Discussion based on the adaptability design for the construction of rural tourism for the revival of villages in China

Guanyi Xie[1, a], **Xingyi Li**[2, b] **and Hanyu Zhao**[3, c]

[1] Associate Professor, School of Design, South China University of Technology, 1972,Guangzhou, China

[2] Graduate Student, School of Design, South China University of Technology, 1993,Guangzhou, China

[3] Graduate Student, School of Design, South China University of Technology, 1992,Guangzhou, China

[a] 36095275@qq.com

[b] 285378988@qq.com

[c] 784757988@qq.com

Abstract. Tourist development has been an increasingly popular part in rural construction in contemporary China, and has become a juncture of rural renewal and revival. Taking the three perspectives of rural physical form, rural culture, human action and activities, this article summarizes the problems and conflicts created by Chinese rural tourism, and analyzes the root reason for the conflicts. We try to generalize valuable experience learned from Chinese New Village experimental base so far from different aspects such as architectural forms, spatial scales, ecological environment, arts and culture and residential life, integrated with notion of 'adaptability design' in the theoretical system of sustainable development, and then deduct a strategy for designing rural sustainable development, under the intervention of tourism. Lastly, the example of a Chinese village - Fenshui Village is chosen to practice, and construction conception is raised accordingly.

1. Opportunity of village revival: rural tourism development

In the past two decades, urbanization in China has brought leaping development and changes to Chinese economy, culture and people's daily life. However, social problems also occurred such as economic gap between urban and rural areas, unbalanced division of labor, environmental degradation, etc. What is more worrying is that Chinese civilization, globally renowned for its farming culture, is fading from its past radiance; 900 thousand natural villages disappeared in the last ten years, most of them with traditional intangible cultural heritage.[11] Thus, reviving villages becomes an important task for the state to resolve social problems and to inherit national culture.

From the progress of Chinese history, the prosperity and decline of rural areas are inexorable laws of social development; the continuous birth and development of villages also depend on different dynamics and factors in different epochs. In Ming and Qing dynasties, for instance, governments recovered the declined villages damaged by warfare through land system; in modern times, only

Content from this work may be used under the terms of the Creative Commons Attribution 3.0 licence. Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.
Published under licence by IOP Publishing Ltd

through social intellectuals and their rural assistance movements did the problem of rural declined be assuaged.[9] Contemporary Chinese economic system is a mode of development based on state macro-surveillance and led by market economy. Diverse and modern urban economy has absolute advantage when competing with single, backward rural agricultural industry. Hence, the essential prerequisite of rural revival is to transform and to develop modern rural economy.

Shengxuan Zhu[1] said, it the next twenty years, the main consumption of Chinese people will shift to touristic products for leisure; the construction and the development of foreign villages also show that urban residents tend to prefer quiet pastoral life and countryside environment due to competitive atmosphere and pollution caused by industrialization in cities, and that is why foreign rural tourism has been developed, so far, as ecotourism for leisure.[12] As a product of market economy, rural tourism is a new opportunity for the revival and further development of Chinese traditional villages; it can drive the update of rural architecture and infrastructure, and can make rural development adapted to modernization.

2. Current situation of Chinese rural tourism

During the early phase of Chinese rural tourism, developments usually took place in villages with rich natural or cultural resources such as Lijiang, Zhouzhuang, Xidi, etc. And since the new policy of 'Chinese new villages construction', there has been a rise in locality and agricultural-experiences-based rural tourism.[8] So far, the outcome of the construction practice is worthy for us to learn and to reflect: on the one hand, the relatively more famous traditional villages did bring relatively greater economic gain, and did preserve their traditional architectural monuments; however, on the other hand, their strong commercial atmosphere has been gradually eroding the ecology of the original pastoral environment, and led to the development of these touristic villages moving away from its agricultural nature. Touristic programs and sites are very much stereotyped, without any local characteristics . According to the investigation made by China's Traditional Village Protection and Development Research Center, many developers wantonly damaged the appearance of traditional villages for the sake of "village protection", while they actually did it for financial profits. The cultural heritage of villages with hundreds and thousands of years of history are disappearing one after another. Local culture should always be the foundation of touristic construction; agriculture, farmers and agricultural life should be put in priority in no matter what forms of rural construction development. And the root cause of touristic development not adapting to rural condition includes over-commercialization, cultural fault, lack of essence of the villages, etc. The following three points are a summary of current problems and conflicts caused by rural tourism.

2.1. Tourist construction detached from the physical form of traditional villages

Modern rural tourism changed the physical form, texture, traditional housing and traditional agricultural landscape of villages. As traditional space with single social structure transformed into diverse, complex and composite one, problems are thus created. For example, traditional housing and street spaces usually fit best with local population density and activities, and because of the geography and population condition, streets, yards and other public spaces are usually narrow. And during the development of rural tourism, it is necessary to enlarge the space in villages for the increasing human flow; the peak and off-peak seasons can also influence people's spatial recognition of rural architecture, and the former spatial feature of traditional residential architecture is thus damaged (Figure 1). Another example is that developers all pursued high efficiency of tourism construction, so the architectures built in relatively shorter periods have rather poor quality since there is no specific domestic standards for rural reconstruction. Plus, the buildings are either antique or maverick, resulting in overall destruction of villages' appearance (Figure 2). Furthermore, due to the construction,

[1] Shengxuan Zhu,promoter and designer of Mogan Mountain Village transformation experiment. He is committed to the 'green city' practice and research, actively processing research and practice urban agriculture and rural development mode.

pollution brings trouble to rural ecology. During the rural development, huge amount of waste is produced, including wreckage of the former architecture and scrap of the new establishment, that cannot be degraded naturally by ecosystems; all these do great harm to local ecological environment (Figure 3) [10]. The causes of these problems are from the planning for rural tourism construction not adapting for the original appearance of the village. There is thus a gap within rural development, a very outstanding issue in domestic rural tourism development.

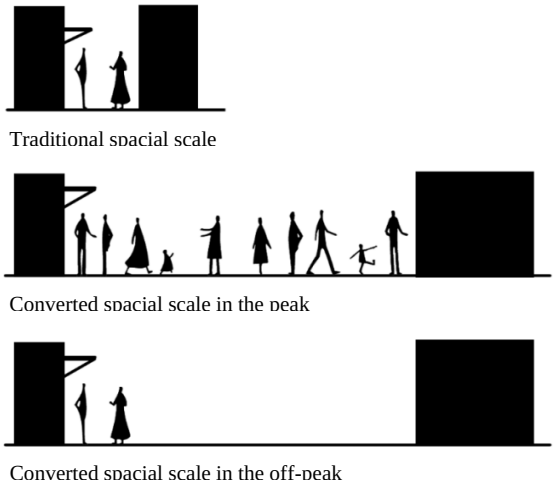


Figure 1. Comparison of between spacial scale before and after modification



Figure 2. Two extremes of the rural building



Figure 3. Villages in the eye of tourists and of villagers

2.2. The conflict between commercial and local rural culture

Local culture and customs in villages are well preserved, thanks to its closed geographical feature; along with the development of rural tourism, rural and urban areas become more closely connected. The purpose of rural tourism construction is to develop local tourism and its economy, and the goal is to satisfy urban residents' need and wish to travel and relax in rural areas, so the main source of the market are from urban customers (Table 1). Therefore, local tourist development is absolutely to bring globalized commercial culture to traditional rural environment. Commercial culture can definitely do good to intangible civilization if it can be suitably combined with local culture and can be continued beyond time, but the modern industrial production and globalization so far have influenced the current commercial atmosphere to have identical forms. In economically and culturally developed regions, developers have enough financial support to focus on local feature; however, in relatively under developed traditional villages, the aspect of financial profits made from tourism gains most attention from both developers and villagers, and thus developers tend to choose programs with low costs, high profits but without innovation, such as native product sales and farmhouse experience.[2]

Table 1. Basic needs and features of urban tourists for rural tourism.

Age range	Tourist activities	Characteristics
Children and teenagers	Mountaineering, picnics, biking, gaming, farmhouse visiting, agricultural education, crafting	Mainly aimed at juveniles, who participate into activities and trips during holidays. Divided into children accompanied with parents and teenagers groups. They prefer activities with more fun and participation such as leisure, entertainment and agricultural skill learning.
College students	Camping, nature exploring, hiking, folk song collecting, painting, photography, gaming, shopping, farmhouse experience, cafes and bars	Mainly college students with more flexible timetable. They are more interested in folk culture and its products, adventures, and literary or artistic experiences, and that makes them the biggest consuming group of rural tourism.

Office adults	Hiking, picnics, photography, park visiting, fishing, shopping, farmhouse experience, traditional life visiting and experience, agricultural experience	For white collars with only statutory holidays off. With relatively more pressure, they need to relax through rural life during weekends. They tend to be more practical in terms of consumption, so they usually purchase naturally friendly food during their tour in order to have them back in cities.
Retired elders	Wellness, root seeking, fishing, shopping	Some of the elders living in cities are born in the countryside; thus are more nostalgic of rural life, and seek to go back to their root. Others prefer staying away from urban environment and living a quiet, relaxing pastoral life.

Table 2. Type and characteristics of rural residents' activities.

Activities type	Contents	Characteristics
Daily activities	Watering, laundry, cooking, chess playing, chatting, shopping, village announcement gathering	With more activities that are necessary and voluntary, happens daily, and ranged among all age groups and genders. Because of the simple social structure and rather slow pace of life in villages, villagers often drop in others apart from necessary activities such as cooking and laundry. The atmosphere among villagers is generally very harmonic with trust on each other.
Production	Cultivation, harvest, crop drying, processing	Essential activities with seasonal features. Main participants are adult villagers, mostly men. As the traditional economic source in rural areas, agricultural production is the major activity during the busy farming season.
Cultural activities	Sacrifice, marriage and funeral, feast, festivals	Social and voluntary activities. Villages have strong sense of clans, and villagers are generally superstitious, so sacrifices and other rituals are paid with great attention. Villagers also have strong sense of tradition, and very much value traditional festivals.

2.3. Conflict between tourist activities and locals' daily life

Although rural tourism is profitable for locals and can cater tourists' need for holidays, tourists and locals' activities do have conflicts from what is shown in several cases. For instance, as the number of tourists increases, the accumulation of wastes has exceeded the capacity of local infrastructure; some tourists even leave garbage at the tourist attractions, and these non-degradable waste not only damages the ecological environment of villages, but also brings burden for local residents, who live far away from urban areas, to clean up the garbage. The increase of local population, on the other hand, causes problems like water stress and sewage treatment. Apart from the environmental issues, there is also conflicts between the religion and values of tourists and of locals; serious incidents thus take place. In terms of tourism's intervention to rural economy, the presence of tourists will definitely influence or even disturb the daily motion of local residents, a fact that can be compared between touristic activities and locals' traditional activities (Table 1 and 2).[13] During the rural tourism development, developers seldom think for the local residents' need for daily activities because it is the urban guest, not them, who are the main source of their service. This is the root cause of all conflicts above. Basically, urban tourists are aliens, tourism has its peak and off-peak seasons, while the natives are the community who lives the longest and being most directly affected by touristic development. Therefore, rural natives' attitude and customs are the core of consideration during tourism construction.

3. The Concept of Adaptability Design for Rural Construction

Various conflicts arisen from rural tourism construction is not at all rare in domestic practice, and this derives from the ignorance of village's self-recognition and cultural heritage. The development of rural tourism needs to adapt to the requirement of modernized construction, and also to the traditional culture of villages, which is to respect the concept of 'rural adaptability design'.[3] The so-called

Adaptability Design is originally from the sphere of architectural and product design, referring to the protection of positive elements and the improvement of negative elements of the environment, while maintaining the condition in general; it is a dynamic balance with one part being changed and harmonious with the other.'Rural Adaptability Design' is then born during the usage of the concept in rural construction; based on respecting the former structure of villages, stressing the features of rural culture as well as following the basic need of the villages themselves, it requires to construct and develop traditional villages low-destructively and sustainably by using other economies to stimulate traditional rural industries. If the design can respect villages' own needs for development, with tiny amount of intervention from other industries, it helps encourage the development of rural areas in general, increase villagers' standard of living, while not altering the property of rural traditional culture. Through modifying some components of the structure of villages in order to adapt to their objective requirements, we can gradually find out the basic rules along with the ongoing trends of rural development of our times.[6]

Table 3. History of development of European rural tourism.

Phase	Functional features	Accommodation features
Embryonic stage (Experiencing agriculture)	No established tourist district, no professional tourist management; no specific service, architecture and auxiliary recreational facilities at the reception	Tourists stay at the locals who are paid with little room and board or choose camping outside the locals
Forming stage (Visiting farms)	Gradual emergence of farms for sight seeing with beautiful agricultural landscape, such as gardens and pastures, designed for tourists' sight seeing, holidays and recreation	Emergence of home stay, as well as living places reformed from abandoned spaces such as factories and carriages, etc.
Mature stage (Participating in farming)	Emphasize the participation within rural tourism, the experience of villages' cultural atmosphere and the spiritual leisure. Diversity in forms including agricultural tourism, natural tourism and custom tourism, etc.	Including hotels, camping sites, home stays, semi-self hostels, seasonal farmhouses, B&Bs, etc.

Referring to the history of European rural tourism in the past two hundred years, rural tourism and agricultural production are always well combined. From traditional agriculture to agricultural recreation, their development is a progressive process of mutual catalysis and mutual adaptation.[5] Starting with sight seeing such as 'farm visiting', to experience activities later on such as 'training courses of agricultural activities', rural tourism always has activities based on agricultural production as a lead role during its gradual mature stage.[12] From the history of foreign rural tourism, we can learn that rural tourism, as one of the diverse industries in rural areas, always develop itself around the topic of agriculture till its last stage; that is also the only way to maintain the vigor of rural tourism, and for its culture to last longer. In contrast, many tourist villages in China focus too much on financial benefits brought by tourism, and thus make traditional villages lose their basic agricultural functions and transform into consuming tourist sites instead. This is a wrong direction of rural tourism construction, as well as the root cause of conflicts.

4. Methodology Research on the Adaptability Design of Rural Tourism Construction

The notion of 'adaptability design' for rural tourism construction has requirements in two aspects, to adapt to the need of modernization, and to fit into the protection of rural culture. Aimed at these two requirements, adaptability design has to complete two steps (Figure 4). First, 'how to preserve and how to abandon' is a crucial step to compare and to judge during the adaptability design; it is also an important prerequisite prior to the construction of rural sustainability. Second, a special method of 'adaptability design' is that to modify the actions that are negative to the continuation and heritage of

villages, in order to transform them into positive elements for rural development. Therefore, rural tourism plays a positive role in the promotion of agriculture, farmers' living standard and agricultural health. We cannot deny that the concept of 'adaptability design' in this article is on the same line of succession with the experience learned from foreign rural tourism. In spite of our rural tourism construction still in its exploration phase, some of the rural transformations are very representative and outstanding that are worthy for us to summarize and to refer; they are also helpful for resolving the problems and conflicts during tourist development mentioned in the previous paragraphs.

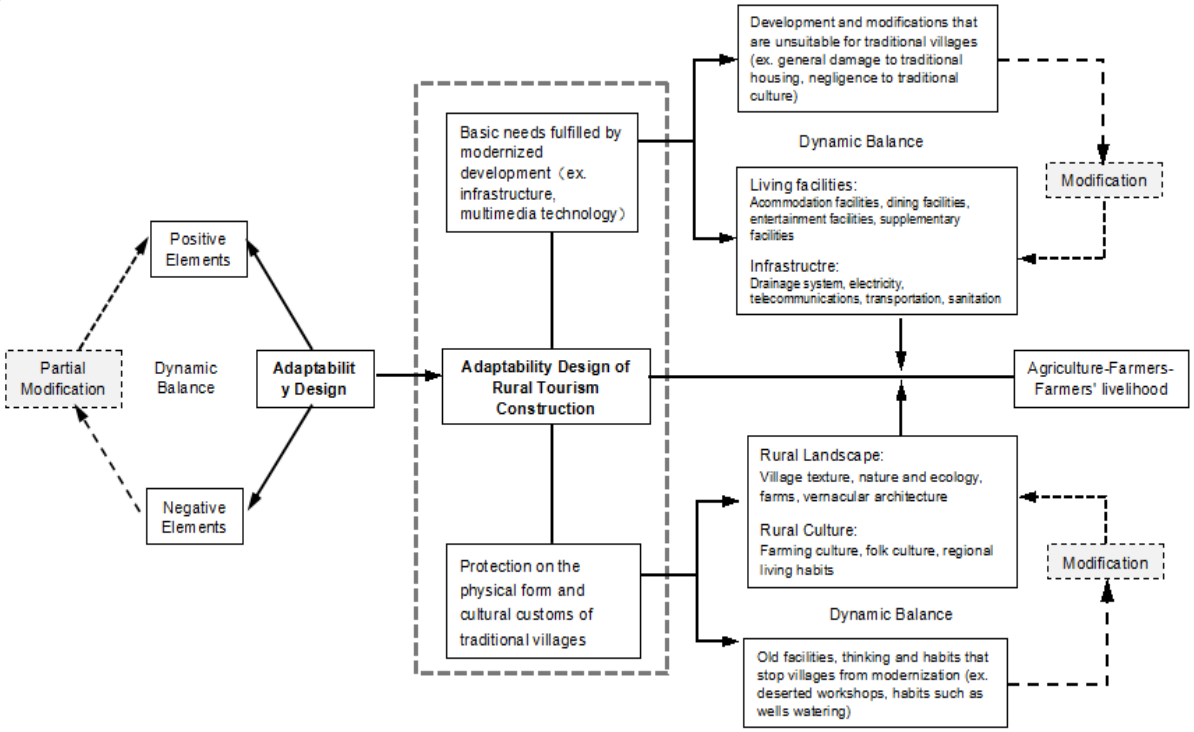


Figure 4. Adaptability design of rural tourist construction conception analysis diagram

4.1. Conflict between tourist activities and locals' daily life

Apart from renewing the under-developed infrastructure of rural areas, respecting the traditional appearance of villages, promoting their characteristics, and staying strongly against damages brought by massive destruction or construction projects are also some of the basic requirements of rural construction and the 'adaptability design'. In the project of Mogan Mountain village improvement, Zhu Shengxuan adapted his improvement with both requirements from the tradition and from the modern days through the methodologies of 'recovery' and 'importation'. The focal points of the project are the 'recoveries of land-based agricultural production' and of 'the simple beauty of traditional rural housing', with the layout and planning respecting the prototype of the village's natural growth; these points also include to 'import the Taiwanese model of rural construction: production, ecology, quotidian'[2], to upgrade traditional agricultural production, to set up a rural ecological circle of 'land, residence, town', and to develop projects such as 'Hideaway-Plantation', 'Hideaway-Homes', Geng Village Cultural Market, etc.[7]

Land given back its agricultural function, communities continued with rural texture, accommodation with original and rustic features... All memories of rural life can be found here in new Mogan Mountain Village. It plans to set the former texture of the village and local housings as the

[2] the Taiwanese model of rural construction: production, ecology, quotidian. Such agricultural production and management of the 'agriculture + tourism' nature helps develop agricultural production, protect ecological environment, enlarge agricultural tourism and stimulate farmers' benefit as well as rural economy at the same time.

foundation of infrastructural renewal during rural tourism construction, creating communal intimacy through controlling architectural density. And its tourist attractions are also constructed upon traditional physical forms of the villages; B&B not adhering to the same pattern with personalized decoration all make the new Mogan Mountain Village with more of its local features. (Figure 5)



Figure 5. Rural transformation of Mogan Mountain Village

4.2. Local rural culture: combination of local and commercial culture by 'Modern Art'

The modern commercial market brought by rural tourism is equivalent to the impact made to local rural culture by globalization; however, villages cannot turn into a thoroughly commercial site for mass consumption, and rural tourism construction cannot influence negatively on non-tangible cultural heritage, either. Hence, the questions of how to preserve and to develop the local culture of different regions and villages, along with how local culture can adapt itself to the commercial market demand of our times, are the non-negligible parts of research on rural tourism construction. Among some of the rural experimental bases, there are examples of adopting contemporary art and culture with absorption of the essence of traditional culture, followed by re-creation that are very much welcomed by the consumers thanks to its artistic features and the artists' interpretation of traditional culture. Bi Mountain Project in Huizhou, for example, is an experience on the combination of rural globalization and localization, as well as a fusion of traditional rural culture and modern commercial culture through artistic re-creation.

But it is worth pondering that contemporary arts often focus too much on visual impact, innovation or complexity, making art works too obscure and distorted. Therefore, during artistic re-creation, artists should respect traditional culture and promote traditional culture to the public. Adapting to the need of modernized market, and preserving precious non-tangible cultural heritage at the same time, are the reflection of the adaptability design for local culture. Bi Mountain Project encourages architects, artists and other intellectuals to stay in the rural, and to create and promote works through experiencing rural life and interpreting traditional culture. Apart from that, cultural elements for artists' re-creation and re-design also include historic remnants, residential architecture, traditional custom activities, tribe culture, etc. (Figure 6) At the 'Bi Mountain Harvest Festival', dance competitions are held in the form of sacrifice, inheriting the traditional sacrificial activities in the ancient farming community. [4](Figure 7)



Figure 6. Bi Mountain handicraft directory: Hundred Handicrafts of Qian Town



Figure 7. Harvest Festival of Bi Mountain

4.3. Rural life: tourist activities' return to the simplest rural way of life

'While picking asters 'neath the Eastern fence, my gaze upon the Southern mountain rests' is the depiction from ancient Chinese poetry of scenes of idle rural life (Figure 8); for rural residents nowadays, to leave the crowded, noising daily surroundings and to return to the funky rural relaxation, is the call made both physically and spiritually to rural touristic activities. Articles for daily use in rural society are rather simple without pollution; even though not as diverse as those in urban areas, they are environmental friendly and reusable. The adaptability design of touristic activities should reflect itself on recreational agricultural activities and rural pastoral life: not out of the purpose for increasing the number of tourists and fast consumption, but for developing local articles for daily use that are ecologically friendly and for raising the quality of touristic activities experiencing rural pastoral life through combining together touristic activities and agricultural activities. The advantage is that it not only reduces the burden due to the garbage and heavy use of water brought by exceeded number of tourists, but also helps the tourists respect and protect rural environment at the same time with experiencing and learning agricultural production.

The rural tourist activities of Mogan Mountain features itself on agricultural activities; local farmers guide urban residents, who are not familiar with knowledge of agriculture, narrating relevant precautions of agricultural production. Urban tourists can also participate in farming activities, raising their conscious on the protection of agriculture. Farmhouses provide agricultural training courses to encourage tourists to rent lands for farming their own crops, and to harvest non-polluted primary products (Figure 9). Their hostels should also be based on simple, rustic decorations, with inner walls with raw concrete finishes, minimalist furniture using ecological materials, and furnishing of native artifacts. Such design facilitates tourists' activities' return to the simplest form of rural life.[1]



Figure 8. Traditional agricultural activity of Mogan Mountain



Figure 9. Tourist participation into agricultural production

5. Exploring the adaptability design experiment of Fenshui Village's rural tourism development

Fenshui Village is just one among all Hakka villages in the Northern Cantonese Mountain District; it dates back for more than 300 years of history, but nowadays it is no more than an empty village except for busy seasons. (Figure 10) Fenshui Village's main source of economy is the bamboo shoots, which is also why the villagers cannot escape where they are. Due to poor transportation, lack of water resources, and unitary industry, it is impossible to let villagers rebuild the village by solely depending on traditional agricultural production. Therefore, we proposed the integrated structure of 'Agriculture-Processing-Tourism' for this project, enlarging traditional agriculture and processing industry of bamboo shoots in Fenshui Village by introducing tourism as a new breaking point of its economy. Apart from that, rural infrastructure and the renewal of vernacular architecture mainly 'adapt' to the developmental requirements of local industry based on bamboo shoots; and thus Fenshui Village still has bamboo shoots processing as its basic industry, while making such industry a featured programme of rural touristic activities.



Figure 10. Current appearance of Fenshui Village

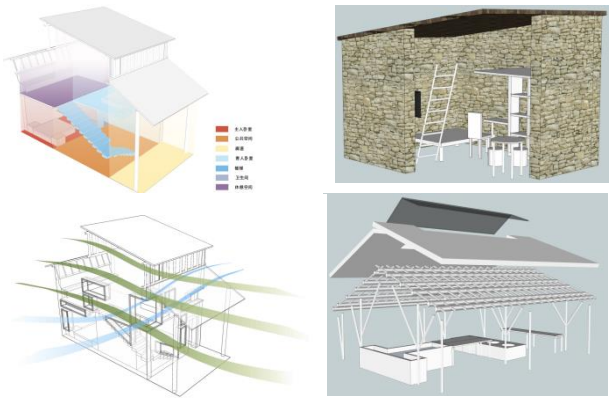


Figure 11. Adaptability transformation of vernacular architecture based on functional space in Fenshui Village

We should encourage not only the locals to preserve those fading-away traditional Hakka culture and customs and use them as featured programmes of touristic cultural activities, but also the tourists to re-create local culture in C&C space, which will be upgraded from deserted architectural space. Arts and crafts ateliers, Hakka restaurants, traditional customs research institute and other cultural elements can also be introduced to adapt different types of tourist communities. Daily life of urban tourists and local living habits as well as cultural customs should be combined and adapted together, and B&B design needs to reflect the architectural concept of 'rustic and practical' inspired by rural residence, to meet the basic needs of the locals while creating the atmosphere of 'returning to simple rural life' from all details during designing and construction process. For example, architectures use mostly clay, stone, bamboo, etc., materials that are economically more practical and are easy to find in the village; architects try to solve the ventilation and lighting problems by the architecture itself, reducing the usage of air-conditioning and lights in order to lessen the pollution to the environment and the waste of resources; indoor arrangement and furnishings focus mainly on being rustic, simple and functional, in accordance with the natives' living habits. (Figure 11)

6. Conclusion

Rural tourism has driven the traditional rural economy to develop, has increased the quality of rural vernacular architectures and of rural infrastructure, and has promoted the modernization of rural areas. However, the development of rural tourism has also created several conflicts and problems, and thus rural tourism construction should respect the norm of 'protecting rural civilization and renewing the physical surroundings of villages with adaptability'. The renewal design brought by rural tourism has to set 'adaptability design' as a requirement, using pristine conception of design and modernized

advanced technology, and reducing to the simplest rural life as well as agricultural production, with endangered intangible cultural heritage under protection. Rural construction in China is yet to overcome the pilot phase of exploration and experimentation; there is no systematic regulation on traditional residence and its construction, and other designing methodologies considering tourist development and village protection still need more architects and planners to ponder, to quest.

References

[1] Deyin Luo, Bo Ya. (2015). Village Heritage: Back to Daily Life. *World Heritage* (11): 68 -75
[2] Darong Yang. (2014). Research on Mode of Leisure Agriculture from the Perspective of Regional Agricultural Culture -taking Suzhou as an Example. *Chinese Journal of Agricultural Resources and Regional Planning* 35: 65-69.
[3] Liangbin Tan. (2007). Study on the Regeneration Design of the Earth Dwellings in Weatern Country of China.Xi'an University of Architecture and Technology.
[4] Ning Ou.(2015). A Case Study on the Bishan Commune: The possibility of Utopian Practices. *New Architecture* (2): 17-22.
[5] Pete Melby,Tom Cathcart.(2002).Regenerative Design Techniques: Practical Applications in Landscape Design. *Wiley:* 1 edition
[6] Smit B, Wandel J. (2006). Adaptation, adaptive capacity and vulnerability. *Global Environmental Change* (3): 282-292.
[7] Shengxuan Zhu, Xiaozhe Yang. (2015).Mountain View/Land Dependency/Rural Escape -- Hideaway Homes/Hideaway Plantation/Geng Village 1932 C&C Park.*Designer*, 77: 64-73
[8] Tongqian Zou, (2008). Rural Tourism: Theories and Case Studies. Tianjin: Nankai UP
[9] Weiqiang Wang, Gousheng Ding. (2015). Historical evolution of Chinese rural construction practice.*Time+Architecture* (3) : 28-31
[10] Xiaobo Zhang, Jiewei Jiang. (2015). Several Exemplary Works on Vernacular Construction and Their Social Effects in China in the Last Decade. *Time+Architecture* (3): 32-35.
[11] Xiyi Zhang.（2015，March 1）.Observation on NPC & CPPCC: 900,000 villages vanish in a decade, Chinese ancient village protection urgently needed. the Chinese News Agency Xinhua.
[12] Yuncai Wang, Huancheng Guo, Huilin Xu. (2007). Rural Tourism Planning: Principles and Methods. Science Press.
[13] Zinan Shao, Huaicheng Wang, Jianglong Chen, Qin Su.(2013). A Review of Land Consolidation of Rural Residential Areas in China. Chinese Journal of Agricultural Resources and Regional Planning, 34: 10-15.