



Reutilization of Idle Space in Village Under Light Intervention Theory

Jin Xia¹(✉) and Mei-Feng Mo²

¹ School of Design Art, Xiamen University of Technology, Xiamen, China
236859746@qq.com

² College of Art, East China Jiaotong University, Nanchang, China

Abstract. As urbanization develops since the 21st century and China has always focused on city construction, the gap between rural construction and city construction gradually enlarges, and rural structure is also changed. First, as human society develops at a high speed, some traditional lifestyles and methods of production have changed, featuring a gradual reduction of traditional farming practices, which results in the discard of some rural land. Second, as population structure changes and young people outflows in large numbers, the rural labor is insufficient, bringing about more idle homesteads and the downfall of traditional villages. This study explored idle space in Maolin Village, Xiang'an District, Xiamen City, Fujian Province. In managing the idle space, a sharing model was introduced, and, based on light intervention design, resources were integrated to activate the space before reutilization. After the space attribute is converted, the rural space is therefore publicly shared. By seeking the compound use of public space and rebuilding genius loci for public space, countryside memory is recalled and countryside culture is carried over. With new space incorporated into old space, rural public activities of different kinds are held, enriching villagers' lives and improving their life quality. Idle space can also display its maximum value and is expected to drive the development of new idle spaces in adjacent areas in a way of fanning out from point to area.

Keywords: light intervention design · idle space · reutilization · Genius Loci

1 Introduction

As urbanization develops and China's focus on its urban construction on the city, the gap between urban and rural construction enlarges. Furthermore, rural structures and population structure change, resulting in idle rural building space and derelict land [1]. This idle rural space is in extensive management usually due to the vanishing of its previous functions or lack of labor and capital for maintenance [2]. At present, China devotes great effort to rural construction, which offers a perfect opportunity for the development of idle rural space. In No. 1 Central Document issued in 2022, it encourages people to use four types of wastelands and carry out old house rescuing, pointing out that reutilization of idle rural space is a key policy in solving rural issues. This study explored

the reutilization of idle rural space. Through literature study, investigations, interviews, a questionnaire survey, and case analyses, this study analyzed in detail the features and patterns of idle rural space and how it is now and was before, before developing a design under light intervention theory that is based on facts. Light intervention starts in three spots - idle buildings, idle public space, and idle landscape. It comes up with targeted plans for different spaces, and sculptures of idle space in three respects, which are the integration of indoor and outdoor spaces, recombination of outdoor space, and shaping of genius loci. When idle space is activated to use, cultural landscape and natural landscape should be combined in its construction [3]. In managing public space, sharing model is integrated into the management of idle rural space, and designing solves some rural problems. Idle space is converted to publicly shared space by integration of wasteland resources, activation of idle space, and transformation of space attribute. Therefore, the utilization rate of idle space is raised, and it is expected that the sharing model in space and environment resources further activates the cultural sharing between city and country. Based on the sharing model, idle space functions are adjusted and rebuilt [4]. Finally, a light intervention design is carried out on idle space in Maolin Village per strategies discussed previously. In addition, this study proposed a strategy of idle rural space activation and utilization from the point of light intervention and introduced that villagers could have better service facilities and communication places after activation and utilization of idle buildings and landscapes in some parts of rural areas and injection of new industrial types. This practice is in the way of light intervention and does not damage the original styles and features of the space. While converting the idle space to rural public space, if we, from the angle of genius loci, respect its historic feature, and carry out design with all factors in actual space being sensed and experienced by people and its value being reflected, then it is exactly the solution to the weakening of the sense of place in rural areas at present.

2 Literature Review

2.1 Research Subjects and Conceptual Definition

2.1.1 Research Subjects

This study explored idle space in Maolin Village, Xiang'an District, Xiamen City. At present, villages there have many waste areas and buildings, especially in villages that retain traditional buildings. No matter in traditional villages or non-traditional villages, it is obvious that a vast area is discarded, which includes traditional buildings and wasteland adjacent to them. These places are always not unique and hard to differentiate. In the revitalization of rural development, these problems must be considered and solved. In the current development of rural construction, village buildings are gradually updated, and more and more modern buildings emerge. Traditional buildings are wasted little by little due to weaker functions and a lack of comfort. No manpower is available for plowing and sowing on these idle lands due to the outflow of labor in the village. Gradually, weeds grow and lands are wasted. Idle buildings are usually adjacent to idle lands.

2.1.2 Idle Space

Different scholars provide different explanations for idle space. But in general, it means the space loses its original use function and at present is not useful at all while maintaining the potential to get used again. In academic circles, the study of idle space roughly dates back to the word 'lost space'. This word is from a book named *Finding Lost Space: Theories of Urban Design*, written by Trancik in 1986 [3], and it means the idle space in the city has no use at all at present. This definition is ambiguous and lacks a clear boundary in space. The idle space studied in this paper mainly refers to idle buildings and lands adjacent to them. These buildings and lands have been neglected for years and are currently of no use, but have great potential due to their location, historical significance, and the needs of their users.

2.1.3 Genius Loci

The word 'loci' comes from *Genius Loci*. Specific building forms and sites comprise a locus and then an ensemble is constructed. It includes color, shape, material, and texture. Locus is kind of unique and different from the natural environment in quality. Human is closely related to the environment, and locus is generated during the connection between human and the environment when a human has a memory with the locus. So, humans can live in any corner of the world and this corner is the essential meaning of locus. In general meaning, humans call the house they live in 'home', which is their material and spiritual belonging, but locus contains a larger scope, meaning 'home' in the colorful world, which also enables humans to have a sense of belonging [5]. Human has many basic material needs for living, and the forming of a sense of belonging is one of their needs, both mentally and psychologically.

Genius loci is a kind of atmosphere, where the human can feel something. Genius loci satisfy human needs in different stages. It, in constant changes, gives humans some feelings and awards them with a certain sense of belonging. Then this sense of belonging owns a local characteristic.

Recently, the traditional regional culture in China's rural areas gradually declines and shrinks. With the hollowness of villages and the fading of interpersonal relationships, the problem of public morality breakdown becomes more and more serious. This ignorance of traditional culture and vanish of public space reflect a lack of confidence in villagers' own culture, which results in their loss of sense of belonging and cultural identification, further diminishing genius loci in rural areas [6]. At present, the great important thing for the development of China's new countryside is to explore local characteristics, local historical context and belief, and strong sense of space and place and belonging. So, it is of great importance to China's new rural construction and development to explore the activation and inheritance of rural traditional culture, view folk belief objectively and rebuild genius loci for public space.

2.1.4 Light Intervention Design

Light intervention design is a catalytic design that targets at local relatively small spaces. The term "catalyst" comes from a technical term in the field of chemistry. It is a catalyst used to accelerate chemical reactions. The process of chemical acceleration is vividly

applied to urban and rural renewal, where new elements are inserted into Spaces that have lost vitality to activate surrounding spatial elements. It adjusts the original factors slightly without damaging the original connotation so that it can drive the development of the surrounding space with the activation of small spaces, forming a “catalyst” design [3]. The strategy of light intervention enables the existent space environment to absorb new design elements without causing any damage to existing elements [7], while newly planned space can affect the whole existing space and its surrounding environment, and in the process of space integration, the spaces are gradually combined into an ensemble, all of which are of theoretical and practical significance to the protection and renewal of villages.

2.2 The Study Status for the Reutilization of Idle Space Domestically and Internationally

2.2.1 The Study Status Abroad

In urbanization, the Occident takes a lead over China and the gap is as big as several hundred years of development. But they still face many problems with idle space utilization in their development. Since industrialization in the 18th century, the industrial transformation causes many cities to have a large number of industrial buildings left, but its geographical situation is superior, so it is not only of historical and cultural importance but is meaningful to people’s lives and society.

The initial phase of the development of building reutilization is from the beginning of the 20th century to the 1950s or 60s when seeking the historic heritage is the first, followed by reutilizing buildings of historic meaning, and then gradually by reutilizing industrial building legacies, which means a further step on idle space study and exploration.

In the 1960s, the formulation of the Venice Charter enlarges the concept of historic sites, which lays a foundation for the development and protection of industrial buildings. This Charter marks a new stage for the protection of buildings, when a large number of works of art, such as *Silent Spring* and *The Death and Life of Great American Cities*, excite people to protect the buildings.

In the 1970s, the buildings of historic meaning have truly begun to develop. During this time, the U.S. slowly restored a large number of historic buildings, which was followed by a wave of old building reutilization, turning undefined spare space around old buildings into daily living space.

Around the 21st century, architecture academic circles focus on old buildings. ‘Vague Terrain’ is raised in the 19th session of the Historic Sites Building Association in 1996 and this concept refers to waste space in urban areas, which should be protected and reutilized to have its use value revived.

At present, many foreign countries have achieved good results in the research on the renewal of rural idle space. For example, in the renewal of village space planning in Japan and Germany, the government guides them to avoid big demolition, retain historical and cultural elements, extract villagers’ opinions and drive villagers to build together, and carry out joint development from various aspects such as ecology, positive, historical context and philosophy. Explore new ways of village renewal in an all-round way.

2.2.2 The Domestic Study Status

As China develops, urbanization speeds up, during which the population in urban areas increases dramatically, and early buildings are replaced by modern buildings in large numbers. These early buildings become spare space in the village as the village develops rapidly. Besides, as a large number of people move to cities for working, a lack of labor causes the discard of land. This phenomenon is more and more conspicuous as urbanization develops in China.

These idle spaces are distributed in every corner of the countryside. In order to develop the rural economy, these places should be compensated. As people's living quality is improved, more and more designers notice these spare places, and gradually renew and reutilize them. In the meantime, China begins to attach importance to developing rural areas. According to a survey, recently China researches the condition of idle space reutilization and makes summaries based on it.

The most representative study in old building transformation and reutilization is Conservation and Adaptive Reuse of Historical Industrial Buildings and Sites, written by Chinese Academy of Engineering Academician Wang Jianguo. Wang also put up with the idea of recreating the use value of old buildings to prevent them from being reduced to construction waste, while asserting that this is the preservation of historic memory. Recently, China has step by step launched related policies to protect this idle space, along with a little more than 800 works of literature where protection and renewal of old buildings are discussed and analyzed being released.

The development of the reutilization of idle rural space in recent years mainly includes the reutilization of rural manufacturing buildings, the transformation of ordinary traditional rural buildings, the reuse of idle courtyards, the development of 'courtyard economy' and the reutilization of idle rural space. The key to rural development is the full reutilization of idle rural resources. More and more scholars notice this. In Renewal Strategy of Ordinary Traditional Rural Buildings -- Zhang Wu Twelve Sheds, written by Professor He Yong in Zhejiang University, introduces the renewal and transformation of existent traditional buildings; in The Reuse of Idle Space in Villages Based on the Change of Land System -- A Case Study of Yanliang District, Xi'an City, written by Shi Libang in Chang'an University, studies how to efficiently utilize village idle space from the angle of change of land system; In Study on the Reuse and Spatial Integration of Rural Idle Resources in Southern Jiangsu Province, written by Qin Zhenxing, explores the value in use of idle rural space from the point of reuse and spatial integration of idle space to build a healthy, beautiful and harmonious rural ecosystem.

From the 1950s or 1960s till now, in the study on the reutilization of idle space, China has developed greatly. As the transformation of the city's industrial building is growing, it becomes mature. The experience and methods used are gradually applied to the reutilization of idle rural space, which promotes the revival and development of rural idle space. These strategies and plans of transformation and reutilization lay a solid theoretical foundation for the study of this paper and bring significant reference value for this study. The activation and reutilization of idle space also offer more choices for the catalytic type development of rural areas.

3 Method

3.1 Light Intervention Design for Public Rural Space

3.1.1 The Necessity of Light Intervention

At present, as the strategies of urban-rural integration and rural revitalization are raised and developed, non-traditional villages are provided a good opportunity for their development, however, it should be noted that some villages are not added to the protection list because they are not rich in history and culture and not distinct in building styles, so they are gradually transformed as urbanization develops. Under the economic benefit-driven condition, the origin features of these villages no longer exist. This situation is urgently needed to be improved.

3.1.2 The Value of Light Intervention Design

In carrying out the rural revitalization strategy, the recall and preservation of countryside memory are usually not put into consideration, which results in the loss of countryside culture and memory in the process of village development. A village loses its direction after its original spiritual values and intention are lost, followed by wrong positioning in its development, which indirectly influences its future development. Therefore, a revival design is carried out on idle rural space under the guidance of light intervention theory, so as to solve this issue.

The core of light intervention design is ‘rooted in the original land’. It means a light intervention in space, which is based on regional characteristics, countryside culture, and a feeling of homesickness [8]. Targeted at local cultural elements, local distinguishing materials and local structure characteristics, the light intervention design is used in space construction to make a tiny adjustment in these cultural elements, materials, structure, and colors, with the need of present public rural space being considered. In this way, it is expected to preserve countryside memory and carry over countryside culture.

3.1.3 The Principle and Goal of Light Intervention Design

Design is an art activity that is based on human’s basic needs and light intervention design is on the basis of villagers, who are users of public rural space. Light intervention design emphasizes what problems can be solved and what benefits can be brought about. It can start from the following respects. First, light intervention on space distribution is carried out based on local production mode and villagers’ lifestyles to meet the use pattern of villagers. Second, the proportion of facilities for the elderly should be in public space distribution based on changes in population structure, such as an increase in the aging population. Third, encouragement is offered to villagers to increase their willingness to participate and strengthen their sense of community, belongingness, and identity after public space is constructed centered on villagers. Forth, by increasing villagers’ benefit and creatable value of public space, and through the introduction of rural tourism, this can drive rural economic development, achieve maximum value of public space and enhance villagers’ feeling of well-being.

3.1.4 The Strategy of Light Intervention Design

The strategy of light intervention design for villages can start from the following five respects:

- (1) Light intervention on the layout in consideration of the region's environment. In the organization of space, the structure should be built according to the topography. With the benefit of original landscapes, the place is integrated into the environment.
- (2) Light intervention on the layout of space function in consideration of real life. Inject modern functions into the original space to optimize and activate it.
- (3) Light intervention on architecture technics in consideration of existent technics. Optimize traditional construction methods and bring in modern elements.
- (4) Light intervention on building materials with the use of local resources. According to local circumstances, extract characteristic materials in the village and add modern materials. The building then benefits from associating new materials with original materials, and new creativity is promoted.
- (5) Light intervention on building form while retaining the look of the village. Extract abstract symbols in countryside form, and bring in new structure by transforming building structure to form reconfiguration and collision between new form and old form.

3.2 Building Genius Loci in Public Rural Space

Recently, China constantly strengthens rural revitalization, which provides the best opportunity for the revival of public rural space. Public rural space, as the important assistant for promoting villager self-government and optimizing rural governance, plays an irreplaceable role in rural development. It generates endogenous power for rural governance and contributes greatly to the sustainable development of rural society [9]. So, it is important to construct public rural space as it has a direct influence on the development of the countryside.

The construction of public rural space must be rooted in topography and locality. It can start from the following three respects.

First, respect the natural region attribute of the place. The distinctive geographic environment, which is naturally existent and formed after long-term development, is the actual material carrier for the forming of genius loci. The attribute of the place forms a cultural texture that exists in human memory. The place attribute passes on from generation to generation, and gradually genius loci are formed, along with a sense of belonging and identity for the place, and finally, villagers feel proud of the place they live in [10]. So, in the design of public rural space, the natural attribute of the place should be respected without any damage to the original resources for the building of the public rural space that owns local characteristics and fits into local history and culture.

Second, carry over the regional culture of the place. As the countryside develops, influenced by some natural factors, it forms some distinctive regional culture, and some spiritual intention of the regional culture of the place, which is formed by countryside memory and humanistic care. This is also the historical feature of rural development. In village development, rich history and culture can be dugged out from buildings, customs, historic legends, and village culture. In doing so, inspirational materials can be offered to countryside design, and regional culture can be carried over.

Finally, countryside materials should be taken into use. In the building of public rural spaces, natural materials around the place should be considered. The characteristics of local materials should be studied, and the discarded countryside materials, which are collected locally, should be reused the whole way. Particularly, the traditional village building material is the sample that represents the characteristic of the historic material of the village. So, texture and colors in traditional village buildings should be innovated under new design language to build an interesting public space with historic meaning and finally reuse the countryside elements of the place.

4 Research Design

4.1 Summary of the Project

This project is in Maolin Village, Xiang'an District, Xiamen City, Fujian Province. The village is in the northeastern part of Xiamen City and the southeastern part of Xiang'an District. The plan is to activate and reutilize idle space in some parts of Maolin Village and convert the idle space into publicly shared rural space in a bid to provide better service facilities and communication places for villagers. The plan respects characteristics of place memory from the angle of genius loci and does not damage the original features of the village in the manner of light intervention design. It promotes the future development of Maolin Village while improving the use value of idle space in Maolin Village.

4.1.1 The Location

Maolin Village is 5 km from Xindian Town, Xiang'an District, with hills behind and the sea in front. Xiang'an Campus of Xiamen University is on the east of Maolin Village, and Xiangshan Scenic Area is on the north with LvTang Village on the west. Xinlian Road is on the west of the community and Xiang'an South Road is on the south. Provincial road 204 passes the front of the village (as shown in Fig. 1). Future rural tourism development here will be centered on Xiamen University, with Xiangshan Scenic Area driving the development of surrounding villages, such as Dazhai Village, Chentang Village, Lvtang Village, Maolin Village, Houcun Village, and Dongyuan Village. This provides an opportunity for bringing new industrial types into the base.

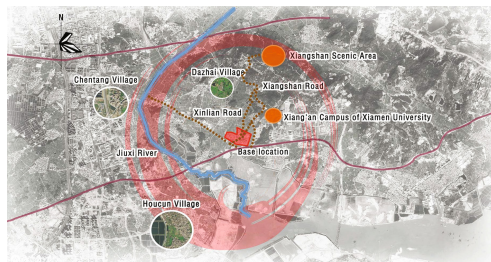


Fig. 1. Location of Maolin Village

4.1.2 The History and Culture of the Base

In June 2016, Maolin Village was added to one of the Beautiful Rural Projects in the second Beautiful Rural Construction and has been put into construction. With its unique Song Jiang culture and eco-agriculture culture, Maolin Village is positioned as “the hometown of martial arts – the ecological Maolin”. Besides, the village is rich in forest resources, among which there are 800,000 m² mountainous regions, 520,000 m² non-commercial forests, and 280,000 m² non-timber product forests. The percentage of forest cover is 85%. These resources provide a natural advantage for the development of Maolin Village.

Song Jiang Battle Array and Wing Chun Kung Fu are the special cultures of Maolin Village, which play an important role in the positioning of its development. Song Jiang Battle Array is also called ‘Catch Song Jiang’. It originates from the Early Qing Dynasty with a history of hundreds of years. It is a Wushu exercise, usually shown at some traditional festivals and widely spread in South Fujian. It has been added to the list of intangible cultural heritage in Fujian Province. Song Jiang Battle Array in Maolin Village has 76 members, most of whom are children with the title of the Caijia Troop. To spread this exercise, Maolin Village builds several exercise grounds, which provide a strong atmosphere for martial arts training in the village. Maolin Primary School especially focuses on cultivating children’s interest in Wushu and develops Wushu classes so as to have every child in the village know how Song Jiang Battle Array goes. Besides, Maolin Village also develops Wing Chun Kung Fu, which enables a stronger atmosphere of martial arts training. Wing Chun Kung Fu, as a national intangible cultural heritage, was selected as a heritage protection program in 2013.

Rich in cultural relics, Maolin Village is positioned as a base point village in the old revolutionary base area, which is also one of the main strongholds of underground guerrilla activities on the eve of liberation. In Maolin Village, there are still cultural relics built in 1958, such as sites of marines’ presence, coastal defense community sites, Shuangyong wells, water towers, and air raid shelters. Maolin Village is also a famous hometown to overseas Chinese in South Fujian, with 1200 overseas Chinese now traveling in Singapore, Malaysia, and Indonesia. 2500 people now live in the village and 500 of them are elderly people, which means an increasingly aging population. Students in Maolin Primary School decrease year by year as most of them go elsewhere for studying. One of the major cash crops in the village is carrot, with an area of 800,000 m², and the other potato with an area of 333,333 m². Now Maolin Village does not have a characteristic industry to support its economy so the villager’s income is low.

4.1.3 The Current Status of the Base

Three roads lead to inner Maolin Village. They are Maoxing Road, Qingxing Road, and Dongban Road. The entire length is 4200 m. The base lies on Qingxing Road in Maolin Village. The road of the village entrance directly leads to the base so it is convenient. The center of the village is the old residential area. The base is where the old residential area and the new building area meet. The base includes the Elderly Association, Lianqiao School, the space in front of the stage, and the Cai Family Ancestral Hall (as shown in



Fig. 2. The Current Status of the Base

Fig. 2). Behind the Elderly Association is wasted land which is the focus of this design. Inside the place, there are hollows on the ground and some wasted buildings stand there. After investigation, it was found that many elderly people prefer gathering together for chatting and drinking tea in the alley of the Elderly Association. In summer, as the alley gets strong wind, many elderly people like to stay here as it is cool. The Cai Family Ancestral Hall is next to it and serves as a negotiation place for important business. Through interviews and investigation, it could also be found that the children here know little of the base or are completely ignorant of it. They know even less about the old buildings, which means a lack of a sense of belonging and identity. Most children prefer playing at home and the base has little interest for them. Gradually, the base becomes somewhere only the elderly come to recall their old days.

The investigation revealed that the village does not lack public space for villagers to hold activities, rather it lacks a spiritual place that is attractive. The study found that the facilities and equipment of some public spaces are good and may be as complete as those in public spaces in the city. However, the elderly do not like to gather and interact in these spaces because these spaces are too urbanized, and the elderly feel unfamiliar with them and cannot sense the original history and memory of the village through these spaces. So, Maolin Village needs a spiritual place that has certain attractiveness to the elderly.

4.2 The Planning Design

Through the integration of papers and field surveys, the plan introduces the theory of light intervention design, aiming to convert idle space to publicly shared rural space by activation and reutilization of idle space in some parts. Under the theory of light intervention, the plan digs out the countryside's cultural memory of the idle space and creates a spiritual place inside the Maolin Village. The plan refines and sublimates the history and culture of Maolin Village and converts it to design elements. Finally, the design elements are transformed into images for execution. In this way, the historic and cultural memory of Maolin Village can be carried over.

The base lies somewhere the old residential area and the new building area meet. This place has a special meaning, communicating past memory and present memory. For this, the design aims to blur the boundary between the base and new buildings, draw closer the distance between new space and old space, and place an open spatial form to mitigate the contradiction between new space and old space. Through the construction of the culture wall on both sides of the road, the boundary between new space and old space is reset, and the culture wall design links the new space and old space. In the show of the culture wall alongside the road, the changes in space, history, and culture in Maolin



Fig. 3. The Panning Design

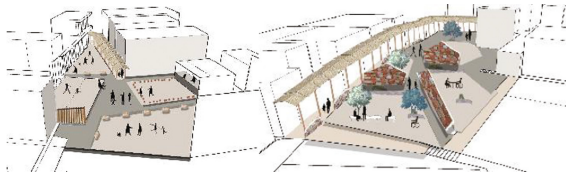


Fig. 4. The Planning Design Pic for the Foreyard and Backyard

Village are shown from old buildings to new buildings. From the culture walls, people can view the changes and development of Maolin Village. Walls are set in the narrow road, linking the grey space, stage, the Elderly Association, Lianqiao School, Song Jiang Battle Array, and the rear courtyard. A rhythm in space of ‘loose - tight - loose’ is formed and two places with different atmospheres - the lively and joyful foreyard and the quiet and peaceful backyard, are shaped (as shown in Fig. 3).

Foreyard mainly includes the stage, the ancestral hall, and the Elderly Association, which are mainly for the activities of tourists, villagers, and children, like folk culture activities. The diversity of functional needs of the place makes the space form a wide variety and more people accept the place and play here. The foreyard has altitude differences. With the stage higher than the ground, a funny space between the stage and the ground is formed and people can rest and play here (as shown in Fig. 4).

There is a characteristic wall of the old building in the backyard and some crumbling walls exist in the base. With the extraction of special building materials in Maolin Village, the crumbling walls are set as cultural walls with local characteristics, which echo the old buildings. The culture walls show Song Jiang Battle Array and Wing Chun Kung Fu. Through the combination of red bricks and stones and the extraction of the shape of Song Jiang Battle Array and Wing Chun Kung Fu, the images on the wall are designed, which builds a strong cultural atmosphere in Maolin Village. The backyard can also serve as the morning exercise place for the elderly. Influenced by the cultural atmosphere of Wing Chun Kung Fu, villagers take a more active part in exercising and spreading Song Jiang Battle Array and Wing Chun Kung Fu (as shown in Fig. 4).

Leisure pavilions are set in the courtyard and public facilities, such as desks, chairs, sculptures, and sports apparatus, are set so that the elderly can have an entertaining place to chat, drink tea and play Chinese chess. In these leisure pavilions, the elderly can admire the scenes, communicate and rest. The modeling design of pavilions echoes the characteristics of local buildings. Pavilions, trees, and feature walls echo with each other and create a subtle courtyard, where neighborhood activities occur naturally.

The beauty of a village is in its simplicity and natural characteristics [11]. Based on the theory of light intervention, the walls and pavilions of the base should be decorated as less as possible. The materials are local common red bricks. In structure, the masonry-concrete structure is used. With stone and masonry wall stone mixed, a structural form of “brick into stone” is created. Light intervention design in the base provides a compound place, making it more possible to hold more activities in the base. With cultural elements as the connection point of activities in the space, comprehensive cultural activities with their characteristics are held in Maolin Village and a spiritual place is therefore built.

4.3 Conversion from Idle Space to Shared Space

In the exploration of the design, the following questions were raised: How to reutilize the idle space in this village? What kind of needs do the functional needs of the reutilization come from? For local villagers, the design is not only presented with economic benefits but brings about other things. This exploration of the idle space in the base is embodied in the wasted traditional buildings where no one lives, wasteland in front of or behind the houses, deserted schools, and dilapidated small squares with hollows.

Traditional buildings have local South Fujian characteristics. The wall uses red bricks and local stones, forming a special sight. Besides, the building has a charming gable - the horseback gable. As it has been discarded, the wall of the building is majorly blocked by weeds. A closed and small courtyard is formed in its spatial layout. The architectural space is small and does not meet the needs of modern people so most of the traditional buildings are discarded. In design, modern functions are added to the space. To respond to the development of local tourism, the design transforms the space into an exhibition building space with characteristics for sightseeing. The traditional building space should be transformed into a new space with double functions to separately satisfy two groups (tourists and residents). The two functions are sharing function (meet people's needs) and the user requirement function (economic needs). In this way, the building culture is carried over and local characteristic culture is spread well while more economic benefits are brought for the villagers. Using a closed courtyard in the design, a space from inside to outside, from reality to emptiness is formed. Via virtual space, the space characteristic of the countryside courtyard is presented (as shown in Fig. 5).

Most wasteland in front of or behind the houses is directly related to the surrounding traditional buildings. It forms a half-closed space by connecting the surrounding traditional buildings. This land is located in the backyard of the base. And the need for the space comes from elderly people who want to drink tea, chat, play cards, and exercise. This space also carries the changes during the village's history, which formulates a spirit bailment to the people. So, under the theory of light intervention, the designer preserves the original historic texture of the space and restores the place to convert it into a public space for entertainment (as shown in Fig. 6).



Fig. 5. The Sharing Design for Traditional Building Space



Fig. 6. The Sharing Design for Wasteland in Front of or Behind the House



Fig. 7. The Sharing Design of Deserted School

The building form of the deserted school integrates local culture with culture from elsewhere and witnesses the historic changes of the space, so it has to be preserved and restored. As the function of the building is not able to reuse, it has been long discarded. But this building contains some memories of a generation when they were primary school students. They once read books aloud and played in fun here, full of laughs and joy. So, the designer plans to convert this space into a countryside children’s library based on the reading needs of local children, to carry over the scenes before and activate the spiritual atmosphere of the space (as shown in Fig. 7).

The dilapidated square with hollows mainly lies in the foreyard of the base, surrounded by the stage, the Elder Association, the deserted school, and the ancestral hall. It is a place with all kinds of functions and the entrance of the base. So the design of this place is to plan and recondition the parts that are originally dirty and dilapidated to build a small cultural square with compound functions, which can satisfy the functional need of sharing (as shown in Fig. 8).



Fig. 8. The Sharing Design for the Small Dilapidated Square with Hollows

4.4 The Light Intervention Strategy and Structure in the Design

The design holds the theory of light intervention. But what should be noted is how to present it in the design of the space. In the investigation of the reutilization of the building space, light intervention theory is applied to the design of the space, and the space form, colors, and texture are preserved. The wall is restored and renovated. With regard lighting of the building, the design increases the light by expanding the size of the window and taking modern glass to form a simple glass window. Besides increased lighting, it also forms a comparison between the traditional element and the modern element in sightseeing. This presents the theory of light intervention, which is, adding new things based on the original things without damaging the original features.

The feature walls are designed by using red bricks with South Fujian characteristics. The building takes the technic of ‘replacing some bricks with stones’ and in the meantime, the wall is shown with local culture. The shape of Wing Chun Kung Fu is injected into the wall and a special space atmosphere is formed.

The shape design of the pavilion uses the shape of the horseback wall on the local buildings. Through the change and simplification of the shape, the final simple shape with beauty is formed. The materials are combined with a local wood element that presents a sense of primitive simplicity. In addition, the place is half-closed surrounded by buildings around, so the design of lighting considers shape and materials. Through the combination of wood and glass, not only the need for enough lighting is met, but the space characteristics are presented (as shown in Fig. 9).



Fig. 9. The Light Intervention Design for Space-shaping Material

4.5 The Expression of the Sharing Theory in the Design for Rural Idle Space

The space design needs consideration for two groups, tourists and villagers. It means to consider what kind of space the tourists need, what kind of space the tourists feel is worth traveling to, and what attraction the space has for the tourists. For villagers, it means to consider how to satisfy villagers’ needs without damaging the original features of the functional space and how villagers can share the space with tourists.

For villagers, some think buildings with modern cement are nice and traditional things can not satisfy the current needs so they should be demolished for rebuilding, and some think the things left by their ancestors are precious so they should be completely preserved. However, neither demolishment nor complete preservation is the correct way of developing space. The space should satisfy needs both practically and spiritually, as

culture is the soul of a space. To satisfy the needs of these two groups and for sharing, the space design injects modern functions into the traditional space whose original form is preserved. In this way, new and old functions are integrated and the goal of sharing is achieved.

For tourists, as modern tourism develops in high quality, the standard for the appreciation of beauty is improved, which raises higher requirements for tourism. The best way to avoid homogenization in sceneries and prevent aesthetic fatigue is to dig out the local culture and highlight local characteristics. With the building of the space with local characteristics, not only can local culture be spread, but the building of the space further promotes the villagers' sense of belonging and identity for their local characteristic culture. Then, it meets both the needs of tourists and villagers, and the culture and the space are shared by both.

5 Conclusions

With the natural environment and sceneries and years of history, rural space has precious folk cultures. With the development of urbanization, too modernized design makes these precious resources lose their original spirits and intention. In the future, an important step to developing rural areas is the activation and reutilization of rural idle space. It is available to inherit and innovate the regional culture of the village based on the history and culture of the village while reusing the space by recreating the use value and spiritual value of idle space, integrating a sharing model, and using light intervention design. In this way, the original look of the village and the feeling and memory of the place are carried over for the building of improved service facilities and communication places.

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