

Spatial Design Strategies for Rural Tourism: Based on a Public Health Orientation

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Abstract: With the development of cities and citizens' increasing focus on health, rural tourism in the suburbs of large cities has become an excellent space for improving the physical and mental well-being of urban tourists. This paper takes five key rural tourism villages in Shanghai as its research subjects. Through field investigations, it identifies the main problems existing in current rural tourism spaces and, through analysis, proposes design strategies to promote tourist health through the rural environment. By creating diverse and vibrant rural spaces, fostering a comfortable environmental atmosphere, providing rich cultural experiences, and improving service facilities, the strategies aim to enhance the attractiveness of rural tourism, create favorable environmental conditions for tourists' health experiences, and better meet tourists' health needs. The research results of this paper provide a theoretical basis and practical guidance for the design of rural tourism spatial environments, and have significant practical application.

Keywords: Rural Tourism; Spatial Environment; Restorative Design; Public Health; Design Strategies

1. Research Background

As urbanization accelerates, people's lives have become increasingly fast-paced, leading to a rise in psychological and physiological health issues. In dense urban areas, there is a growing desire for contact with nature. Access to natural environments plays a crucial role in restoring both mental and physical well-being. Rural tourism destinations located in the suburbs of cities offer convenient transportation, scenic beauty, and fresh air. These spaces provide urban residents with

opportunities for weekend getaways, leisure vacations, ecological recreation, agricultural education, family activities, and wellness programs. By creating favorable spatial conditions for improving the physical and mental health of urban tourists, rural tourism is becoming an important choice for those pursuing a healthy lifestyle.

With the comprehensive promotion of China's "Healthy China" initiative, the importance of healthy environments in meeting the growing needs of the people for a better life is becoming increasingly prominent [1]. Since the "Healthy China" strategy was proposed, particularly after it became a national strategy in 2016, academia has maintained significant attention and conducted extensive research on it. Theories and practices regarding the construction of a "Healthy China" are continuously developing. However, most research primarily focuses on the macro perspective, with less attention given to the micro level. Specifically, research on how rural tourism spaces can reflect health benefits and create environments that meet the needs of tourists for physical and mental restoration has not yet received sufficient attention.

This study takes five key rural tourism villages in Shanghai as its research objects to explore design strategies that promote the physical and mental health of tourists within the rural tourism environment and enhance the quality of spatial environmental construction. This research aims to provide a scientific basis for the spatial design of rural tourism and better meet the health needs of tourists.

2. Relevant Concepts

2.1 Rural Tourism and Tourism Villages

Rural tourism originated from agricultural and farm tourism in Europe [2]. Research on rural tourism began earlier abroad and has

developed into a comprehensive field of study. Chinese scholars offer various perspectives on rural tourism. Yang Xu believes that rural tourism is a tourism activity based on a series of landscapes formed by the biological resources, economic resources, and social resources of rural areas as tourist attractions [3]. Lin Zongxian et al. believe that rural tourism is all kinds of tourism-related activities carried out in rural areas [4]. Xia Qian believes that rural tourism is a type of activity that combines the rural landscape, cultural heritage, agricultural life, and local customs with tourism [5]. Despite these varying interpretations, two commonalities are widely acknowledged: rural tourism occurs in the countryside, and its attractions are the diverse natural and cultural resources found there [6].

A tourism village is a rural settlement characterized by natural resources such as scenic landscapes and water features, or cultural resources like historical sites and unique human elements [7]. These villages foster tourism and leisure industries by exploring, integrating, and showcasing these resources while modernizing their infrastructure and services. This evolution has transformed many villages with distinctive landscapes and cultural heritage. They have shifted from being primarily centers of production and daily life into sought-after tourist destinations, offering immersive experiences such as farm stays, cultural immersion programs, and opportunities for meaningful interaction with local communities. This transition has brought significant changes to village development, including economic growth, infrastructure improvements, and increased cultural exchange. Therefore, the spatial design of tourism villages should consider not only the quality of daily life for rural residents but also the richness and diversity of tourist activities. Especially in light of public health needs, creating a favorable environment that promotes the healthy development of both residents and tourists has become a crucial consideration.

2.2 Healthy Environment

Environmental builders and psychologists recognize the significant impact of restorative environments on human health. As early as the late 19th century, the pioneer of landscape architecture, Frederick Law Olmsted [8],

perceived the renewing effect of nature on the mind and body. Building on this understanding, in 1983, American psychology professors Stephen Kaplan introduced the concept of 'restorative environments' [9], arguing that environments that can promote the physical and mental restoration of individuals during their interaction with the environment can be called 'restorative environments.' These environments, such as green spaces with access to nature, offer individuals opportunities for stress reduction and mental restoration. In subsequent developments, Stephen Kaplan developed the Attention Restoration Theory (ART), which focuses on how natural environments can restore depleted attentional resources. Similarly, Roger S. Ulrich et al. proposed the Stress Recovery Theory (SRT), which suggests that exposure to nature can reduce stress and promote physiological recovery. These theories suggest that well-constructed environments alleviate stress, generating positive emotions and restoring physiological function.

Currently, it is widely accepted in environmental psychology that well-constructed environments can improve people's quality of life, help alleviate mental fatigue in the short term, enable faster mental recovery, and aid in managing chronic diseases.

3. Research Investigation and Analysis

3.1 Research Locations

This study focuses on five natural villages located in the suburbs of Shanghai. As detailed in Table 1, these villages are representative examples of rural tourism destinations, each possessing favorable natural, agricultural, and cultural resources. They vary in size but offer a suitable range for this research. In 2023, these villages were officially recognized as characteristic rural tourism villages by the Shanghai Municipal Bureau of Culture and Tourism.

3.2 Current Situation of Tourism Village Spaces

3.2.1 Relatively single spatial function, unable to meet tourists' diverse health needs

Through rural surveys and tourist interviews, it was found that the villages have not fully capitalized on the unique characteristics of their local natural and cultural resources. This

oversight has resulted in a relatively homogenous offering of tourism activities and a lack of differentiation among rural tourism projects. For instance, the tourism experiences provided by Xianqiao Village and Zhonghua Village primarily consist of farm visits, plantation picking, purchasing agricultural products, and homestay accommodation. These activities, while potentially enjoyable, lack innovation and opportunities for personalized experiences. This homogeneity

may limit tourists' engagement with the local environment and culture. Specifically, the current emphasis on a simple mode of 'eating, living, and shopping' can lead to feelings of monotony and boredom among visitors. This lack of diverse and stimulating activities may hinder tourists' ability to fully experience the restorative benefits of the rural environment, ultimately failing to meet their diverse health and well-being needs.

Table 1. Basic Information of the Investigated Areas

Name	Area (km ²)	Level	Landscape Features	Recreational Functions
Yingdong Village	1.94	Characteristic Rural Tourism Village	Green spaces, lake water resources	A comprehensive resort with ecological leisure, sports activities, and folk custom experiences.
Qianwei Village	2.5	Characteristic Rural Tourism Village	Ecological farmland, orchards	A multifunctional rural tourism village with ecological agriculture, leisure vacations, and farmhouse tourism.
Xianqiao Village	1.4	Characteristic Rural Tourism Village	Crab ponds, orchards, peony gardens, homestays	An agricultural tourism village integrating ecological breeding, fruit picking, sightseeing, popular science education, and "homestay+".
Zhonghua Village	2.94	Characteristic Rural Tourism Village	Recreational woodlands, rural parks, riverside recreation areas, large lawns	A fashionable agricultural tourism integration demonstration village integrating characteristic catering, rural homestays, and dynamic children's activities.
Shuiku Village	4.16	Characteristic Rural Tourism Village	Natural countryside, water town architecture, ponds and rivers, wetland ecology	A new Jiangnan water town complex integrating modern agriculture, leisure tourism, and rural communities.

3.2.2 Insufficient spatial inclusiveness

With the changes in family population structure, tourism products based on kinship are gradually emerging [10]. Family trips need to take into account the diverse needs and preferences of all family members, encompassing the health and wellness of the elderly, engaging vacations for adults, and opportunities for children's outings, parent-child entertainment, and nature education. However, current rural tourism spaces often fall short in providing for these diverse needs. They tend to offer only basic tourism spatial forms, without adequately reflecting the specific functions required for children's entertainment and nature education. For example, the areas and content of children's activities and nature experiences in the surveyed villages are relatively limited, primarily focused on agricultural labor

experiences and picking, lacking innovation and variety. Similarly, there are few dedicated leisure and fitness activity spaces designed for elderly tourists. In most cases, the elderly are limited to strolling within the village, with their activity options constrained to a single mode, which cannot adequately meet their diverse health needs.

3.2.3 Imperfect service facilities

Beyond the specific activities offered, the overall accessibility and quality of service facilities also play a crucial role in ensuring an inclusive and welcoming environment for all visitors. The survey of the villages revealed that service facilities are often imperfect. For example, Zhonghua Village has designed greenways for bicycles, but there are few supporting stations, so tourists cannot obtain material support in time during activities. Shuiku Village has a large area but does not

provide corresponding bicycle riding, sightseeing transportation facilities, and dining facilities, resulting in insufficient services. The villages generally lack barrier-free toilets. Additionally, the guide system suffers from issues such as small fonts, poor design, and insufficiently humanized facilities.

4. Design Principles for Rural Tourism Spatial Environment

4.1 People-Oriented Principle

A people-oriented approach is crucial in designing the spatial environment of tourism villages. Prioritizing human needs and enhancing comfort and experience creates more attractive rural tourism spaces and promotes public health, resulting in economic and societal benefits. By understanding the diverse needs of various visitor groups, planners can foster a sense of identity and belonging, for example, by providing opportunities for authentic cultural exchange and interaction with local communities. Ultimately, meeting these diverse needs is essential to improving the quality of rural tourism and satisfying its increasing demand.

4.2 Ecological Principle

The ecological principle is undeniably central to the spatial design of rural tourism. Protecting the natural environment is not only fundamental for achieving harmonious coexistence between humans and nature, but also crucial for enhancing the attractiveness and sustainability of rural tourism destinations. Natural environments offer numerous benefits, including air purification, climate regulation, and the improvement of urban ecosystems. Moreover, engaging in recreational activities in such spaces can induce psychological relaxation, reduce stress, and promote holistic well-being. Existing research has demonstrated a positive correlation between the frequent use of green spaces, such as parks and woodlands, and improved public health outcomes [11]. Therefore, the spatial design of rural tourism should prioritize ecological considerations, emphasizing the preservation and sustainable development of regional ecosystems. Through thoughtful design and meticulous implementation, rural tourism spaces can become more than just appealing destinations for relaxation and enjoying nature;

they can also serve as a driving force in fostering harmonious coexistence between humans and the natural world.

4.3 Cultural Principle

In the spatial environment design of rural tourism, the implementation of the cultural principle is crucial. Excavating and inheriting local culture can not only enrich the tourism experience but also significantly enhance the quality of the spatial environment. Rural tourism destinations often carry a rich historical and cultural heritage, such as the historical development of villages, traditional handicrafts, and folk activities. These cultural elements not only enrich the connotation of rural tourism but also provide tourists with an in-depth cultural experience. Rural tourism destinations can leverage their profound historical and cultural background by excavating and showcasing local historical relics and folk culture, such as preserving historical buildings, showcasing traditional crafts, and organizing folk festivals. By doing so, they attract a large number of tourists while also enhancing their sense of belonging and identity. Furthermore, this cultural integration contributes to the inheritance and protection of local culture.

4.4 Innovation Principle

In the spatial environment design of rural tourism, the innovation principle is key to enhancing the overall experience and health benefits. By introducing new technologies and materials, the attractiveness of the space can be effectively enhanced. For example, adopting green technologies, such as solar panels for energy generation and sustainable building materials, can better promote ecological development and minimize the environmental impact of tourism. Furthermore, the application of smart technologies also brings new possibilities for rural tourism. Through intelligent sensors and Internet of Things technology, tourists' behavior and environmental parameters, such as visitor flow and air quality, can be monitored in real-time. This data can then be used to optimize services, manage resources effectively, and personalize tourists' experiences. By strategically introducing new technologies and materials, the ecological and health benefits of the space can be better reflected, creating a healthier and

more enjoyable tourism environment for visitors.

5. Health-Oriented Rural Spatial Design Strategy

From a public health perspective, rural tourism spatial design strategies should focus on how to create comfortable environmental forms and improve the health of tourists and local residents, including physical, psychological, and social well-being.

5.1 Creating Diverse and Vibrant Rural Spaces to Meet Tourists' Health Activity Needs

Rural tourism visitors primarily seek respite from urban environments, hoping to experience rural customs and restore their physical and mental health. Therefore, tourism villages should consider the needs of residents and tourists for healthy activities and carry out reasonable functional planning. For example, utilizing the natural resources within the village, cycling paths or fitness trails can be established to provide fitness, decompression, and exercise spaces for tourists who enjoy cycling, walking, and jogging. The spaces under forests and in the fields can be used to design children's play areas, allowing children to better run and play, make friends and play games, and relax in nature. Village squares, rural parks, and other public spaces can be used to design leisure activity areas for the elderly, providing suitable spaces for the elderly to engage in fitness activities such as square dancing, folk dancing, and Tai Chi. Improving waterfront spaces such as riversides and ponds in the village can provide places for children and young people to engage in water activities, camping, and gatherings. By rationally dividing functions and meeting the needs of tourists for healthy activities, the attractiveness of rural tourism can be better enhanced.

5.2 Creating a Comfortable Environmental Atmosphere to Relieve Tourists' Psychological Stress

Tourists engage in rural tourism primarily to connect with nature and experience leisure and relaxation. Humans have an innate affinity for natural environments, particularly those rich in diverse elements such as fields, forests, water bodies, and distant mountains. These elements

provide a multitude of visual stimuli and expansive views, effectively restoring attention fatigued by urban environments [12].

Within rural spaces, a diverse range of plants can be incorporated to create landscapes that provide year-round appeal. For instance, spring can feature cherry blossoms and peach blossoms, summer can showcase sunflowers and lavender, autumn can be adorned with maple and ginkgo trees, and winter can retain vibrancy with evergreen plantings. This approach not only enhances the aesthetic quality of the environment but also allows tourists to experience the distinct charm of each season, contributing to a heightened sense of pleasure and well-being within the space.

Furthermore, the strategic utilization of water resources is crucial. Designing diverse water-friendly spaces encourages interaction between people and the natural environment, fostering a sense of connection and tranquility. This integration of water elements, alongside thoughtfully designed landscapes, contributes to a comfortable and restorative atmosphere that can effectively alleviate stress and improve the mental well-being of visitors.

5.3 Providing Rich Cultural Experiences and Promoting Active Social Interaction among Tourists

Rural tourism destinations typically have lower population densities and a greater degree of openness compared to urban areas. This environment provides tourists with increased freedom, personal space, and opportunities for social interaction. Developing diverse and engaging rural tourism experiences rooted in local traditions and cultural elements is essential for attracting visitors and promoting their physical and mental restoration.

For instance, incorporating the cultural heritage, historical significance, and unique characteristics of a village into its design can enhance its appeal. Utilizing local folk customs, traditional handicrafts, and other forms of cultural heritage to develop experiential activities and events can deepen visitors' cultural understanding and contribute to a sense of relaxation and well-being. Villages can also organize regular cultural festivals and events, such as agricultural festivals, folk celebrations, and rural markets, to encourage active participation and interaction among tourists, creating memorable experiences.

These cultural activities not only enrich tourists' experiences but also foster meaningful exchanges between visitors and local residents, promoting the development of healthy social connections and cross-cultural understanding.

5.4 Improving Service Facilities to Provide Support for Healthy Activities

Service facilities are fundamental to supporting tourist activities and enhancing their experiences in rural tourism destinations. Therefore, a people-centered approach should be prioritized in their design. This entails a thoughtful consideration of the diverse needs of various tourist groups and their desire to engage in healthy activities within the rural context. For instance, integrating rest stops along trails and pathways, equipped with basic amenities like seating and restrooms, can effectively support visitors engaged in physical activities such as walking, jogging, or cycling. In recreational areas, planners should provide a variety of resting facilities, such as benches, picnic tables, and pavilions, to cater to diverse needs, including relaxation and outdoor dining. Furthermore, clear and attractive signage, designed in a style that reflects the local region, can help visitors navigate the village with ease and discover points of interest.

Beyond basic accessibility, the design of village facilities should also aim to foster a sense of belonging among visitors. This can be achieved by thoughtfully utilizing existing village features. Spaces under large trees, along streets, or near water bodies can be transformed into inviting areas for rest, exercise, and recreation. By integrating these spaces into the visitor experience, a sense of harmony with the everyday life of the village is created, allowing tourists to feel more immersed in the environment and fostering a sense of belonging and enjoyment.

Technological advancements offer further opportunities to enhance service facilities and support healthy activities in rural tourism. This includes the introduction of smart and eco-friendly facilities, such as smart trash cans and intelligent lighting systems. Planners should strategically determine the density of these facilities based on visitor usage patterns to minimize environmental impact and energy consumption. To ensure visitor safety and maintain order within the village, consider implementing a comprehensive monitoring

system that utilizes strategically placed cameras and sensors to ensure visitor safety without being intrusive. The usage of such systems should be carefully balanced with visitor activity levels to ensure a timely response to emergencies and provide a safe and secure environment.

6. Conclusion

This study explored rural tourism spaces in Shanghai from a public health perspective. The findings suggest that the spatial design of rural tourism should focus on promoting healthy activities, creating a healthy environment, improving mental well-being, enhancing social participation, and prioritizing health services. Implementing these strategies will contribute to improving the overall health of rural tourism and promoting its sustainable development.

This research focused on key rural tourism villages in the suburbs of Shanghai as case studies. Therefore, the conclusions have a certain degree of specificity and limitations. Subsequent research will be conducted on a broader scale to further refine and improve the proposed strategies.

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