chinese Town and Village, Cool Planning Practice

### 1. Introduction

Recent years in China, more and more construction work and focus move from urban to rural area. In this process, town and village planning plays an important role. However, because of the rapid urbanization process China has experienced over the past years, urban planning with rapid industrial thinking is the mainstream in Chinese planning practices. But town and village in rural area have different situations from physical space to culture background. Unfortunately, at the beginning of the rise of town and village planning, because of the ignorance of the difference and rapid-develop requirement, planners still use the same methods and ways of thinking which has been proved to fail. Thus, this research is based on the character of town and village and their close relationship with rural area which actually act the cooling-temperature system or the 'refrigerator' role to the urban area where they surround. Two real Chinese town and village planning practice has been chosen. Both of them are natural resource oriented, but they have different methods and strategies in order to keep and strengthen their ecological function on one hand, and on the other hand to guarantee and promote the town and village's living and production purpose.

### 2. The Role of Rural Area

#### 2.1 Supporting to the Urban Area

China has experienced a very rapid development process in the past more than 30 years. However, this process almost only happened in urban area. And the development of urban area is based on the support of large amount of Chinese rural area. Urban area cannot support themselves without the outside rural area. For example, food, the basic living source, is come from the rural area. And also the eco-system supporting about the fresh air circulation. To some extent, rural area play a 'refrigerator' role to the urban area. Without rural area as 'refrigerator', the urban heat island effect will more severe and worse.

#### 2.2 Facing Problems

Furthermore, the support of rural area for cities is not only about natural resource but also including human resource. Numerous farmers left their land and moved to cities to join in the construction of urban area. Therefore, people who still living in the rural area are almost the

aged and children who are not effective workforce. They are not capable to maintain and sustain the large-scale agricultural production and a lot of lands are not farmed and left there with weeds. This is one problem. Another problem is that people changed the function of the land for economy purpose. For example, many villagers who living in mountain area, Zhejiang Province changed their farm or forest land to plant landscape trees. We will have more details about this situation in the case study. And the third problem is the planning and construction problem under the misunderstanding of the rural area. Because in the past 30 years in China, almost all the planning and construction work are focus on cities, most planners do not have the experience of rural planning. So they use the same thoughts and ways in the rural planning without understanding the natural and ecological attributes of rural area and made some mistake to this area. The first case is mainly deal with this problem.

### 3. Case Study One: South Mountain Rural and Town Area Planning

#### 3.1 Existing State of Affair

The first case is happened in rural area of Liyang City, Jiangsu Province, southeast of China. This planning scope is 113 square kilometers naming South Mountain Area, including two towns and eight villages (Figure 1). This area is most famous for their high quality of natural resource in Southeast of China and even in the whole nation. The local government want to use this advantage and give more impetus to promote this area's economic development, and the planning is the first step.

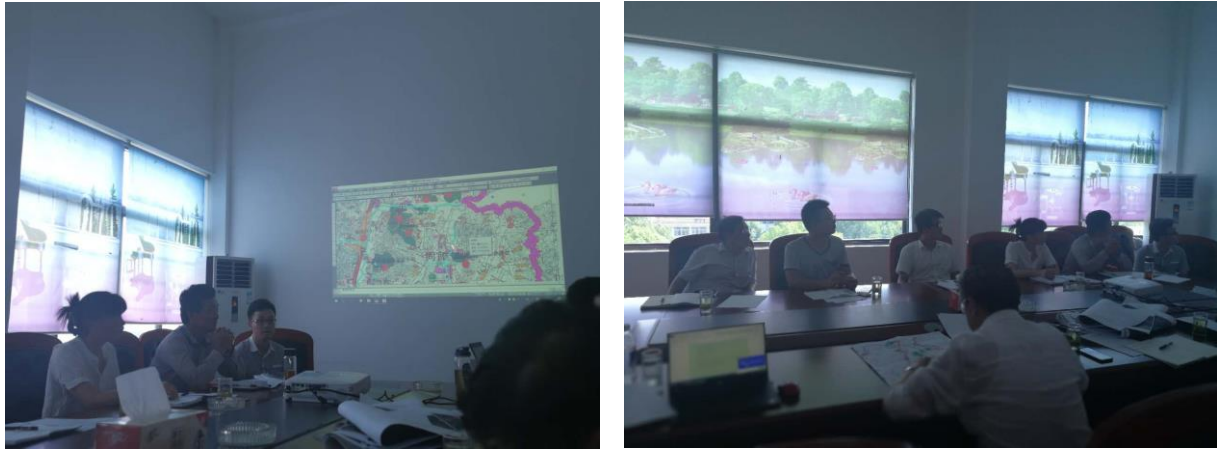


Figure 1: Location Area

#### 3.2 Planning Process and Problem Identification

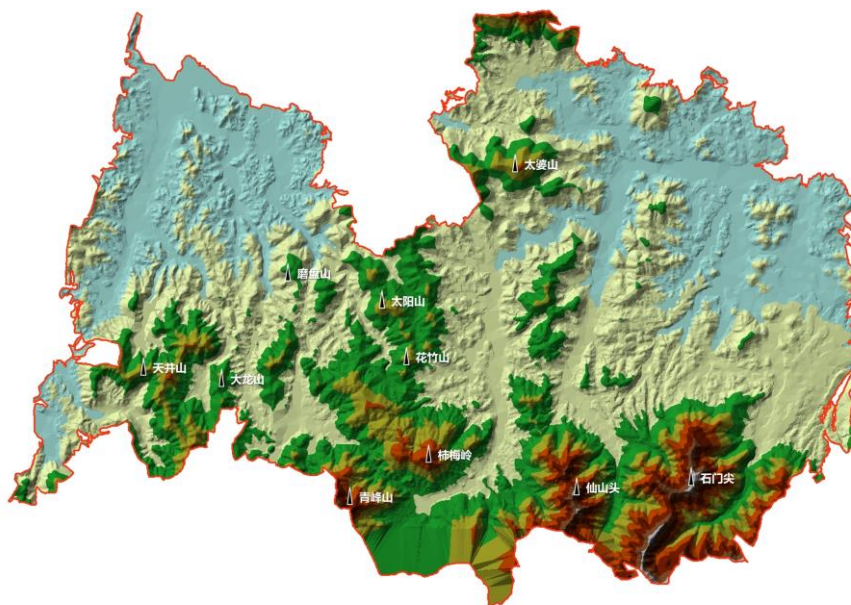
The origin of this planning is for economy concern and Up-Down push, the purposes of the government are very clear. But, what is the real and main problem of this area is still vague before the planning. Therefore, in order to find out the main problem of this area, the planning has been launched by bottom-up investigation and enquires.

So at the first step of this planning, a meeting has been hold to invite the representatives of the eight villages and two towns (Figure 2). And during the meeting, local people who live in this area gave the feedback that the economy problem is not the first problem they are concerning about, because they are facing the more severe problem of the flood. The whole area is facing very severe flood problem.



*Figure 2: Representatives Meeting*

Then through the discussion, inquisition and field investigation, it is shown that the flood problem is the result of the overdevelopment for tourism and wrong construction behavior. For this area is belong to the Tianmu Mountain and it is famous for its high quality natural mountain and water resources, especially the hilly terrain and the beautiful rivers and streams between the hills (Figure 3). And the temperature of this area at summer is much lower than the temperature in the cities around. So every summer many people who lives in the cities come to here to avoid urban area's summer heat. Because of the need of city people, this area has developed tourism many years ago. And the people living in this area are the earlier group that has tourism income adding to their normal income. Therefore, the economy problem is not their first thinking.



*Figure 3: Mountain Topographic Analysis*



To support the tourism, many construction has been hastily done without enough thinking which lead to the over-development of land use and mistaken-construction of the embankment. And the result is so many rivers and streams has been polluted, blocked and even disappeared (Figure 4). Without the enough rivers and streams to store and distribute water, whenever in the rainy season, flood began to torture this area. As every summer is the tourist season and is also the rainy season, the flood situation is getting worse in recent years that not only reduce the tourists' passion but also affect the people's normal lives who are living there. Even more, if this situation continues, this area's ecological system will be destroyed and not to mention the 'refrigerator' function.



*Figure 4: Polluted River*

### **3.3 Planning Strategies**

Based on the survey before the planning and to deal with the flood problems at first, through several rounds discussions with local people and also the local government water resource department, planning strategies have been taken out which are adhere to the principle of natural resource orientation and focus on the water resource and river channel dredging. On this basis, the planning and design is carried out for the landscape and public facilities upgrading.

#### **Strategy I: Keep Intact of the Mainstream Rivers and Basins**

There are six main rivers in this area and they divide the whole area into seven basins (Figure 5). So the first step of the planning is to protect and retain the ecosystem pattern of the relationship between the rivers and the mountains. Forbid any constructive behaviors that will endanger and destroy ecological security in the basins. And prevent the different type of non-construction land into construction land through strict construction control by land and construction management department of local government. The planning provide a detailed land classification map to help the government to supervision and management (Figure 6).

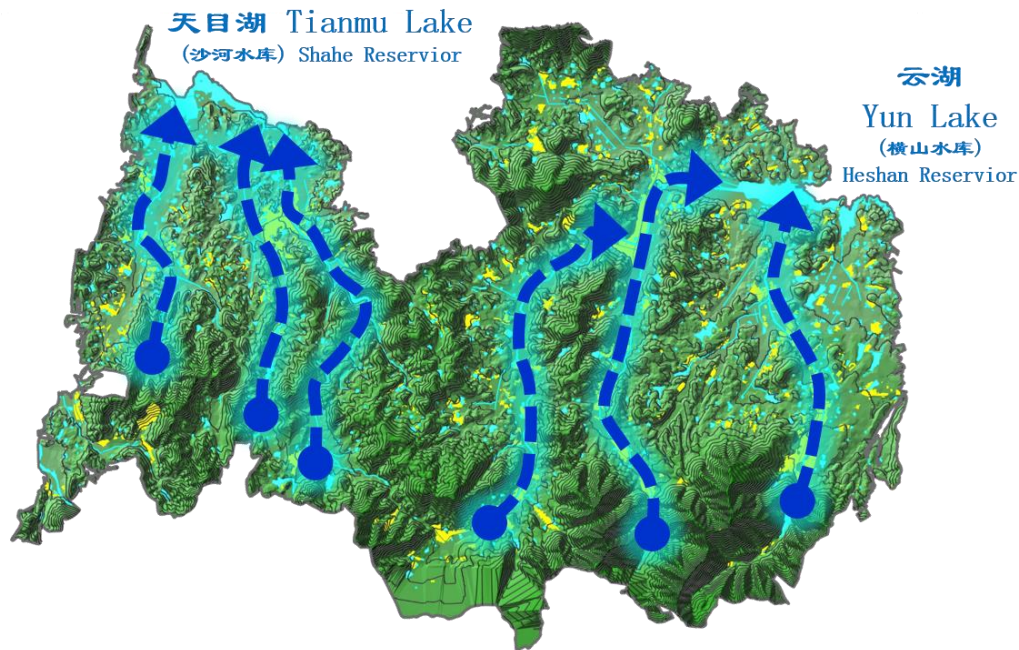


Figure5: Mainstream Rivers and Basins

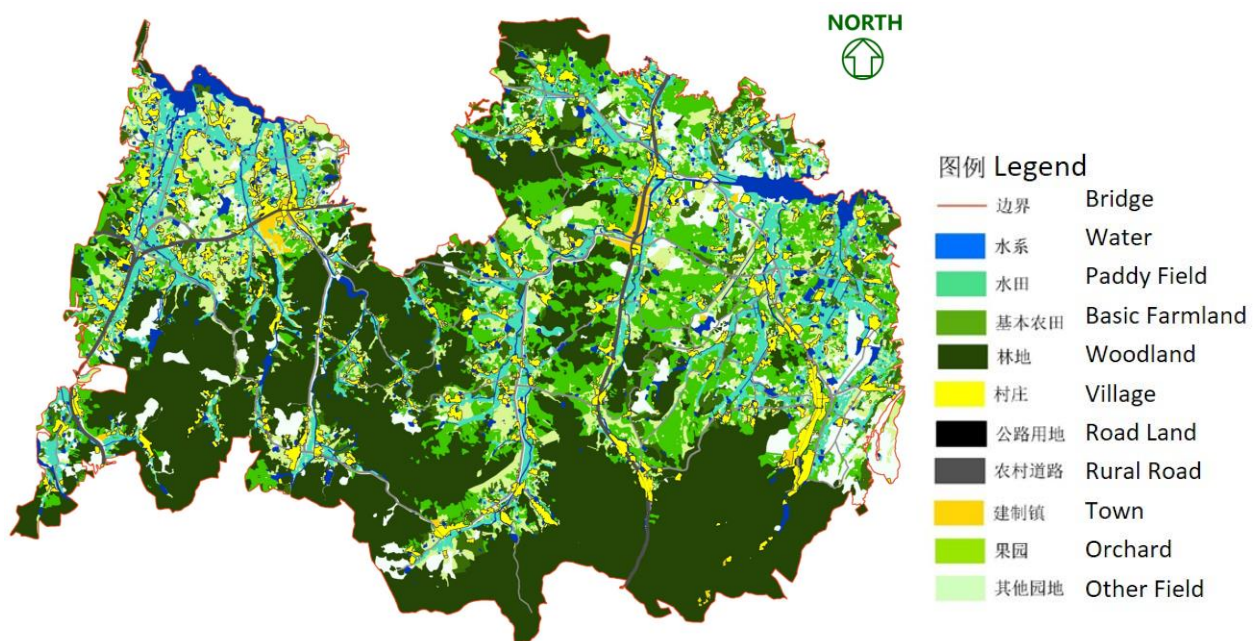


Figure6: land classification map

### Strategy II: Core Area Resource Recovering

The whole scope of South Mountain Area is at the door of Liyang South Mountain Bamboo Sea Scenic Area which is an AAAAA national scenic spot, the top level in China's scenic spot rating standards. The east part of the planning scope area is nearer this scenic spot and as the pass way to the spot it attracts more city people than the west part of the scope. And also it has more construction without careful consideration. Its flood problem is also more serious than the west part. Therefore, this part of scope has been chosen to the core area to analyze and reorganize the resource (Figure7).





Figure 7: Core Area Site

Firstly, During the investigation, a special character of the landscape pattern has been found that not like the east China's Jiangnan Water Town, this area which along the river there is always the farmland or the field and it has a very important function that to become the flood buffer to avoid the village to be drowned (Figure8). But during the past years unthoughtful construction, some buffer area has been destroyed. So in the planning, recovering the buffer zone become the first step.

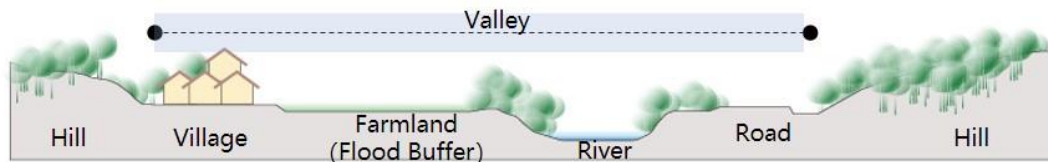


Figure 8: Flood Buffer Pattern

Secondly, recovering the natural river linear. In the past years' development, in order to more efficiency and having more land use, the construction has change the rivers' natural linear to more straight linear. Then, the water has not enough time and space to stay, that is why the flood happened. So, in the planning, the curved natural river linear need to be recovered to let the flood have more buffer space (Figure9).

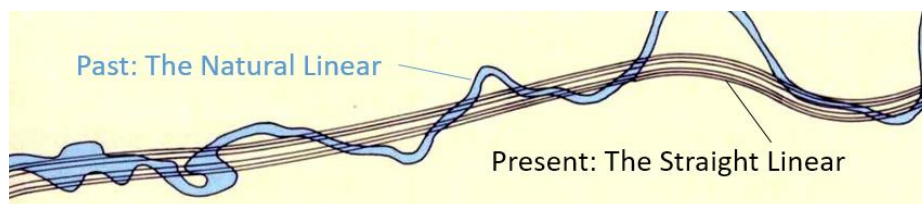


Figure 9: Natural River Linear Recovering

### Strategy III: Embankment Detailed Design Demonstration

In the river buffer zone, is not the pure natural space that prohibit human entering. It can join to proper human activity which also can help people to more understand of this area's ecosystem and enjoy the natural landscape. Based on this idea, some detailed design near the river has been done. While recovering the character of natural rivers embankment, some riverside promenade has been added and change the straight line embankment to the resting slope that more people could safely close to the river and enjoy their time near the river (Figure10).

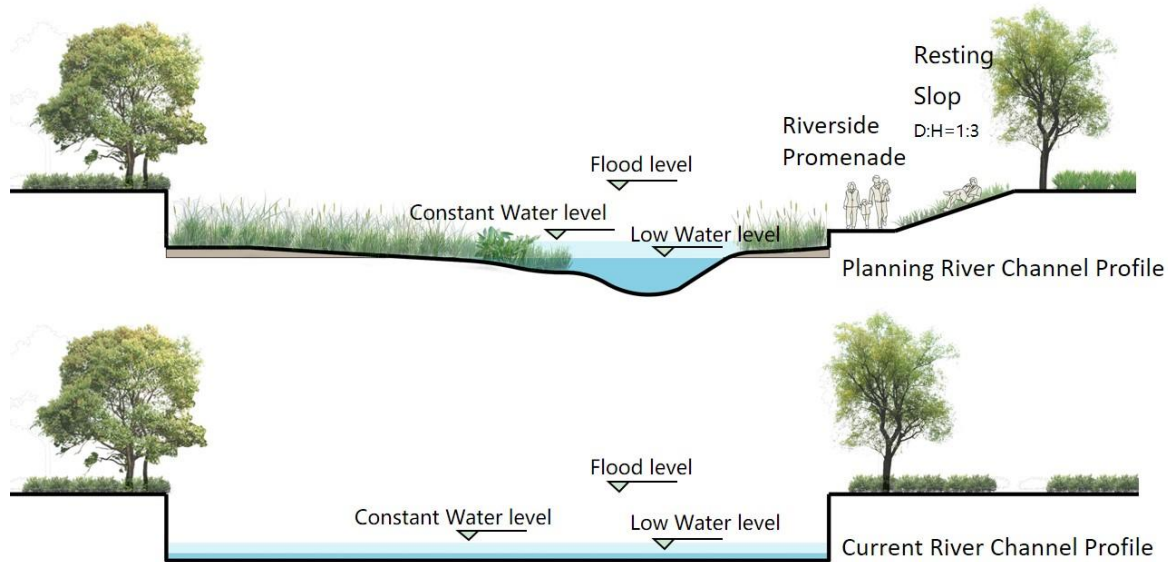


Figure 10: Embankment Detailed Design

## 4. Case Study Two: Tangxi Village Planning

Compare to the first case's large area, the second case study is specific on a small village which name is Tangxi and located in Siming Mountain area, Zhejiang Province, east coast of China. This village is almost at the top of the mountain, so in the summer, the temperature here is almost eight degrees lower than the average in the surrounding plains. It is a truly a 'refrigerator' village to the urban people. And also near the village only about six miles is the entrance of the Siming Mountain National Forest Park. Every summer, a lot of urban people come to the park and some retired people even live there for the whole summer about two or three months in order to escape the cities' summer heat. Some of these people even from Shanghai.

### 4.1 Planning Origin

The origin of this planning is bottom-up that is not from governmental will, but from the villager. They have strong willing to change their lives and to increase their income. Because in the last few years, this village has finished a transformation from agriculture to planting. But along with the downturn of Chinese real estate, their planting incomes begin to a dim view. The villagers want to find a new way to change their lives and adding their income. Also they have the wish to improve the living environment of their village.

### 4.2 Planning Process

Because of the bottom-up origin of the planning, the villagers are very enthusiastic and eager to provide a lot of information about their village. And some of them are not only familiar with the current situation but have abandon of historical knowledge of the village. Therefore, with the help of the villagers, through the planning survey and discussion with them, the village's

natural resource with deep culture heritage come out and become the main driving force for the planning.

### 4.3 Planning Strategies

The planning strategies making is not limited to village built-up area, but the whole village administrative area has been considered as a whole ecosystem. Its scope is about 14.6 square kilometers. And the village built-up settlement is in the center of the area which living about more than one thousand people. But about half of them are going out for work and not always living there.

#### Strategy I: Overall Forest Protection of the Whole Village Area

Seen from the area, the village built-up area is only a small part in the center of the whole village administrative scope. Beside and near the built-up village area, the west part is the agriculture planting area and the east part is the natural landscape area which including some small hills that people can climb up and also some reservoirs. And the faraway area is the forest area which people can hardly reach and climb, and also it is not allow normal persons to get into as the ecological protection requirements. So the overall Forest protection of the whole village area is on the basis of the different characters and functions. The build-up village is located and hold by the natural space. Just like in the Tai Chi diagram, only if the natural part be protected well, the whole system can be balanced (Figure 11).

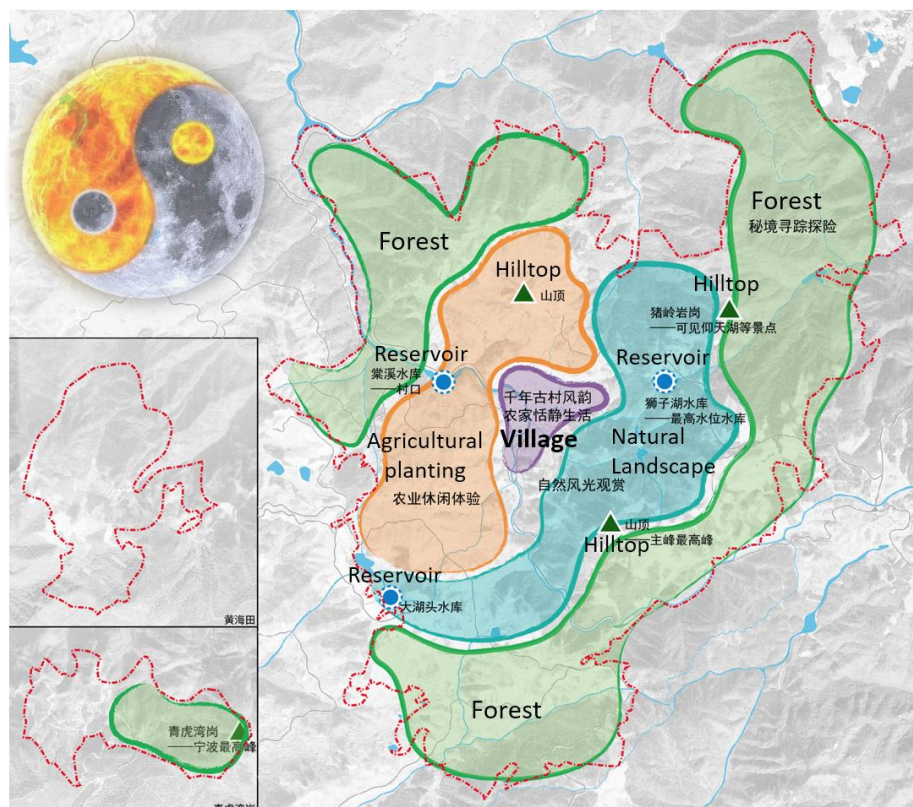


Figure 11: Village Whole Area Function Division

#### Strategy II: Maintain the Historical and Culture Meaning Landscape

The mountains around the built-up village are not only have the eco-function but also have a long historical meaning in Feng Shui, the deep and long-term China geomantic learning. It is not used very often today, but in the ancient time people use it to choose where they live. And this village been chosen here is because they found the snow in this place is easy to



melt and it means it is warm here. And also there are several hills around this place, they give a very good protection from wind and cold air. Even now these hills which can be seen in the village, and the aged villager can call out the meaning names, such as dragon, phoenix and so on. Each hill's name has a symbolic auspicious meaning in Chinese culture. I think it is not superstitious, but actually reflect the relationship between the human and the nature. And shown the respect of the villagers to the nature. To continuation of the tradition, the planning advise to intensely maintain this, not only to protect the physical hills as landscape but the meaningful stories behind (Figure 12).

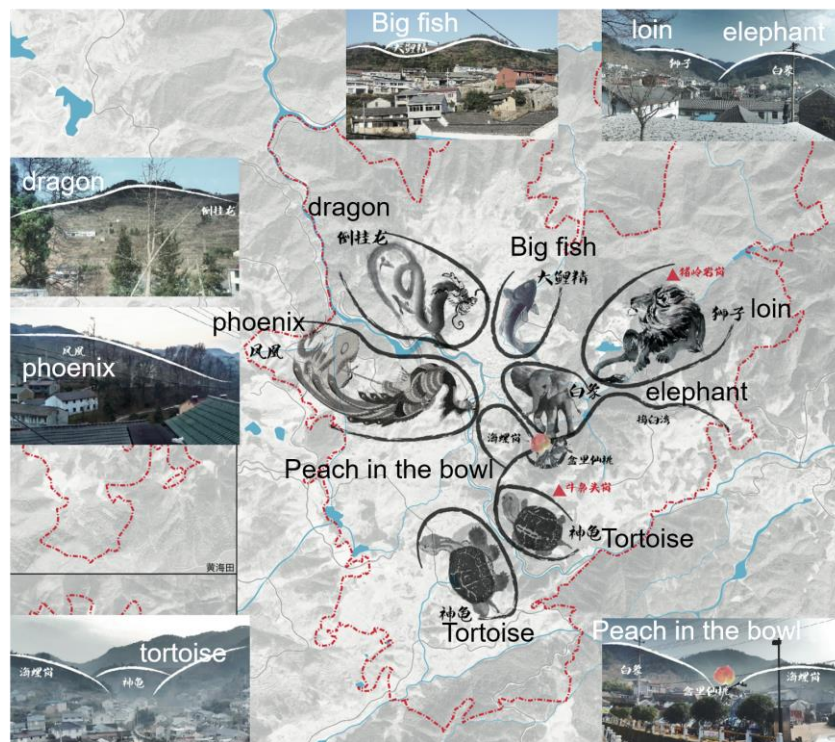


Figure 12: Historical and Culture Meaning Landscape

### Strategy III: Details Design of the Village's Environmental Facilities

On the basis of the whole eco and natural structure protection and maintaining, the village's build-up environment is the next problem need to be solved. As the analysis before, the village has the natural advantage of temperature in summer and has the location superiority near to the hot scenic spot. And also, it has the accommodation living need of the urban people in the summer. If the village has a clean and characteristic built-up environment, the village will attract the urban people to live and the villagers will add another way of income which will not let them leave their home.

The detailed plan and design also follow the ecological and natural concept, avoiding to familiar with the urban construction and using the local material. For example, there is one place at the cross of the two main roads of the village, and it is upfront the entrance road as a signal place. But before the planning, this place seems like to be wasted, not even to say the landmark of the village. As the village is in the mountain area, it is full of rocks with different shapes. The detailed detail utilize this feature and build up a landscape with local rocks' characteristic (Figure 13). Another example is a public facility which is built on the bridge. Because most people living in the village now is the aged and children, they need some place to rest and talk together. The galleria is planned for this purpose and it is the idea of the village not the planner. We planners just help them to realize their idea and gave them some design advice (Figure 14).

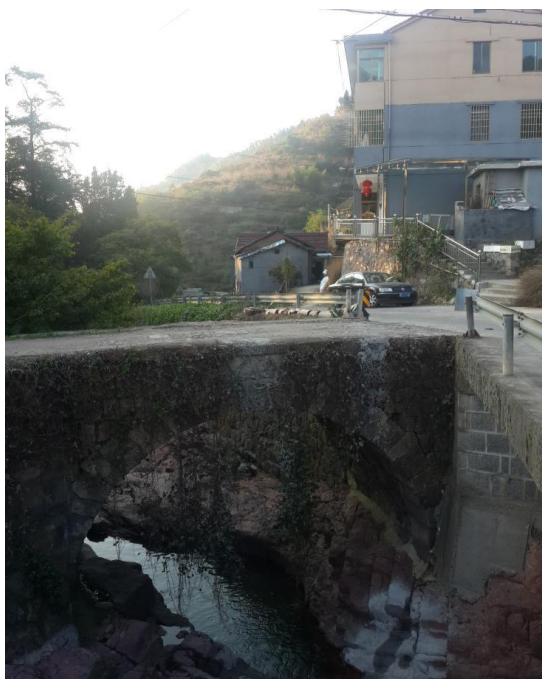


*Before Planning*



*After Planning*

*Figure 13: Rock Corner Landmark*



*Before Planning*



*After Planning*

*Figure 14: Bridge Galleria*

## 5. Conclusion

China has a very rapid socio-economic development after the Reform and Opening up over the past 30 years. In this period of time, economy development has been emphasize too much to ignore the protection and maintaining of the ecosystem and natural environment, especially the support to the cities and careless with the rural area.

Nowadays, with the emergence of various environmental problems, people's consciousness has also begun to transform. From the simple focus on economic and material space development, it has begun to return to respect for the overall natural environment. And it has gradually come to realize that the stability of ecosystems in rural areas is also a guarantee for maintaining urban ecosystems.

Through two real planning practice cases, this study explores the planning strategies for restoring natural ecosystem functions in rural and town areas from system to detail by



protection and maintaining the integrity and harmony of the regional system as a whole. In order to guarantee the role of the 'refrigerator' in rural areas will not be destroyed. In China, there is still a long way to do this aspect of work, this study is only a beginning of it.

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