

# Research on the design method of rural public space based on aesthetic interaction concept

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**Abstract.** Rural public space is not only the carrier of rural residents' daily life and public activities, but also the link to maintain villagers' community feelings and the support of traditional culture. It plays a crucial role in rural construction. At present, designers for the design of rural public space, still stay in the "function" level. Based on the concept of aesthetic interaction, this paper applies the concept of interaction design to architectural design, discusses the feasibility of applying "beauty" as the entry point and "interaction" as the core design method in the design of rural public space, and summarizes a set of reasonable and effective design methods from the three aspects of spatial function compound, in the locality and perceptual guidance.

**Keywords:** rural; Aesthetic interaction; Public space.

## 1. Introduction

Village public space is a material space that accommodates villagers' public life and neighborhood communication. It is the main place where villagers can freely enter to carry out daily communication and participation in public affairs and other social life. Rural public space, as the most important place for villagers to communicate with each other, is not only the carrier of rural residents' daily life and public activities, but also the link between maintaining the community sentiment and the support of traditional culture. It plays a major role in rural construction. With the in-depth development of the new rural construction, we find that a large number of new rural public spaces with the city as a sample to copy, transport the construction mode of the city, ignoring the inherent customs and cultural characteristics of the countryside, there is a lack of vitality of the new rural public space, the vacancy rate is high.

## 2. The correlation between interaction design and public building design

Interaction design, which emerged from the 1980s, is a design field that defines the behavior of man-made systems. It was originally produced in the field of industrial design, and then widely used in human-computer interaction, interface design and other directions. It mainly composes of users and systems. By studying the psychological and behavioral activities when people interact with the surrounding things, interaction designs can help establish a better and more comfortable interactive relationship between users and products, so that products can better serve the people. The rapid development of interactive design in the field of industrial design has changed the way people communicate and communicate, and it is also rapidly expanding on additional fields.

Winograd proposed in 1997 that "the focus on design is human rather than machine, and interaction design should shift its attention from the machine to people's life". With the development of The Times, the importance of human behavior and experience in architecture has gradually emerged. Interactive architectural design surpasses the limitation of traditional architectural design which takes houses as the basic functional attribute, and makes architecture grow in the environment as an information medium and change with the changes of people or environment. Interactive architectural design takes human behavior and experience as the design goal. It is not restricted to spatial changes, but lays more emphasis on the presentation of time. By dynamically influencing human behavior, it sets up a dynamic place with the significance of the

time. Due to the uncertain result of giving time characteristics, architecture has been injected with a new meaning: the initiative of people and the existence of time. Interactive architecture lays more emphasis on experience and the shaping of emotions, and offers a greater possibility for the experience and sharing of emotions. It can get to the key role of public architectural space in maintaining residents' feelings and inheriting characteristic culture to a higher degree.

### **3. Overview of aesthetic interaction**

With the gradual introduction of information technology into people's daily life, usability designs based on an analytical perspective are difficult to match the richness and complexity of daily life. Aesthetic interaction design gives up the traditional design centered on usability and user tasks, separating aesthetic and functional design methods. It takes the pragmatic aesthetics and the aesthetics of daily life of Dewey and Schusterman as the theoretical background, and puts forward the design philosophy under the framework of holism. The holism perspective of aesthetic interaction is embodied in three aspects: system, user and aesthetic attitude.

#### **3.1 System: The interactive system and the living environment are integrated as a whole**

John Dewey and Richard Schuster's pragmatic aesthetics and daily life aesthetics is the main source. Dewey thinks that Kant's aesthetic interaction design contemplation for no utilitarian, aesthetic attitude to aesthetic isolation from the People's Daily life, which can lead to division of art and life. However, aesthetic experience is not some abstract and autonomous concept. It is embedded in the social and historical context of people's life, and comes from the interaction between people and the environment. It is an "unanalyzable whole". Aesthetic interaction design believes that the interactive system is not only a part of our living environment, but also a medium for us to interact with the environment. The purpose of design is whether it can inspire users to engage in meaningful activities in daily life, so that users can continue to feel new values from the system.

#### **3.2 User: Restore the continuity of the user's daily experience**

Aesthetic interaction's understanding of user experience has the following three characteristics:

First, a person as a whole acquires the rich sense of everyday life through emotion and cognition, mind and body, thought and behavior, personal experience and social interaction, which is difficult to achieve by simply considering cognition or emotion.

Secondly, this continuum is also manifested in the interactive behavior of the two-way dialogue relationship between the user and the system. Experience is not the solitary behavior of users, but the "common experience" emerging in the interaction process, so the user experience cannot be independently quantified and analyzed.

Finally, aesthetic interaction argues that user experience is difficult to be clearly expressed through analytical methods, and that everyday life always contains accidental, vague and plausible factors, which precisely reflects the richness and complexity of everyday experience. Aesthetic interaction focuses on the ambiguity in the interaction, arouses the curiosity and imagination of the user, and stimulates the user to explore the interactive system in his own way and obtain free interpretation in the use of it.

#### **3.3 Aesthetic attitude: Through aesthetic instrumentality to stimulate the user to engage in behavior**

Analytical aesthetic looks at aesthetic objects in isolation and evaluates them in an intuitive way. Under the influence of analytical aesthetics, interaction design limits aesthetics to the appearance and form of interactive interfaces, and aesthetics are seen as static aesthetic attributes related to visual senses such as color and shape. Based on the perspective of holism, pragmatist aesthetic holds that aesthetic is not "contemplation" or "utilitarianism", but has the purpose and tool

of the ontological sense. Aesthetic interaction design adheres to the utilitarian attitude of aesthetic instrumentalism. The aesthetic instrumental value is reflected in that it can invite users into action, enhance the interaction between users and the system, and stimulate users to obtain new insights in the interaction.

#### **4. The application of aesthetic interaction in rural public space design**

In recent years, many avant-garde architects have been exploring and practicing the concept of "interactivity" in architectural design. The pragmatism of architecture has been surpassed by virtual interactive design. Architectural design is no longer just creating rational functional space, but more tends to create perceptual "information exchange and emotional experience". With the continuous development of digital technology, the architectural design in the future will not only focus on the construction of spatial entities, but also pay more attention to the construction of interactive interfaces and virtual software. Therefore, it is particularly important to the architectural design of the new era to make overall use of virtual and physical design elements, make digital technology and architectural construction harmonious and unified, and make people have good experience in the interactive space.

The interactive architectural design based on the traditional interactive design concept understands the user as a single purpose processor by the method of analysis, ignoring the continuous characteristics of user experience. Based on analytic aesthetics, it limits aesthetics to the appearance and form of interactive interface, leading to the separation of aesthetics and functionality, resulting in many problems such as functional simplification, lack of personalized experience, lack of intuitive interactive construction methods and so on.

From the perspective of aesthetic interaction, users can regain full daily holistic experience; Products are also considered in the context of sociocultural meaning; Aesthetics is no longer a discrete and isolated functional accessory, but emerges from the interaction between users and the system while serving the interaction as an aesthetic tool. The application of aesthetic interaction concept to the design of rural public space can be started from the following aspects:

##### **4.1 Interactive design of complex space function**

Rural-themed cultural interaction is a dialogue and exchange between visitors and the cultural atmosphere created by the entity of the public space, strengthening the cultural atmosphere of the space, so as to form a dialogue between visitors and the whole cultural space, which is not only created through the artistic effect of public buildings. The theme of the building will infect the whole space with the cultural connotation of the countryside, so that visitors to the building are not only looking at its external image, but also need to experience in the spiritual level.

Modern rural public buildings are no longer just a pure gathering and commercial place, but also an important part of shaping rural cultural space at the spatial level. The complex and changeable rural public space allows rural residents and tourists to have interactive experience of the sense and psychology, so that people can get the sense of rural culture. This requires designers to have a deep understanding of the local culture, find out its unique connotation, and create architectural space that can reflect the beauty of rural culture on the basis of cultural changes. The complex interactive space is a link between reality and the spiritual world, enabling visitors to meet the needs of daily life and communication in this environment, while experiencing the regional culture of rural characteristics and enriching spiritual life; The architectural space is naturally integrated into the lives of residents, providing users with the overall experience of daily life.

In recent years, due to the development and construction of ecological civilization in the northern foothills of the Qinling Mountains, the villages in the northern foothills have also been affected to some extent. Some rural industries have been forced to transform and plan. As a result, comprehensive problems such as serious aging, loss of young labor force, sharp reduction of

cultivated land, lack of concentrated public space with life and cultural identity, and low identification degree of village appearance and appearance are prevalent in the villages. Public Activity Center of Dianzhen Village, Xi 'an, Shaanxi Province, designed the existing public space with frame-type functions aggregation to build a place of rural cohesion, and create a public space suitable for village life and development in Beilu. The design is based on the site selection of the existing villagers' activity places, and the overall planning and design are carried out to transform the site, giving a variety of related functional Spaces, trying to build a space framework that can realize multiple functional resettlement, friendly for all ages and easy to transform. The framework can undertake and accommodate multiple possibilities and spatial needs of the village's future development, and exists on a relatively stable and growing structural form. On this basis, space planning and space guidance is carried out, and regional identification degree related design is carried out from structure, function, shape recognition and other aspects, so as to build a landmark architectural landscape space that is convenient for multiple use, guided entry and has high aesthetic experience. The design proposes a linear space application mode of "village +", and takes the village meeting room, village park and village museum as the main body of the spatial extension of the mountain traffic system to construct a series of rural activities and life stages in the north to meet the functions of conversation, play, performance, reception, market, education, science popularization and publicity. It has become a large meeting room for villagers to chat after dinner, a walking park and a local museum bearing material cultural heritage, local memory and lifestyle. It gradually integrates into villagers' life and leads to the creation of a slow rural life style.

#### **4.2 Interactive design based on location**

"The 'localism' of architecture emphasizes that architecture is a complex product formed by the comprehensive action of human and environment in a specific time and space, and is the architecture here, here and here."The local design logic includes the original biochemistry of the site, the inclusion of design, the delicacy of space and the persistence of construction.The construction of rural public space reflects the inherent customs and cultural characteristics of the countryside. The design should conform to the nature, pay attention to the original elements in the site environment, and then carry out the concrete expression of the original biochemistry of the land according to the space, form and layout.In the design of interactive space, we should pay special attention to people's sense of belonging in the space,start the design from people's feelings,pay attention to embodied perception, and highlight the significance of "localized" design by preserving the original scene and reproducing the historical space.

Different from the strong exclusivity of modernism, the concept of "localism" is more inclusive, emphasizing the design from people's feelings, focusing on the embodiment of perception, using the age, number, psychological requirements, functional needs and other factors as the entry point of planning and design, so as to cater to the inner demands of users. The most important thing in the construction of rural public cultural space is to return to the attention of people. Instead of simply taking villagers as passive service objects, it should explore from the perspective of mass participation, and take the villagers' sensory experience and behavior habits as the design criteria to create a space that can be recognized by villagers and make them have a sense of belonging.

Taking the public space design of Dawei Town and Xuxi Village in Hefei City as an example, architects insist on preserving the original appearance of the village to the greatest extent on the planning and design level, integrating the elements of the original public space, and shaping the public space by means of space implantation, so that foreign tourists and new residents can experience the beautiful rural characteristics and farming culture when walking. While introducing new public building space to meet the functional requirements of rural public space in the new era, Dawei local village history is fully explored to show local culture and folk customs, reflect the struggle and entrepreneurial process of villagers, stimulate the rural masses' sense of honor and belonging to a beautiful home, carry forward fine folk customs and retain nostalgia.In the design, it is necessary to recycle the red bricks, tiles, stone slabs, etc. of the original building, which not only

retains the local atmosphere, but also does not lack the atmosphere of the time. The local shaping of the site spirit of Xuxi Village not only creates the atmosphere of the place through the above materials, technologies, structures, etc., but also continuously designs according to the feedback from villagers and "new villagers" during the design, so as to truly achieve people-oriented.

### 4.3 Perception -guided interaction design

The perception -led design approach is a target behavior -oriented approach to space design. Perception is a process of people's cognition of the outside world. It is the cognition of the whole thing produced in the mind by the direct action of objective things on the senses. The interaction of perception is distinct from the interaction of sensation. It includes the judgment of visitors' visual, auditory and other senses as well as past experience and skills. It is a more comprehensive feeling. In the interactive space, visitors can receive certain stimuli brought by architecture, such as visual stimulation and auditory stimulation, so as to be attracted by architectural works, visit and appreciate them, and finally trigger personal association and actively participate in the interaction with architecture. This is a state of intense mental concentration and rapid processing of information.

In the design of rural public space, in order to better guide the perception and even thinking of visitors, interactive design should be carried out based on local cultural customs and the direction and goal of visitors' behavior, and finally lead the thinking of visitors to the expected situation. In the design of buildings, designers can use a series of multimedia technologies to stimulate visitors' senses, so as to stimulate visitors' sense of belonging to local culture.

Based on the rapid development of digitalization, Anren Ancient Town in Sichuan Province uses new digital means to carry out interactive narration and inherits the cultural heritage. Visitors can not only visually appreciate the exhibits in various museums in Anren Ancient Town, but also integrate various kinds of interactive experience through a series of digital means, enabling the audience and exhibits to have a new interactive experience of exhibition viewing through various media. Start from the simplest reading narrative, with electronic text as the main form; Then into the audio-visual narrative level, effectively mobilize the dual relationship between visual and auditory, with video, sound, animation, graphics as the main object of audio-visual; Next, it enters the experience narrative stage, creating a virtual simulation environment through audio and visual elements such as sound and image, and encouraging users to achieve a full range of interactive narrative forms such as physical contact, psychological feeling and emotional integration on mobile terminals or digital devices. Finally, visitors can also participate in the narrative creation of the exhibits through the previous series of operations. With the emergence of nonlinear narrative mode, visitors change from experience visitors to co-creators. In the immersive experience of exhibition, ordinary space becomes a complex and stimulating sensory world, and finally realizes the integration of time and space.

## 5. Conclusion

The foundation of Chinese culture comes from the countryside. It can say that revitalizing rural culture is revitalizing Chinese culture. Rural public space is a field to display rural characteristic regional culture, integrate rural social resources, and enrich villagers' spiritual and cultural life. Its optimization construction is the core link to rural construction, and also an important way to realize the strategy of rural revitalization. Thinking about the construction of rural public cultural space based on the concept of "aesthetic interaction" and analyzing the predicament faced by rural culture is of great significance to the current rural culture construction. Aesthetic interaction, as a new emerging design idea in the "third wave" of interaction design, is still in the development stage, and it still needs to be clarified in design theory and further attempts on design practice in order to provide more solid guidelines on design work. However, in the contemporary social context of science and technology information in daily life, aesthetic interaction is undoubtedly a more

beneficial design perspective, which brings new possibilities for expanding the vision of interaction design of rural public space. With the continuous promotion of the rural revitalization strategy, how to build rural public space to meet the spiritual need and better life wishes of villagers still needs people to continue to practice.

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