# Differences of Rural Residential Quarters in North and South China

Zhao Jian Ying\*, Gan Tong

School of Art and Design, Jilin Jianzhu University, China

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**Abstract** China is a large country with an extensive north-south span, resulting in huge differences in geography and climate, folks and customs, and regional economic developments. These differences have further brought forth some unique characteristic cultures and architectural styles in the north and the south of China. Nowadays, most rural residential quarters are innovative renovations based on the original old buildings, so rural residential quarters generally have a close regenerative relationship with the local traditional buildings, rural residential quarters represent and inherit the traditional architectural spirit and culture of the regions. Consequently, the architectural styles and spatial compositions of rural residential quarters in the north and the south of China show relevant differences in accordance with regional architectural traditions. Excellent rural residential quarters design can not only promote local culture, but also provide a strong guarantee for the local economy and employment. From the perspective of professional point of view, studying the differences between the North and the South of the rural residential quarters will enable relevant practitioners to have an in-depth understanding of both the advantages and disadvantages in the architectural designs of rural residential quarters in the north and the south of China. The paper hoped to provide possible enlightenments for the developmental designs of China's rural residential quarters that are supposed to combine traditional culture with modern architectural designs for inheritance and innovation. In terms of policy significance, promoting the development and integration of rural residential quarters can not only attract tourists, but also enable the locals who work abroad to work in their hometowns. Although rural

residential quarters are small, they are one of the driving forces for the development of China's rural revitalization strategy. Meanwhile, the study of the differences and integration of rural residential quarters of north and south residential quarters has long-term comprehensive planning significance for the supply-side reform of the rural economy and the integration and exchange of architectural culture between the north and the south. Enter the 21st century, the fast pace of modern life makes people yearn more and more for the traditional rural life. In this background, China's rural residential quarter industry has entered a rapid development stage, which, however, brought some industry problems, such as serious homogenization and lack of characteristic innovation. In order to help to solve the relevant problems and possibly provide some corresponding theoretical bases, this paper, by way of comparative analysis, tried to explore in depth into the major architectural differences of and their possible causes for rural residential quarters between the north and the south of China from the aspects of construction wall, external building component, building space and courtyard, site selection and facing orientation, internal decoration and furniture, theme orientation, and regional culture so that people who yearn for traditional rural life can have a deeper insight into the rural residential quarters in the north and the south of China. The development of rural residential quarters can not only promote the local culture, but also develop the local economy and increase the local employment.

**Keywords** Rural Residential Quarter, Difference, Cause, Regional Culture

### 1. Introduction

There have been many theories and sayings about the origins of rural residential quarters (abbreviated as RRQ hereafter). Some say that RRQ originated in Japan and some other say that they originated in Britain or France, From the perspective of the time origin, RRO mainly originated in Europe and America [1]. Taking England as an example, in the early 1960s, in order to increase family incomes, some British farming families began to introduce family hospitality residence mode, referred to as B&B (Bed and Breakfast), and most countries in Europe and the United States also adopted B&B to represent home stay (residence), only with slight differences in regions. As the birthplace of rural residential quarter in Asia, Japan's rural residential quarter industry originated in the foothills of Hakuba, and then gradually developed from ski resorts to seaside resorts, the word "Minshuku" was used to indicate small and simple home-based accommodation facilities [2]. With the rapid development of Japan's post-war economy, the Japanese tourism industry ushered in a thriving development trend that made the traditional hotels fail to meet the increasing market demands in the peak tourist season, enabling the Japanese RRQ industry to boom.

The booming Japanese RRQ industry exerted a profound impact on the development of RRQ in China [3]. Taiwan was probably the first area in China to have developed RRQ, whose modes gradually developed from the single mode of B&B in the early stage into diversified residential modes that managed to integrate local culture, humanity, ecology, natural resources, surrounding landscapes, forestry, animal husbandry, handicrafts and so on. Thanks to the rapid development of regional economy and the vigorous promotion of rural revitalization strategy in the past twenty years in China, people's living standards have been substantially raised and their enthusiasms for rural tourism have been growing increasingly. RRQ gradually became a major tourism development project and a new component in the tertiary and cultural tourism industries. In recent years, China's RRQ industry witnessed a rapid development from the past single form of entertainment RRQ to the present characteristic forms of family hotels, farmhouses, youth hostels, country villas and serviced apartments, belonging to cultural RRQ, high-quality RRQ, or artistic and experiential RRO.

China is a large country with an extensive north-south span of some 5,500 kilometers, with the Qinling Mountains and the Huaihe River as the geographical line between the north and the south. Reasonably, because of different geographical locations, the architectural designs and styles of RRQ in the north and the south could not be the same. What are their major differences and what are their main causes? At present, there are few related researches in China, in order to make relevant practitioners have a clearer understanding of the

development and design of rural residential quarter in the future, this paper, by way of pair comparison, taking the Qinling Mountains and Huaihe River as the geographical line between the north and the south, tries to analyze the major architectural differences and their causes in the aspects of construction wall, external building component, building space and courtyard, site selection and facing orientation, and internal decoration and furniture, theme orientation, and regional culture of RRQ in the north and the south of China, with an aim to provide feasible references for potential visitors' better appreciative understandings of RRQ and possible enlightenments for relevant practitioners' better developmental designs of RRQ.

### 2. Differences in Construction Wall

Climate, a combination of humidity, temperature, wind, natural light, precipitation and other factors, has a fundamental impact on our individual psychology and physiology, and people's direct responses to the regional climate are mainly reflected in the architectural designs [4]. Affected by the differences in geography and climate, RRQ in the north and the south of China also have their different architectural characteristics to adapt to the unique climatic conditions of their respective regions and to meet people's requirements of comfortable living. For example, in the north, the natural temperature in the winter is low, and enough natural light is needed to improve the comfort of indoor residents. However, in the south, the annual precipitation is high and the rainy and hot days usually coexist, so it is usually humid and sultry indoor buildings. Therefore, the constructions in the south need to pay more attention to indoor ventilation while shielding strong sunlight. The different needs for comfortable livings in the north and the south lead to big differences in their architectural styles. In RRO construction, the use of natural light and the improvement of indoor ventilation have profound impacts on the designs of architectural styles, which are mainly reflected in the three aspects of internal and external components, internal and external spaces, construction site selections.

In the aspect of construction wall, its sickness plays a crucial role in keeping the building warm. In the north with higher latitude, shorter day time, and closer to the winter wind source, the solar energy goes through a longer air path and the atmosphere has a stronger weakening effect on the sunlight. All of these factors help to lead to the cold and long winter in the north and the buildings obtain comparatively less sunlight and heat than those in the south. As is shown in Table 1 below, the average winter temperature in the north is below zero, especially in the northeast, where the average temperature remains below zero for as long as eight months. In order to resist the invasion of the low temperature, RRQ

constructions in the north usually need to increase the wall thickness to about 370mm to 500mm, and often use thermal insulation materials such as plastic boards and foamed cements in building the internal and external walls so as to increase the effects of cold insulation. These thermal insulation building materials have the advantages of shielding the cold in winter and the heat in summer. However, the thick walls will make the overall internal building space in a passive position, quite limited by the physical constraints that fail to have free expansion and extension. The constructions of RRQ buildings in the north present more of regular forms, lacking the sense of dexterity and flexibility of those in the south [5]. Secondly, because of such reasons as financial capacities and

material resources, RRQ constructions in the north mainly rely on relatively simple local materials such as soil, wood and stone to cast into three-in-one clay walls, adobe walls and brick walls, which help to reduce construction costs and time. Thirdly, since the illumination intensity is weak and the perennial sandstorm is strong, to prevent the wall from being made dirty by the dust and increase the absorption rate for the natural light and heat, gray and other heavy stain resistant paints are generally used to decorate the facade. For example, in picture 1, the RRQ of Tingsong academy in Baoding choose brown-gray as the main color of the wall, making the building displaying a thick and plain architectural style and giving people a feeling of being too delicate to be processed.

Table 1. Climates in the North and the South

Items	South	North
Average Winter Temperature	Above Zero	Below Zero
Annual Mean Illumination	1000-2200h	2200-3300h
Annual Mean Light Radiation	140-200 Kcal/cm <sup>2</sup>	120-160Kcal/cm <sup>2</sup>
Annual Mean Precipitation	>800mm	<800mm



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Picture 1. Tingsong (Listening to the Pine) Academy in the North



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Picture 2. Shanxingxipan (Stream in the Valley) in the South

While on the contrary, it is warm and humid in the south, so RRQ building designers do not have to worry much about the thermal effects of the building, whose walls seldom use special thermal insulation materials to construct. In general, bricklaying empty bucket walls with a thickness of 180-240mm are used to save construction costs and increase the use of indoor spaces of the building. Adapting to the natural conditions, the more southern the building is located, the thinner and more lightweight the wall is, because it increases the flexibility to design concave-convex building structure, enriches the external building façade, and makes the combination between different spaces feasible and easy. RRQ in the south not only better adapt to the unique undulating and hilly terrains in the area, but also meet the basic functions and increase the spatial gradation to promote the overall permeability of the building. Secondly, as a result of rich products and well-developed regional economies, RRQ buildings in the south usually use more colorful and diversified construction and decoration materials, such as bamboo, red brick, rock, and carbide brick to highlight the unique and attractive terrain features[6]. RRQ buildings in the south usually increase the heights of the wall, making the internal spaces bigger and wider. The increase of the space and the connection of the front and the rear doors are more conducive to the ventilation cooling of the building, and the high walls also make the main structures of the building well above the humid low ground, helping to prevent the summer rain from eroding the wall foundation of the building. [6] Thirdly, to promote the cooling effects of the building, most RRQ in the south choose white as the main color of the external wall (Picture 2). In picture 2, the Shanxingxipan RRQ in Wenzhou, Zhejiang province, chooses white as the overall color of the building, which are used to reflect the sunlight in hot summer, and reduce the absorption of the

natural light and heat of the building. Simple but elegant colors, high and narrow walls, and steel and wood structures are harmoniously integrated to present a strikingly delicate and natural feature of the area.

The wall foundation angle refers to the load-bearing components in contact with the building base and foundation. The foundation of any building must be solid and stable. Therefore, in the connection zone between the wall and the ground at the bottom of the building, there will be a revetment. Just as the name indicates, revetment is a slope for dispersing water. It is the outside ground part that is perpendicular to the plinth of the outer wall of the building, serving to drain water and protect the foundation of the wall from rain and snow erosion. Revetment is usually cast from concrete, cement mortar, pebbles, stones and other materials, whose width should be determined according to the soil condition, climate condition, height of the building, and the form of roof drainage. Because of different soil and climate influences, the revetment is obviously different in RRQ buildings in the north and the south and the slope protection in northern and southern RRQ buildings also have their obvious differences. Take the revetment of a northern RRQ in picture 3 as an example, in the designs and constructions of RRQ buildings in the north, the walls and entrance steps need to have sufficient depth and slope protection with compact cement. The revetment usually has a certain gradient and should be compacted with new waterproof materials. Such elastic designs constructions need to prevent cement slopes from absorbing rains in summer and swelling cracks in cold and dry winter. The cement slope protections in the southern RRQ also have certain depths and waterproof materials to prevent the infiltration of summer rains, but their depths are shallower than those in the north, because their main purposes are not to prevent freezing cracks in

winter, but to protect the building wall base angles against possible rain erosions. In Guangdong, Guangxi, Hainan and other southern greater rainfall areas, for example, the revetment design of the southern RRQ in the picture 4, open drainage ditches would be set up around RRQ buildings to enhance the drainage effects. Since the soil in

the south is generally soft due to heavy rainfall, to prevent the crack in the joints between the revetment and the plinth of the outer wall after the building settlement, the connecting part should pre-set up the gap with elastic connection materials.



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Picture 3. Revetment in Northern RRQ

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Picture 4. Revetment in Southern RRQ

# 3. Differences in External Building Component

Affected by the natural climates in their respective regions, RRQ in the south and the north have great differences in such external components as doors, windows, roofs and so on. In the designs of doors and windows, RRQ in the north pay more attention to the practicability to meet the needs of obtaining certain lighting coefficient instead of considering of building large doors and windows to improve the lighting effects. Since it is hot and dry in summer and cold and long in winter in the north, from the perspective of energy-saving insulation, large doors and windows are likely to increase the losses of indoor heat in winter and indoor thermal radiation in summer. Take the Chanxiang courtyard RRO in Qinhuangdao as an example (Picture 5), RRQ buildings in the north seldom use large scale ribbon windows and their doors are comparatively smaller than those in the south. The RRO windows in the north are mostly open-type ones, designed as double-layer glass structures. Thermal bridge treatments are made on window frames, ring beams and door frames, etc. Special thermal insulation enclosures are also done to avoid excessive heat transfer, so as to meet the requirements of 65% energy saving rate for the buildings[7]. While in the south, the average temperature is high and the sunshine is sufficient all the year round. RRQ buildings are mostly constructed with single-layer outer windows, and the integration of doors and windows or the opening of a hole for light is applied to increase the connection between the internal and the external environments and to better introduce or borrow the exterior scenes into the interior. While paying attention to the practicability, RRQ windows in the south are often designed with certain decorative structures to show the beautiful and generous characteristics. Due to hot, humid and rainy weathers in the regions, the RRQ buildings in the south tend to be hot and humid inside, therefore, inter-connected windows and doors with balanced symmetric forms are more generally built up for the mutual air convection and moisture-proofing, moth-proofing and cooling.

Regarding roof construction, the natural light intensity is high in the south in summer and far-reaching roof eaves are generally built to shield the hot sun, providing a unique area for rest and dinning of the RRO occupants. A typical example is the Dalezhiye RRQ in Huzhou in picture 6, thin and light walls and roofs are built with relatively slim components, for which free expansion, concaving and extension can be made. The building entity can have all kinds of flexible processing according to the terrain applicable to the building space. The ridges of the building are in all shapes and forms, most of whose bottoms are laid into rectangles, matched with a variety of decorative structures against other external components, giving people a lively and exquisite, clear and bright feeling. As a result of substantial annual precipitation, RRQ buildings in the south commonly use large slope roofing designed in tall and sharp forms so as to be moisture-proofing and rot-proofing. As the annual precipitation gradually decreases from the south to the north, the sloping of roofs gradually lessens. Because of the low annual precipitation in the north, RRQ in the north don't need to consider much of waterproofing and therefore they usually adopt flat houses or flat slope roofs, and the quality of their construction materials is not as high as that in the south. This is the so called construction characteristics of sharp roofs in the south and flat roofs in the north. The high slope RRO housetops in the south are not only convenient for drainage and leakage prevention, but also conducive to air circulation inside the building. Effective ventilation not only solves the problem of indoor sultry heat in summer in RRQ in the south but also achieves the effect of moisture-proofing moth-proofing. From the south to the north, with the increase in the demands for warmth and the decrease in the demands for ventilation and cooling, the eaves and the depths of RRQ gradually decrease, resulting in the fact that the eaves of RRQ roofs in the north are generally short and narrow to better absorb sunlight into the interior of the building and to satisfy to a certain extent the thermal design requirements [8]. Because of strong sandstorms and dusts in the north, slope roofs are easy to get dirty and difficult to be cleaned, therefore, low and flat roofs are used in RRQ in the north, whose layers are heavy and components are thick, which are in line with simple and generous design styles of the buildings in the north. All these designs accordingly help to save the consumption of building materials.



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Picture 6. Dalezhiye (Wilderness of Great Joy) in the South

# **4. Differences in Building Space and Courtyard**

Restricted by flat roofing and building entity, the internal space of RRQ in the north is usually regularly divided by horizontal walls, and there is a relatively clear boundary between different spaces. The layout of the internal has therefore produced a symmetrical form, and the plane has a strong sense of a single direction, which is a stable and in a relatively static space. The internal space of RRQ in the south is freely combined and coherent with each other, making the overall interior space extremely dynamic. Southern RRQ often use virtual partitions such

as bamboo curtains and partition curtains made of bamboo, wood, rattan and other materials to divide the interior space, so as to avoid affecting the formation of the cross-room wind so that the space can not only maintain relative independence, but also keep in a separate and continuous state of freedom. [9]From the perspective of improving living comfort, RRQ in the north focuses on the building warmth, and the building of indoor space should not be too large, otherwise it is not convenient for the transmission of heat to the various indoor areas in winter, which might consume heating resources and increase operating costs. In this consideration, there are very few designs that have open spaces or half-open gray

spaces in RRQ in the north. The Beijing Sansa RRQ as shown in picture 7, even if there is an open space in the design, elements such as doors or glazing wares are used to insulate it from the internal space, making the internal and external spaces of the building in a relatively independent state. The communication with the outside space is reduced, thus reducing the losses of heat inside the building and providing occupants with a warm and comfortable living atmosphere in winter. However, it is warm in the south and RRQ are free from the shackles for the needs to keep the building warm. The internal space of RRO buildings can be large or small according to the actual needs of the occupants. The ventilation and heat dissipation problems in southern architectures are mainly solved through large indoors and semi-outdoor spaces. Therefore, the spaces of RRQ in the south generally

follow the design concept of pursuing the large and the wide to provide some spaces for the transparent internal areas, making the space scales seemingly enlarged. At the same time all kinds of "gray space" designs are a commonplace in the solution. For example, flexible demountable partition boards are chosen to create a half open big space so that the construction of external Daijiashan RRO in Tonglu in picture 8, the designer has designed a number of gray space, so that the exterior space and the interior space of the building have a better continuity, the beautiful natural scenery around the dormitory is introduced into the internal, while the internal spaces of RRQ buildings in the north mostly use the designs of closed forms. This is the so-called design characteristics of openness in the south and closeness in the north.



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Picture 7. Sansa RRQ in Beijing (North)

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Picture 8. Daijiashan RRQ in Tonglu, Zhejiang Province (South)



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Picture 10. Dalezhiye (Wilderness of Great Joy) in the South

Courtyards are the main spaces as well as the best natural spaces for tourists to do outdoor activities and experience RRQ. RRQ, whether they are located in the south or in the north, usually set up their own independent courtyards to enrich the entertainment. Take Beijing's Yuanzhuyuesu RRQ as an example (Picture 9), due to the vast land and relatively smooth terrain, RRQ courtyards in the north are large in area, extensive in space and regular in shape. While most RRQ in the south are built in mountainous and hilly areas, with tight construction land and undulating terrain, their courtyards are relatively small in size, giving people a feeling of intimacy and closeness. The courtyards of the southern RRQ have no strict constraints on the symmetry of the building axis, and the horizontal expansions of the courtyards are various in layout so as to flexibly combine the main buildings with the unique terrains. The overall scales of

RRQ courtyards gradually become small from the north to the south [10]. Because of sandstorms, RRQ in the north usually have enclosed walls to connect the courtyards with the buildings as a whole to block the sandstorm. To shelter from the winter winds from Mongol and Siberian, most of the walls of northern RRQ avoid the northward opening. In the south, there is no need for RRQ to consider this problem, therefore it is free for the courtyard to be enclosed or not, and the orientation of the enclosed wall opening is also determined by specific environmental factors.

In courtyard landscape design, lush plantings not only block the sun but also absorb it. In order to provide ample light and heat for the courtyard, the courtyard of northern RRQ is usually planted with deciduous trees although they cannot stay green all the year round. There are four distinct seasons in the north and the plants in RRQ

courtyards show unique dynamic changes with those of seasons [11], green and blue in spring, shade in summer, red maple leaves in autumn and green pines in winter. The changes of four seasons in RRO courtyards are better reflected through the color changes of plants, making the landscapes constantly new and never declining [12]. This unique scenery makes RRQ courtyards in the north a little inferior in plant species but not any inferior in vigor and vitality to those in the south. Since there is sufficient water and heat in the south, the plant growth cycle is correspondingly prolonged. Therefore, the plant landscapes of RRO courtyards in the south don't possess obvious seasonal characteristics. However, under the influence of traditional southern garden architecture, RRO courtyards pay more attention to the diachronic effect of day time changes, namely, the landscapes of plants and rockeries are changed through those of color and light in the different periods of the morning, afternoon, dusk and night, achieving, via the changes of bright and dim light, the purposes of co-use of day and night. Moreover, RRO in the south lay more emphases on the use of water, often setting some exquisite water landscapes in the courtyards to enrich the space layers. For example, the Dalezhive RRQ in Huzhou in picture 10, some high-end RRQ with more spaces tend to build swimming pools for tourists' entertainment. However, due to low temperature in winter in the north, water landscapes are easy to get frozen, leading to a short viewing time and a certain degree of danger to view in winter. RRQ in the north seldom use water landscapes in design.

# 5. Differences in Site Selection and Facing Orientation

Site selection is one of the decisive factors to keep the building warm in winter and cool in summer. Topography is the dominant factor, and location, climate, hydrology and so on are also important environmental factors for site selections of RRQ buildings. Compared with the unique topography of hilly terrains in the south, the northern area is mostly flat and extensive, whose selections of RRQ sites are usually not restricted by their special terrains. Loose land and flat terrains in the north provide sufficient conditions and solid foundations for the simple and orderly architectural styles of RRQ. As shown in picture 11, the Shizigou RRQ in Baoding are situated in the plain areas with neat topography, appropriately away from rivers and lakes to keep the building away from being excessively cold in winter and humid in summer. In the south, the terrains are complex, mainly composed of hills and mountains, rivers and lakes, and dense water networks. Taking Jiangsu, Zhejiang and Fujian provinces as an example, where RRQ industries are best developed, and the terrains there are known as "Eight tenths of the area are mountains, one tenth of the area is water, and one tenth of the area is fields". The complex and diversified terrains make the land used for RRQ buildings relatively narrow and limited, and buildings are generally constructed alongside mountains and waters. The Yuleshanfang RRQ in picture 12 is the face of the river, back against the peak and the unique scenery of water sets off the aura of RRQ. More flexible building layouts and unique terrains are used to produce mutually adapted forms, not only to integrate the beautiful natural sceneries and rural buildings, but also to use the specific heat capacities of water to make adjustments of the temperatures around the buildings in hot summer. In line with *Fengshui* theory, a place surrounded by an inlet of the river is supposed to be an auspicious location.

Sunlight can raise the indoor temperature of the building, which is something that northern RRQ love and southern RRQ avoid. The facing orientations of RRQ buildings, one of main guarantees for RRO to be warm in winter and cool in summer, are mainly affected by light and heat conditions. From the perspective of geographical factors, the Tropic of Cancer is the most northern line of the sun's direct illumination on the earth, and China's land areas mostly lie in the northern temperate zone beyond the Tropic of Cancer. The sunlight in most regions always comes in the direction from the south and the sunlight angle in the northern areas is low. Therefore, facing south for buildings in the north can maximize the absorption of the sunlight and increase the house temperature. The southern side of the building in the north naturally becomes the main sunny side, followed by the eastern side and the western side. At the same time, China's northern regions belong to the typical temperate monsoon climate areas. The breezes from a subtropical high over the Pacific, which we call the summer wind, and the high pressure cold current from northern Mongolia and Siberia, which we call the winter wind, move southward into the northern part of China. Such climatic conditions make RRQ in the north strictly follow the orientation of southern exposure to ensure that the buildings can absorb sufficient sunlight, rely on thick walls to resist the cold current from the north in winter, and alleviate the dry heat by using the summer wind from the south in summer [13]. The buildings in the north attach great importance to natural light. Because of their locations in high latitudes, the buildings need to rely on the orientation of southern exposure to work out the problem of inadequate light problem in spring and autumn. The buildings in the south don't attach as much importance to the orientation of southern exposure as those in the north. To avoid direct sunlight on the building, all buildings facing the wind and dissipating the heat are reasonable and feasible. Therefore, RRQ in the south generally don't have very fixed facing orientations, which are practically decided by the regional environmental factors.



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Picture 12. Yuleshanfang (Fish Joy Mountain House) RRQ in the South

### 6. Differences in Internal Decoration and Furniture

The atmosphere of the internal space is largely decided by its internal decoration, and different decoration materials and forms have a great difference on the composition of the building's internal language. The decoration mainly comes from the cultural customs, preferences and aesthetic concepts of the regions where RRQ buildings are located. Therefore, internal decoration boasts of obvious locality and strong national features. Influenced by the regional humanities and daily customs of different regions in the north and the south, the designs of internal decoration also present many differences. The designs of internal decoration in the north are usually

simple and plain in shape, monotonous and unified in color, relatively low in cost, and abstract in style. While in the south, the designs of internal decoration are diverse in modeling, complex in color and material, and more realistic in whole adornment style. This is the well-known decorative style of the traditional Chinese architecture with complexity and luxury in the south, and simplicity and plainness in the north [14]. RRQ, successors of regional cultures, are influenced by the decorations of traditional residences.

Furniture is the core embodiment of the whole architectural design idea, and its design style should be relatively consistent with that of the architecture. The comprehensive interaction of such multiple factors as climate conditions, natural resources and local economy

inevitably make the characters of the residents and the styles of internal furniture in the north and the south different. Since people in the north are bold in character and their buildings are thick, their furniture designs are relatively simple, paying more attention to their practical uses and effects. For example, the Tiandingshan RRO in Changchun in picture 13 has set up warm beds and a series of unique furniture forms in northern areas, such as warm bed table and warm bed chair, are created. The featured furniture allows tourists to fully experience the traditional rural life in the north. Some other RRQ furniture in the north is mainly made of wood, with a similar color to the architecture and the dark color as the main one. The people in the south are gentle and introverted and the southern regions are economically developed, and high-end RRQ can be seen everywhere. RRQ buildings in the south not only pay attention to the practical functions of the furniture, but also take into account the aesthetic needs, making them an object of appreciation and an organic combination of traditional culture and modern aesthetics [15]. RRQ in the south use those commonly-used wood materials and choose bamboo and metal to make furniture. One of the most representatives is the bamboo-made rattan chair, rattan bed and so on, and they have the advantages of being cool in summer, variable in shape, and low in cost. The Wukelishicang Cultural RRO (Picture 14) used rattan to make lampshade, the delicate and beautiful furniture designs are matched with soft and elegant colors, integrating into a whole with fresh and beautiful architectural styles in the local area. But affected by the sultry and damp climate, RRQ furniture in the south is generally made of bamboo, beech and other materials that need to apply chemical agents for surface anti-corrosion and anti-mildew processing. RRQ furniture in the north does not follow these practices because it is dry and windy, and most of the furniture use walnut, yellow pineapple, ELM and so on as the main materials.



Author's photo

Picture 13. Tiandingshan (Tianding Mountain) RRQ in the North



 $\label{lem:condition} Cited from: http://p1-q.mafengwo.net/s10/M00/19/25/wKgBZ11-SF-AbllQAAcaAdoqdpw050.jpg? imageMogr2% 2F thumbnail% 2F1360x% 2F strip% 2F quality% 2F90$ 

Picture 14. Wukelishicang Cultural RRQ in the South

### 7. Differences in Theme Orientation

It is warm and moist all the year round in the south and tourists can travel all the year round, ensuring the stability of tourist resources to a certain extent and supporting the operation costs of various RRO. What's more, there is little or even no difference in economy and culture between urban and rural areas in the south and the regional economy is well developed, affording ordinary people to experience RRQ. RRQ travelling has been well developed and RRQ buildings are mostly located in the midst of beautiful mountains and rivers, all of which provide a solid foundation for the general exquisite and elegant high-end boutique themes. RRQ in the north don't seem to have the unique climate advantages as in the south, but in comparison, the land costs in the north are much lower, decreasing the construction costs of RRQ. The RRQ operators in the north generally adopt down-to-earth modern farmvard RRO instead of having high-quality RRQ that consume a lot of financial and material resources. The main cores of modern farmyards are their courtyards, and the large and broad RRQ

courtyards in the north highlight the characteristics of traditional northern dwellings and emphasize on the family traits, enabling tourists to better experience the rural life. For example, in north China, especially in northeast China, winter snow is frequent, therefore, many RRQ take full advantage of this climate feature to adopt theme of ice and snow culture, or those well-developed ski resorts, and snow and ice themes. As shown in picture 15, the Ice Cabin RRQ in Top Sky Mountain in Changchun, it adopts the method of adaptation to local conditions to skillfully transform the cold climate disadvantage of northern winter into the theme advantage, which, to a certain extent, solves the problem of off-season and peak season tourism. There are many kinds of characteristic themes in the southern RRO, such as the themes of Bamboo Culture, Tea Culture, Poem Culture and so on, which is a good way not only to attract tourists to stay, but also to promote cultural characteristics such as picture 16 of the Shishezhuliguan RRQ, it makes use of the characteristics of rich bamboo in Sichuan province to take bamboo culture as the theme of RRO.



Cited from: http://inews.gtimg.com/newsapp\_bt/0/12940816656/641

Picture 15. Ice Cabin in Top Sky Mountain RRQ in the North



Cited from: https://dimg04.c-ctrip.com/images/02321120008vxddyc231F\_Z\_1280\_853\_R5\_Q90\_Mht8\_3.jpg

Picture 16. Shishezhuliguan RRQ in Yibin (South)

### 8. Differences in Regional Culture

There exist sharp differences in regional humanistic cultures between the north and the south. Since RRQ are mostly reconstructed in accordance with the traditional residences in the region, the architectural styles of RRQ are closely related to their regional humanisms. RRO buildings are regionally different in construction system, material use, and physical appearance, reflecting different artistic and architectural styles. RRQ in the north generally present a dignified temperament, simple and gentle architectural style, which gives people the impression of a close relationship with the local environment, the overall architectural style, and the straightforward, unscrupulous character of the northern people. The overall architectural style of RRQ in the south is elegant and delicate, fresh and transparent, which is also influenced by the gentle and delicate character of the southern residents. Secondly, the rigorous and thick architectural styles of RRQ in the north are influenced by the political culture to a certain extent. Since the Yuan Dynasty, Beijing has been established as the capital. The whole northern region has been influenced by the strict political ideas of the capital, and the spatial layouts of residential houses show rigorous and orderly styles. Although the northern RRQ buildings don't very strictly follow the spatial layouts that are traditionally complied with the feudal hierarchy, most of them do adopt the principle of the traditional axial symmetry, with flat overall layouts. While the southern region is far away from the political center, without the shackles of the traditional ideas, the spatial combinations of traditional residences are more free and at random, more lively and flexible. The southern RRQ buildings similarly present a vivid and lively style [16]. Finally, there are regional differences of economic cultures. Ever since the reform and opening up, the economy of southern China has developed rapidly, not only surpassing that of northern China, but also far ahead. The continuous improvement of consumption level in the south affords people the high prices of high-quality RRQ, which in turn helps to develop RRQ to a new high. Limited by financial factors, RRQ buildings in the north are not only comparatively simple in construction materials that mostly choose cheap and readily available local materials, but also low in prices.

#### 9. Future Research Areas

The main difference between RRQ and traditional hotels is that RRQ not only provide accommodation, but are also an important medium for tourists to participate in local activities and experience regional culture. With the increase in demand, RRQ have attracted more and more investors to participate in the country house industry. However, driven by the profit-seeking of capital, the

operators of actual RRQ are often outsiders. Due to their lack of sufficient understanding of the local culture, the RRQ they run often lack the use of the local culture, resulting in a poor experience for tourists. Therefore, RRQ operators should not only pay attention to the shape and living comfort of RRQ buildings, but also pay attention to the emotional needs of residents to experience regional culture, and use RRQ symbols with local symbolism to build visitors' sense of place in the RRQ experience. Therefore, in the future, I will focus on the research of RRQ symbols, and conduct a systematic study on the influence of various RRQ symbols with local characteristics on tourists' sense of experience.

### 10. Conclusions

The inspiration for making comparative analyses about the architectural differences of RRQ buildings in the north and the south of China mainly comes from the different traditional architectural designs of residential houses in their respective regions. To a great extent, the architectural designs of RRQ buildings are different from those of the traditional architectures because they are innovative representatives of local geographies, folks and customs, traditions and cultures that are more or less displayed in the traditional local architectures. It is hoped that this study of the architectural differences of RRQ buildings in the north and the south of China might throw some light on ordinary people's understandings of the traditional architectures in different regions, potential tourists' appreciation of regional RRO buildings, relevant practitioners' horizons for the developmental designs of RRQ buildings, and interested researchers' in-depth studies on any specific area mentioned in this paper, providing some enlightenments and references for the study in the architectural aspects in the countries that also have diverse geographies, economic developments, and traditional architectural cultures, all of which might help to promote the healthy development of RRQ industries.

To analyze the architectural differences of and their causes for RRQ buildings in the north and the south of China, this study tried to cover the aspects of construction wall, external building component, building space and courtyard, site selection and facing orientation, internal decoration and furniture, theme orientation, and regional culture. Clearly, the comparative studies of the aspects of construction wall, external building component, building space and courtyard, site selection and facing orientation, and possibly internal decoration and furniture are relatively concrete and specific because there are practical and objective facts and resources available for reference. For the comparative studies of the aspects of theme orientation and regional culture, it goes without saying that the study has much more room for further improvement. Theme orientation and regional culture of RRQ buildings are more of subjective matters that deserve close exploration and scientific summarization, the success of which will make this study more meaningful.

### REFERENCES

- [1] Wang X.C., Research on the development status and countermeasures of rural residential quarters in China's rural tourism, Journal of Leshan Normal University, vol.24, no.6, pp.69-72, 2009, DOI: 10.3969/j.issn.1009-8666.2009.06.020
- [2] Fang B.B., Features and Inspirations of Japanese rural residential quarters, Co-Operative Economy & Science, vol.34, no.20, pp.31-33, 2018, DOI: 10.13665/j.cnki.hzjjykj.2018.20.012.
- [3] Yang K.J., Xu X.A., Wang L., Research on the development of Japanese rural residential quarters and its enlightenment to China, *China Journal of Commerce*, vol.28, no.4, pp.74-75, 2019, DOI:10.19699/j.cnki.issn2096-0298.2019.04.074.
- [4] Sun S.Y., A comparative study on the differences of interior design styles of residential houses in Beijing and Zhejiang from the perspective of regional culture, *South West Jiao Tong University*, no.3, 2019, DOI: 10.27414/d.cnki.gxnju.2019.000865
- [5] Yao Y. C., Zhang J., Talking about the comparison of residential buildings between the north and the south -take Shanghai Shikumen and Beijing Siheyuan as an example, *Urbanism and Architecture*, vol.16, no.25, pp.5-9+82, 2019, DOI: 10.19892/j.cnki.csjz.2019.25.001.
- [6] Xie H., Adaptability analysis of architectural color and regional climatic conditions, *Cities and Towns Construction in Guangxi*, vol.30, no.10, pp.28-30, 2003, DOI: 10.3969/j.issn.1672-7045.2003.10.007
- [7] Yin J., Zhai H.X., Research on the calculation and conversion relationship of building energy saving rate, Building Energy Efficiency, vol. 48, no. 12, pp.129-131+149, 2020, DOI:10.3969/j.issn.1673-7237.202 0.12.023

- [8] Qi S.T., Wang M., Zhou Z.W., Cheng H. R., Ai X., Internal differentiation analysis of north and south architecture in China, *Building Materials and Decoration*, vol. 16, no. 12, pp.83-84, 2019, DOI: 10.3969/j.issn.1673-0038.2019.12.059
- [9] Li X.Y., Ren X.Y., Cen Y.T., Research on the application of local materials in interior design of rural residential quarters, *Furniture & Interior Design*, vol.28, no.12, pp.49-53, 2021, DOI: 10.16771/j.cn43-1247/ts.2021.12.01 1.
- [10] Zheng J.X., Comparison of traditional residential courtyards in the north and south of China, *Beauty & Times*, vol.4, no.4, pp.24-25, 2015, DOI: CNKI:SUN:MEIC.0.2015-04-008
- [11] Nan X., Preliminary study on design characteristics and cultural extension of traditional residential courtyard landscape in north China, *Architecture and Culture*, vol.14, no.3, pp.164-165, 2017, DOI:10.3969/j.issn.1672-4909.2017.03.057.
- [12] Qi W. M., Wang X. H., Urban courtyard space environment design, *Introduction to urban environmental art*, JLAPUB, 2013, pp.193-194.
- [13] Liu X.Y., Architectural differences between north and south and their livable forms, Modern Property, vol.10, no.7, pp.200-201, 2011, DOI:10.16141/j.cnki.xdwyxjs.2011.07.096
- [14] Zhang L. C., Wang H.Y., Research on spatial cultural differences between north and south buildings, *Urban Geography*, vol.7, no.10, pp.92, 2014, DOI: 10.3969/j.issn.1674-2508.2014.12.080.
- [15] Zhang Z. X., Discusses the differences of cultural elements in furniture design between the north and the south of our country, China Forest Products Industry, vol.57, no.2, pp.66-69, 2020, DOI: 10.19531/j.issn1001-5299.20200201
- [16] Lin C.H., Qin J. l., Zhang J. Z., Analysis on the spatial characteristics of architectural courtyard in south and north China, *Architecture & Culture*, vol.13, no.12, pp.183-184, 2016, DOI: 10.3969/j.issn.1672-4909.2016.12.059.