

DLA Dissertation

A Study of Organic Renewal Strategies and Practices in Traditional Settlements in Northeast China

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Abstract

With the development of late-model urbanization, traditional enclosed villages can no longer meet people's production and living needs. Many villages are transformed by means of large-scale demolition and construction or collective relocation. This simple but rude method made traditional settlements lose many valuable rural resources, separated the continuity of the traditional landscape, leading to the gradual loss of traditional settlement features. The landscape of traditional settlements is developed by long-term historical evolution, and landscape of folk and custom serves as a unique carrier of civilization. It has laid solid foundation for the long-term development of traditional settlements to retain and develop the traditional regional landscape features. The main content required to be researched and discovered is how to meet the requirements of residents' modern life, while revive and inherit the regional landscape of traditional settlements.

Based on the organic renewal theory, this paper discusses how to build the landscape of settlements in Northeast China with traditional regional characteristics. The paper comprises five sections:

The first section presents the introduction of the thesis, with an elaboration of the research background, purpose and significance. The main content and methodology of the research of are sketched out in this paper.

The second section is a detailed interpretation of the development of organic renewal theory at home and abroad. Based on the literature review, it is concluded that earlier studies were primarily conducted in southern China with the organic renewal theory of Chinese traditional settlements, and the research on the organic renewal theory of traditional settlements in Northeast China is scarce. In addition, the theoretical research mainly focuses on the *status quo* investigation and spatial pattern analysis, with less attention to the development and renewal strategy of the settlements. Therefore, it is of great significance to study the theory of organic renewal of traditional settlements in Northeast China.

The third section is about the detailed interpretation of the organic renewal theory and the summary of the organic renewal project of traditional settlements. The paper explores the ideas and methods of organic renewal theory in detail, provided experience for the research and practice of traditional settlement renewal, and stated that the organic renewal theory reflects dynamic and step-by-step thinking. This part provides clues for the renewal of overall landscape of traditional settlements, and lays a theoretical foundation for the following application and practice of the organic renewal theory in traditional settlements in Northeast China.

The fourth section discusses the empirical research. This study examines the history of Wula Street Ancient Town in Jilin City, analyzes its current situation, identifies the problems, and applies the organic renewal strategy of traditional settlements to the renovation of the landscape of ancient town of Wula Street. It puts forward the renewal design scheme for the overall pattern and different spatial layers of the ancient town, and realizes the revival of the landscape of traditional settlement and the continuation of traditional folk culture on the condition of of meeting the needs of residents for modern life. It also conducts practice on the application of traditional northeastern Manchu architectural culture in modern design.

The fifth section is a presentation of the conclusion, which summarizes the results of this paper and the limitations and implications of this study. The present study was an active attempt to renew the traditional settlements in Northeast China. Guided by the organic renewal theory, it has built a renewal strategy system of the traditional settlement landscape in Northeast China, which might provide reference and experience for other traditional settlement landscape in Northeast China and even the whole country.

1.Introduction

1.1 Research background

Since the 1990s, driven by the acceleration of urbanization and new rural construction, innovation and development have occurred in the living environment of traditional settlements, during which problems and challenges have emerged as well. Due to the simplification of the transformation plan with less clear aims, a large number of traditional settlements were in a negative and declining situation. More and more traditional settlements were left behind in the process of urbanization. As a result, some problems such as unfavorable ecological environment and lack of traditional culture emerged, which are elaborated as follows.

1) Launched by developers or the government, the large-scale and one-time demolition and reconstruction have been blindly undertaken, which makes it difficult for the public to participate in the renewal process based on the existing problems. In this large-scale transformation, destructive damage has been caused to the local historical culture.

2) The effective renewal mode is lacked. At present, while the organic renewal theory has been mainly applied in the renewal of old urban areas and the protection and transformation of historical blocks, limited attention has been paid to traditional settlements and a clear theoretical method and application mode are yet to be formed. Therefore, in the renewal of traditional settlements, both the government and individuals have certain blindness without an effective renewal mode.

3) The organic nature of the planning of urban and rural settlements have been neglected. Urban planning in China is conducted in a modernistic way, with an emphasis on the order of planning and it applies a unified mode to urban planning, resulting an urban feature that is "thousands of cities of the same pattern". In the process of planning traditional settlements, the dynamic diversity of rural development has been ignored because of strong urges to complete reconstruction in a manner of overthrowing and starting over.

As an integral part of Chinese rural settlements, traditional settlements in Northeast China have a long history and involve mixed ethnic relations, unique folk culture, and rich natural resources. Methods to renew villages in a more reasonable and sustainable way are of great significance to protect and develop traditional settlements in Northeast China¹.

1.2 Research purpose and significance

1.2.1 Research purpose

Through the study of the organic renewal theory of traditional settlements, this paper summarized the research about the concept, significance and related practice, and applied the organic renewal theory to the renewal and transformation of traditional settlements in Northeast China. This study focused on the traditional settlements in Northeast China, and confirmed the strategies through case design, exploring a comprehensive, systematic and applicable renewal mode and transformation method to provide a detailed

[1] L. K. Huang, "Research on rural construction strategies and methods from the perspective of Cultural Anthropology", Zhejiang University, 2015.

and feasible reference for the renewal of rural settlements and provide guidance for villagers to participate in village renewal. This research might exert a profound influence on the protection and development in the renewal of traditional settlements by providing reference for the renewal and transformation of traditional settlements and other villages in Northeast China.

1.2.2 Research significance

Traditional settlements, as the gathering place of residents who rely on agricultural activities, are the carrier of the culture, customs, history and natural resources of a region, representing the development course of the region. The traditional settlements in Jilin Province are the most representative of the Northeast China, which reflects the folk customs, architectural features and local religious culture etc. How to inherit and develop the cultural characteristics of traditional settlements in a sustainable way and how to improve the overall living environment and living standards of residents are the problems to be addressed. Therefore, taking rural settlements in Jilin Province as the main object of research, this program has important theoretical and practical significance for promoting the development of rural settlements in Northeast China and the policy of building beautiful countryside advocated by the government.

1) From the perspective of settlements, it is beneficial for the protection and inheritance of traditional culture in settlements. The mixture and integration of folk culture in the constant development of settlements have created the present traditional settlements. Due to the urbanization, the renewal of traditional settlements was not conducted according to local conditions with the mechanical application of the urban renewal methods, ignoring the regional cultural backgrounds of traditional settlements. In the transformation, if the dynamic and gradual organic renewal mode can replace the method of overthrow and reconstruction, and retain the most precious "nostalgia" and "architectural language" while renewing the living environment in traditional settlements, traditional settlements can continue to pass on the traditional folk culture in the future.

2) From the perspective of residents, it fosters the improvement of the living environment and helps to create a better life in the settlements. Due to the influence of economic development, migration and culture shock, the number and coverage of traditional settlements are on the decline. However, the organic renewal of traditional settlements is helpful to explore the sustainable renewal of the living space and alleviate the conflicts between existing traditional settlements and urbanization. Therefore, to find the balance between urban and rural areas in the process of urbanization, it is necessary to renew the traditional settlements. Additionally, in the gradual renewal of the living environment, it is also necessary to stimulate residents' vitality and drive the "activation" of the whole traditional settlements, and promotes its sustainable development.

1.3 Research object and content

1.3.1 Traditional settlements in Northeast China

1) Traditional settlements

① "Settlement" is defined in *Ciyuan* as a village where human beings live in forms of communities. The definition of "settlement" in Encyclopedia of China is that "Settlement refers to various living places of human, which are often called residential areas on maps. It is not only the center of human activities, but also the place where people live, work, rest, carry out various social activities". Professor Wu

Liangyong once pointed out that "settlement is the general name of various forms of peoples living places." The environment, cities, market towns and villages related to human activities belong to different settlements". "Settlement" generally has two different understandings in broad and narrow sense. In the narrow sense, "settlement" generally refers to rural settlement, while in the broad sense, "settlement" refers to the place where all human beings live together. In settlements geography, settlements can be divided into rural settlements and urban settlements. In modern research, settlement is generally explained as all residential areas including both rural and urban settlements.

Traditional settlements generally refer to group settlements with certain historical and cultural relics, including not only traditional villages dominated by agriculture, but also traditional towns that have not yet formed cities in terms of scale. Since the 1980s, great changes have taken place in rural industrial structure. Rural areas are not only places for farmers to engage in agricultural production and live in communities, but also a carrier of whole economic life. Apart from agriculture, rural areas also include economic activities of material production and non-material production such as industry, commerce and service business².

②In terms of the definition of traditional village, in 2012, the government investigated Chinese traditional villages and defined traditional villages in the following way. Firstly, the buildings with a long history in the villagers need to meet the standard of cultural relics protection units. Besides, traditional constructions should be harmonious and integrated with their surroundings. Traditional buildings have certain value aesthetic research in materials, structures and decorations, which is of great significance to inherit traditional customs. Secondly, in terms of site selection and planning, traditional villages can represent the characteristics of their regions, and the inheritance of national culture can be reflected in villages, representing the typical characteristics of specific historical periods, and have certain value in archaeological and cultural research.

③As regards the definition of historical and cultural villages and towns, the Chinese historical and cultural villages and towns are jointly selected by the Ministry of Construction, thus enjoying the legitimate protection at a certain degree. It is of critical historical significance to protect historical and cultural villages. Traditional villages fully reflect the overall landscape and national cultural characteristics of traditional folk residences and villages in China from the perspectives of overall layout, architecture, alley space and so forth. Up till now, 487 villages in China have been selected into the list of famous historical and cultural villages in China, and 312 villages have entered the list of famous historical and cultural towns in China.



Fig 1. Rural settlements in Northeast China (Photographed by Zhao Liangyu)

[2] Y. G. Peng, "Landscape analysis of traditional settlements", China Construction Industry Press, China, 1990.

2) Traditional settlements in Northeast China

Northeast China is not an administrative region, but a geographical, cultural and economic region in China. It often has two meanings in terms of the broad sense and the narrow sense. Northeast China generally refers to the three provinces in northeastern China and Inner Mongolia areas, while Northeast China in its narrow sense, refers to Heilongjiang Province, Jilin Province and Liaoning Province, which share almost the same regional characteristics. The research scope of this paper is Jilin Province, in which the author lives and works, and which is also the most representative area in Northeast China³.

From the perspective of location and boundary, traditional villages in Northeast China tend to be located in the suburbs of towns. From the perspective of industrial composition, the leading industry in most traditional villages is agriculture. The site selection of traditional settlement in Northeast China has undergone an evolutionary process. The site has changed from mountain to hills, then to mountains and plains. The location of traditional villages is very nature-oriented, most of which are along rivers, lakes and ditches, or in the southern areas in front of hills⁴, while some are near the main roads for the sake of convenience. The overall layout style of the buildings can be very flexible, and all of them choose to face the south, so the houses are arranged horizontally in order to form an obvious line.

Traditional settlements in Northeast China are famous for their long history, unique layout, deep religious overtones, colorful folk customs and quaint residences. It has great value in history, cultural relics, ecological environment, people's living environment and tourism. It is an important cultural heritage and living fossil of settlements in Northeast China⁵, and it plays a pivotal role in developing the tourism, and supporting the connotation of ethnic settlements in Northeast China.

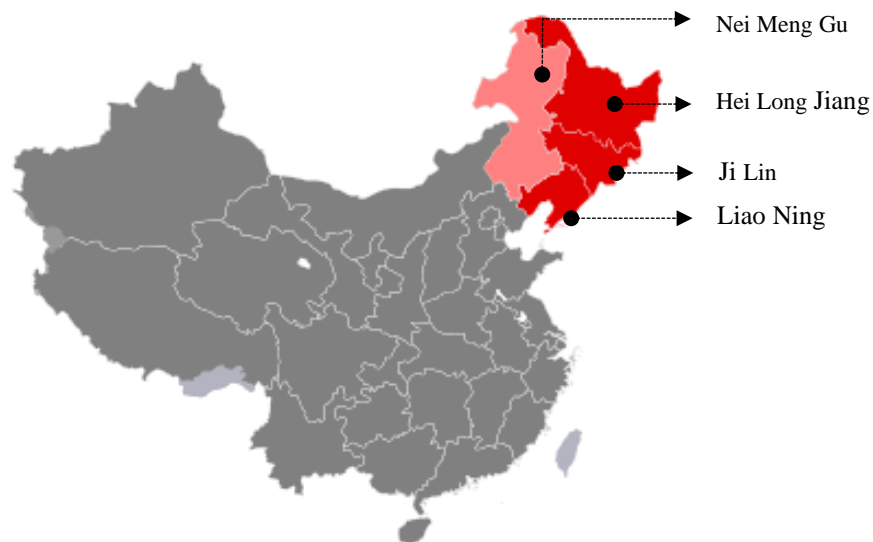


Fig 2. Location map of Northeast China (Drawn by Zhao Liangyu)

[3] L. L., "Rural settlements: Form, type and evolution", Southeast University Press, China, 2007.

[4] X. T. Fei, "Earthbound China", Peking University Press, China, 1998.

[5] Z. L. Liu, "Architectural will and cultural re-extension of traditional dwellings in North-East China", *Academic Inquiry*, no. 10, pp. 126–129, 2013.

1.3.2 Organic renewal of traditional settlements in Northeast China

Situated within the organic renewal theory, the present study about the renewal of Northeast traditional settlements focused on the organic nature of the overall organic renewal, the organizational renewal and the renewal process, which was applied to the design practice of traditional settlements in Northeast China. The characteristics and current situation of the traditional settlements in Northeast China were summarized through the interpretation and analysis of the traditional settlements, as well as the excavation and induction of the traditional Manchu culture in Northeast China⁶. Considering the present situation and the characteristics of folk customs, this paper studies the organic renewal strategy of traditional settlements in Northeast China in three layers, namely traditional settlements as a whole, alley space and single building. It also inherits and applies the traditional Manchu culture to the modern design.



Fig 3. Ancient village of Northeast China (Photographed by Zhao Liangyu)

[6] C. L. Zhang, "Part 3: Northeast Manchu Residences", *Northeast Residence*, China Construction Industry Press, China, pp121-148, 2012.

1.4 Methodology

1) Literature review

The literature is initially reviewed, including works, papers, periodicals and online information about the organic renewal theory, traditional settlements and rural landscape renovation. The analysis of the literature has provided a comprehensive theoretical basis for the present study. At the same time, the historical data of Wula Street Ancient Town in Jilin City and the relevant materials of related departments were collected, which provided a more comprehensive practical basis for the specific empirical research of this study.

2) Field research

The renovation of traditional settlement landscape does not merely rely on theoretical research. Therefore, after obtaining a general understanding of the relevant theoretical knowledge, this study, on the one hand, has studied the renovation characteristics of traditional settlements at home and abroad through the field survey of typical cases of traditional settlements and the summary of the author's experience of designing projects, and has used examples to explore the strategies and methods of landscape renovation that adapt to modern life with traditional characteristics of Northeast China. On the other hand, this study has conducted a detailed field investigation of the landscape of Wula Street Ancient Town in Jilin City, and the author has personally experienced the advantages and disadvantages of the *status quo* of Wula Street Ancient Town, so as to guide the renovation work in the next stage.

3) Combination of theory and practice

This study took the renewal example of traditional settlements designed by the author as the research object, paying equal attention to both the theory and practice. Guided by the organic renewal theory, this study put into practice the findings of the research on traditional settlement landscape renovation, and further confirmed and promoted the development of theoretical research through the implementation of projects, so that the theory and practice are in a state of mutual feedback and continuous improvement.

4) Iconology research method

In the process of collecting data, through the collection of historical and folk images, this study analyzed and summarized the categorization of images and the meanings of texts and images, identified the characteristics of Manchu residences and folk culture in Northeast China so as to clarify the historical state and development course of Wula Street Ancient Town and acquire a deeper understanding of the folk culture in Northeast China. In the process of case summary and project implementation, the designed concept and effect of the cases were demonstrated through shooting and organizing images of settlement cases, and designing images of practical cases.

1.5 Innovation of research

Although examples related to the theory in the renewal of Chinese traditional settlements existed before, most of them focused on the settlements in South China. As the number of traditional settlements in Northeast China is small, since some of them experienced damages by wars since modern times, the overall landscape of traditional settlements in Northeast China is worse than those in Southern China, while there is a paucity of studies on the protection of traditional settlements in Northeast China.

Moreover, prior studies have focused on the protection strategies for the improvement of living environments of traditional settlements, but paid less attention to the protection of traditional settlements as a whole. The author drew on the organic renewal theory to take a comprehensive perspective, viewing traditional settlements as an organic entirety, and protecting and inheriting not only the material environment, but also the residents and their cultural environment. Through the research on history, folk customs and design of Wula Street Ancient Town in Jilin City, the study proposed the protection and renewal strategies for the traditional settlement system with Manchu culture in Northeast China, which can provide theoretical basis for the protection of traditional settlements in Jilin Province and other areas, and contribute to the protection of traditional settlements in Northeast China.

1.6 Framework

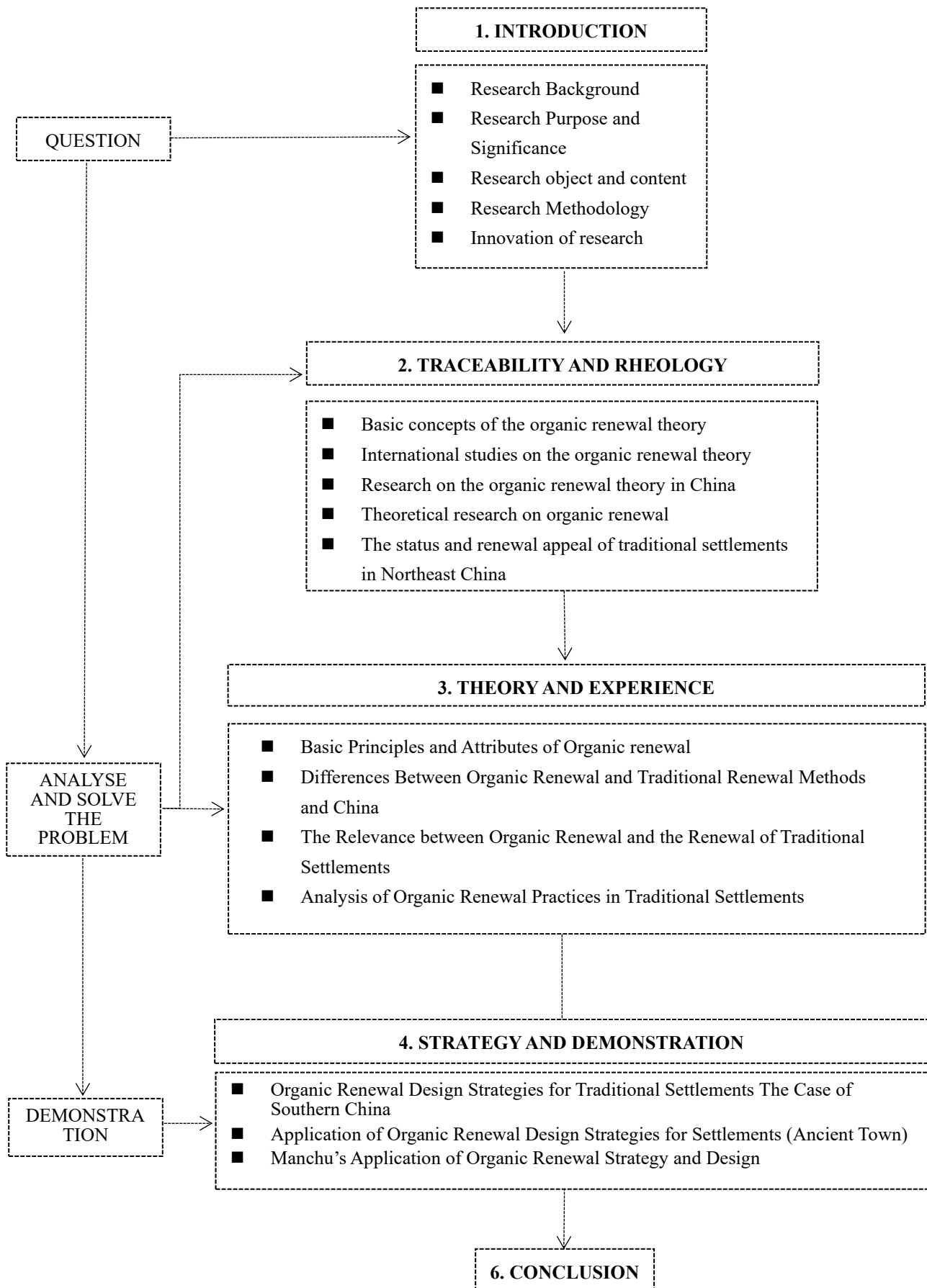


Fig. 2. Research framework (Drawn by Zhao Liangyu)

2 Traceability and rheology: Research on the organic renewal theory of traditional settlements

2.1 Basic concepts of the organic renewal theory

"Organic renewal" is the evolution from the biological perspective, and it refers to a metabolism process in which living organisms adapt themselves to the environment during their survival and development⁷.

In the field of architecture, organic renewal refers to a sustainable metabolism process in which the renewed object can be compared to a living organism. The organic renewal theory was initiated by Wu Liangyong during the renovation of Ju'er Hutong in Beijing in 1987 to guide urban renewal and historical block renovation; "the so-called organic renewal means taking appropriate scale and size, properly handling the relationship between present and future based on the content and requirements of renovation, continuously improving the quality of planning and design, and making the development of each district achieve relative integrity". As for the specific implementation, in accordance with the principle of sustainable development, the overall environment was improved and a harmonious organic unit was gradually formed after renewal, resulting in an inseparable structure and function, thus achieving the ultimate goal of organic renewal⁸.

2.2 International studies on the organic renewal theory

1) Patrick Geddes, a Scottish biologist and planner, proposed an idea to turn the city into a living organism at the end of the 19th century to address issues such as urban disease, emphasizing that the relationship between man and environment was the driving force that determines the development and change of the city. Later, some architects carried out relevant research on the concept of "urban organism".

2) Daosadias, the famous Greek urban planner, pointed out that cities cannot be built in one time, and it is necessary to combine "dynamic urban structure" with "static cells" (i.e., buildings) for planning urban construction. For example, the construction of Islamabad presided over by Dawsa Dias fully applied this dynamic urban construction idea.

3) In *History of Urban Development* (1961), Lewis Mumford elaborated his summary and reflections on the urban renewal movements in western countries. He demonstrated that urban renewal should fully take into account into people's needs, and pointed out that "the urban renewal and slum removal in the past 30 years has not solved the urban problems at all, but only changed the superficial images of the cities, while the cities still cluster aimlessly, which destroys the organic function of the cities, thus such urban renewal urgently calls for solutions"⁹.

[7] L. Y. Wu, "The old city of Beijing and Ju'er Hutong", China Construction Industry Press, China, 1994.

[8] K. Fang, "Explore the appropriate ways of organic renewal of residential areas in the old city of Beijing", Tsinghua University, 1999.

[9] Z. L. Qian, "Shaoshan experiment - renewal method and practice of rural residential environment", Zhejiang University, 2015.

4) Sharinen, a Finnish architect, put forward the organic evacuation theory aimed at the phenomenon of excessive expansion of big cities in the early 20th century, emphasizing that the central areas of cities should be reasonably rolled out, and cities can only have sound and orderly development with a good structure. For example, E•Howard, a British sociologist, put forward the concept of "pastoral city" for the problem of over-concentrated cities; In 1990, Camillo Sitte, a Vienna architect, pointed out that the harmonious unity of cities and towns came into sophisticated forms through the coordination of many building units; L•Wright, an American architect, proposed the idea of "wide-acre city", which could not emphasize more the idea of decentralized development of cities. Their studies all criticized the renewal forms of large-scale demolition and construction and emphasized the need for organic combination and harmonious development between man and nature, man and city, as well as city and nature. The idea of advocating the harmonious coexistence of nature, man and city obeys the law of urban development, and also coincides with the traditional view of "harmony between man and nature" in China¹⁰.

The international research on the organic renewal theory has highlighted the organic combination of cities and nature, and attempted to transform old cities and build new cities by establishing a healthy and orderly organic development model¹¹.

2.3 Research on the organic renewal theory in China

1) The background of the organic renewal theory

Since the implementation of the policy of reform and opening-up, China's urbanization has witnessed enormous improvement in urban environment, infrastructure and public service facilities. However, with the rapid economic growth comes the great agglomeration and mobility of population and resources, which has strengthened urban construction and expansion, resulting in great damage to numerous traditional buildings and increasingly prominent contradiction between old cities and urbanization. China's reconstruction of old cities used to apply the western renewal methods based on large-scale reconstruction. "Urban renewal" was simply understood as the demolition and reconstruction of the old material environment, while "urban protection" was interpreted as the intact preservation. Such large-scale demolition and construction and intact protection have become the two extremes of urban reconstruction. Because the situations in China differ from those in western countries¹², we should learn from the experience of western "urban renewal", and at the same time, we should explore the renewal strategies and paths suitable for China's development.

In this context of era, based on his understanding of the renewal planning of western urban areas, Professor Wu Liangyong conducted relevant renewal research suitable for the situations of old districts in Beijing with comparison of the different backgrounds between Chinese and western urban development. Professor Wu Liangyong put forward the idea of "organic renewal" when planning Shichahai in 1979, and then the idea of organic renewal was put into practice in the reconstruction of Juer Hutong in 1987¹³.

[10] Y. Chen, "Study on rural settlement ecology domestically and abroad", *Rural ecological environment*, no. 3, pp58-61, 2005.

[11] X. T. Fei, "Local reconstruction in China", Beijing United Press, China, 2018.

[12] Rapoport. A, "House Form and Culture", China Construction Industry Press, 2007.

[13] Koolhaas, "The future is in the Countryside", <https://theworldin.economist.com/edition/2018/article/14595/future-countryside>, The Economist, 2017.

2) Theoretical research

Since Professor Wu Liangyong applied the organic renewal theory to the renovation of old districts in Beijing and achieved success in the renovation of Ju'er Hutong, the organic renewal theory has been widely used in the protection and renovation of historical blocks and old urban areas. Subsequently, some domestic scholars have also applied the organic renewal theory to the protection and renewal research of some villages and towns.

Professor Wang Lu (1999) from Tsinghua University summed up the experience and lessons of German village renewal planning, applied its successful experience to the protection and renewal of traditional villages in China, and proposed that establishing renewal plans serves as the foundation of village renewal, which is the earliest research combining renewal theory with villages in China¹⁴. Pan Yi and Cheng Wangjie (2010) held a view that rural planning under the guidance of organic renewal should pay attention to shooting and organizing the construction of village appearance, but also the construction of infrastructure with urgent demands from villagers. They took Liujiashan Village as an example and carried out relevant empirical research. Wang Xudong (2011) from Xi'an University of Architecture and Technology, utilized the idea of organic renewal to guide the protection and development of traditional villages. In his paper, he clarified the relationship between the protection and development of villages under the guidance of organic renewal, and advocated that the organic renewal can be realized only by inheriting the natural environment, protecting the traditional system and the human environment in villages. Chen Zhongyu and Zheng Wenjun (2014) reformed old villages in Guilin based on the concept of organic renewal, and thought that in the planning, the path to realize organic renewal should be carried out in four aspects: sorting out alleys, renewing local settlements, organically renewing land use and recreating community cultural atmosphere¹⁵.

2.4 Theoretical research on organic renewal of Chinese traditional settlements

The research on the protection and renewal of traditional settlements started relatively late in China. Until the 1990s, domestic scholars' studies of architecture have gone through the transformation from single building to groups and then to settlements, and the research perspective has also changed from single building technology and form to the study of settlement environment and architectural culture of traditional residences¹⁶.

Professor Wu Liangyong once announced the idea of "regionalization of modern architecture and modernization of vernacular architecture". Influenced by this thought, Professor Shan Deqi has presided over several projects of National Natural Science Foundation in several countries, such as "Research on the Transformation Mode of Traditional Residential Colony" and "Structural Renewal of Traditional Villages and Blocks under the Context of Urbanization and Agriculture". He also explored the

[14] L. W, "Protection and renewal of traditional villages in rural architecture -- momentum of village renewal planning in Germany", *Journal of Architecture*, no. 3, pp16—21, 1999.

[15] X.h.Tan, "Localized place-making and the knowledge-based regeneration strategies – The case of Xiasha Village in Shenzhen" *Vol. 83*, no.1, pp73-84, 2019.

[16] P. Setijanti, "Traditional settlement livability in creating sustainable living procedia", *Social and behavioral sciences*, no.4, pp204-211, 2015.

modernization transformation of traditional rural settlements and buildings under the research background of urbanization and urban-rural gap. His book *Illustration of Chinese Traditional Residences* focused on the transformation process of vernacular architecture from tradition to modernity.

In the 1980s, Professor Chen Zhihua from Tsinghua University began to devote himself into the protection of Chinese vernacular architecture, and he was an advocate of Chinese rural settlements and architecture research. With more than 30 years of research, Professor Chen has published many books about vernacular architecture. He put forward the methodology of "overall research and protection of local settlements as the unit", which blazed a new path in the research on traditional residences and local architecture in China. The theory proposed by Professor Chen brings the traditional architectural culture of our country to a new level, providing theoretical support for the protection of rural settlements and guidance for the practice of rural planning and construction. Many dissertations were based on the theoretical and practical research of the organic renewal theory on rural settlement renewal, historical block protection and transformation, such as Qian Zhenlan's Ph.D dissertation in Zhejiang University, *Experiment-Method and Practice of Organic Renewal of Rural Human Settlements* (2015)¹⁷, Liu Juan's dissertation in University of Civil Engineering and Architecture in Beijing, *Research on Renovation Strategy of Mountain Rural Landscape Based on Organic Renewal Theory* (2017)¹⁸, Wang Dan's dissertation in Zhejiang University, *Strategies and Methods of Organic Renewal of Mountain Valley Villages in Dongshen Village, Deqing, Zhejiang Province* (2018)¹⁹, Zhang Guoshu's dissertation in University of Civil Engineering and Architecture in Beijing, *Research on the Protection of Qingni Village in Gansu Province Based on the Concept of 'Organic Renewal'* (2018)²⁰, Zhang Haiiao's dissertation in Shanghai Jiaotong University, *Organic Renewal of Rural Areas in Yunnan, China* (2021)²¹. These papers conducted experiments to confirm and summarize organic renewal according to different regional features, offering theoretical basis for further study in this study.

2.5 Theoretical research on the organic renewal of traditional settlements in Northeast China

The theoretical research on the organic renewal of Chinese traditional settlements mostly focused on the south of China with less attention paid to the north of China. Research institutions and scholars of traditional settlements in Northeast China were mainly in Harbin Institute of Technology, Jilin Jianzhu University and Shenyang Jianzhu University in Northeast China. *Jilin Residences* wrote by Professor Zhang Yuhuan (2009) and *Northeast Residences* wrote by Professor Zhang Chenglong of Jilin Jianzhu University (2012) have identified the regional characteristics of Manchu residences in Northeast China in detail. *Folk Culture in Northeast China* wrote by Shi Lixue (2019) has been the latest and most

[17] Y. Zhang, "Study on spatial correlation analysis method of mountainous settlement streets and lanes in the construction of small towns -- a case study of Guifeng village, Youxi", *Journal of Architecture*, no. 2, pp90-96, 2015.

[18] J. Liu, "Research on the renovation strategy of mountainous rural style based on organic renewal theory", Beijing Architecture University, 2017.

[19] D. Wang, "Strategies and methods of organic renewal of mountain valley villages in Dongshen village, Deqing, Zhejiang Province", Zhejiang University, 2018.

[20] S. G. Zhang, "Study on the protection of qingni village in Gansu Province Based on the concept of organic renewal", Beijing Architecture University, 2018.

[21] H. A. Zhang, "Organic renewal of rural areas in Yunnan, China", Shanghai Jiaotong University, 2021.

systematic theoretical work to examine Northeast folk culture so far. Professor Yuan Qing from Harbin Institute of Technology published *Research on the Features, Protection and Renewal of Landscape of Traditional Village Alleys in Northeast China* (2015), which captured the regional characteristics of rural alleys in Northeast China and put forward renewal strategies for different spaces in alleys. Hu Xuehui's paper *Research on Spatial Form of Traditional Villages in Northeast China* (2016) systematically displays the spatial characteristics of traditional villages in Northeast China and puts forward development and protection strategies. Wang Jingru from Northeast Forestry University's paper *Research on Small-scale Gradual Organic Renewal Mode of Rural Settlements in Heilongjiang Province* (2018) combines organic renewal and small-scale mode step by step, and puts forward strategies for the renewal of traditional rural settlements in Heilongjiang Province²².

Based on the literature review, it was found that the theoretical research on the organic renewal of traditional settlements in Northeast China focused on historical development, realistic investigation and spatial pattern analysis, with less attention on the development and organic renewal strategy of settlements. Therefore, the author focused on the organic renewal of traditional settlements in Northeast China, which has important significance for the theoretical study of organic renewal of traditional settlements in North China²³.

2.6 The status and renewal appeal of traditional settlements in Northeast China

2.6.1 Development status

Since the first batch of villages entering the list of Chinese traditional villages was announced by the Ministry of Housing and Urban-Rural Development the Ministry of Housing and Urban-Rural Development in December, 2012, a total of 4,157 traditional villages have been selected. A total of 32 villages in Northeast China were selected. In terms of quantity, the number of traditional villages in Northeast China accounted for less than 1% of the national total amount, so the cultural resources of traditional villages in Northeast China still need to be excavated.

1) Manchu folk culture in traditional settlements in Northeast China

Manchu has a history of more than 3,000 years and their ancestors can be traced back to the ancient Sushen people prior to 221 BC. Sushen people are the earliest documented ancient ethnic groups in Northeast China. At that time, tribes were built along the Yangtze River and they made a living by fishing. Manchu has the largest population among 56 ethnic groups in China except Han. Northeast China is the birthplace of Manchu, and 70% of Manchu population lives in Northeast China²⁴. Manchu folk culture includes religion, ancestor worship, family rules, food, clothing, dwellings, folk art and other forms. Manchu culture boasts rich heritage resources in Northeast China, exhibiting colorful Manchu folk culture forms, which are considered as cultural treasures of all mankind.

[22] X. H. Hu, "Study on the spatial form of traditional villages in Northeast China", Harbin Institute of Technology, 2016.

[23] R. J. Wang, "Study on small-scale progressive organic renewal model of rural settlements in Heilongjiang Province", Northeast Forestry University, 2018.

[24] Q. Yuan, "Study on the protection and renewal of traditional village features in Northeast China", Harbin Institute of Technology, 2015.

① National costumes

Cheongsam is the common costume for Manchu, regardless of people's sex, age, and wealth. It is gradually developed by Manchu and its ancestors to adapt to the long-term hunting livelihood in the mountains. The basic shape of cheongsam is round neck and narrow sleeves. The length of Men's cheongsam can achieve to their foot and the cheongsam splits on all sides for riding and shooting. At the beginning of the Qing Dynasty, women's cheongsam was wide and straight, long to the foot, with straight and fat cuffs, in plain color. While at the end of the Qing Dynasty, men's cheongsam was gradually abandoned, and women's cheongsam developed from original style to the costume with most Chinese characteristics amid a crowd of popularity. Since the beginning of the Republic of China, Han women have followed the example of Manchu women and started to wear cheongsam, which accelerated the change of cheongsam and finally brought it to a higher level of fashion. It became the costume which can best represent the charm of oriental women, enjoying the reputation of "national costume"²⁵.



Fig. 5. Men and women in cheongsam during the Qing Dynasty (Pictures from *Northeast Folklore*)

② Traditional festivals

Manchu festivals in Jilin have not only kept their own national characteristics, but also have been influenced by the Han nationality in Northeast China, showing the characteristics of Manchu-Han integration. Its main festivals are Spring Festival, Lantern Festival, Dragon Boat Festival and so on. Spring Festival is the most important festival for Manchu people. They began to prepare it from the end of the last year until the Spring Festival in early February. There are many main customs of Spring Festival, including killing pigs, sweeping houses, steaming rice cakes, sticking Spring Festival couplets, sticking blessings and so on. On the Spring Festival, people would reunite with their family and go to visit relatives and friends next day²⁶. 15 days later comes the Lantern Festival, during which people would watch lanterns, enjoying fireworks and eating dumplings.

③ Folk art

As a living culture, Manchu folk paper-cutting has strong national characteristics. Manchu believed in Shamanism and considered that all things were spiritual, which formed worship towards nature, totem and ancestors. In Shaman culture, Mammy God is a symbol of good fortune and has become a traditional theme of Manchu folk paper-cutting. Mammy is the main image of Manchu paper-cutting²⁷, and men are in robes and mandarin jackets with braids standing on their heads. Women are decorated with corollas,

[25] L. Jiang, Y. W. Bi, and S. Y. Zhang, "Folk memory of Kuandian-Manchu countryside", *China's Ethnic Groups*, No. 6, pp. 56-63, 2016.

[26] L. X. Shi, "Northeast Folk Culture", Social Science Literature Press, China, 2019.

[27] Z. M. Huo and Z. X. Huang, "Research on the inheritance and conservation of ethnic minorities in North-East China - Taking Manchu folk houses as an example", *House*, no. 9, pp. 96-97, 2019.

round eyes and square mouth, triangular nose, drooping hands with five fingers separated, and the patterns on clothes are burned with incense. As a precious cultural heritage, Manchu folk paper-cut art was listed in the Intangible Cultural Heritage List of the People's Republic of China and the World Intangible Cultural Heritage List by UNESCO in 2009. Manchu paper-cutting can be divided into myth paper-cutting, god worship paper-cutting, shaman paper-cutting, legend paper-cutting, traditional custom paper-cutting and real-life paper-cutting²⁸.

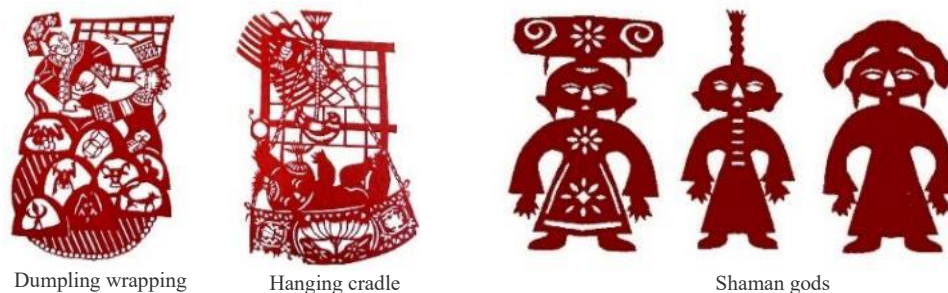


Fig 6. Manchu paper-cuts (Created by Folk artists Wang Yumei and Ni Youzhi)



Fig 7. Paper-cuts decorations on the windows of traditional residence (Photographed by Zhao Liangyu)

Farmer painting came from Manchu folk, and its content and form were mostly influenced by Manchu traditional folk customs. In its headstream, it expresses modern folk customs in the form of ancient folk art²⁹, and has formed its own unique style and aesthetic characteristics. Among painting techniques, the painter absorbed the artistic features of Manchu folk paper-cutting and embroidery, and they chose excellent stories, legends, allusions and customs of Manchu folk to be its subject, which was full of local characteristics. The use of color focuses on enthusiasm with bright red and green, and it also tends to choose obvious comparison and differences in color, and reflects simple objects with complex and diverse colors, which has become an important aesthetic feature of farmer painting³⁰.

[28] Y. H. Zhang, *Jilin Dwellings*. Part 3: Manchu residential architecture, Tianjin University Press, China, pp. 20–82, 2009.

[29] L. J. Zhou, *Northeast Folk Residences*. Part 3: Northeast Manchu Dwellings, China Construction Industry Press, China, pp. 121–148, 2009.

[30] X. S. Han, *Manchu Folklore*. Part 9: The dwellings of the Manchu ancestors, Shenyang Publishing House, China, pp. 9–12, 2004.



Fig 8. Manchu peasant painting- *New Village* (Drawn by Folk artist Wang Wei)

2) The characteristics of Manchu residences in traditional residences in Northeast China

① Classification and materials of buildings

Manchu residences in Northeast China can be divided into three categories, namely, brick houses in towns, courtyard houses in villages and small single-family houses in villages. Urban residences tend to be large in scale and high in construction grade, with blue bricks and wood structures and gray tiles on the roof. Rural courtyard houses are mainly small three-section compounds formed by multiple houses, which are generally made of soil and wood, and the roofs are paved with grass roofs. Small single-family houses in rural areas take the form of rammed earth combined with wood structure, with simple courtyard layout and small areas³¹.




	Town residence	Rural courtyard residence	Rural single residence
Pictures of residences			
Wall structure	Grey brick masonry	Adobe masonry combined with wooden structural columns	Adobe masonry
Roof structure	Wood structure, Grey tile paving	Wood structure, Wood tile paving	Wood structure, Straw roof paving
Material	Grey Brick, Grey Tile, Wood	Wood structure, Wood tile	Adobe, Straw
Colour	Grey	Grey, Earthy yellow, Straw	Earthy yellow, Straw

Table 1. Classification of residences (Photographed and drawn by Zhao Liangyu)

[31] W. Zhao, "Exploring traditional Manchu folk architectural forms", *Journal of Inner Mongolia University for Nationalities*, vol. 18, no. 6, pp. 167-168, 2012.

② Courtyard and building layout

Manchu residences can be divided into two types, that is, three-section compounds and four-section compounds. There is no gatehouse at the front end of three-section compounds, but the gate is opened and surrounded by a big wall. There is a gatehouse at the front of four-section compounds as the main entrance. Manchu residences include single buildings such as main house, wing house and concierge. The main house and concierge are arranged on the central axis, and the wing houses are arranged at both ends of the main house. Most of the front parts of the main house and wing houses have front porches, and the houses are connected by cloisters. The relationship between the main house and the wing house embodies the master-slave thought. In a courtyard, the main house of the inner courtyard is the place where the elders and masters live, so the building is tall and magnificent. The wing house is the place where the younger generation and guests live, so it is smaller than the main house, and wing houses, servant rooms and facilities in the outer courtyard are way smaller.

Houses have different layouts according to the number of rooms. Generally, there are three, five or seven rooms, and each room is rectangular. The general size is 6–9 meters long and 3–5 meters wide. The most prominent characteristic of the Manchu people's living rooms is that kang (kang is a heated brick bed) are built along the walls of three sides of the room, namely the north, the south, and the west. The beds on the three sides connect, and the one to the west is usually narrow. Another characteristic is the cradle hanging on the beam. This is because the Manchu people lived in the period of hunting when there were often poisonous snakes and wild animals in the mountains and forests. It was unsafe to put the baby who could not walk on the ground meanwhile the Kang was so hot that children might get sick if staying on it for a long time. Therefore, people came up with the idea of hanging the cradle.

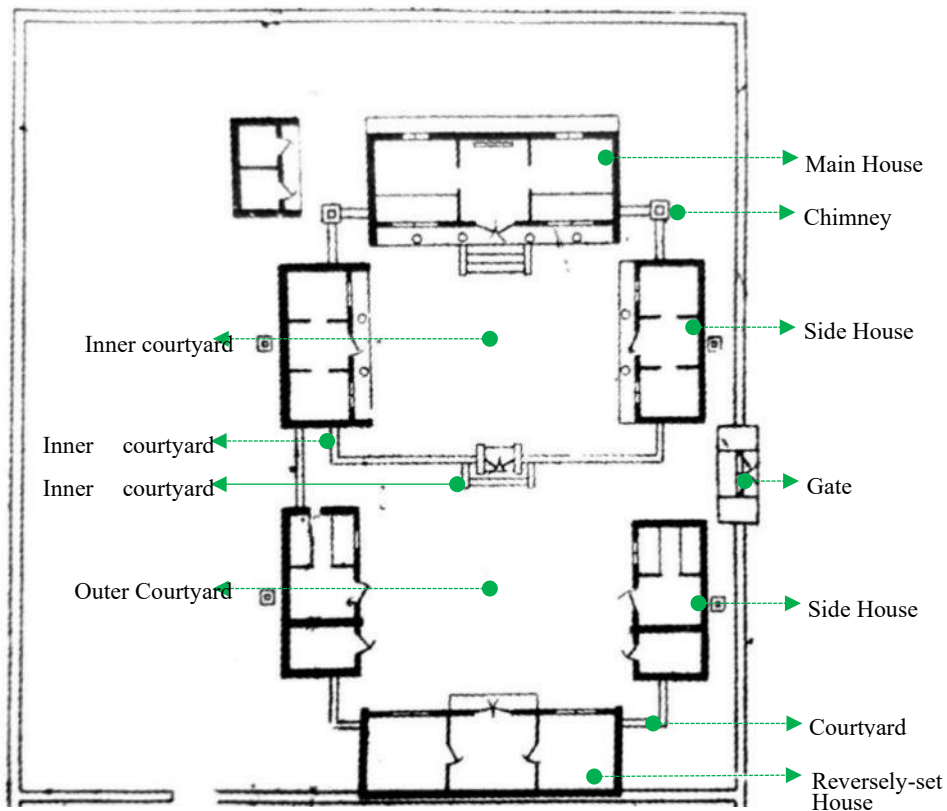


Fig 9. Analysis of the layout of the courtyard (Drawn by Zhao Liangyu)

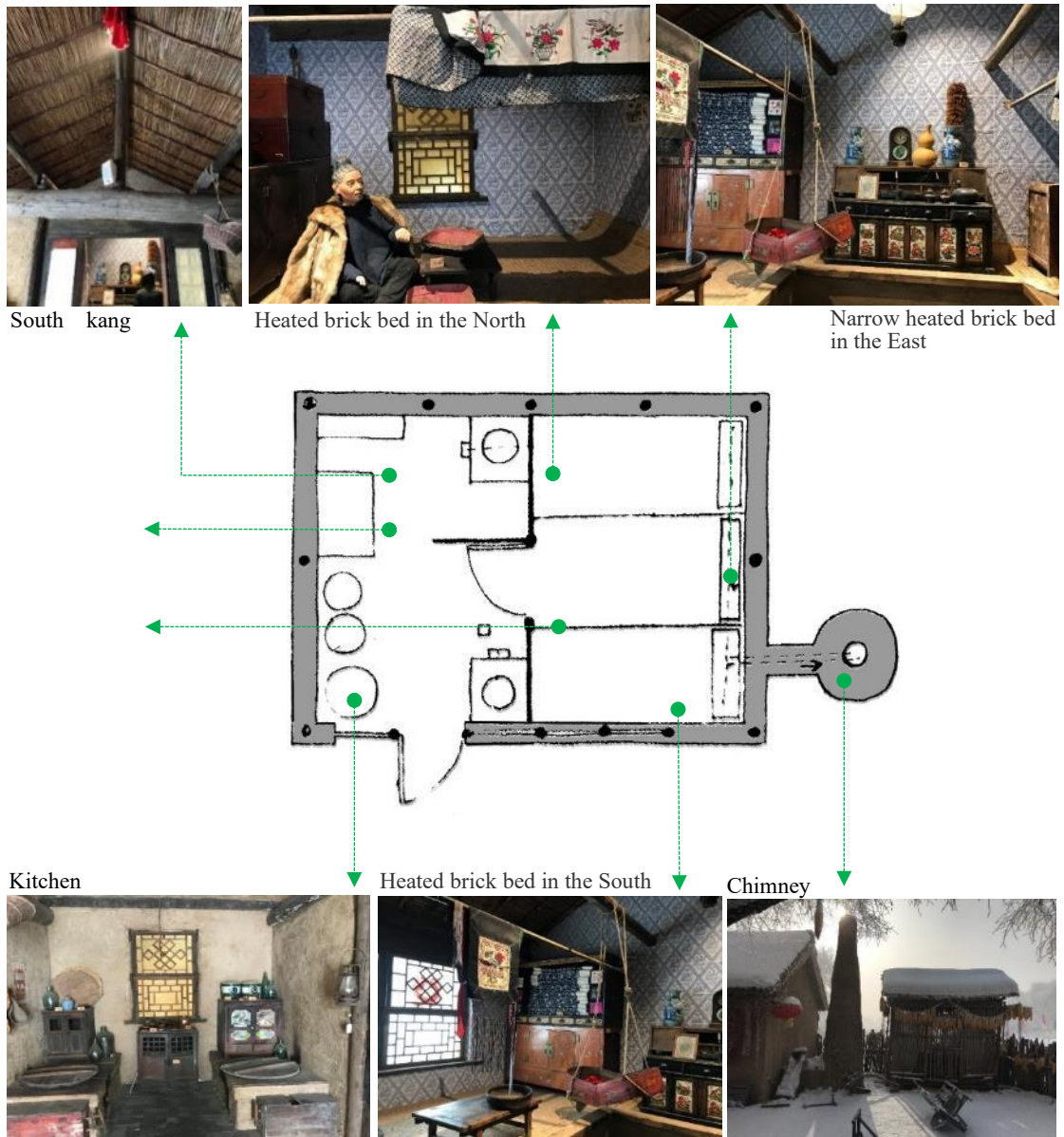


Fig. 10. The interior layout of the Rural courtyard residence (Photographed and drawn by Zhao Liangyu)



Fig. 11. Courtyard of Rural residence (Photographed and drawn by Zhao Liangyu)

③ Architectural elements in the courtyard

Steps—They are arranged at the entrance of the architecture, 10–20 centimeters higher than the ground. The edges are inlaid with stone and the inner parts are paved with bricks. Its length is the same as the width of the road.

Gate—There are mainly four types of gates. The first type is the house-type gate, which is used at the forefront of the three-section compound (a traditional style of Chinese courtyard), and the rooms connected by the gate on both sides are the gatehouses of the quadrangle courtyard. The second type is the wooden plank gate, which is used when there is a big wall in front of the three-section compound. This gate makes full use of local timber and is exquisitely constructed. The third is the wooden stick gate, which simply consists of two wooden pillars and a wooden beam at the top. This type is widely used in both the urban and rural areas in northeast China³².



Fig 12. House-style gate; wooden board gate; pole gate (Photographed and drawn by Zhao Liangyu)

Screen wall—The screen wall of a Manchu house is usually built on the outside, and facing the centre of the gate. People can definitely see the wall when they go out. In ancient times, it was ominous for people to see the chimney of some other household when entering or leaving the front door, as well as to see a distant graveyard. Therefore, a wall was established as a screen. In addition, it also served to protect privacy and security and prevent unwanted visitors from entering the courtyard directly.

Chimney—There are three main types of chimneys in Manchu residences. The first type is the brick chimney. The horizontal flue built on the ground connects to the building. Most of these chimneys are located on the side of the building, which can also be built in front of or behind the building. The chimneys are tall because of the windy weather in northeast China. The second type is made of hollow wood formed naturally in the mountains and forests. Because ancient Manchu people lived in the mountains³³, where these hollow trees were ubiquitous and were a cheap and convenient material. The third type is a mixture of mud and grass masonry chimney. After the Manchu people moved to the plains, they could not easily get hollow trees, so they mixed mud and grass with water and made the mixture into cylinders. As most of the early Manchu residences were grass houses with grass roofs, the chimneys were independent of the houses and the bases were 1–2 metres from the façades to prevent a fire.

[32] W. W. Zhang, “Architectural features of Manchu folk houses in North-East China”, *Shanghai Arts and Crafts*, no. 6, pp. 83-85, 2012.

[33] T. J. Wang, “A study on the inheritance and development of the indigenous culture of Manchu folk dwellings in North-East China”, *Journal of Jilin University of Arts*, vol. 126, no. 3, pp. 67–72, 2015.

④ Architecture Form of the Roofs

Roof—There are two main materials for the roofs, namely tile and grass. Tile roofs are generally laid with gray tiles, with bordered ends to avoid the feeling of thinness. And there are two layers of tiles at the eaves, both for decoration and drainage. Grass roofs, on the other hand, are made by laying grass on a wooden frame.

Ridge—There are two main types of ridges. One is solid and simple, and the other is decorated with tiles or carved bricks. The latter is called flower tile ridge, which is more elaborate. It has patterns including fish scales and chains, as well as lotus flowers in the centre of the ridge, symbolizing good luck. There are also many simple or complicated shapes at the two ends of the ridge. Some ridges have different patterns on each side, with a dragon head on the east side and a phoenix tail on the west side, signifying that disasters and misfortunes can be blocked by the dragon head and phoenix tail, all of which are wishes for peace and good fortune.



Fig 14. Solid ridge, Fancy roof ridge (Photographed by Zhao Liangyu)

⑤ Forms of architecture façades

Gable—One type of gable is made entirely of bricks, while the other is made of brick and stone. There is a carved stone pattern on the base stone in front of the gable, and the pattern expresses a wish for wealth and good fortune. The upper part of the gable decorated with carved patterns is a unique feature of the Manchu residences in Jilin Province. Most of the patterns are flowers and animals that signify good fortune.

Window—The Manchu architecture usually has double-layered windows, the outer layer of which can be removed in summer to facilitate ventilation. There are two large windows on the south side of the buildings, the lower one is often closed. The shaft is equipped at the upper end of the window and the window is supported by wooden sticks when opened inward, or hung on the shed by a hook. The window frames are decorated with various patterns, with simple designs, straightforward lines and exquisite workmanship, and all the patterns indicate good fortune and happiness.



Fig 15. Forms of windows (Photographed by Zhao Liangyu)

Pillar— The pillars are usually made of local pine and painted red. The pillars are thick at the bottom and thin at the top, with a diameter of about 23 cm at the bottom and 27 cm at the top. The pillar bases in the Manchu residences look very similar, like drums. In terms of patterns, there are plain ones and ones with carved patterns.

⑥ Structural Features

The wood structure of the Manchu residences belongs to the beam-and-column structure system, which is widely used in official and noble buildings and is also the most preserved architectural structure style. The so-called beam-and-column structure is to erect columns on the ground and put beams on the columns to form the skeleton of a house. According to the number of columns and beams, the structure has many different types, with a general pattern of a triangular ridge, two pitched roofs and vertical wooden columns supporting the building.

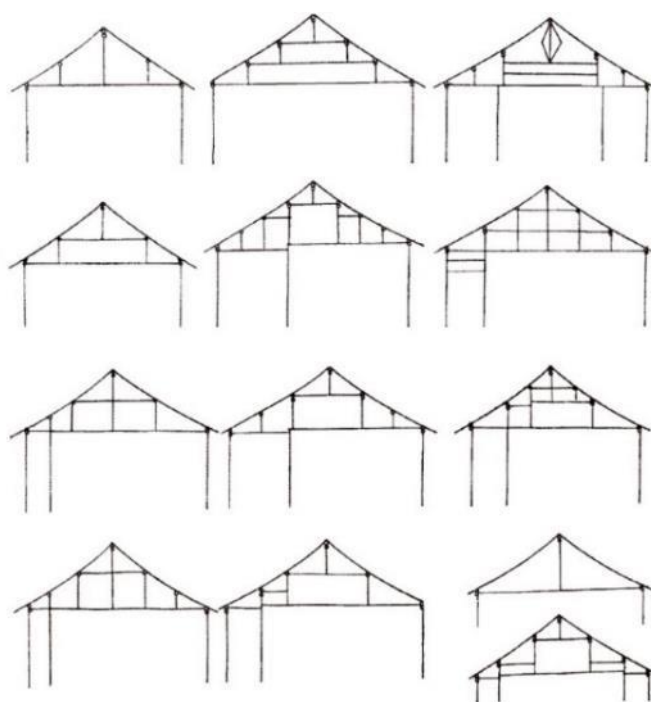


Fig 17. Wooden structure styles of traditional residences

2.6.2 Appeal for Renewal

It is urgent to protect the traditional villages and architecture in northeast China, which, at present, are poorly protected. And the “planning of beautiful villages” promoted by the country does not really cover the unified planning, continuation and revitalization of the material and socio-cultural forms of the villages. The protection of traditional architecture falls short of the practical requirements. The old settlements fail to fit into the modern way of life and production. Except for a few celebrity residences and ancestral houses, most of the traditional buildings get dilapidated and demolished, and there is insufficient excavation and protection of the historical and cultural characteristics of the villages. It can be seen that a large number of traditional villages and buildings widely scattered in northeast China are not well protected, without effective hierarchical protection mechanisms in place. Therefore, the protection work needs to be expanded, both in depth and

breadth.

With an increasing number of tourists visiting northeast China, traditional villages have gradually become a signature of the tourism industry of the region. The feature tours in the three northeastern provinces include sightseeing, art learning, folk culture experience, human settlement environment, architectural experience, etc. Nowadays, the traditional villages in the region fall behind the needs for tourism development. The protection of these villages is in a grim situation because it has not been figured out how to improve living environment and conditions against the backdrop of rapid urbanization and better financial status of the villagers, with the insufficient understanding of the spatial forms and the protection of cultural heritage's value serving as another reason. Therefore, the unified planning and guidance for the protection and development of traditional villages in northeast China should be put forward, coupled with protection strategies that keep pace with the times.

3 Theory and Experience: Strategies and Practices of Organic Renewal of Traditional Settlements

3.1 Basic Principles and Attributes of Organic renewal

3.1.1 Basic Principles

1) Integrity—Organic renewal emphasizes the integrity of the subjects, which should be carried out in accordance with the original law of development and contextual features of the subject, with the relative integrity of the texture and order maintained, to avoid the intervention of a large number of external factors.

2) Continuity—No city can be developed in isolation from its regional characteristics. Moreover, since valuable historical resources and wealth have been created in old cities during the long-term development, the transformation process of organic renewal should be carried out on the basis of continuing the historical context and respecting the living habits of local residents³⁴.

3) Dynamic progression—Organic renewal is a dynamic and stepwise process. The areas to be renewed generally have complex and diverse problems, which often cannot be solved all at once due to the dearth of funds and the far-reaching problems involved. Therefore, the most dilapidated and urgent parts can be renewed first in this process. Gradually, the new replaces the old, with the old environments improved. This approach requires less investment but has quick returns. Adjustments should be made as the construction deepens to avoid similar problems and properly deal with the relationship between the present and the future in the renewal³⁵.

4) Autonomy—Renewal is a complex project concerning the vital interests of local residents, which is difficult to achieve by relying on the government or developers. Therefore, public participation should be fully mobilized. Only by focusing on the realistic needs of residents can an environment that meets their needs be created.

5) Comprehensiveness—To better meet the needs of urban life, organic renewal should not only upgrade the physical environment but also coordinate and unify the related social, economic and humanistic benefits at various levels. In addition³⁶, efforts should be made to gain more benefits.

3.1.2 Basic Attributes

Dr. Fang Ke from the School of Architecture at Tsinghua University, Mr. Wu Liangyong's PhD student, further summarized the basic attributes of organic renewal based on the existing organic renewal theory and the study on Ju'er Hutong.

[34] Frans Thissen, "Guest editorial: Changing villages; what about people?", *Journal of Rural Studies*, Vol.87, pp423-430, no.10, 2021.

[35] M. Shucksmith, "Re-imagining the rural: from rural idyll to Good Countryside", *Journal of Rural Studies*, Vol. 59, no.4, pp163-172, 2018.

[36] Ioanna Katapidi, "Heritage policy meets community praxis: Widening conservation approaches in the traditional villages of central Greece", *Journal of Rural Studies*, no.1, pp47-58, 2021.

1) The overall organic nature—A city, no matter from an overall or detailed perspective, should be an organic whole. For urban renewal, the city should be studied as a whole. Only by establishing an orderly organization in which all parts of the city are interrelated can order and vitality be formed.

2) The organic nature of the renewal of “cell” and “tissues”—Cities also have metabolism, in which every “cell” or “organization” needs to be constantly updated, such as buildings, courtyards and blocks in the city.

3) The organic nature of the process of renewal—Cities are like organisms, whose metabolism is a natural and orderly process of change. Therefore, cities should be renewed in accordance with the internal order and development law.

4) To summarize, organic renewal is a small-scale, fragmented, phased and dynamic approach that enables the healthy development and orderly evolution of cities.

3.2 Differences Between Organic Renewal and Traditional Renewal Methods

The differences are as follows:

1) The process—The traditional renewal of settlements tends to be large-scale and completed with concentrated efforts in a short period of time while organic renewal highlights continuity and gradualness, with constant adjustments during the dynamic process of renewal.

2) The subject—The subjects of the traditional renewal methods are government departments and real estate developers. The traditional approaches are controlled by the designers while the users' wills are overlooked. Organic renewal, based on the communication and coordination with the public, focuses more on the real participation of the latter.

3) The objective—The traditional methods focus on economic benefits, which cause the loss of regional characteristics and cultural emotions. Organic renewal considers social, economic, cultural and natural benefits to meet the multi-level needs of people and society and promote the overall development.

4) The content—The traditional methods tend to focus only on the renewal of the spaces of physical forms while neglecting the development of the non-physical forms. Organic renewal covers multiple aspects such as the form spaces, social spaces and environmental spaces.

5) The method—The traditional methods tend to be top-down, lacking in-depth and detailed investigation and research on current conditions and problems³⁷. Organic renewal underscores the cyclic design that combines top-down and bottom-up, which helps to conduct thorough and intensive analysis to ensure the feasibility of the final solution.

6) The philosophy—The traditional methods are based on modern functionalism, with a simplistic and limited perspective, which is not conducive to the long-term development of a complex and diverse subject. Organic renewal is based on the theory of sustainable development, focusing on the relationship between the present, the past and the future, with attention to deeper dimensions.

[37] D. Z. Guo, “Organic combination and good guidance -- Discussion on some problems of current mountain village and town planning”, *Planner*, no. 9, pp30-32, 2004.

<i>CONTENTS</i>		<i>TRADITIONAL RENEWAL METHOD</i>	<i>ORGANIC RENEWAL METHOD</i>
<i>SUBJECTS OF VALUE</i>		Administration, Market	Residents and the overall area
<i>PARTICIPATING SUBJECTS</i>		Government, Developer, Designer	Residents, Government, Markets, Designers and other social forces
<i>PROCESS CHARACTERISTICS</i>		Staged, Terminated, Closed	Continuous, Progressive, Openness And Dynamic
<i>METHODS OF OPERATION</i>		From management to executive, Physical space	Combination of management and Executive, Multi-factor participation
<i>CORE OBJECTIVES</i>		Economic benefits	Integrated social, Economic and Environmental benefits, Satisfy the multi-level needs of people
<i>MAIN CONTENTS</i>		Physical space	Morphological space, Regional social space, Environmental space
<i>THEORETICAL CONCEPTS</i>		Modern functionalism	Theory of sustainable development

Table 2. The difference between organic renewal and traditional renewal (Drawn by Zhao Liangyu)

3.3 The Relevance between Organic Renewal and the Renewal of Traditional Settlements

1) The organic attribute of the settlements

Compared with cities, rural areas fit into nature to a larger extent and have a more distinct organic attribute. Traditional villages are like naturally organized organisms due to the organic integration of their overall forms into nature, the organic relationship between architectural units and spaces and the organic growth of self-evolution.

① The overall organic nature of settlements—In the traditional countryside with lower economic and technological levels, people’s production and life rely directly on the natural environment, which leads to the concept of harmonious coexistence of human beings and the environment, as well as an ecological outlook. The location and construction of settlements tend to conform to the limits of the natural environment. Therefore, during the long development, the traditional villages have evolved slowly from disorder to order by relying on the interaction of various factors, where an ecosystem featuring an organic integration of nature and human settlement, production and life has gradually formed.

② The overall organic nature of the organization unit—As a systematic organizational unit, the human settlement, without specific instructions from the outside world, coordinates with and adapts to the original village environment in terms of location, scale, function and form, autonomously forming an orderly system. The organizational units lies a spatial form featuring coordination and organic relevance, and all organic organization units form a complete organic system.

③ The overall organic nature of self-evolution—The self-organized growth process of the villages allows the new residential units to maintain similar functional characteristics, coordination

and unity with the whole so that the form leans toward a free and homogeneous growth. Over a long period of time, traditional villages have been able to maintain or improve their existing spatial forms by making local adjustments by themselves, thus enabling a state of organic growth in the villages.

2) The Organic Renewal of Traditional Settlements

The meaning of “organic” is a certain inheritance. In a traditional settlement, it means a unity in which various components of the settlement, the settlement and its surroundings are inseparable from each other, and so are the content and form of the spatial environment of the settlement. The conditions of a building and its relationship with the surroundings should be taken into consideration during the renovation to make the building a vital and dynamic space.

“Renewal” refers to dynamic preservation and development, i.e. preserving the parts of the traditional settlements with historical values, renovating the parts that are not in line with the environment and local landscapes and reconstructing the parts that are seriously incompatible with the tradition landscape or dilapidated situation³⁸. In short, under the consumption of protecting traditional landscape, the buildings and the environment should be renewed and improved so that they can firstly continue the traditional landscapes and features and adapt to the needs of modern life.

3.4 Strategies Constructions of Organic Renewal of Traditional Settlements

Based on the study of organic renewal theory and the guidance of organic renewal principles, renovation strategies of traditional settlements are proposed as follows and will be applied to the case study in the subsequent part of the paper for practical verification³⁹.

1) The strategy of controlling the landscapes in a holistic manner to indicate the direction

The strategy emphasizes that the renovation of rural landscapes should be regarded as a whole, instead of simply improving and constructing a certain part, so a holistic control system is a prerequisite. There are three models of renovation models according to how the landscapes are preserved⁴⁰.

Firstly, the “protection” model is for the traditional villages with well-preserved historical landscapes, which are in harmony with the natural environment and have an architecture with distinct regional landscapes⁴¹. This model of renovation is applied in these villages to maintain the integrity of the rural landscapes and highlight the regional values.

[38] Y. L. Li, “Practice and Reflection on the living protection of mountainous villages in southern Zhejiang -- a case study of Songyang County, Zhejiang Province”, *Zhejiang Social Sciences*, No. 8, pp. 143-150, 2016.

[39] H. W, “Investigation on the practice of village renewal in Rongshui County, Guangxi”, *New Architecture*, no.4, pp12-16, 2005.

[40] F. Y. Wang, “Exploration on village planning and renovation of haotang village in Xinyang and Its Enlightenment to the construction of beautiful countryside”, *Small town construction*, no. 7, pp62-66, 2015.

[41] X. Y. Chen, “Study on small-scale progressive microcirculation transformation model of beichizi historical district”, Beijing University of Technology, 2007.

Secondly, the “upgrade” model is for villages with poor living conditions where some traditional buildings have been left idle or demolished after years out of repair. This model continues the original layouts of the villages, but the buildings and the village environment are altered to varying degrees. To be more specific, the traditional texture and pattern are preserved, with the traditional architectural landscape passed down, and the spatial environment, buildings and infrastructure are renovated to meet people’s requirements in their daily social life.

Thirdly, the “brand-new” model is for villages with relatively poor historical and cultural values which were constructed through unified planning and design. In the renewal process, attention should be paid to the improvement and renovation of infrastructure required by the villagers, with some characteristics of the original architecture applied to the new construction in order to continue the region’s architectural features.

2) The continuing strategy of the regional context

Guided by continuity, one of the basic principles of the organic renewal theory, the regional context of villages should be continued and the landscapes should be developed and passed down through an approach that preserves the original pattern and protects the traditional culture, with the nature, history, residents and traditions being respected.

① Protecting the texture of villages and maintaining the original pattern—At present, most of China’s villages have witnessed large-scale demolition and construction of traditional buildings, resulting in the destruction of the original landscapes, but the figure-ground relation between architecture and the texture of countryside still exists. It is necessary to maintain the original pattern and preserve the original texture of the streets, architectural styles and various spatial forms as much as possible, which are the witness of the villages’ history and culture. In addition, according to the status quo and the new functional requirements, it is advisable to use new materials and methods to adjust and repair the local space. This strategy maintains the overall landscapes of the original rural environment and preserves the organic spatial order formed during centuries of self-growth, and takes into account the daily social needs of the people while respecting history and cultures.

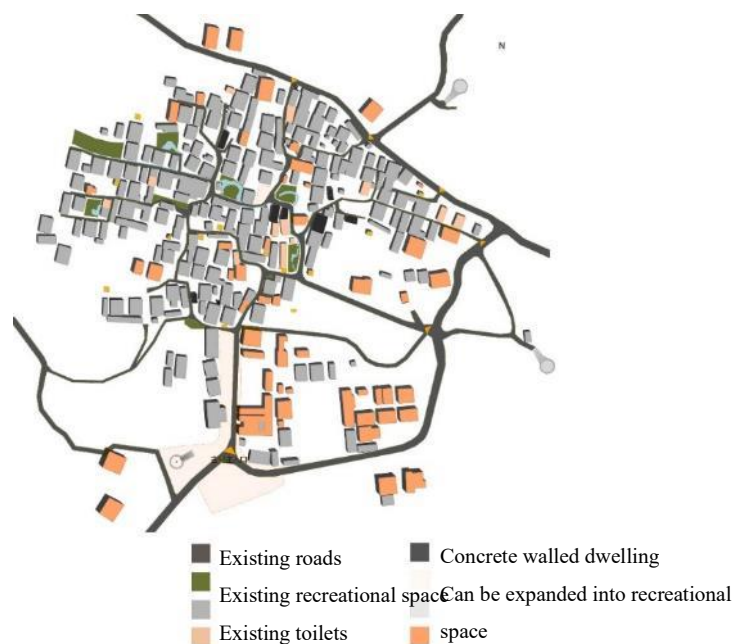


Fig 18. Combining the original rural texture of Meixiao Village (Designed by Zhao Liangyu)

② Passing on the traditional culture and maintaining the rural memories. Biological organisms have heritability and can pass on their genes from generation to generation, which is the biggest difference between them and non-living things. For the rural areas, the hereditary genes are their cultures, which are the spiritual and emotional support of the villagers. Through the recognition, protection and dissemination of the cultures, and through the passing on of specific awareness and places within the settlements, the spirit of the residents is gathered and a common sense of belonging is created. The concept of organic renewal advocates respecting the laws of rural development⁴², the cultural characteristics of different regions and the living habits of villagers. In addition, organic renewal emphasizes a stepwise process for the passing on and development of local cultures, so that the daily habits, values, customs and activities of rural residents do not change abruptly due to external shocks in the renewal process. Thus, the harmonious development of local cultures and the rural areas is ensured⁴³.



Fig 19. The embodiment of volcano culture in the entrance square of Meixiao Village
(Designed by Zhao Liangyu)

3) The transforming strategy of the physical environment

In the past, villages witnessed backward technical levels of rural construction and poor infrastructure and public service facilities. The self-sufficient production method completely separated from the city could no longer meet the villagers' living and psychological needs, and the villagers also have the right to enjoy the same modern conveniences and services as urban residents. Therefore, the traditional context of the rural areas should be respected to coordinate the modern functions and the traditional rural environment. In terms of the implementation in the physical environment, the spatial environment, architectural landscapes and infrastructure can be optimized to highlight the local features⁴⁴. The living standards in the rural areas should also be improved while the traditional landscapes are continued, and the villagers can therefore live and work in peace and contentment and enjoy a meaningful country life in which they are respected.

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[43] D. Wang, "Ethnic groups, communities and rural settlement construction -- a case study of ethnic minority villages in Southwest China", China Construction Industry Press. 2008.

[44] Q. Yuan, "Optimization strategy of village courtyard in severe cold area based on value promotion", *urban planning forum*, no.01, pp68-77, 2015.

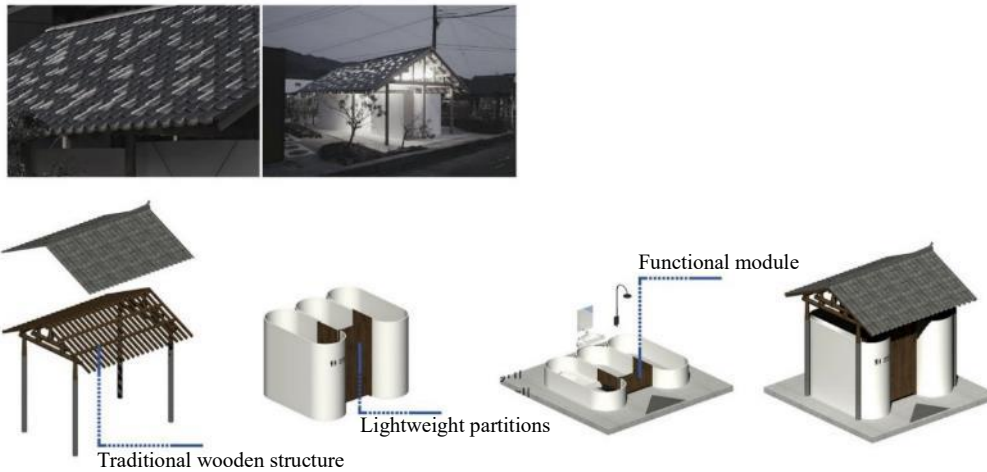


Fig 20. Meixiao Village's Infrastructure Improvement (Designed by Zhao Liangyu)

4) The coordinating strategy of the participation mechanisms

In the past, the rural areas are generally constructed by villagers who focused on their farmland and houses and neglected the external environment of the buildings, causing the decline of rural landscapes. Meanwhile, villagers lacked scientific guidance for construction, resulting in a lack of unified order. At present, most of the construction of villages is under unified management by the government, which is somewhat mandatory and contradicts the principles of organic renewal. The renovating of rural landscapes is a process of constant repair and update, in which an organic integration of the participation mechanisms of the government and the villagers is pivotal. An operation mechanism guided by the government and joined by the public should be set up. The government and the planners play the role of assistance, guidance and management, understand the needs of the villagers and encourage the villagers' autonomous participation. It is conducive to the construction of the buildings that meet the demands of the villagers. At the same time, the active participation of villagers can establish their sense of responsibility and mission to construct the countryside.

3.5 Analysis of Organic Renewal Practices in Traditional Settlements

3.5.1 Analysis of Organic Renewal Practices in Traditional Villages

3.5.1.1 The Organic Renewal Project of Dongziguan Village, Hangzhou

1) Settlement Group

The design of this case abstracts common features from a typological perspective, restores spatial prototypes, and realizes a diversity of settlement forms through the organization of basic units. The design identifies two basic units with different orientations, creating an interwoven relationship between the base boundary of the building and the boundary of the courtyard, rather than the parallel relationship of a traditional square layout. The two basic units evolve into four types, with the units being staggered and mirrored back and forth to form a group with public courtyards. Compared with the traditional parallel layout, there is a significant improvement in terms of land conservation, layers of the courtyard space and privacy in the design. The orderly growth of a number of groups gradually develops into an organic and diverse general layout of a

settlement. This unit-group-village growth pattern is consistent with the logic of group formation in traditional settlements, reflecting the organic nature of organizational units of traditional settlements and that of self-evolution.

2) Architectural Design

The design starts from the curved roof of Jiangnan (the regions south of the Yangtze River) residences and abstracts it. The traditional pitched roof has been made into a continuous and asymmetrical one, with the contours of the roof lines in accordance with the forms of different units. The subtle comparison of independent units and the continuous roofs of the group constructs a whole featuring “harmony in diversity”. The dark gray roof and the large white solid walls form a strong tonal composition of white vs. gray and line vs. surface. In terms of creating a relationship between the real and the imaginary, the external walls are mainly solid, while those facing the courtyard are mainly glass, which ensures the daylighting need and fosters a sense of introversion.

3) Building Construction

The design returns to the essence of construction and explores the relationship between the industrial model and traditional formal elements. The brick-concrete structure, insulated roof, insulated and waterproof exterior walls and double glazing have been used. Traditional materials such as wood, rammed earth and stone are replaced by mature ones such as white paint, gray bricks and wood grain metal. As for the walls, bricks are laid in different ways to form walls with different degrees of transparency. Meixiao Village is a natural village in Yongxing Town, Haikou. It was founded in the Ming Dynasty, with a total area of 6,500 mu. The ancient village’s stone-made grinding tools, stone fences, stone-paved village roads and stone-built houses are cultural factors arising from the unique environment.



Fig 21. The Form of Settlement Group and residences (Pictures from *Archdaily.com*)

3.5.1.2 The Organic Renewal Project of Meixiao Village, Hainan (designed by the author)

1) Overview

Meixiao Village is a natural village located in Yongxing Town, Haikou. It was founded in the Ming Dynasty, with a total area of 6,500 mu (1 mu = approximately 667 square metres). Surrounded by woods, Meixiao is a well-preserved volcanic village. In the ancient village, stone grinding tools, stone fences, stone-paved roads and stone houses are the cultural factors generated in the unique environment.



Fig 22. Ancient village settlements, Pavilion in alley, Residence. (Photographed by Zhao Liangyu)

2) Existed Problems in Ancient Town

The simple ecological awareness and appropriate techniques developed by the villagers during their life, labour and construction are their interaction results with nature for generations. However, as the village gets more modern, the quaint and harmonious landscape developed over centuries has been destroyed. Due to the lack of protection, some of the old stone houses have collapsed and the cultural heritage of the village has suffered a major impact.

3) Integration of the Spatial Structure of Ancient Town

The planning of the village respects the original layout and focuses on the integration of the textures, with the locations of new buildings and the layout of the courtyards unified with the overall layout of the village. A folk culture museum and a visitor centre are built at the entrance square of the village, the architectural layout and scale relations of which are integrated with the adjacent ancient wells and temples, thus strengthening the cultural value of the entrance function and the historical sites. “the workshops of craftsmanship” and “flower and fruit gallery” arranged in the orchard area from the entrance square to the Tangxiao Temple, coupled with the supporting facilities of the folklore street from the Tangxiao Temple to the assembly square, connect the nodes of public spaces of the village and enable a transition of the overall spatial structure from natural landscape to humanistic landscape. The important spaces formed between the alleys are preserved and their role as landscape nodes in the spatial structure is strengthened. (Analysis of spatial nodes, overall layout, design of entrance square, design of landscape nodes within the village)

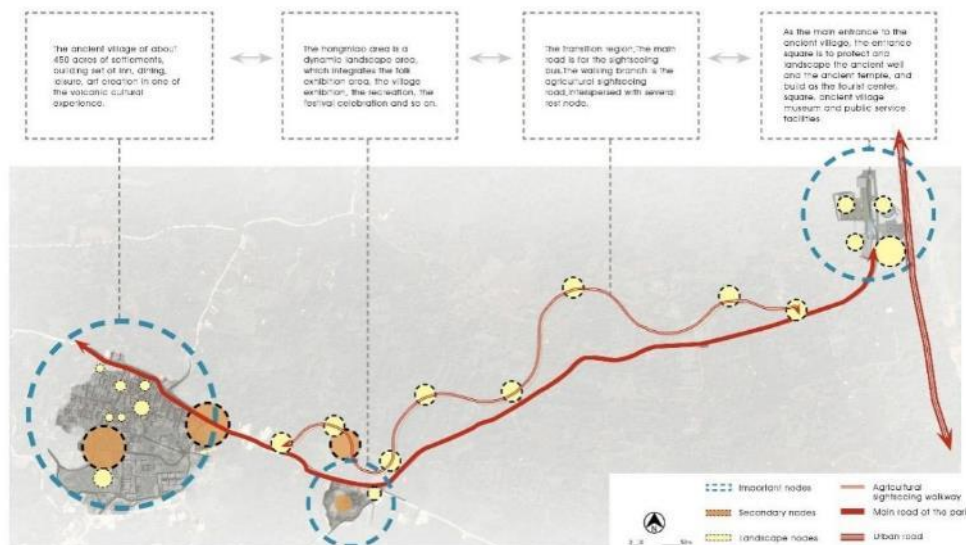


Fig 23. Integration of the overall space of the ancient village (Designed by Zhao Liangyu)

4) Architectural Renovation of Ancient Town

There are over 300 old houses in the village, as well as other historical sites such as ancestral halls and temples. All the buildings, as well as household and labour tools, are made of volcanic stone, which has been used for the conservation and continuity of the village. The landscapes of ancient buildings should be preserved and restored to the maximum extent possible. The renovation mainly aims at the stone residences. Architectural elements that can both represent the characteristics of the village and continue its history have been summarized according to the research on the existing houses in the village—improving the façades of the pilot buildings uniformly and controlling various building components, such as material, colour, shape proportion, roof slope, the form of cornice, the style of windows and doors and courtyard pavement. As the old buildings are poorly lit and ventilated and the rooms are small, they are unable to meet people’s pursuit of a modern lifestyle. Therefore, smart facilities need to be improved and the building space needs to be expanded to organically link the indoor and outdoor spatial experiences. For new buildings that affect the texture and landscape of the village, unitary curtain walls made of volcanic rock, climbing plants, or artistic patterns are used to weaken their sense of dimensions and make the buildings fit into the overall landscape. (photos of Confucius Institute, bed and breakfast design, music space, renewal of the buildings at the entrance)



Fig 25. Residence renewal design (Designed by Zhao Liangyu)



Fig 26. Restoration of the Confucius Hall



Fig 24. The design of the assembly square in the ancient village (Designed by Zhao Liangyu)

3.5.1.3 The Organic Renewal Project of the Manchu Village, Tonghua, Jilin

1) Overview

Luquanzi Village is a typical Manchu folk village in Jilin Province, northeast China. It is near the mountains and the river, with a harmonious and beautiful natural environment. During its history of nearly 100 years, the texture and natural environment of the village have grown in harmony. The buildings are constructed against the mountains to the north and along with a river system. The village boasts various types of Manchu residences in northeast China, including brick-and-tile quadrangle courtyard, adobe grass-roofed residences and detached wooden residences. The village has 10 aboriginal households, with a population of less than 40. There is a fully preserved adobe residence and is inhabited by an old man over 90 years old, which is a living fossil of the original appearance of residents there.



2) The renewal of the village

The renewal of the village is to respect the original spatial texture, restore the original appearance of the Manchu architecture and renew, in a subtle manner, the spatial nodes on both sides of the alleys by planting greenery. The Manchu residences in the village are well preserved,

so it has been developed into a traditional Manchu folk village, with vacant traditional houses transformed into bed and breakfasts, restaurants and public activity rooms. Due to its beautiful environment, the village has gradually become a base for teachers and students of various art colleges and painters to sketch from nature. Meanwhile, it attracts a large number of visitors. The village has driven employment for local people and those from the surrounding villages, injecting new vitality into the originally silent ancient village. However, as the renewal is only the restoration of the original landscape of Manchu buildings, there is no organic combination with contemporary design forms, there are imperfections in the facilities for modern life, such as public toilets and the layout of restaurants, kitchens and indoor bathrooms, which are all to be improved.

3.5.2 Analysis of Organic Renewal Practices in Traditional Blocks

3.5.2.1 The Hilltop Site Renovation Project in Budapest

1) Comparison between old and new

The restoration of the tower on a hill in Budapest was carried out on the basis of respect for the original appearance. Red bricks were used to repair the damaged parts, whose texture harmoniously blends with the original stone and reflects the state of architecture in different periods. Similar stone to the original material was interspersed between the two materials as a kind of transition. The restored or newly added parts contrast with the original building, emphasizing the difference between old and new, which is more than a restoration.

2) Restoration of the old as the old

The original architectural style should be maintained. Even the newly repaired buildings should be restored to their original state to the largest extent possible, with traces of history, which is different from the “fake antique” method used in many Chinese cities to restore demolished historical buildings.

3) Integration

The use of new formal language and the historic buildings form a new unity to achieve an overall harmony. This method is often seen during architectural conservation and reconstruction. Moreover, it is a common technique in architectural renewal to use ingenious design language to integrate new and old and simple and complex forms and structures.



Fig 29. Heritage Park and Historic Building Renewal (Photographed by Zhao Liangyu)

3.5.2.2 The Heritage Park Project in Pécs

There are many examples of the conservation of historical sites in the city of Pécs, where buildings with a history of decades and centuries of years are still in use everywhere, and where buildings are constantly repaired and reinforced while ensuring safety, rather than being torn down and rebuilt. Architectural conservation has become a separate profession in European countries. The University of Pécs has long focused on the conservation of historical buildings and, through constant efforts and explorations, has accumulated a wealth of valuable experience that has enabled the city to maintain its original vibe throughout its development and changes.

1) The Street Heritage Park in Pécs

The modern landscape is fully integrated with the architectural ruins in a stylistic fashion that fully preserves the site, enabling people to build up a perception of scenes from the past and providing a sense of contrast and integration between modern and ancient cultures, thus allowing the new landscape environment to be well integrated into the original historical relics, as to show respect for history and make the combination of the new and the old a natural one. The simple composition of the ground formed in a modernist approach is in sharp contrast to the ruins of the traditional form. The modern structural form and material language contrast the architectural ruins to emphasize the design concept that conservation and renewal are not a restoration. From the remains of the walls, it can be seen that the materials and structural forms are still in their original state. The mottled walls with a strong sense of history can quickly bring people into the living environment in history.



Fig 30. Park Model and Photo (Photographed by Zhao Liangyu)

2) Tettye Heritage Park in Pécs

Tettye refers to the area north of the historic city centre of Pécs, which is a valley on the Mecsek hill. In 2011, the ruins were restored in a systematic and modern way. The development of the public environment of the Tettye site divides the southern landscape into three parts. The development of the public space was combined with the historical remains and a contemporary architectural structure was used to restore the ruins, on which a number of independent structures have been installed, including a watchtower, surrounding the outline of the remaining walls of the original building. The combination of historic and new elements makes the project stand out as it provides some outdoor recreational spaces for visitors to relax and enjoy the views of the city, with weather-resistant steel as the building material. The design also includes a recreational terrace and a children's playground, with the three parts of the space forming three terraces facing the city centre, which have become a gathering place for people of all ages and for different purposes. The park

enhances the community and cultural functions of Pécs and expands the functions carried by the historic architecture.



Fig 31. Park Zoning Plans, Model & Photo (Photographed by Zhao Liangyu)

3.5.2.3 The Renovation Project of a Market in the Old Town of Shanhaiguan (designed by the author, 2019)

1) Introduction to the base

The base is located in Shanhaiguan District, Qinhuangdao City, Hebei Province. In the famous historical and cultural city with a long history, the old town of Shanhaiguan is one of the representatives of the Great Wall. The market in the old town has a history of over 600 years that has survived along with the development of Shanhaiguan. The old merchants in the market have long been a unique part of the urban landscape, carrying the memories of generations of people. Moreover, the market is an important spatial and cultural resource of the old town. At present, the market suffers from poor landscape and simplistic function, and the stalls are in urgent need of renewal.



Fig 32. Base location (Drawn by Zhao Liangyu)



Fig 33. Status photos (Photographed by Zhao Liangyu)

2) Renewal design

The market was renewed and renovated through a highly creative approach that could awaken the residents' awareness of active participation, making the market not only a consumer market for local people but also a consumer place where visitors can experience the life of the old town. At the same time, the renewal model of “government’s support and guidance, cooperation between local residents and businesses, and participation of social resources” was implemented, injecting vitality into the old town.

The renovation plan focuses on the problems such as inadequate functions and poor image of the market stalls. The signboards, shelves, price tags and storage space of the stalls have been renovated with the approval of the owners. Under the concept of serving the practical needs of the stall owners and highlighting the cultural heritage of the old town, creative ideas were added to the design, such as firewood, shells, hemp ropes and other materials with a local flavour, to revitalize the traditional bazaar, providing useful assistance to the stall owners in soliciting customers, storage and display of goods, as well as bringing new opportunities for local residents to reclaim their memories and visitors to gain fresh experiences.



Fig 34. Renovation Design (Designed by Zhao Liangyu)



Fig 35. Renovation process (Photographed by Zhao Liangyu)



Fig 36. Photographs of the completed construction (Designed by Zhao Liangyu)

3.5.3 Analysis of Organic Renewal Practices in Traditional Individual Buildings

3.5.3.1 The Renovation Project of the Art Centre of the Venice Biennale

1) Overview

This project is the renovation of the old building “Paui Justí cia”, it is full of memories for the local residents who used it for weddings and Christmas parties. But the club had been abandoned for many years. Now, it has been rebuilt, the residents need to reconnect with the space they remember, as the building has taken on a new spatial function: a theatre, drama school and a place for drama creation.



Fig 36. Building renovation process and completed photos (Photographed by Zhao Liangyu)

2) Renovation design

The former social club was incredibly respected during the design process. The designer studied the existing spaces and decorations before passing them on to create the atmosphere of the new drama centre. The entrance foyer connects all floors through a series of openings in a continuous floor slab, with the building completely exposed to the interior landscape in a promenade that draws everyone's attention. When people enter the building and look up or look around, they can see people upstairs and downstairs, which is a versatile way of communicating. Thus, the foyer is transformed into a family place where communication can take place unexpectedly. Many of the finer details of the space, such as the staircase corners and the benches for resting, are well designed. Theatre activities not only take place in the rehearsal space but can also be extended to the whole building.

The project is not a drastic reconstruction but a micro-renovation based on full respect for the original environment, which preserves the former structure while adding new functional spaces. The architects dismantled and preserved the historical elements of the original building, including all the doors, windows and floor tiles. In addition, they kept considering different possibilities of the space through cardboard models. The final version is a space that is not only contemporary enough to meet modern functional needs but also has a strong sense of history. Meanwhile, the new space also reflects the full use of the texture and elements of the old one, and the historical context has been continued perfectly.

3.5.3.2 Carlo Scarpa's Restoration Project of Castelvecchio Museum

1) Concept of Restoration

It indicates a metaphor for the memory of the city. The strong sense of history in the Restoration of Castelvecchio Museum (1956-1964) is absent in most modern architectures. The uniqueness of such a sense originated not only from his consistent emphasis on architectural inclusion of historical contexts, but also from his interest in preserving the historical transparency of the objects under restoration or renovation. The specific method was to exhibit every historical section authentically after organizing fractions of architecture by separating and juxtaposing different components.

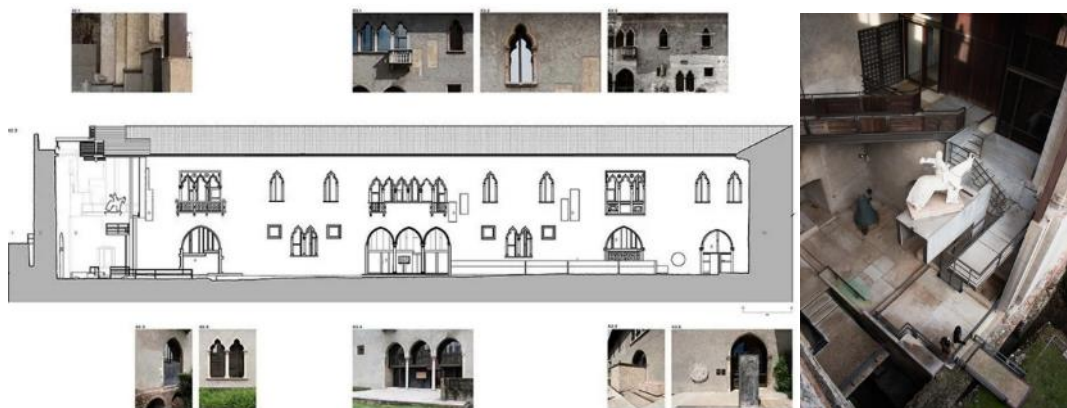


Fig 37. Building façade and atrium design (Pictures from *Archdaily.com*)

2) Design of Restoration

The symmetrical composition is extremely inconsistent with the local Gothic architecture tradition. However, Scarpa shattered the existing symmetrical pattern merely by applying sideways of the entrance

and utilizing the juxtaposition of a completely different composition system of doors and window sashes. The same juxtaposition pattern was also applied indoors, where every work of art was displayed in its combination with light and its frame against the delicately designed exhibition stands. The steel beams in the center of the ceiling created a new sense of space in depth, while the connections between old and new elements all highlighted contemporaneity. The center of the space was fenced up, from which the audience can have a peek at the relics of a medieval castle buried beneath the structure. No restoration was applied to the part destroyed by war. Instead, it was demolished and refurbished into an atrium. A cement platform was added to the second floor for the exhibition of the horse-riding statue, rendering it a visual focus that can be seen from every floor of the building and every angle of the courtyard. As a result, such a fragmentary spot was converted into the most vivid intersection to tell the history of the castle.

3.5.3.3 Renewal Project of the Ancient Residences in Beijing Hutongs

1) Function Design

The project was located in Dazhalan Hutong area, Qianmen, Beijing, a typical warren once accommodating 12 households. During the past 50 to 60 years, each household added a lot of small buildings in the courtyard. In the previous urban renewal projects, these spontaneous additional structures would be wiped out as the remnants of urbanization. Distinguishing from the general old town renewal mentality, the design started from the current qualities of the site and preserved the original architectural structures entirely. The unofficial additional structures in the Hutong were redesigned, renovated and reused based on the reference to the massing of the residents' spontaneous additional buildings and the precondition of respect to the spatial features of the warren. A children's library, a dancing room, an art studio and a craftsman classroom were inserted in the building, each occupying 6 to 9 square meters of space. These micro spaces with separated functionalities together inherited and preserved the spatial texture of the original warren. Whilst bringing more colors to the daily life in the Hutong, the design itself also serves as a living example to reveal the new possibilities in the renewal of old complex town areas to the citizens and the government of Beijing.

2) Micro-renewal Strategy

In the past, the topic of urban renewal in Chinese contexts concerned much more about the discussion over large-scale urban renewal and renewal of historical blocks. However, current discussions and practices of urban renewal have been extending to the small-scale daily projects. The intricate and contradictory relation between history and contexts emerges as an inevitable topic in the process of urbanization and urban renewal in China. Architecture fabricates sophisticated logics and strategies in application of the traditional and novel materials, in conversion and utilization of the old and the new space, and in respect to the existing elements of the place. Although these reflections and endeavors may be small-scale termed as micro, they serve as promising attempts to unravel the future relation between individuals and the city.

3) Symbiotic Construction

Humidity and meticulousness of the architect were reflected by application of protection for the ancient locust tree with over three centuries of history, materials with minimum impacts and construction strategies, as well as embracing the kitchen space previously built by the residents in renewal. With the newly grafted structures and implanted public functions, the micro warren bridged the daily life of the senior residents and the use of the children's library and the art center in a good manner. The small-scale

intervention in the courtyard boosted the communication within the neighborhood and enriched life in the Hutong for the natives. Despite that the micro warren can't even be counted as a traditional architectural project, the symbiotic renewal proposed by the designer in this project is a Chinese architect's strategy to deal with domestic issues.



Fig 38. Residence and Courtyard Renewal (Photographed by Zhao Liangyu)

3.5.4 Experience Summarization

From the practice analysis on organic renewal theory, the essence of renewal under the guidance of the theory is to restore the vitality of cities or villages based on their own characteristics and respect to the law of development. During the process of urban development, demands and forms of the life of residents living inside will vary along with the constant progress of the time. Therefore, preservation and renewal are not monotonous. Firstly, regional features of urban or rural traditions should be preserved with persistent efforts for the continuity of traditions on the basis of sustainable development. Secondly, organic renewal should be carried out with the precondition of protection, so that resident-associated modern functions can be implanted to stimulate vitality. The organic renewal theory is attuned to rural construction and development. As a dynamic progressive renewal mentality instead of a specifically defined pattern, it can be applied to all respects in rural construction including architectural environmental and cultural development. It also provides methodologies for the regulation of overall rural landscape and constitutes the starting point of this dissertation.

This chapter serves as the theoretical foundation of the dissertation, starting with specific interpretation of the organic renewal theory and subsequently summarizing the organic renewal strategies for traditional settlements. Meanwhile, experience is drawn from the combination of case studies on traditional settlement renewal in different places and the author's design project. It provides ideas for regulation of landscapes at each level of traditional settlements, which paves the theoretical groundwork for the applicability study, specific strategy construction and practical operation of organic renewal for traditional settlements of the northeastern China in the following section.

4 Strategy and Demonstration: Organic Renewal Design

Application of Northeast China

4.1 Organic Renewal Design Strategies for Traditional Settlements

4.1.1 Organic Renewal Design Strategies for Settlements

The construction of integrity of traditional settlement landscape guided by organic renewal theory is implemented by establishing organic orders. Good organic orders are prone to the realization of balance among nature, human settlements, and production and life, thereby offering an orderly environment for the continuation of the landscape and development and stimulating the vitality of the rural area. The landscape of traditional rural areas does not take shape in one day but progresses from a chaotic state to an ordered one during its lengthy development. Such an organic order carries hundreds of years of historical contexts of rural areas and serves as the intrinsic condition for continuing rural landscapes. Establishing an organic landscape order does not mean creating order from anything but restoring and optimizing the existing landscape order and coordinating every landscape component in an organized and hierarchical manner. Repair and improvement over the gradually unbalanced organic order of landscape play a fundamental role in realizing the balance in the organic order and the overall coordinated development of landscape, which favors the continuance of rural landscape and rural revitalization.

4.1.2 Organic Renewal Design Strategies for Traditional Blocks

1) Alley Space

The alleys with varied width in rural areas compose a unique rural spatial landscape. Rural alley space fulfills the function of transportation and provides space of communication among neighbors for villagers. Hence, the renewal optimization for alley space should preserve the continuity of the transportation functionality and combine the characteristics of rural streets to provide villagers with communication space full of varieties.

2) Node Space

Node space is the dotted public space dispersed inside the rural areas, including small-sized places on both sides of alleys and activities squares with accumulative effect. Node space serves as the places for villagers to communicate and organize activities for festivals and folk customs. In this way, it helps to facilitate mutual communication in the neighborhood and satisfy people's gathering behaviors and psychological demands. As the connecting joints for rural spatial structures, node space exhibits functions in connecting alleys and spatial twisting, associating different parts in the village to form an order. To shape rural node space, the first task is to assemble multiple functions of relaxation, communication and culture, such as fitness locations and cultural facilities, to bring new vitality into rural life. Secondly, it should be combined with the surroundings to accomplish the molding of diversified forms and the utilization of local materials. For the nodes with fine original node, the traditional spatial pattern should be maintained and the environment quality should be improved by renovating or demolishing the public facilities carrying a poor landscape. Based on villagers' demands and the rural reality, new node space should be added in appropriate places. Through the construction of both new and

old public node space, lifestyles of the villagers and traditional spatial texture are combined in an organic way, so that the out-of-order spatial texture will be bound and associated to promote the organic and open development of the spatial texture.

4.1.3 Organic Renewal Design Strategies for Individual Buildings

1) Continuation of the architectural landscape and adaptation to modernity

As one of the important factors that form landscape, rural architecture majorly represents the characteristics of villages. The relation between architecture and rural landscape is associated with the relation of parts and whole. If rural areas are regarded as an organism, then architecture is the cells constituting the former. The generation and renewal of an organism depends on the propagation and alteration of cells within. During the alteration, the decaying cells are repaired or replaced ceaselessly to accommodate the normal functions of the organism. Such a renewal pattern also applies to the architectural renewal in the rural areas. As for the regulation of the architectural landscape in the rural areas, continuance and adjustments should be implemented based on the original traditional architectural landscape. Architecture-bearing regional features should be preserved, while adjustments need to be applied to that with poor architectural landscape in order to render it attuned to the requirement of rural development, so that ultimately rural landscape can be constantly optimized.

2) Principles of Architectural Landscape Regulation

Firstly, principle of integrity. In regulation of architectural landscape, one architecture group should be considered as a whole. The adjustments of architecture are not only confined in the reconstruction of building units, but also include optimization of the interior environment and exterior space of the architecture.

The second principle is to weigh preservation and development equally. During organic renewal of architecture, on one hand, preservation is adopted to protect traditional valuable architecture while massive demolition and reconstruction is forbidden to avoid damage to the original regional architectural landscape from development. For architecture that shows good architectural landscape, approaches of adjustment and optimization with low intervention should be applied as possible to improve architectural landscape with moderate interference. The regulation of architectural landscape should possess sustainability, with the regulation plan undergoing diversified adjustment based on the current situation of the architecture and demands of the villagers, so as to keep the flexibility of the regulation.

The third one is the site-specific principle. Regulation on architecture should be carried out on the basis of the reality in the rural areas after multi-aspect analysis and research conducted on the local natural environment, history and human culture, and traditional architecture styles, for the purpose of realizing harmony and unity with the regional cultural background. The selection of architectural materials should consider regional ecological and economic costs. Local materials should be utilized as much as possible to obtain coordination with the environment.

4.2 Application of Organic Renewal Design Strategies for Settlements (Ancient Town)

4.2.1 Present Situations of Wula Street Ancient Town, Jilin City

4.2.1.1 Geographical Position and Natural Environment

Lying along the Songhua River at the foot of the Changbai mountain, Jilin City, Jilin Province was named as the Place of Origin by the Qing dynasty. Wula Street Ancient Town is located in Longtan District, Jilin City, Jilin Province, 30 kilometers away from Jilin City, covering a total area of 188 square kilometers. Occupying 8.6 square kilometers, Wula Street Ancient Town is the aggregation district for Manchurians in Jilin City, and therefore renowned as the First Town of Manchurians in China. In 2008, Wula Street Town was registered in the directory of Historic Towns of China compiled by Ministry of Housing and Urban-Rural Development of the People's Republic of China and National Cultural Heritage Administration. With one of the four wonders in China, Jilin's Wusong Island being only 3 kilometers away, remarkable natural geographical position, abundant natural tourist resources, profound history and culture, and distinguished folk features all converge at Wula Street Ancient Town. Wusong Island tourism stands out as the most appealing naturally distinctive landscape area, whose development sheds new light to the development of Wula Street Ancient Town.



Fig.39. Location of Wula town, Foggy Island (Photographed by Zhao Liangyu)

4.2.1.2 Social Economic Industries, Demographics, and Restrictions in Development

1) Social Economic Industries

The major economic industries of Wula Ancient Town are agriculture and stock farming, which account for 50% of its economy. 75% of vegetable supply for the city comes from Wula Street. Product processing, agricultural product processing, automobile supporting industry, and traditional mineral building materials account for 25% in the economy, while the rest 25% is contributed by tourism and services (mainly including related industries of Wusong Island and Folk Village tourism, such as photography, accommodation and characteristic catering).

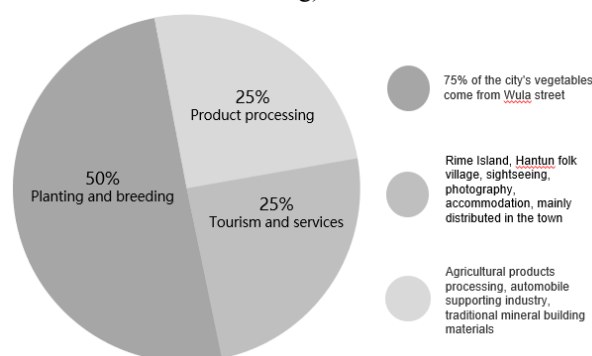


Fig.40. Industry distribution proportion chart (Drawn by Zhao Liangyu)

2) Demographics

Wula Street Ancient Town is an ethnic minority town, of which 31% of the total population belong to ethnic minority groups. The whole town accommodates 71,200 residents, among which 58,000 are agricultural population whereas 13,200 are non-agricultural. The township area holds a population of 15,100. Inside the administrative district, there are 28 administrative villages, 70 natural chariots, and 1 street subdistrict. Most areas in the administrative district are rural areas at poor urbanization level.

According to 2020 National Census, the demographic composition of Jilin City is: age 0-14 (11%), age 15-59 (64%), age above 60 (25%). The demographic composition of Wula Street Ancient Town is: age 0-14 (9%), age 15-59 (30%), age above 60 (61%).

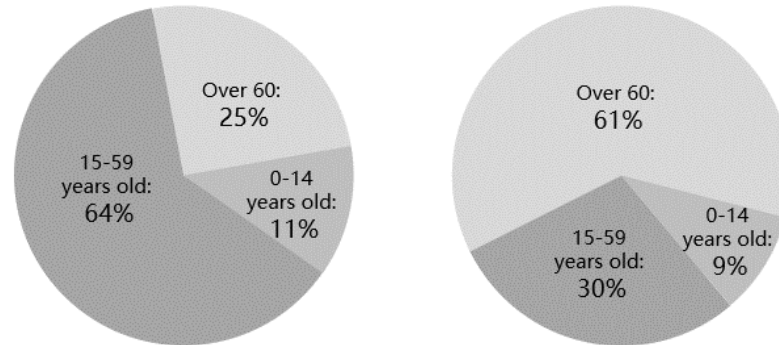


Fig.41. Population data of Jilin City in 2020 national census, Population data of Wula Street ancient town
(Drawn by Zhao Liangyu)

3) Restrictions in Development

Due to the recession of the Ancient Town's business, the environment of catering and homestay is poorly developed and the support and investment from government is insufficient. Without effective utilization of its own historical cultural resources and surrounding natural tourist resources, economic and living environment of Wula Street Ancient Town gradually declines.

4.2.1.3 Folk Features, Tribe Concept, and Social Problems

1) Folk Features

Major folk features of Wula Street Ancient Town are Shaman culture, snow and ice landscape, hunting traditions, and specialty foods.

2)Tribe Concept

The ancient town is immersed in Shaman culture, which beliefs in animism. In Manchu myths, Shamans are the avatars of the celestials to host activities in Shaman culture. The expression forms of Shaman culture are mainly ritual activities and praying activities. The former can be categorized into family rituals, celestial rituals, animal sacrifices, and botanical sacrifices. Praying activities are organized when significant events encounter in people's life, such as expeditions, hunting, marriages, births, and funerals. At such moments, Shamans are invited to make prayers or conduct certain rituals to ask for celestials' blessings. The subsistent Shaman customs in Wula Street Ancient Town mainly include family rituals and Wula Manchu Shaman music, both of which are provincial intangible cultural heritage. *Shaman music* is the music sung or played during rituals.

3) Social Problems

With the rapid transformation of the social-economic structure, agriculture loses its predominant role, leaving the inner structures of traditional ancient towns falling apart. As the lifestyles of villagers are deeply affected by urbanization, the original social space and living environment can not satisfy villagers' demands for production and living. The past organic systemic structure, where rural production, living, and ecology merged as one, thereby lost balance, pushing the environment of Wula Street Ancient Town toward a state of chaos. The evolution of industrial structure and the accumulative effect of cities force most young population to migrate outside to find jobs, leading to intensified rural hollowing and an aging population. The loss of the young generation has drained out the blood for the advance of the ancient town. With a lagging economy, it is even more challenging for the town to attract adequate personnel and resources. The ancient town lacks the motivation and capacity for self-renewal from its core.

4.2.1.4 Analysis of the Present Situations and Problems of the Ancient Town

1) Alley Areas

The traditional architectures in the old town alleys are either abandoned or refurbished to residences, accounting for the disorder of the alley area that causes a messy and a chaotic business situation inside the commercial street. The landscape environment lacks maintenance. Apart from the preserved historical street texture, the old cross street within the block area has lost its original charm in terms of the spatial characteristics and architectural forms.

Before the Republic of China (1912-1949), residences in Wula Street Ancient Town were mostly small-scaled within-two-story structures. The height of public buildings slightly surpassed that of common residences, forming smooth and ordered spatial outline characteristics of the ancient town with public buildings as the principal parts and mass traditional folk residences as the background. After the founding of the New China, main streets in the historical town area were sharply widened, along which plenty of multi-story buildings were constructed. They pierced through the original smooth skyline of the ancient town and destroyed the spatial dominance of public buildings, confronting the ancient town with the risk of losing its original spatial outline characteristics.

2) Transportation System

The transportation system of the ancient town is basically unimpeded with the road surface of motor vehicles being mostly intact, but it lacks diversion design of sidewalks and roadways. The alley space and lane in front of the houses are severely damaged and in urgent need of repair. Without public parking, the parking system is chaotic. Besides, the concrete surface of the roads bears no traditional features.

3) Infrastructures

The infrastructure of the ancient town is outdated, with a lack of public hygiene facilities, including public toilets and garbage cans. It also lacks lighting devices at night. Electricity cords are placed randomly in the block area, and drainage systems are missing in traditional folk residences.

Activity degrees of the crowd in the ancient town are detected through Baidu thermal map software, where the color transition from yellow to purple stands for the crowd aggregation degree from high to low. The displayed image of Wula Street Ancient Town is consistent with the situation observed on-site, showing a particular activation in the new commercial street. In contrast, no activation is found in the old town street.



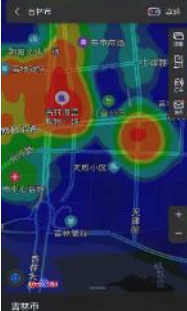


Road system	Street space	Jilin city activity Level chart
		
Residence	Infrastructure	Ula ancient town activity level chart
		

Table 3. Current Issues in ancient Town (Photographed by Zhao Liangyu)

4) Present Situations of Residences

Many traditional folk residences in the ancient town are left unused or destroyed. Some residences spontaneously constructed by villagers damage the original landscape of the settlements, most of which were reconstructed at the site of previous traditional architecture but adopted largely different building materials and spatial layouts from those of traditional folk residences. Modern residences use red bricks as the major wall masonry materials, while gray, red or yellow tiles are lain on the roofs. A small number of residences use steel to lay the roofs. Chimneys, however, are directly inserted inside the building and number of rooms is set by the number of dwellers. Courtyards generally consist of main houses and warehouses for planting or storage.

5) Survey on the Willingness of Residence Renewal

Survey questionnaires were sent out to the residents. After organization, a conclusion can be drawn that local residents showed a relatively low satisfaction degree of the living environment of the ancient town in all aspects. Apart from some seniors, the rest of the residents only had little knowledge of local history and culture. Therefore, during the process of ancient town renewal, improving the material environment and incorporating history and culture of the ancient town are both of great importance.

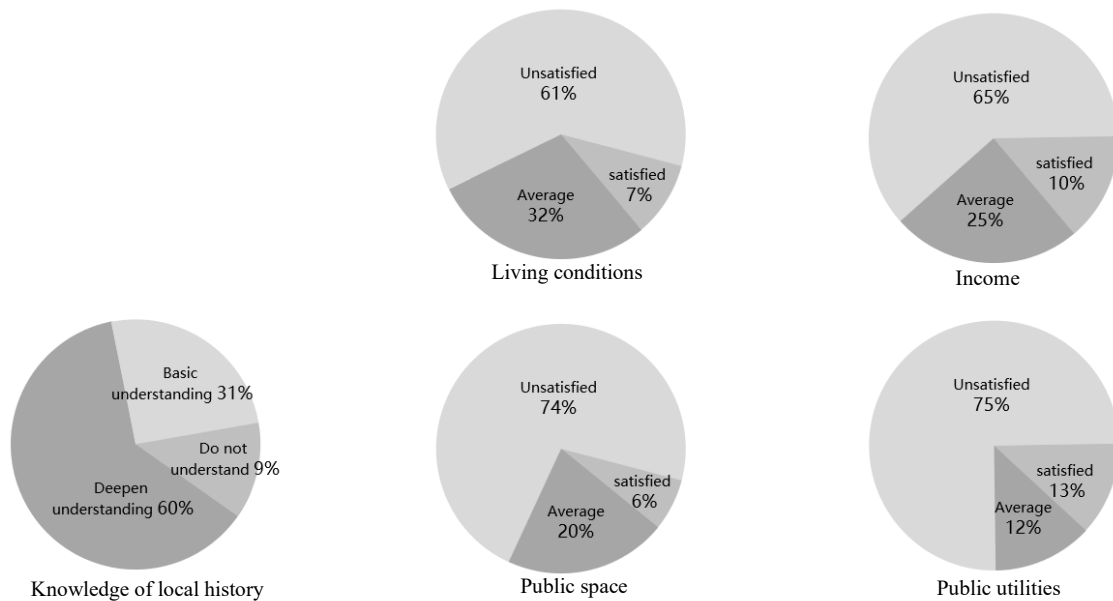


Fig.42. Analysis of residents' wishes survey (Drawn by Zhao Liangyu)

4.2.2 Historical Evolution of the Ancient Town and Succession Analysis on Spatial Patterns

4.2.2.1 Historical Evolution of the Ancient Town

In the long history of Wula Street Ancient Town, the town plays a significant role in the development of the northeast area. According to the local historical records, the ancestors of Manchurians had been living here as far as the Neolithic Age 5,000 years ago. In 1562 A.D (Jiajing 40th year of the Ming Dynasty), Hercynian Jurchen proclaimed kingship on the banks of the Wula River and founded the Wula Kingdom. On the 19th day of the first month in 1613 (Wanli 41st year of the Ming Dynasty), the head of Statehood Jurchen Nurhachi led an army and annihilated the Wula Kingdom. In over 260 years from 1648 to 1909, as one of the best three tribute bases, the place became an economic special distribute responsible for tributing local goods to the royal family. Also, two offices specially for hunting wild delicacies were installed in Wula Town. Among twelve emperors of the Qing dynasty, five had come to this place for war or other deeds. Wula was awarded by the Qing dynasty as the birthplace of the dynasty. The legend spreads that ‘First there was Wula, and then Jilin was founded’.

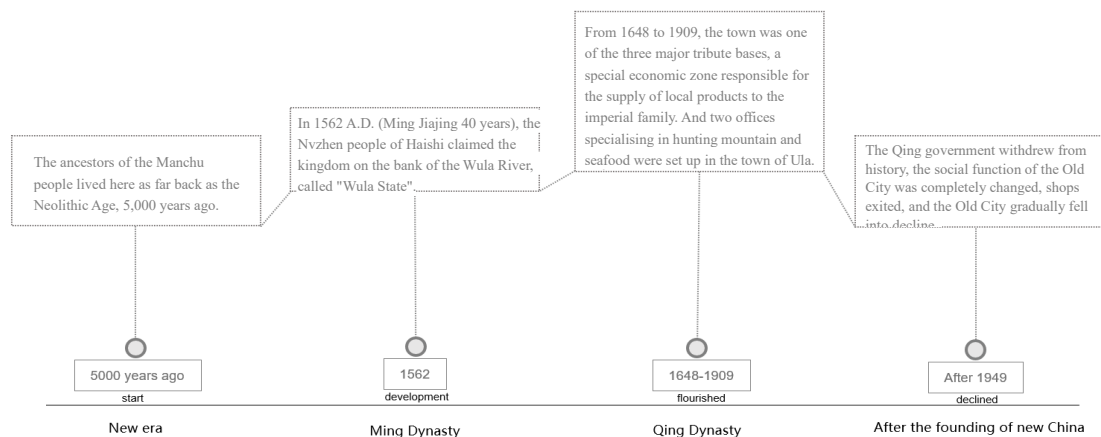


Fig 43. Historical Development of the Ancient town (Drawn by Zhao Liangyu)

4.2.2.2 Succession in Spatial Patterns of the Entire Ancient Town

The layout and geographical position of Wula Street Ancient Town have changed with the succession of dynasties, political factors and evolution of city functions. The evolution underwent three stages, the original layout, the defensive layout and the living layout.

1) The ancient town was first founded in the eighth century A.D. In Tang dynasty, the king (Dae Jo Yeong) founded Bohai Kingdom. The kingdom nestled under the mountain and near the river and was thereby benefited from transportation convenience.

2) In Ming dynasty, to the west of Wula Town, there was a great river circulating to form a natural isolation belt, which contributed to an excellent geographical position for defense. For that reason, the town was founded on this site. In Jiajing 40th year of the Ming dynasty, an inner city was constructed, where a rectangular palace called the Forbidden City was built in the center. The inner city was of a perimeter of 788 meters and a height of 4 meters, with only one south gate. In the inner city there was a three feet high platform, with a length of 57 meters and a width of 28 meters. It was used as a lookout building in military back in the day. Outside the inner city a mid-town was constructed. The perimeter of the city wall in the middle was 3532 meters, with a height of 4 meters and 4 gates to the east, west, north and south. An outer city was built outside with a perimeter of 6000 meters. Three gates to the east, south and north served as military facilities for defense while four turrets were set on four corners. The inner city was the palace of the Wula Kingdom, whereas the mid-town and outer city were the residences for officers and soldiers. It was the largest city and the grandest palace in the northeast at that time. The pattern of the ancient city reflected the hierarchical concept of orders between the lords, officers and soldiers and the supremacy of imperial power.

3) In 1704 during the reign of Emperor Kangxi of the Qing dynasty, a new Wula Town was built due to a flood, which was later expanded to form the present Wula Street Town. In 1706 A.D., on the southeast side of the old city, the new Wula City was built on the higher ground. The new city had a circumference of 4000 meters and a height of 2.75 meters. Four gates were set up, with a gate tower set at each gate, guarded day and night. The city wall was rammed with earth, and the gate was a brick structure. Two archways were set up at the central axis. There were three streets and eight hutongs in the city. Since the social function of the ancient town of Wula changed from the capital to the tribute base in the Qing Dynasty, the political authority of the ancient town was not so important, rendering the pattern of the ancient town flat square with grid roads. Influenced by the social system, Manchu people lived in the ancient town, while the Han nationality lived outside. As the transformation of the ancient town into a tribute base promoted commercial prosperity, the cross commercial street built to the west of the city has become today's ancient city street. The cross axis corresponds to the central axis of the ancient city.

4) In 1912, the Qing dynasty fell, followed by the foundation of the Republic of China. The collapse of the feudal system gradually softened the hierarchy system and weakened racial discrimination. It also led to ethnic integration, immigrants, population expansion and business prosperity. In 1923, the city wall was expanded based on that of the Qing dynasty. The settlement spatial structures of main-auxiliary dual cities further took shape. The commercial center, public gathering place, political power seat and main residential area were all located in the main city, while some cultural buildings, public activity places and some ruins were in the auxiliary city.

5) Nowadays, the long-time disordered construction of urban areas has seriously damaged the historical and cultural landscape. It is difficult to highlight the characteristics of the famous city except for the scattered buildings and roads in some blocks. The existing Wula Street Manchu town no longer

features landscape as a historical town, but the environmental pattern of "one river, one city, one street" remains.

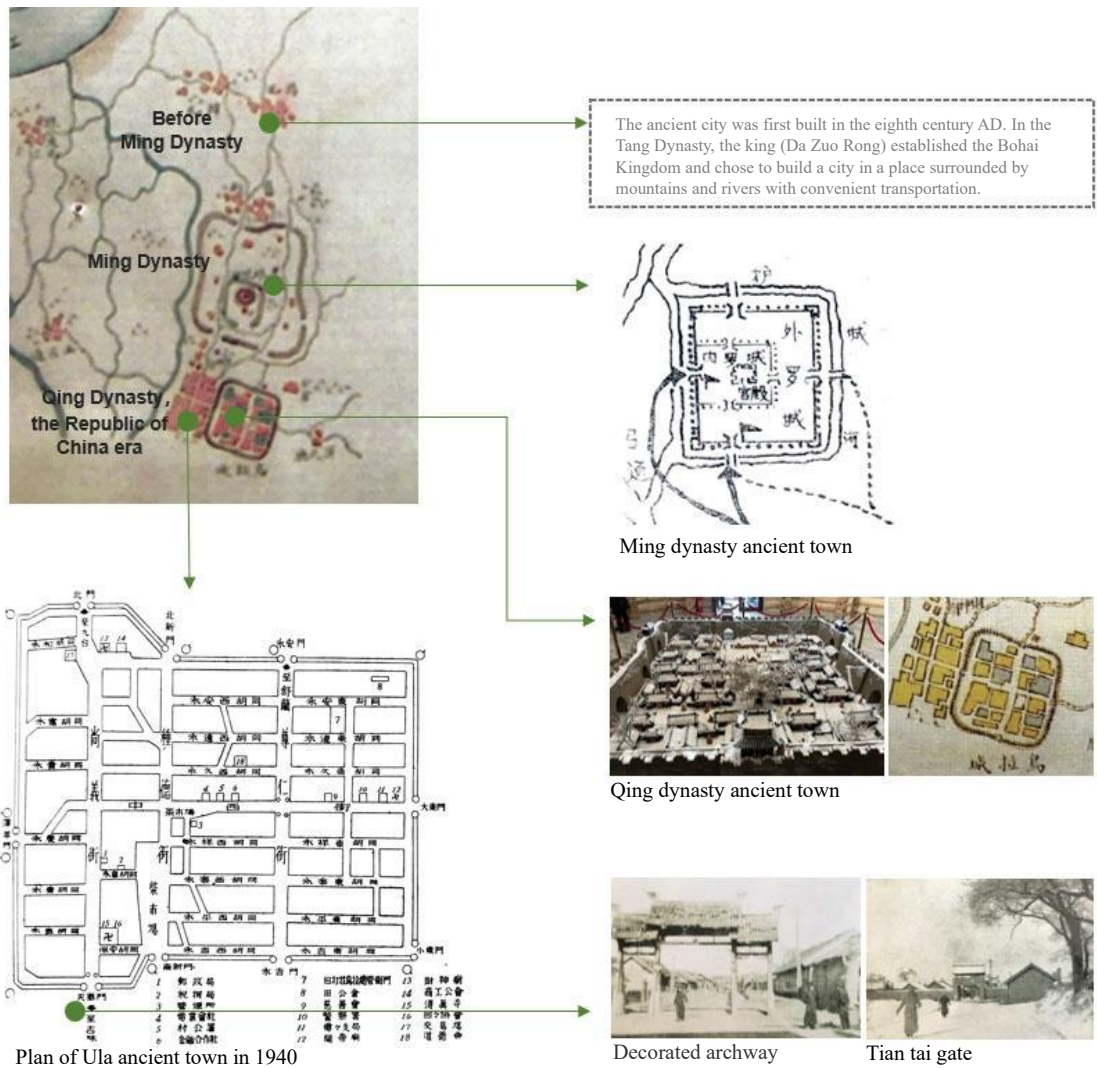


Fig 44. The succession of the ancient town pattern (Drawn by Zhao Liangyu)

4.2.2.3 Spatial Succession in Key Block Areas

The ancient town street is located in the west of the township of the Wula Street Manchu town, with a total length of 940 meters and more than 100 traditional buildings. During the Qing dynasty and the Republic of China, the ancient town street was a trading center of major economic activities.

1) Early Stage of Formation

In the 45th year of the Reign of Emperor Kangxi of the Qing dynasty (1706), a new Wula City was built on the high ground to the south side of the Ming ancient city to prevent floods. Manchu people lived in the square city. Main religious and administrative buildings were also located in the newly built ancient city. Defense departments were installed in the four gates, and eight hutongs were arranged in the ancient city with the old cross street as the center. According to emperor Kangxi's decree, shops must be built outside the west gate. Hence, the commercial area was expanded outside the west gate, making the cross street the center of trade and commerce. Shops were distributed along the cross street. At this time, the

cross street had been developed to a certain scale. In the 37th year of the Reign of Emperor Qianlong of the Qing dynasty, there were more than 70 shops, and in the 11th year of Guangxu, the number surmounted 300.

2) Prosperous Development during Prime Time

In the 12th year of the Republic of China (1923), the old city walls were expanded and reinforced on the basis of the new city of the Qing dynasty. As the Qing dynasty stepped down from the historical stage, Wula city saw a greater openness. People of all ethnic groups inside the city interacted with each other to a great extent. The in-migration of Han Nationality brought advanced production technology and culture. The number of the shops on the cross street increased rapidly, and commodity trading activities exploded. At that time, the social economic development of the ancient city of Wula reached a new height, rendering it a town of business.

3) Changes in the declining period

Businessmen fled away after the "Cultural Revolution" movement and the urbanization construction movement. The disappearing city walls forced Wula Street Ancient Town to embrace a complete opening. As the commercial center was transferred to the new cross street with the town's main stem, the old cross street lost its prosperity of the old days. Many shops with characteristics of the times and historical values were changed into residences. Parts of traditional shops are nowhere to find now.

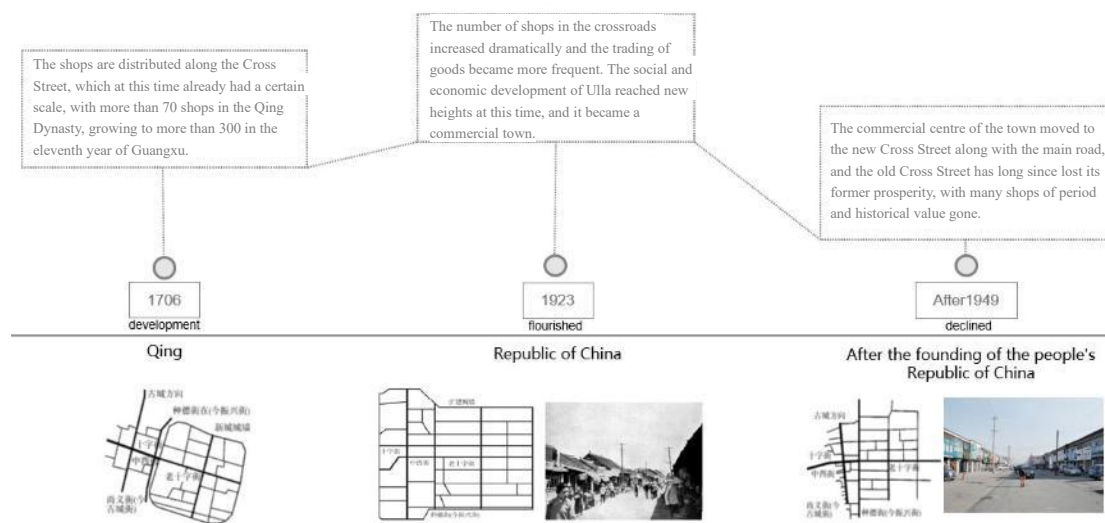


Fig 45. Analysis of the evolution of the ancient town commercial street (Draw by Zhao Liangyu)



Fig 46. Historic State of ancient commercial street (Pictures from *The ancient city of Ula*)

4.2.3 Organic Renewal Design for Wula Street Ancient Town of Jilin City

4.2.3.1 Development Ideas and Planning Position

According to the whole principle for organic renewal, the planning of Wula Street Ancient Town should exploit the existing resource advantages to dominate the future development trends with comprehensive understanding of the current natural and cultural resources from the perspective of regional development, based on the development of its own and surrounding areas.

The plan positioning of Wula Street Ancient Town is to construct a modern harmonious ancient town suitable for living and traveling through the creation of ambient residential environment and development of rural feature industries. The short-term goals of planning include preserving and rescuing the cultural relics and historic sites in danger, improving infrastructures of the ancient town, and boosting the living quality of the residents. The long-term goals include developing the cultural quality of the ancient town, inheriting and highlighting the landscape and features of the town, and effectively protecting and utilizing the historical cultural heritages of Wula Street.

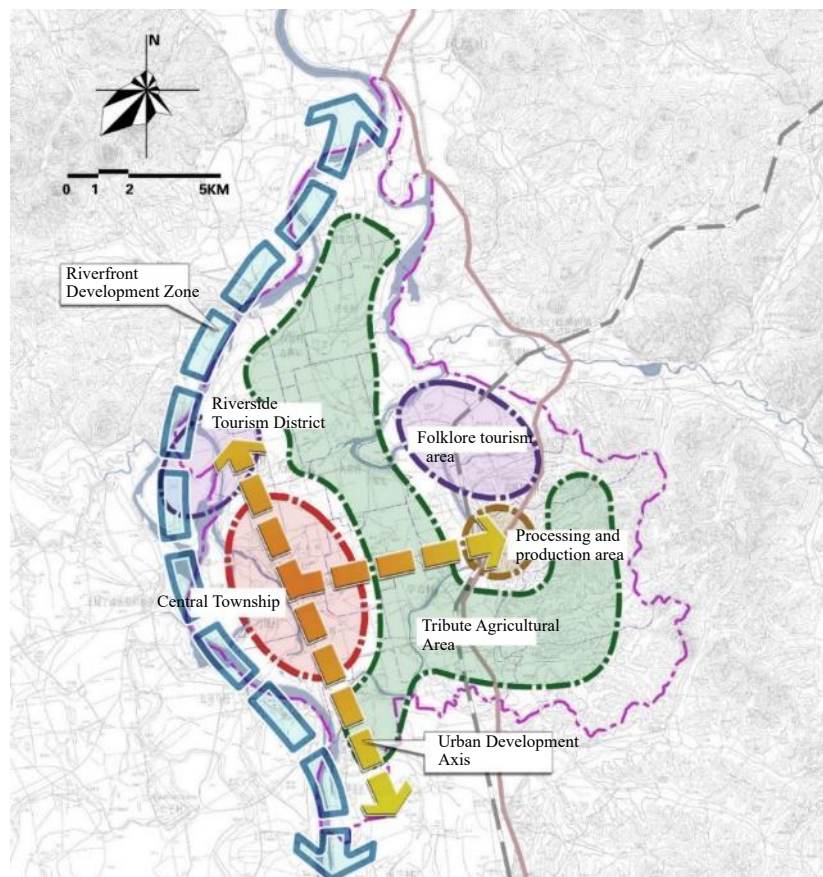


Fig.57. Overall development plan structure for Ulla town and surrounding areas

4.2.3.2 Dynamic Gradual Organic Renewal

The recent construction will accomplish historical cultural heritage protection and landscape regulation in the historical town areas. Preservation and repairment will be carried out to the historical architecture in the historical town areas. Buildings and pavements along the historical block area of the ancient town street will be renovated comprehensively to make for a historical cultural block area with

distinctive landscape and features. Buildings that conflict the control height will be demolished in the township. The overall development planning will be conducted for each sub-area in the ancient town. A template of landscape will be provided for the entire township through regulation of major historical architecture and block areas and the design of new constructions.

The long-term goals will provide suggestions and directions for the second stage of regulation work with feedbacks over a period of operation after the first stage work is finished. At the second stage, the conditions of the residences in the entire ancient town area will be improved. Regulation of the alleys and development of infrastructures will be carried out for villagers. All kinds of cultural squares will be installed. Some of the residences inside the ancient town will be used as tourism and cultural parks and homestays after regulation. Tourist sites and facilities will be improved to boost publicity of Wula Street Ancient Town and enrich tourism cultural contents.

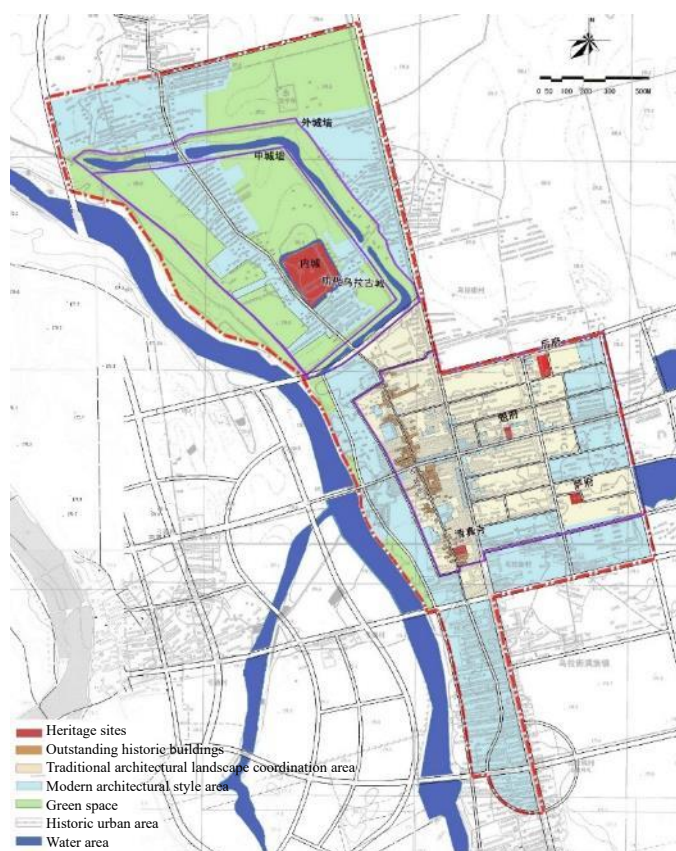


Fig.58. Township functional area planning

4.2.3.3 Low-level Intervention: Preservation and Continuance of the General Pattern of the Ancient Town

1) Sorting the Alley Layout

The ancient town carries distinctive characteristics of urban spatial texture and contains historical and cultural meanings. In different dynasties, there were always a city built on Wula Street. Currently, solid evidence has been discovered for two ancient cities of Ming and Qing Dynasty respectively. At present, the remnant of the city walls of the Ming ancient city is well preserved, while that of the Qing ancient city has been completely destroyed. However, historical street patterns around the ancient town have been completely retained. The overall pattern can still be recognized. These original pattern textures

need to be reserved and sustained. The ancient town has three major axes and nine alleys. The alley landscape should be regulated based on the preservation of the original pattern textures.

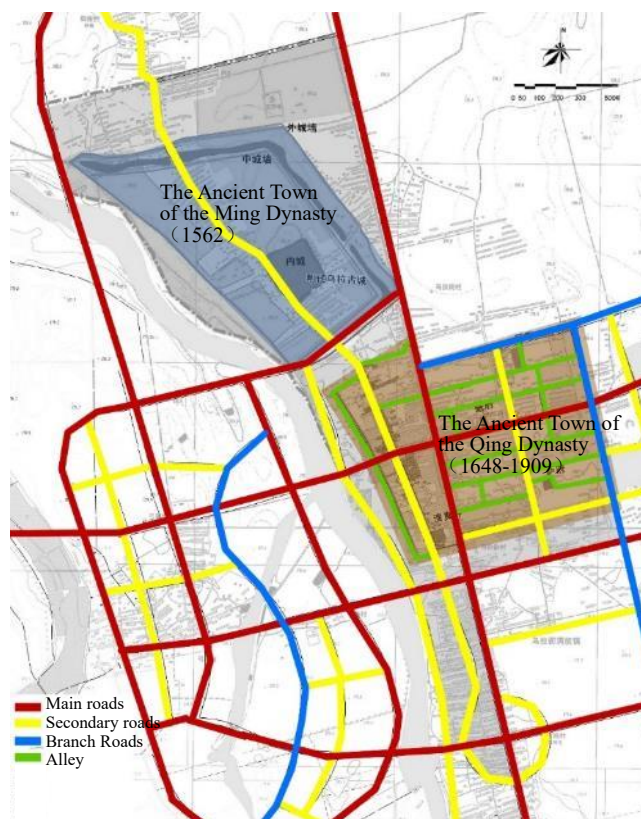


Fig 59. Roads analysis

2) Protective Measures for Historical Streets

The current alignment of the historical street in the historical town areas will be reserved. The width and length will remain unchanged. The alleys in the historic urban area are divided into urban main roads, urban secondary roads and walking lanes for regulation. Accessibility of the peripheral road network will be ensured under the precondition of preserving the original landscape. The current scale and ratio of the traditional streets in the historical town area will be preserved, with walking as the major transportation allowed. Traditional landscape of the historical street in the historical town area will be preserved and appropriately restored, with architectural forms, materials and colors along both side of the street coordinated with the historical landscape.

3) Plan of dividing the central town area into three areas for regulation, including core preservation area, landscape control area and coordinated development area

First, the core preservation area is set for preserving the landscape integrity of the historical architecture and the historical block area in the historical town area. Buildings in the preservation area should be no higher than 6.4 meters, with a two-story structure. Architecture scales, materials, colors and forms should agree with the traditional landscape. Architecture in the ancient town street, which is required to be repaired, is suggested to adopt the forms of pitched roofs and traditional building facades when appropriate. Materials such as green tile roof, wood doors and windows should be selected, while the main colors should be gray, black, white and brown, instead of extremely bright colors.

Second, the landscape control area is the zone with restricted construction in the ancient town area, serving as the transition buffer from historical architecture and the historical block area to newly

constructed space. In this area, new construction, expanded construction, and reconstruction are allowed, whereas heights, scales and colors of these architectures should coordinate with those in the core preservation area. The buildings should have a one-story or two-story structure, with a height below 6.4 meters and an architectural pattern of traditional three-section compound and four-section compound form.

Third, the coordinated development area is the newly built district in the central town, where coordinated development will be carried out based on the architectural landscape in the core preservation area and the landscape control area. Manchu residence patterns are adopted here and the heights of the buildings are kept under 9.5 meters with 1-3 stories. The architectural layout inherits the texture of the ancient town. Craftsmanship exhibition and folk culture enterprises will be built in this area, while the currently existing industries with high environmental pollution will be evacuated.



Fig 60. Phased construction diagram

4.2.3.4 Local Mergence: Holistic Organic Renewal of the Historical Alleys

1) Function Exchange

Due to the local economy recession, ageing population and outflow of the young generation has been increasingly intensified. Therefore, the implantation of multi-functions will drive the development of the local economy forward and provide more employments for young people to stay. Alley regulation will be implemented in the ancient town street to restore its traditional business, enabling it to be a part of Wula Street tourism and a place for residents to relax. The ancient town pedestrian street undergoes adaptive adjustments through opening its interface along the street and renovating part of the neighborhood groups along the street. Through the replacement of partial functions, the street is integrated with functions of public services, traditional culture display and leisure and entertainment, thereby enhancing the street's introversion and gathering people and vitality. Such reconstruction provides resting space for villagers' daily traffic while offering services for tourists as well. It changes the previous monotonous form of transportation function.

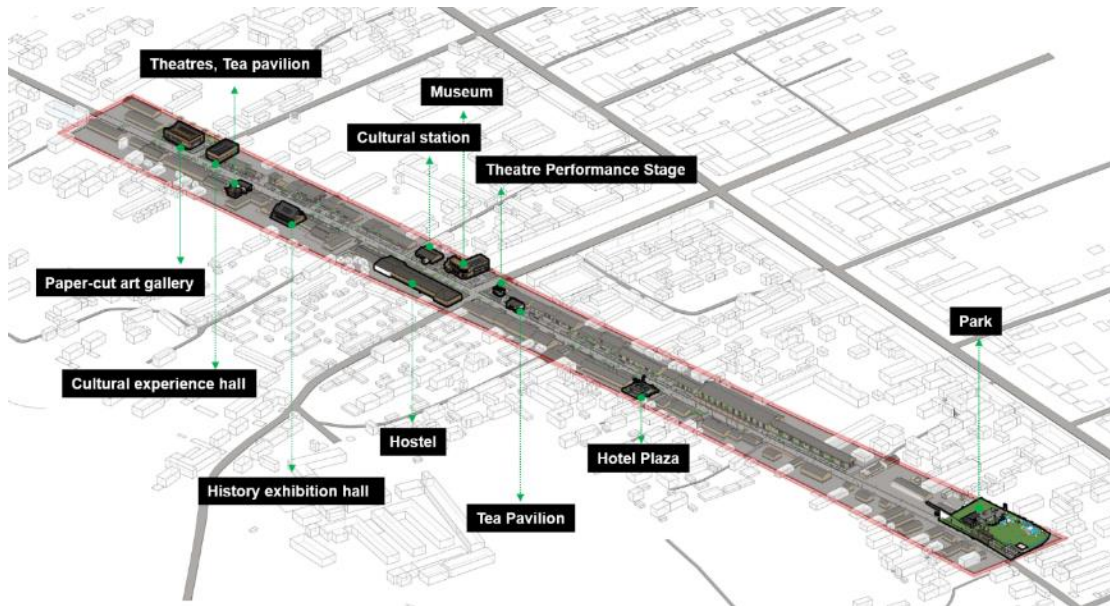


Fig 61. Implantation of new functions for ancient Street

2) Functional Subdivisions

The functional sub-divisions of the ancient town street are as follows:

- ① Culture and leisure zone. Entering the ancient town street area, the major functions of the entrance square are leisure and display of Wula Street history, while the square also serves as the buffering zone before entering the ancient town street.
- ② Ancient town exhibition zone. This is the place for introducing the evolution of the ancient town and its historical folk culture.
- ③ Traditional commercial zone. Historical shops are restored to create the atmosphere of business and allow trade within the traditional commercial zone of the historical block area.
- ④ Manchu courtyard zone. Through reshaping the dilapidated courtyards and interior restoration, the zone uncovers the shape and form of historical courtyards and traditional interior patterns. The courtyards are converted into guesthouses.

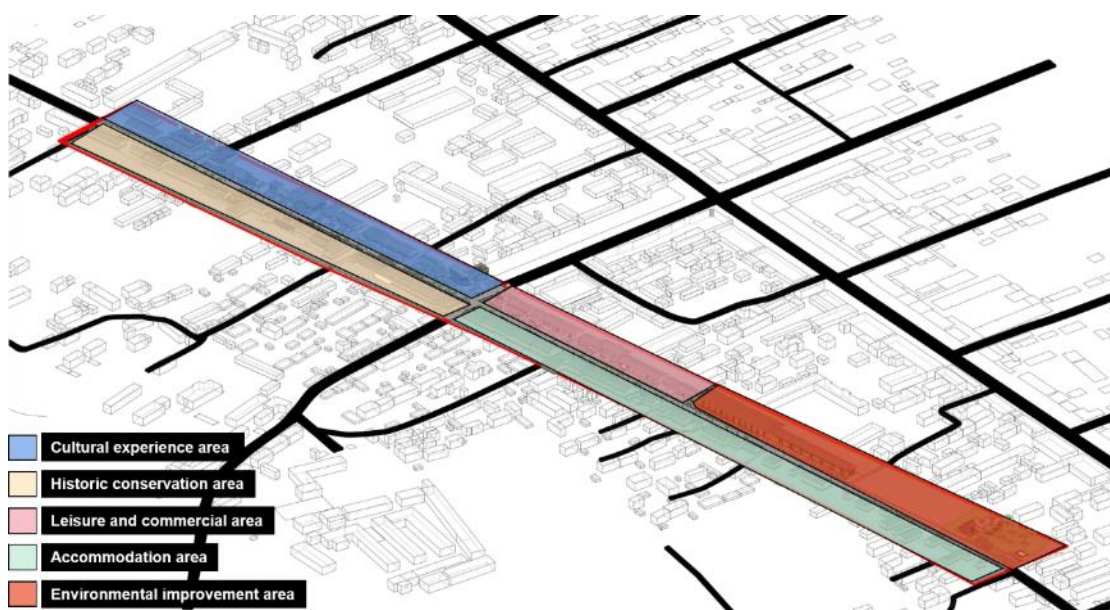


Fig 62. Functional zoning of ancient street

⑤ Environment improvement zone. In the areas with a poor environment at present, node space is expanded to green parks for public activities. On the sites where the buildings have been completely damaged, new residences and commercial buildings will be constructed.

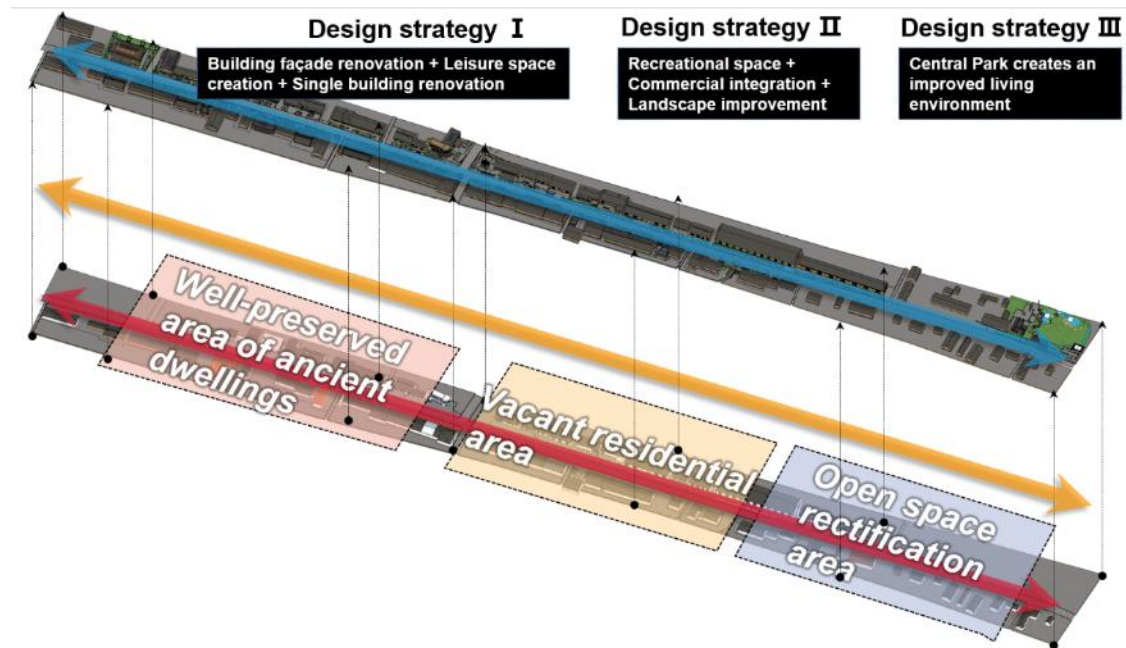


Fig 63. Regional renovation

3) Restrictions on Colors and the Overall Landscape of the Historical Alley

Historical architecture is the key component to compose the landscape of the historical cultural block, which dictates that the primal principle should be preservation of the historical architecture in the block area. Space scale and landscape environment elements of the street area should also be protected and inherited. Based on the original landscape of the block area, the reconstructed and newly-build buildings should be confined within two stories (6.2 meters) to preserve the smooth and orderly space outline and scale relation of the historical block interface and to maintain the intervisibility of the lines of sight traverse and the axes of the historical block area. To ensure the harmony and unity of between alley landscape and the entire ancient town, buildings on both sides of the alley use the sloping roof form and the traditional building facade with materials of gray bricks, gray tiles, plain concrete, and wood doors and windows. Black, white, gray and brown are chosen as the primary colors.



Fig 64. Original outline of ancient street



Fig 65 Planing of ancient street

4) Historical Alley Landscape and Node Design

① Alley Landscape Design

Design of the ancient town alley space should be carried out under the precondition of preserving the original alley textures to improve the alley textures and concentrate on the shaping of alley landscapes with methods combining the old and the new. Walking streets and public activity block area will be constructed. The unused areas are exploited to construct node space where people can stay to hold activities. By enclosing the outdoor areas, some residences use different courtyard wall forms and ground segmentation forms to enrich the variation of space. The layered transition is henceforth formed from public space, to semi-public space, and to private space between alleys and buildings, producing courtyards with different features.



Fig 66. Landscape module



Fig 67. Ancient street landscape design

② Entrance Square Design

The entrance space provides the first expression of the alley as the transition place connecting the alley and the ancient town. Design of this node should highlight the image of the exit of the village to create a specific landmark and sense of space. Square space of local adaptation and entertainment is created through reasonable configuration of landscape greening and the use of local materials. Some of the village history and culture is organized to be on display in the form of sculptures or exhibition halls to strengthen the culture identity of villagers. It also provides the environment where tourists from outside can learn about the culture of the ancient town. The scales and colors of landscape sketches should be coordinated with the environment and merged with the village to create an enclosed space with a sense of small scale. Such space provides public places for residents and tourists to launch cultural activities and performances. Activities such as rituals with Manchu features and folk dances will be held on the square on a regular basis.



Fig 68. Entrance square location and rest pavilion design



Fig 68. Overhead and pedestrian views of the entrance square

③ Leisure Space Design

Constructions will be added to the empty areas in the historical alley. Space nodes will be extended in the appropriate places to form street-side leisure activity squares. Contents of node space are enriched by native plants and local landscape sketches to create small-sized green leisure parks. The implementation of greening and landscape environment makes for natural transition between node space and streets. Diverse functions and facilities are endowed to the leisure space such as exercise places and leisure facilities, which provide villagers with places for entertainment and folk custom activities.

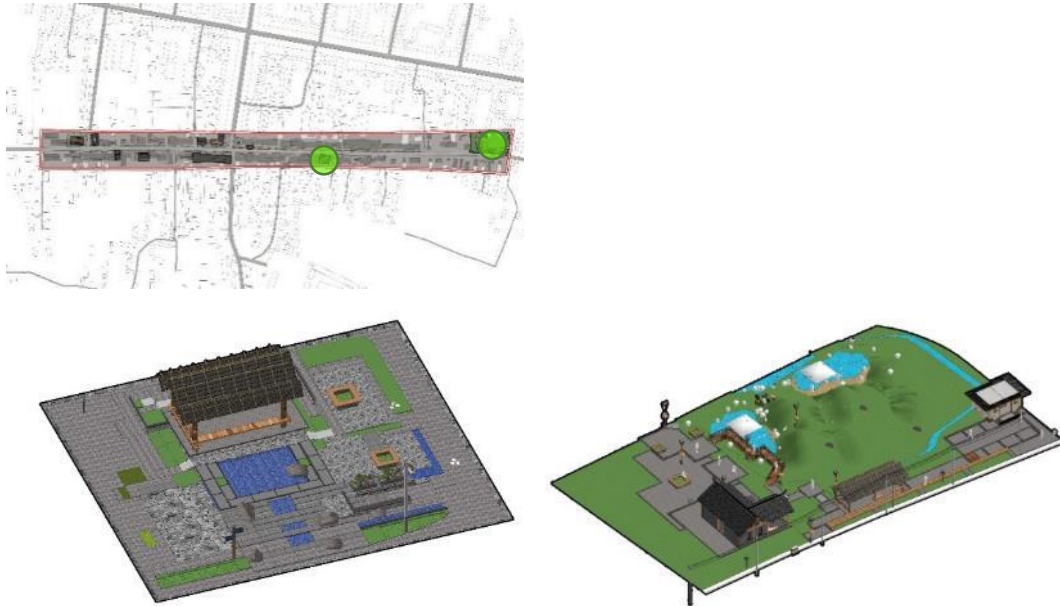


Fig 68. Location Leisure square and park



Fig 69. Overhead and pedestrian views of the leisure square and park

5) Renewal Design for Alley Buildings

① Overview and Categorization of Buildings

The ancient town street is 950 meters in length, with an average 12 meters gap between buildings on both sides. Once, the street was filled with shops on both sides, showing enriched contents of history and culture. Primitive northeast Manchu residences distributed on both sides dated all the way back to the Ming and Qing periods. They are the soul of the entire Wula Street Ancient Town, as they carry the most authentic Manchu style. At this moment, the ancient street is paved with cement and the street environment is a mess. The buildings are all common residential buildings with a one- or two-story scale and double sloping roofs. Most are ragged and the forms are monotonous.

The buildings in the ancient town street are divided into three categories based on time, material, color, and roof form, including traditional style, traditional/modern style, and modern style. Buildings of the first category are the ones constructed before the end of the Qing dynasty, with intact preserved landscapes. The second category contains buildings before the foundation of the new China, of which the qualities are average and a certain amount of historical architectural components are reserved. Buildings of the third category are the reconstructed modern architecture. Based on the value and property of the architectural landscapes, four reconstruction approaches of demolition, preservation, restoration and new construction are adopted accordingly.

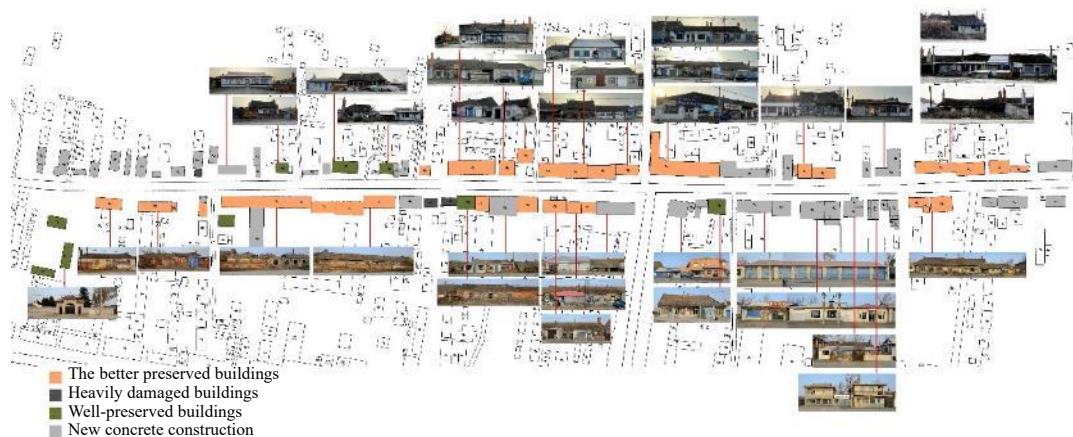


Fig 70. Classification of the current state of preservation of residences

② Architecture Reconstruction: Coordination of the Overall Architectural Landscape

Regulation will be applied to general buildings in the block area, where common residences, which show no obvious contradiction with the historical landscape, can be reserved. Common residences with more than 2 stories that are not coordinated with the historical landscape can be adapted while preserving the main body of the building. Harmony will be achieved through lowering the buildings and changing the appearance of building facades. For small number of modern buildings strongly conflicting with the historical landscape in the area, demolition should be implemented gradually followed by replacement of new buildings in tune with the historical landscape. During regulation, local brick and stone materials are selected as the major structure for maintenance. The architecture color should be set in a gray tone in concord with the historical alley buildings.

The unused and deserted old architecture will be reconstructed. The buildings are transformed from the previous place solely for living to a space composite carrying multiple functions including culture,

leisure and entertainment, to bring new vitality to the sustainable development of the ancient town. Functional replacement does not only add momentum to the economic development of the ancient town. The combination of tourism related industries with the buildings can also endowing the buildings with diversified use value, which is beneficial to the ordered continuance of architectural space textures, making it a positive renewal method.



Fig 68. A modern building converted into a museum

③ Newly-Built Cultural Activity Space: Continuance of Traditional Manchu Architecture and Manchu Culture

The styles of the newly-built architecture should be coordinated with traditional architecture and the overall rural environment. As for the implantation of modern functions, on one hand, the architectural development needs to deliver characteristics of traditional culture to certain extent; on the other hand, it should respond to the demands of modern life.

First, continuance of traditional Manchu architectural features. In the Chinese traditional society,

due to the restrictions of ritual, building materials and technology, the structure of buildings was monotonous, while the restrictions also created distinctive architectural details. These architectural symbols can be a spatial form, a construction component form, or a specific building material. Its function is to present regional landscape and features, and to inherit and promote historical contexts. During renewal, transition and coordination of landscapes between buildings are emphasized and traditional Manchu architectural features are extracted to guide and control architectural landscapes through reviewing historical materials and investigating historical architecture. (Facade elements)

Second, application of regional materials. Local materials are generated under natural conditions, including building materials and materials from nature commonly used in rural production and living, such as stones, wood, and plants. With high usage value and regional features, local materials can form regionally distinctive landscape characteristics to increase identifiability of buildings. New buildings in the ancient street adopt traditional construction methods and use local stones, tiles and thatch as building materials to highlight regional features and coordinate with the rural natural environment, and thereby realizing the overall coordination and organic characteristics of villages. (Material elements)

Third, the continuance of traditional structures. The roof structure with large slope and thick wall structure with brick or adobe of the northern residences are the strategies to cope with the snowy climate during cold winters in northern China. The newly-built public architecture inherits the structures of traditional Manchu architecture, brick walls and timber sloping roof roofs.

④ Inheritance and Promotion of Traditional Culture

Based on the needs of its own and tourism development, advantage positions in the empty nodes of the ancient town alley are selected to construct public buildings. Public buildings serve as a bridge to bring together social relations in the rural areas, so that regional culture can be circulated and protected through material carriages. Traditional cultural heritages of Wula Street mainly include Shaman culture, folk dance, ritual activities, festival culture, northeast Manchu paper cutting, traditional Manchu folk residences, and traditional Manchu costumes. To promote traditional culture of Wula Street, Manchu History Museum is founded. The building adopts sloping roof form of traditional Manchu architecture. The overall shape of traditional Manchu architecture is expressed with modern structures to obtain harmony and unity with the overall landscape of the historical block area. The exhibition center adopts the forms of images, videos and relics to present Manchu folk customs of Wula Street.





Fig 70. Location and views of the Manchu History Museum



Fig 71. Overhead and pedestrian views of the Manchu History Museum

Manchu Paper Cutting Museum serves multiple functions as a paper cutting workshop, communication space, gathering space and exhibition space. At ordinary times, learning activities of traditional culture are held in the forms of training and promotion to boost the awareness of residents to preserve and inherit traditional culture. The museum offers space for training and activities for traditional Manchu craftsmanship, where inheritors are cultivated to promote traditional Manchu folk art.

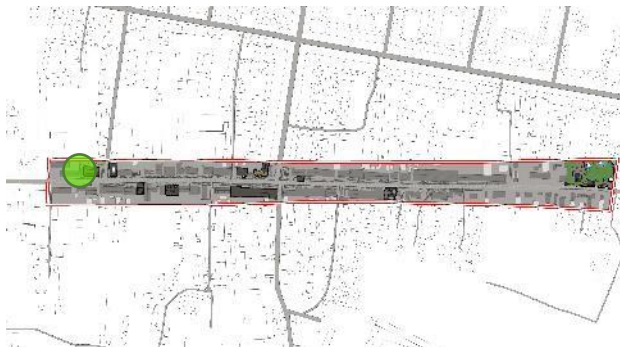


Fig 71. Overhead views of the Paper-Cut Museum

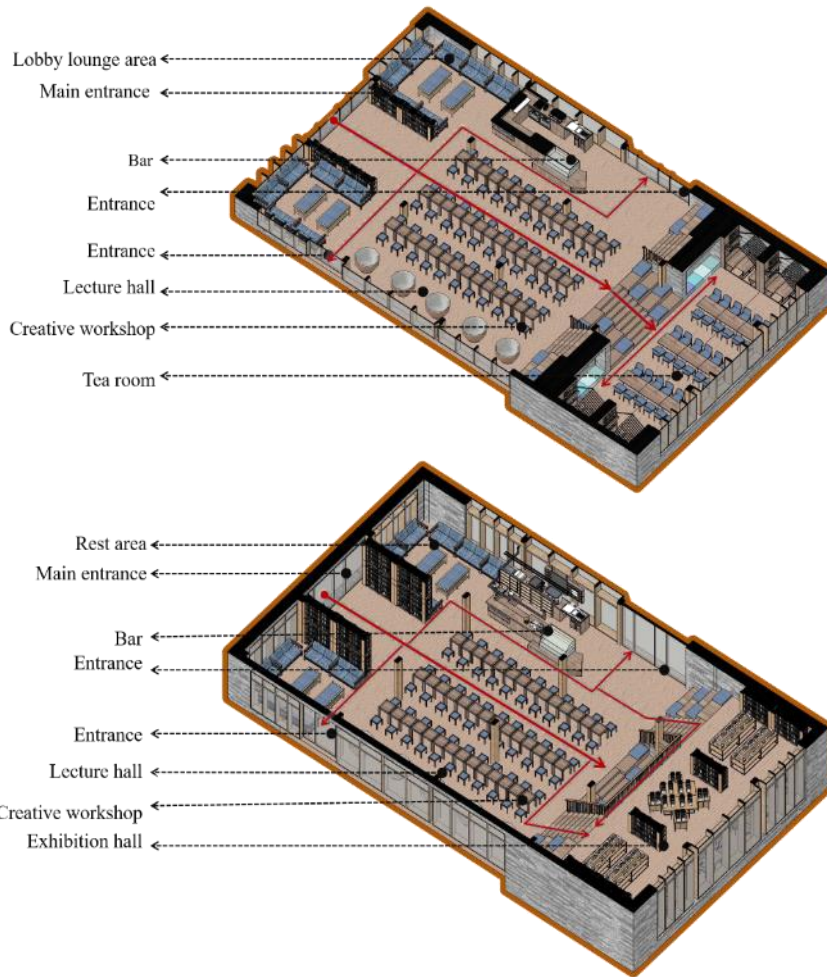


Fig 72. Interior functional layout of the paper-cut museum

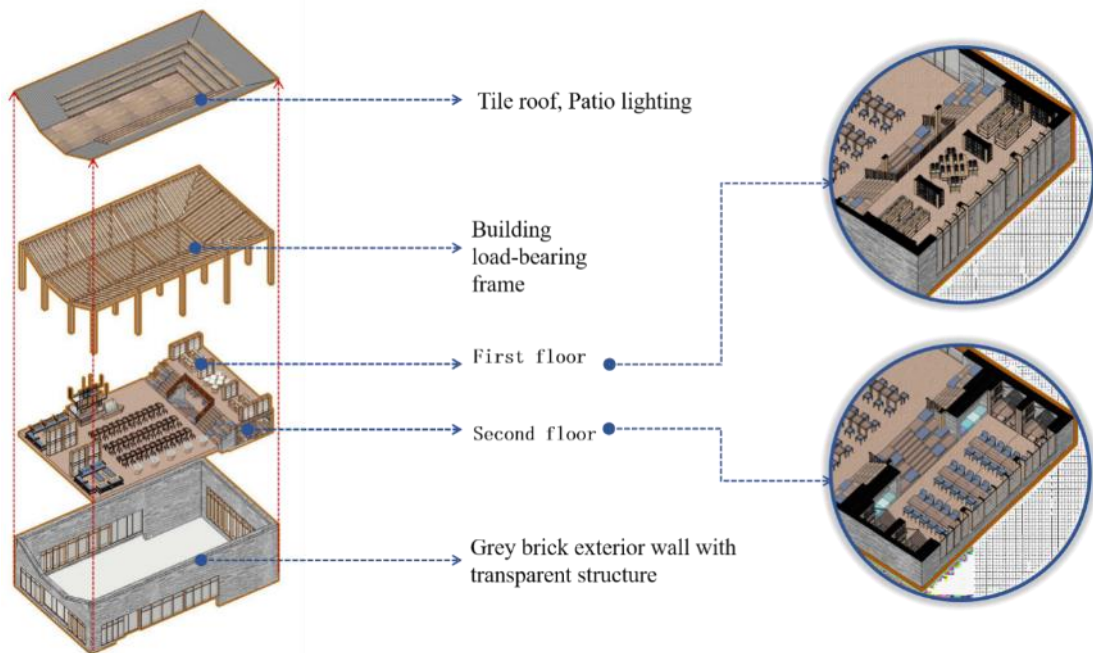


Fig 74. Structural analysis of the paper-cut museum

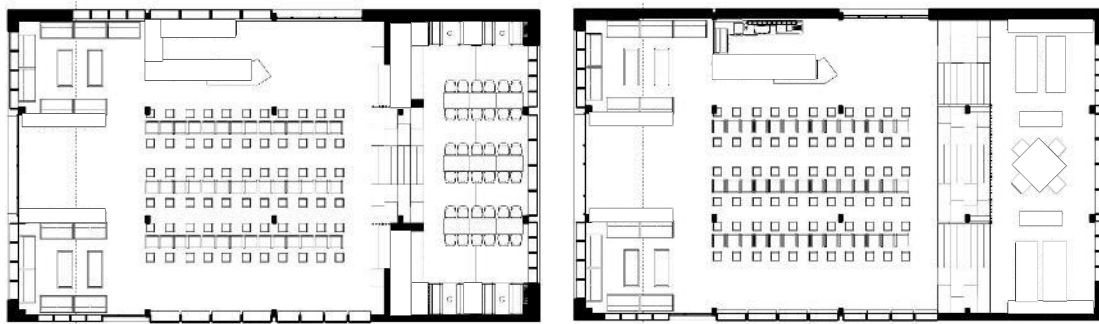


Fig 73. Interior plan of the paper-cut museum

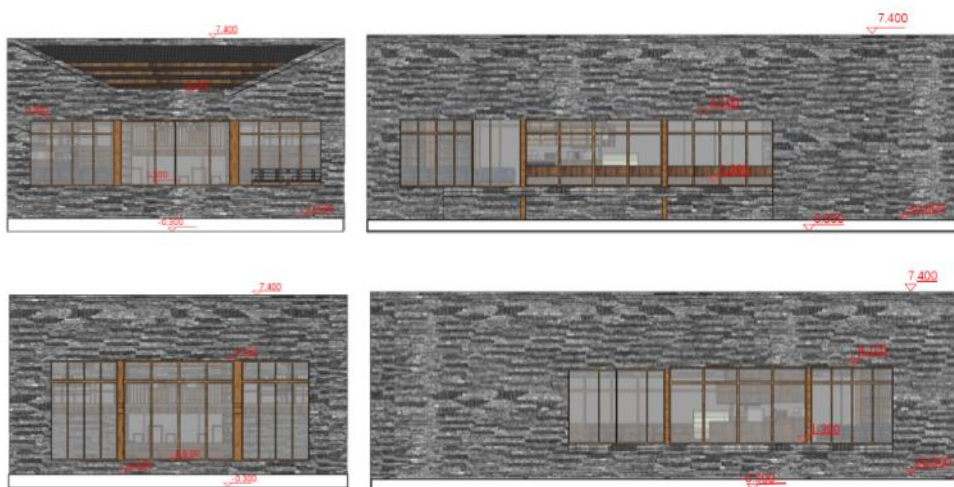


Fig 75. Building facade of the paper-cut museum

6) Alley Micro Landscape and Facility Design

① Micro Landscape

Landscape sketch design is performed in the areas with frequent villagers' activities. For example, tea break pavilions with traditional architectural forms can provide leisure space for local residents and tourists to communicate and enjoy the cool air. The existing idle building components in the village are reconstructed. And the waste building materials such as old bricks and tiles are utilized in combination with the structures in the traditional courtyards, such as the shape of the screen wall to fabricate landscape sketches through exquisite techniques. A strong local landscape atmosphere is henceforth formulated to enrich the contents of the public space. (Tea pavilion, landscape sketch)





76. Theatres, tea pavilion design



Fig 77. Partitions designed in the form of external walls of traditional residential courtyards

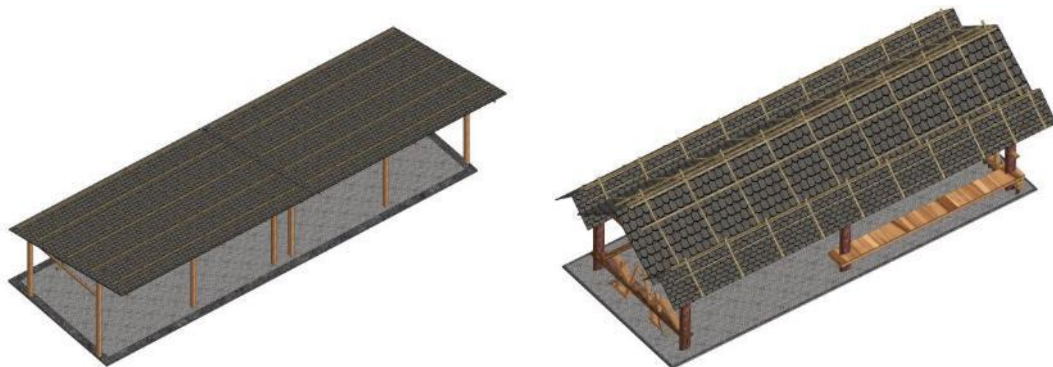


Fig 78. Leisure Pavilion

② Public Facilities

Setting up more public facilities should be taken into consideration (dustbins, public toilets, direction signs and street lights). The concept of combining historic elegance and modern design is emphasized on the basis of satisfying practical functional demands of tourists and residents. Restoring shop signboards, setting signboards in front of each shop to introduce characteristics of different shops in the Qing dynasty are also feasible. As the Qing dynasty was the time when the ancient town street was the most prosperous and the closest to our time, the restoration and design of the ancient town street uses its landscape at that time as the foundation and prototype. The space, which is in front of and behind residences, on both sides of the streets, and in the leisure square, is used for afforestation arrangements. Traditional tree species and flowers are used in the greening configuration. Electric poles and overhead wires that obstruct the ornamental effect are gradually substituted by the buried types.



Fig 79. Flower bed

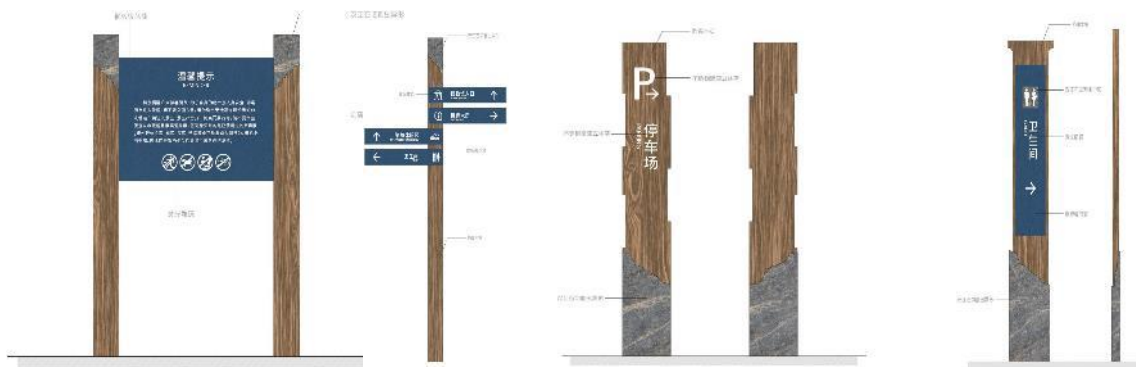


Fig 80. Signage design

4.2.3.5 Prototype Test: Preservation of Historical Architecture and Optimization of Residences

1) Restoration and Renewal of Historical Architecture

① Space Analysis on Historical Courtyards

The Kui Mansion was the residence for officials in the Qing dynasty, constructed by General Wang Kuifu of the Qing dynasty in 1898. It occupies a building area of 466 square meters, with the total area of 1647 square meters. As a four-section compound with two gates, the advantage of the courtyard layout is that the openness in the front of the courtyard is prone to sunshine, and the internal ventilation is optimized. The open courtyard is the main place for activities. In the front of the courtyard are three gate houses, to the east of which is the main entrance. Entering through the main entrance, the first thing to be seen is the fronton of the east wing house, which is also the screen wall of the entrance. The screen wall is painted with color painting. The already dismantled middle wall divides the courtyard into the front and back yard. The east and west wings of the front yard were for servants, whereas the back yard was for the master in which there was a main house and two wing houses connected by the verandah frames. The constructions in the courtyard are all integrated wood frames and gray brick walls. The buildings are well constructed and exquisite in detail, with auspicious patterns carved on tiles, stone

carvings on fronton, cornerstones of corner wall and column base. The whole building group is in a gray tone with historic elegance.



Fig 81. The original historical appearance of Historic building-Kui Mansion (Photographed by Zhao Liangyu)

The Hou Mansion was built during the reign of Emperor Guangxu of the Qing dynasty. It was the private residence of Zhao Yunsheng, who was in charge of the tribute specialty office set by the Qing government in Jilin City. The total area of the mansion is 1980 square meters, and the building area is 190 square meters. In its day, the Hou Mansion was the most grandiose mansion on Wula Street, in a typical four-section compound form with front and back two courtyards. Because of damage, now there are only the main house and the west wing house left.

According to historical records, the mansion was 97 meters long from north to south, 49 meters wide from east to west, and the wall was 3.3 meters high. The wall was built with gray bricks. On the south side of the east wall, there were three gate towers, one high and two low, 5 meters high in the middle, 4 meters high on both sides, and 9 meters wide in total. Opposite the gate, there was a brick screen wall, 7 meters long and 3 meters high, with a picture of *sunrise on the sea* embossed in the front side of the screen wall. Inside the gate was the outer courtyard of the whole mansion, and the wing houses on either side of the gate served as the tool room and the rest room for the security staff. To the south of the outer courtyard were five south main houses. To the west of the south main house were two guest rooms. And to the east were three rooms for accounting and housings. In the middle of the courtyard was a wall separating the inner yard and the outer yard. The 2-meter-high low wall was built of square stones, with a circular ridge on the top. In the middle of the low wall was a small red gate, and under the eaves of the gate were wood carvings of various patterns of flowers, birds, animals, fish and insects. The inner courtyard was a three-section compound, with gray brick pavement in the whole courtyard. There were five main houses and five wing houses in the east and west wing of the inner courtyard, which were connected by corridors. The architecture of the inner courtyard was elegant, with gray brick walls and brick carvings in the frontons on both sides of the building. There was a front porch in the front of the building, with semicircular arches at both ends. On the east and west sides of the main house were 8-meter-high chimneys. On the top of the chimneys were three three-story buildings with copper bells hanging at the four corners of the building.



Current state of the building and architectural details

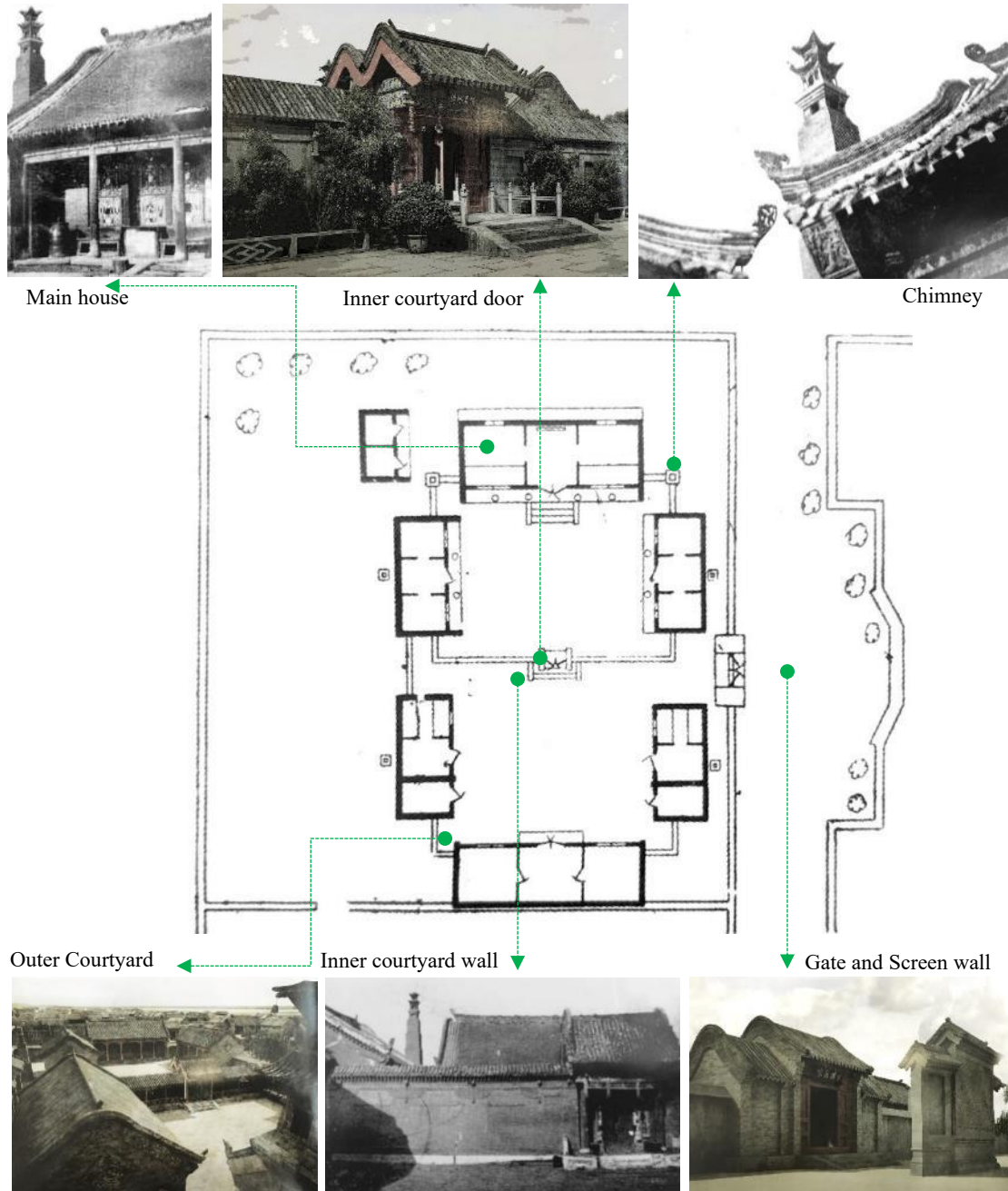


Fig 82. The original historical appearance of Historic building-Hou Mansion (Photographed by Zhao Liangyu)

② Renewal Design for Historical Architecture

The historical materials of the historical buildings were previously collected to summarize the historical development, spatial layout characteristics and architectural details of the buildings. On this basis, the repairment and renewal design were carried out.

Part one, repairment: continuance of traditional architectural space. Renewal work was carried out for the key historical architecture in Wula Ancient Town, the Kui Mansion and the Hou Mansion. In traditional architecture space, the concept of harmonious coexistence of artificial environment and natural environment is frequently conveyed. For example, the form of *Heyuan* in historical residences expresses the social relation between the seniors and the young, whereas *the symmetrical axes* present a cosmic view of balance and coordination. Inside the architectural space, what we experience is not only

the spatial atmosphere, but also the traditional cultural spirit and contexts within. Therefore, repair of the buildings should restore the original landscape as possible. According to the historical data, the restoration sketch of the historic buildings should be drawn, and the original courtyard pattern and style of the historic buildings should be retained. The original building structure should be fully retained. Wall masonry should be disassembled and rebuilt, while the doors and windows are reserved. Building facade decoration, brick carvings are retained and installed in the original positions.

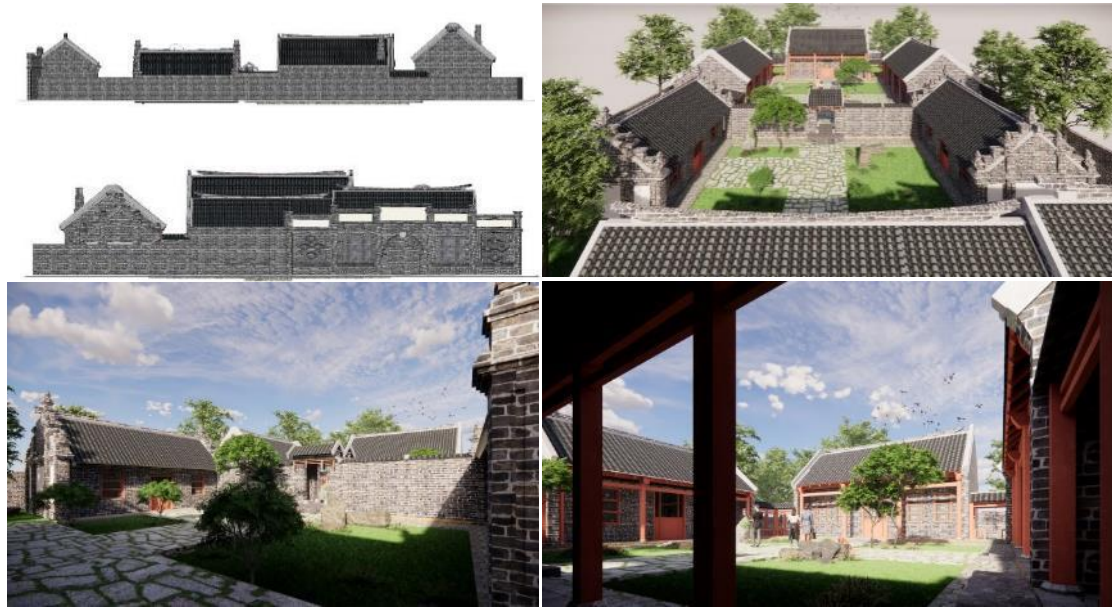


Fig 83. Design of the restoration of the Historic building-Hou mansion



Fig 84. Photographs of the completed restoration of the historic building-Hou mansion





Fig 8. Restoration of the historic building-Kui mansion

Part two, renewal: reconstruction of the courtyard space. The renovation of courtyard space continues the form of traditional courtyard space, with focus on the sense of enclosure and the construction of privacy. The space combination is established in the forms of rectangular residences to produce courtyard enclosed space. As the original middle wall in the courtyard has been torn. In that case, the inner and outer courtyards are divided by the intentional middle courtyard wall. The modern courtyard wall form not only plays the role of space separation but also has the modern function as gallery. The interior space of the building is open for public activities of the ancient town and will be a senior activity center. The courtyard space is set as the ancient town's public activity place to hold festival ceremonies, Shaman rituals and daily gathering.



Fig 85. Renewal design of the historic building-Hou house courtyard

2) Optimization of Residences

After the field research on residences in the ancient town, the existing problems have been identified above. Practice of architectural optimization design strategies are carried out using one residence as the design template to resolve these problems in combination of organic renewal concept.

① Modern Suitability Principle

Renewal and preservation of traditional folk residences does not mean reserving blindly and rejecting application of new technology and new materials. On the contrary, it requires to be get rid of the stale and bringing forth the fresh to realize selective application on the basis of retaining the essence. Mergence and supplementation are implemented between the old and the new. The new one refers to the new function demands for residences from modern life, while the old one is the traditional folk residential form inherited from the history. The new one should conform to the intrinsic laws and basic characteristics of the old one, on which basis modern sustainability renewal is carried out to be coordinated with the old parts. For material application and construction technologies, modern sustainability renewal is conducted with the advantageous modern resources and in accordance with regional features.

② Organic Unity Principle of Unit and Whole

Traditional northeast residences feature with a single house and a single courtyard. Several small courtyard spaces are combined to make a village as a whole. The unit characteristics affect the integrity of the village, so the construction of building units should take into account the overall environment to achieve the organic unity of the units and the whole. Renewal of residences is not just for the adjustment inside the buildings, but also requires comprehensive consideration of yard space, alley space and the whole village. In addition, cultural characteristics, economic conditions, nationality characteristics of the village should be taken into account before architectural renewal. In this way, it can both address problems inside the buildings, and adapt to the external environment, leading to the organic unity of the building units and the whole village.

③ Function Layout

The plane layout of residences continues Manchu traditions, with combination of modern functions. On the coupling of functional space, public and private subdivisions, active and static subdivisions receive sufficient attention. For example: public subdivision should be set near vestibular entrance or indoor central area, while private subdivision should ensure privacy and be separated away from public subdivisions. Bedroom space is static. In layout, it should be separated from kitchen space on purpose to avoid mutual influence. The overall interior layout composes a reasonable dynamic relationship, which can be adjusted and improved according to the living habits of each household to form the most suitable spatial layout for living and improve the comfort level of the residence.

④ Living Space

Living space is the core of rural residences. Influenced by the deep traditional northeast culture, rural bedrooms do not only meet the daily rest and sleep. Also, heated brick beds do not function the same as ordinary beds. Residents' daily living and guesting are mostly completed in the living space, which has a variety of functions. Therefore, the renewal of living space needs a large space to satisfy the functions of family activities and bedrooms, for instance, an area of 20 square meters is appropriate. Indoor walls use cream-colored wallpaper, while heated brick beds are built by red bricks and paved by rattan soft cushion.

⑤ Kitchen and Dining Space

Kitchens and dining rooms are essential space in daily life that ensures living qualities. As they require relatively small space, ergonomics and the comfort level of use should be fully considered in renewal. Kitchen space in the rural areas attached more importance, because it is not solely a place to cook meals, but also the heat source for heating of the house. Therefore, the area of kitchens should be properly expanded to no less than 9 square meters. Ventilation and natural wind circulation should be enhanced. Affected by traditional northeast culture, food is generally set on the tables on the heated brick bed. Nevertheless, to improve living qualities, it is considerable to install a dining room in the layout to be separated from the bedroom.

⑥ Building Facade Form

Based on the detailed analysis on the features of traditional northeast folk residences in the second section, the renewal of residences continues the facade forms of traditional residences and veneer restoration is carried out on the exterior facade of the original building without to many decorations. The selection of materials is more diverse. The overall hue of the village is unified to avoid a messy sense of the appearance of the buildings. The colors of exterior wall bricks and paint are mainly adobe color, with the color of doors and windows being brown, to bring out accordance with the overall environment of the village. The roof of the building continues the traditional form of a sloping roofs with a traditional timber structure. Local pine timber and traditional gray tiles are applied respectively.

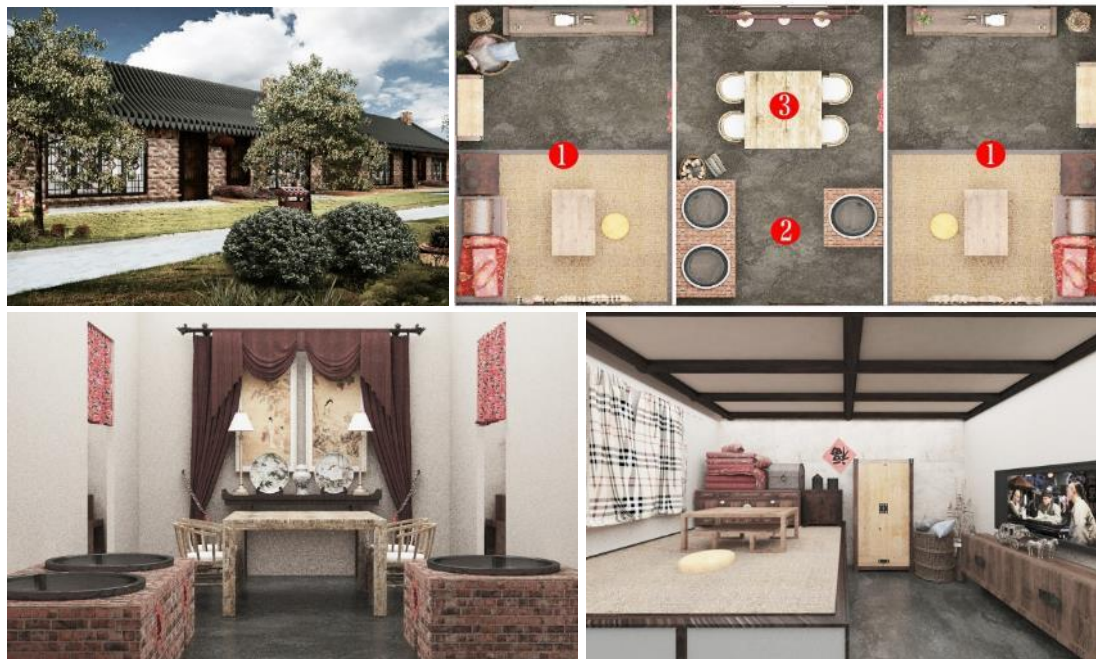


Fig 86. Renewal of the residence (Façade, Interior plan, kitchen and dining room, Living Room)

4.2.3.6 The Coordination Strategy in the Participation Mechanism

In the organic renewal design project of Wula Street Ancient Town, participation of residents can drive the effect of the project to the maximum.

Therefore, before the conduction of the project, participants of different parties are coordinated into one community through establishing a multi-party partnership between representatives of villagers and the local government. Early-stage investigation adopted the forms of questionnaires and in-door interviews to carry out statistical analysis, out of the consideration that only residents themselves know what they

need. Information related to the project was delivered in a manner and language accessible to the residents to reach effective interaction with the local residents, so that they can comprehend the project. During the implementation of the project, residents with construction techniques and willingness were selected to participate in construction.

An expert steering committee for preservation of the historical culture of Wula Ancient Town has been founded. With the Wula Street Town government as the core, for the approval of new projects an landscape protection agreement must be signed with the government. The repair of the historical relics will be supported by the government through multiple methods including attracting investment or striving for national special funds. Organic inheritance and promotion of history and culture is emphasized. With the establishment of museums and workshops of Manchu culture, the history of Wula Street is promoted in various ways. Inheritors of Manchu culture are cultivated. Training programs are open for administrative personnel to improve their history and culture knowledge and professional skills. Vast efforts are made to develop resources of history and culture of the town area and Manchu folk tourism in projects of catering, accommodation, tourism, entertainment and shopping with villagers being the center.

4.3 Manchu's Application of Organic Renewal Strategy and Design

Traditional Manchu architecture and folk culture are fully expressed in traditional settlements, providing more opportunities for modern urban citizens to learn about Manchu culture. Therefore, traditional Manchu architectural culture should be well represented in modern urban architectural design. Following is case summarization designed by the author.

4.3.1 Renewal of Residences Features: Design of the Friendly Villagers' Residence and Museum

1) Project Overview

Youhao Village is located in the suburbs of Changchun City, Jilin Province, 10 km away from the downtown of Changchun. The village is surrounded by mountains and forests, with a river flowing through it. Residences distribute along the river, possessing a wide view in front of the buildings. The natural environment is outstanding. The village has been exploited into a leisure resort, in which facilities including a northeast Manchu folk amusement park, a Manchu folk museum and modern homestays with Manchu features are built. Conforming to the whole principle of organic renewal, architecture renewal design of Youhao Village is carried out on the basis of protecting the surrounding environment and the original texture of the village.



Fig 87. Friendship Village Vista Photo



Fig 88. Folklore Museum

2) Modern Demonstration of Traditional Manchu Folk Residences

① Application of Traditional Materials and Traditional Elements

The residential museum adopts the three-section compound layout that resembles traditional Manchu folk residential courtyards. Despite the subtle and complicated wall laying processes of traditional folk residences, they stand out with good ecological performance and high living comfort. However, since 1950s, to quickly address the housing problem in the rural areas, simplified brick-and-tile houses have been built in a great amount, making traditional crafts including masonry panels and timber frames deserted. Most construction techniques have been abandoned. The design of the residential museum forms new architectural textures and qualities through endowing traditional materials with new forms of modern construction methods. The architectural form extracts elements from traditional Manchu architecture with applications of traditional wood windows and wood doors to the building's facade. The walls were painted in off-white to mimic the color of the original adobe and used antique brick finish. The roofs were laid in the traditional timber structure with traditional gray tile surfacing.

② Renewal Design of the Traditional Structure and Layout

The walls of traditional folk residences were laid with stones and clays, while the new Manchu residences adopt modern construction techniques with metal doors and windows and paint finish on the exterior walls. The architectural form and space layout inherit the style of traditional Manchu architecture. Functional space inside traditional Manchu folk residences can satisfy the demands of modern production and living no more. For example, the restrooms set in the courtyard outside cause great inconvenience. The residence design features reasonable layout to accommodate modern life as it highlights the modernization of functional space to improve living quality. In the interior space, there are guest rooms, living rooms, kitchens and restrooms fully equipped with modern functional facilities. Indoor heated brick beds continue the form in traditional Manchu folk residences, except that electricity is used for heating. The beds are covered with rattan cushions. Traditional indoor structures are restored with modern materials and modern technologies to create a comfortable indoor environment.



Fig 88. Building exterior and gate



Fig 89. Courtyard and interior

4.3.2 Reconstruction of the Alley Landscape: Design of the Northeast Folk Museum

1) Project Overview

The Northeast Folk Custom Museum is a preservation and exhibition institution for northeast cultural heritages located in Changchun City, Jilin Province. The architecture has two stories. The first story serves as the exhibition hall for northeast history and cultural relics, while the second floor holds the exhibition of a northeast folk custom street where traditional business architecture is constructed with a same-size ratio. It comprehensively presents the prosperous business activities in the northeast of China during the Qing dynasty to the Republic of China. The traditional architectural forms, patterns and construction methods are also fully expressed. The museum plays a special role in the city of Changchun, Jilin by creating for urban citizens an opportunity to experience northeast folk customs. It promotes the inheritance of northeast folk culture while combining organically with modern social life.

2) Demonstration of Traditional Manchu Folk Residences and Commercial Alley Space

The atrium on the first floor of the museum shows the shape and internal structure of the traditional northeast Manchu courtyard, enabling people to feel the living conditions of the folks in northeast China during the historical period.



Fig 90. Manchu courtyard in the atrium on the first floor

① Alley Landscape

As a principal component of the traditional village landscape system, commercial alley landscape plays an important role in inheriting and promoting features of traditional village landscape. Design of the traditional commercial street in the second floor of the museum is highlighted in the architectural forms, building facades, building facade decorations, street facilities, and alley nodes. The continuance of facade is the main content of alley interface inheritance. In addition to the continuance of traditional facade elements such as materials, decorations, doors and windows, it is more important to inherit the elements with regional and ethnic features on the facade, such as the design of shop signboard, the design of roof ridges and eaves, and the design of side frontons.

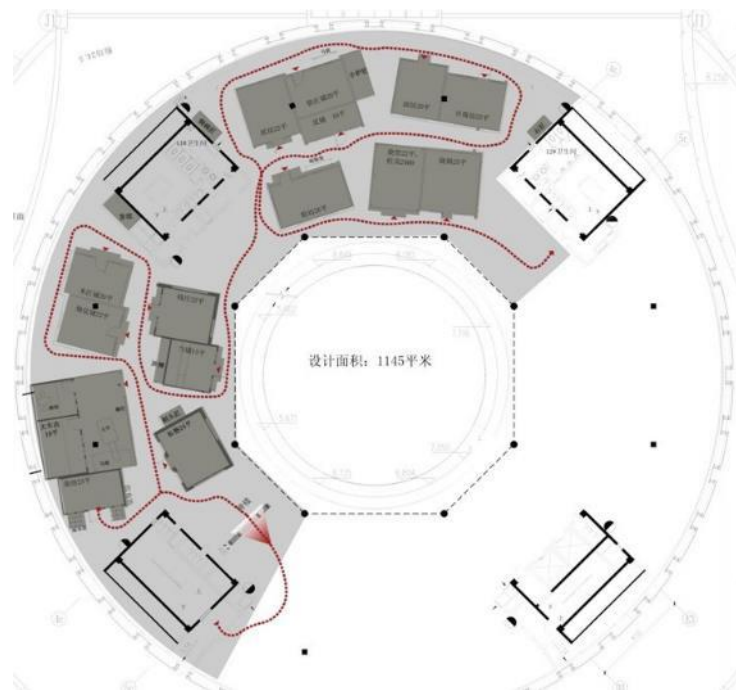


Fig 91. Second floor plan

② Architectural Forms

The shop buildings completely continue the traditional Manchu architectural forms, such as adobe wall with wood frame roof and straw roof pavement structure, and brick wall with wood frame and gray tile pavement structure.

③ Alley Node Design

The scattered layout of commercial street buildings encloses different alley node spaces. For example, in the creation of the entrance space, an archway is set up to form a very distinctive entrance space. Other nodes are equipped with temporary selling booths and tools, which revive more authentically the exuberant market life in history.



Fig 92. Streets and commercial buildings

4.3.3 Continuance of the Regional Culture: Design of the Exhibition Center of Ma'anshan Village

1) Project Overview

The Village History Museum is located at Jiutai District, Changchun City, Jilin Province. With modern architectural forms and interior space organization, the exhibition center puts the development history of Ma'anshan on display. It's the cultural architecture of Ma'anshan Village.

2) Project Design

Overall, the architecture adopted modern construction methods and expression forms. Red brick masonry walls deliver a thick sense of history. Cement hollow bricks for building facades lay out the shape of the mountain of Ma'anshan, which not only enriches the morphology of the front elevation but also enhances the regional features of Ma'anshan. The indoor exhibition line is simple and smooth, and all the exhibits can be appreciated along a zigzag route. The indoor installation extracts the iconic landscape of Ma'anshan mountain, where both positive and negative forms are combined and intertwined. With the upper orthomorphic projection of tree and the lower negative projection of Ma'anshan, it implies

the vision that people of Ma'anshan live in harmony with nature and work together for a better hometown. The interior space also displays the indoor construction of traditional Manchu folk residences, dispatching intuitive perceptions of the living situations of Manchu ancestors for the purpose of exhibiting and promoting Manchu residential culture. The exhibition center provides space of public activities for villagers and serves the purpose of circulating local history and folk culture.

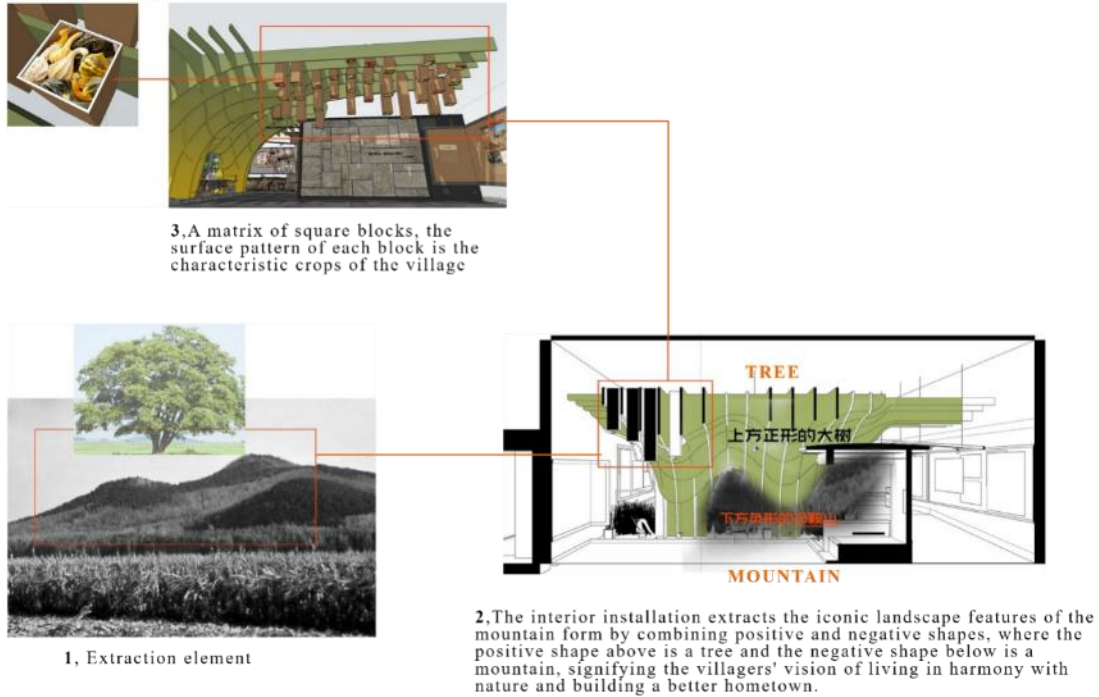


Fig 93. design concept



Fig 94. Manchu folk house interior structure, main installation, building facade

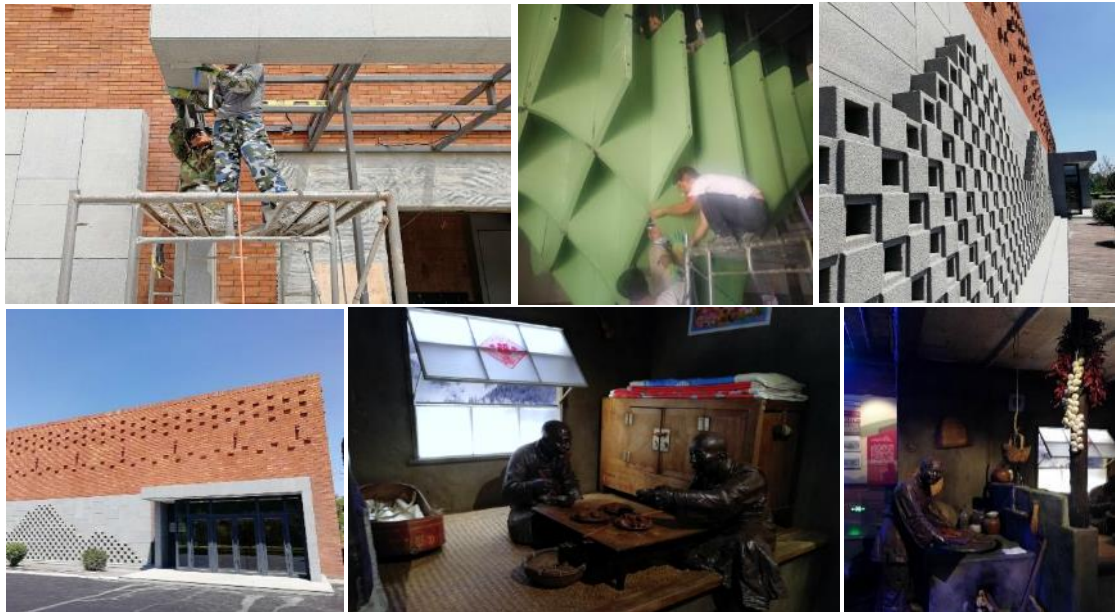


Fig 95. Construction process and finished photos

4.3.4 Translation of Traditional Architecture: Design of the Manchu Cultural Center

1) Demonstration of Manchu Architectural Features

In the building community design of Manchu cultural center, the contents of Manchu traditional folk culture is fully excavated on the basis of deeply understanding Manchu traditional culture and architectural forms. Traditional architectural forms, construction methods and expression forms are remoulded, extracted and utilized to bring the most distinctive and representative part of traditional Manchu architecture to architectural creation in an abstract way. Manchu traditional folk culture and architectural culture are developed and inherited in modern architectural design through modern architectural design techniques of form variation and symbolic to deeply create the artistic conception and atmosphere exclusive to Manchu architecture⁴⁵.

2) Architectural Function Layout

The layout of the building community continues the traditional Manchu courtyard style. The buildings share a two-floor structure with one being above ground and on underground. The main functions are: cultural activity square, folk art learning space and exhibition center. The exterior of the building inherits the traditional Manchu roof ridge and fronton form, expressing the intention of traditional architecture in a simple form. The square space has the screen wall of traditional Manchu courtyard and the totem pole of Shaman culture. As for facilities, there are stone tables and stools and peasant pots to create a strong atmosphere of Manchu culture⁴⁶.

3) Interior Space Design

The interior space puts traditional Manchu folk paper cutting and pottery works on display to promote Manchu folk art. There is also public space for activities and communication in the cultural center, where villagers can read and learn agricultural knowledge. During the slack time of agriculture, activities including agricultural technology training will be held here for them to participate in. There is also space for leisure and entertainment, such as folk dance performance and relaxation and tea drinking.

4) Material Utilization

Following the concept of ecological sustainability, the cultural center adopts endemic materials,

such as gray bricks, gravels, loess, stalks and straws, and reprocesses crop wastes before use to fully reflect regional features and reduce construction costs. The design of the Manchu cultural center improves villagers' relaxation qualities and provides villagers with a diversified activity area.

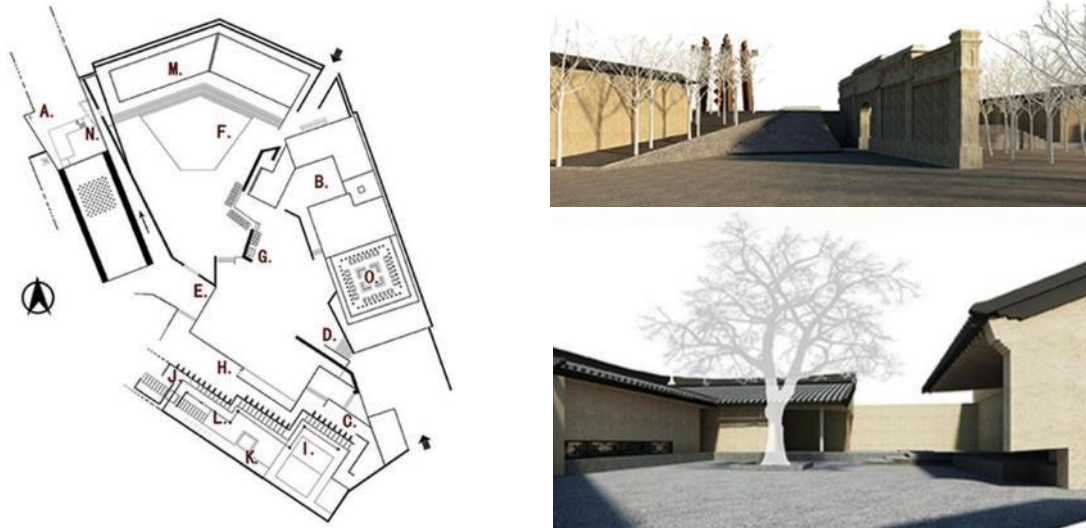


Fig 97. Plan and courtyard



Fig 98. Exhibition hall and event area

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5 Conclusions

As urbanization continues to expand and develop, the center of people's lives is transferred to the urban areas, confronting traditional settlements with the dilemma of decay or reconstruction. The country attaches more and more significance to the revitalization and development of traditional settlements, gaining progresses made from constant practice and exploration. As one key component of Chinese traditional settlements, the traditional settlements of the northeast exhibit distinctive regional features, but also face many problems in reality. What designers should do is to preserve the authenticity and regional features of traditional settlements under the guidance of national policies. Renewal construction of rural settlements should be carried out in an organic renewal way, whereas large-scale reconstruction should be avoided. Patterns and methods applicable for renewal of regional traditional settlements should be proposed. Using northeast traditional settlements as the object, this study proposes implementable theories and strategies after four-aspect verification including theoretical study, field research, strategy construction, and example demonstration. With supports of multi parties and proactive participation of residents, renewal work was accomplished step by step in traditional settlements to create a better living environment for northeast traditional settlements. Detailed conclusions are as follows:

First, theoretical foundation was laid for the organic renewal of northeast traditional settlements through study on the organic renewal theory and northeast traditional settlements. The analysis summarizes the advantages of the organic renewal method and the existing problems in the research on Chinese traditional settlement renewal. Real dilemmas in northeast traditional settlement renewal were identified through investigation and literature review. There are only a limited amount of northeast traditional settlements that are registered as intangible cultural heritages. The villages possess a constricted capacity and share problems of converging features, lagging infrastructure construction, and poor construction qualities. It makes for the major direction of investigation, analysis, and strategy proposal.

Second, it can be learned from theoretical study on organic renewal of traditional settlements, investigation on domestic and overseas design cases, and the author's experience of past traditional settlement design projects that the renewal and development of northeast traditional settlements should focus on improving people's living environment and continuing local traditional folk culture on the basis of increasing rural residents' life qualities. Therefore, the concepts of organic renewal that are progressive, holistic and continuous are in accordance to the current situations of northeast traditional settlements. The strategies of organic renewal design for traditional settlements summarized here are a new attempt and innovation both in theory and practice.

Third, the proposal and construction of the strategies conform to a renewal method that is holistic, dynamically progressive, initiative, and comprehensive. The organic renewal theory is applied to the renewal of northeast traditional settlements. Renewal strategies for traditional settlements with regional folk features are put forward from the aspects of village integration, spatial group organization, and renovation and optimization of building units, starting from the problems found in investigation and combining the local features. On the basis of maintaining the overall spatial pattern of rural settlements, function space of villages are implanted and exchanged. The infrastructure construction is improved and a harmonious organic whole of villages comes into being. Theoretical foundations and renewal design methods for rural settlement renewal are constructed.

Fourth is the demonstration of a real example. Using the renewal strategies based on the theoretical study as the standard, Jilin Wula Street Ancient Town sets short-term and long-term goals respectively

to carry out planning of land integration, courtyard and residence restoration, infrastructure construction, open space renewal, and ancient town culture continuance. Feasibility of the organic renewal theory and design strategies in northeast traditional settlement renewal is demonstrated by an actual project design of northeast ancient town settlements. Apart from integrated effective renewal strategies, renewal of northeast traditional settlements also requires active participation and cooperation of local residents, efficient village administrative systems, and supports from the government and multiple forces, so that policy delivery, satisfaction of villagers' wishes, technical guidance for renewal, and finance can be guaranteed. In this way, a benign relation of interaction will be formed to provide a solid foundation and support for renewal at the level of implementation and ensure successful accomplishment of renewal construction.

Considering the author's limited experiences and short duration of research practice, the dissertation still has a lot of room for improvement. Traditional settlements is a complicated system with long historical and cultural traditions and living customs, and there remain so many problems left over by history. Therefore, settlement renewal is a long-term process of practice and demonstration. The proposal of renewal strategies and methods still awaits constant and deepened improvement. The continuance of culture needs reflections and mergence to a deeper extent and the efficacy of the renewal of material environment requires long-term revisit and verification. We hope to provide reference and new ideas for relative research and the renewal pattern of traditional settlements through study on organic renewal design strategies for northeast traditional settlements, so that traditional settlements can receive revitalization and development.

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7. PUBLICATIONS

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ABSTRACT

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