Study on the Framework of Beautiful Countryside Construction Design Theory based on Ecological Concept

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Abstract

Ecological civilization construction is the important component of the overall planning of socialist cause in our country, involving ecological ethic, ecological economy, ecological system and ecological environment, etc. Ecological concept is the important means and indicator for beautiful countryside construction, therefore, the study starts from the connotation of ecological concept and beautiful countryside construction, and from three angles including the element, structure and function, establishes the design theoretical framework of beautiful countryside construction, and accordingly promotes the overall planning of urban-rural integration, meeting the demands of countryside on environment, completing the construction standard system, and finally building the beautiful countryside and laying the foundation of the construction of beautiful China.

Keywords: Ecological Concept, Beautiful Countryside, Construction Design, Framework Study.

1. BACKGROUND

1.1 Literature review

The development of ecological concept is the major program for future development of the nation, which integrates the ecological concept into beautiful countryside construction and effectively improves the people's living environment in the countryside, laying a foundation of beautiful countryside. Therefore, it requires to enlarge the construction of countryside cultural infrastructure, build the beautiful countryside architectures and inherit the countryside culture, highlighting the local characteristics (Huang and Luo, 2013). Meanwhile, countryside aesthetic isn't utilitarian, it requires to combine the cultural characters, life style and value orientation of the rural people to carry out the construction. It also requires to take the culture as the driving force of beautiful countryside construction, and design the landscapes from several angles, so as to inherit the culture and present the charm of the countryside (Yao, 2014). The construction of beautiful countryside architectures may take the rural people as the construction subject, and accordingly accelerate the development of rural industry, making the rural life be at a long-term evolving stage. The countryside possesses the characteristics according with ecological system, therefore, beautiful countryside construction is required to completely integrate the characteristics of the countryside, realizing the transformation of agricultural production activities (Zheng and Chen, 2015).

2.2 Objective of the study

Ecological civilization concept is an important rule for the development of our country, and applying it in beautiful countryside construction may help improve the people's livelihood effectively (Shao et al., 2014). Meanwhile, beautiful countryside construction is a comprehensive work system, which requires to not only promote the development of agricultural civilization, but also inherit the rural culture and local conditions and customs through the construction of countryside architecture. However, the design of country architecture requires regular overall planning, and the close combination with local custom and cultural background, therefore, the study on the framework of design theory of beautiful countryside architecture has important practical significance. The Study is designed from the angles of element, structure and function of architectures, through completing the country architecture standard system, turn beautiful countryside construction into reality.

2. THE IMPORTANCE OF ECOLOGICAL CONCEPT
2.1 Promoting the development of China through ecological civilization construction

The word "Ecology" originally refers to the house and the environment, and the mutual relation between natural systems. Ecological concept mainly refers to ecological civilization concept, and it's the civilization results generated from unremitting endeavor during the continuous development process (Ye and Zhong, 2017). Ecological civilization designs the spiritual civilization, cognition civilization, environment civilization and psychological civilization, and span the nations, classes and society. By now, ecological civilization is not only a problem of environmental protection, but also an important approach for the planning of economic society construction and beautiful China development (Dong et al., 2011).

2.2 Ecological civilization construction meets the demands of beautiful countryside

Ecological civilization concept is the important basis and sighting of beautiful countryside construction. Firstly, ecological civilization concept may offer the guarantee for the development of rural economy, while promoting the development of natural resources by closely combining the agriculture and land resources, it may also effectively promote the development of rural agricultural level (Ke et al., 2011). Secondly, ecological civilization concept is the basis of rural political development, and ecological civilization construction may help the rural people get rid of the pursuit of traditional material fortune and accordingly recognize the importance of environmental protection, realizing the political construction of green environment. In addition, ecological civilization concept is also the guarantee of rural culture development. Ecological civilization concept may effectively promote the inheritance of culture, so as to provide abundant content for the development of rural culture, and finally meet the demands of the development of beautiful countryside.

3. Construction of Beautiful Countryside and its Practical Significance

3.1 The connotation of beautiful countryside construction

Beautiful countryside construction of our country is originated from Zhejiang Province, which created the first ecological countryside in our country by integrating ecological concept and rural construction. In 2013, agricultural department released the opinions on the construction of beautiful country, i.e. promoting the rural ecological civilization construction (Huang et al., 2013). When building the beautiful countryside, targeted work shall be carried out by combining the rural resources conditions and economic type and other related elements, trying to make beautiful countryside concept become the basis of rural construction, and accordingly build a group of countryside architectures with good ecological environment.

3.2 Practical significance of beautiful countryside construction

Beautiful countryside is a comprehensive wording, which not only requires beautiful rural environment, but also requires the high cultural quality of the rural people, and at the same time, require profound cultural environment (Shao et al., 2010). Only constructing the beautiful countryside, may we effectively promote the development of urban-rural integration, promote the development transformation of rural economy and the successful construction of ecological civilization. In addition, only through the organic combination of ecological civilization concept and rural construction, may we promote the integration of development mode, life style and rural development of ecological civilization, and accordingly completely realize the rural construction target.

4. Establishment of the framework of beautiful countryside architecture design theory

4.1 Constructing the theoretical framework with element as the focus, and planning the urban-rural integration

From the construction design element, its dynamic development characteristics may be seen. The element is the basic unit of design of the architecture, and the development motivation of the change of architectural system. E.g., in ecological civilization construction, the renovation and design of rural residential architectures are required to improve the quality of architecture element, and stabilize the architecture design structure (Zhang, 2017). When designing the theoretical framework for beautiful countryside architecture, the first thing required
is to pay attention to the change and stability of the element. Therefore, when designing the theoretical framework for beautiful countryside architecture, it also requires to take natural ecological environment and local cultural characteristics as the design elements, i.e. not only respect and protect the natural environment, but also integrate the folk custom and design. Thus, guarantee the design element change within the controllable scope and the design results of the architectures meet the demands of rural development. Meanwhile, the design of beautiful countryside architecture is required to stick to the concept of green, wisdom and humanity, carry out overall planning for the rural mountains and waters, humanity, historical development and potential resources, etc., and by referring to the theoretical framework of garden city design, shortening the distance between urban architecture and rural architecture, make both realize mutual attraction and completion. Exerting the important function of such concepts as overall planning, estate planning and land planning, etc. in theoretical framework to eliminate the characteristics of dualization in urban and rural landscape, realizing the harmonious and stable development of rural area and urban area.

4.2 Constructing the theoretical framework with structure as the focus, and completing the standard system of the architectures

From the structure of architecture designed, we may know that the design theoretical framework of the architecture consists of basic structures, including parallel structure, radiating structure and encircling structure, etc., wherein, the encircling structure features the core design function (Li, 2017). Meanwhile, the structure of design theoretical framework of the architecture is also generated from the mutual action between the design system and the element. E.g., in rural architecture design may appear such functional foundation including leisure, tourist and agriculture, etc., the highlighting design of any one will effectively drive the development of the other two functions. Thus, while considering the element change, it also requires to pay attention to the structure module in design theoretical framework, so as to lay the foundation of the construction and development of countryside architecture. For this purpose, may re-plan the design theory of village settlement landscape and architectures, and transmit the rural historical culture with long history by utilizing the landscape featuring close contact among rural people's life (Chen and Yu, 2014), Highlight the leisure functional structure, and drives the functional structures of cultural transmission and appreciation. Meanwhile, in order to better carry out the application of the design theoretical framework of beautiful countryside architecture, it also requires to establish the scientific and reasonable construction standard system for beautiful countryside, and construct the supporting infrastructure, so as to guarantee the stability and completion of the structure of countryside architecture, and accordingly make the quality of beautiful countryside construction meet the rural people's will. E.g., may release such stipulations as Standards for the Construction of Beautiful Countryside Architecture, offer the qualitative characteristics for the design of architecture, and the quantized design factor, making all rural people participate in the connotation of architecture designed, exerting the characteristics of the structure, so as to promote the highlighting of structure in the construction of design theoretical framework of beautiful countryside architecture.

4.3 Constructing theoretical framework with function as the focus, meeting the demands of rural people

With regard to the functions of architecture design, the function module of theoretical framework possesses a certain hierarchy, dividing function module into superficial layer, middle layer and deep layer. At the same time, arrangement of system function may effectively form the standard layers of architecture, appropriate layer, reasonable order and scientific coordination relationship are the important influential factors during architecture design process (Shan, 2013). With regard to layer order, the realization order of construction function may be set with rural people as the focus, i.e. not only exert the appreciation function of the architecture, but also possesses a certain agricultural and industrial function, so as to accelerate the realization of the development target of rural modernization. However, when constructing the design theoretical framework, it requires to completely consider the demands of rural people. The author firstly conducts the investigation on several villages participating in countryside construction, and gets to know that, with regard to beautiful countryside construction design, several issues from different angles shall be considered. Firstly, for the villages with different development trend, it requires to completely consider the rural people's development space, and may plan the construction by combining the characteristics of the industry developed by rural people. Secondly, the scale of architecture may be designed according to the demands of rural people, offering the resident a guarantee and supporting system, or building a functional module for them, and other construction functions shall be selected by the rural people themselves, so as to effectively exert the appreciation and practicability of beautiful countryside architecture and meet the rural people's demands.
E.g. under the visual threshold of "The Belt and Road", the design of beautiful countryside construction in Xinjiang has effectively evaded the problems such as less function and weak cultural features, etc., and through the unification of construction and cultural environment, the integration of spatial characteristics and production activities, the combination of architecture construction and industrial development, design unique architecture group with geographical characteristics. The architecture is related to the cultural characteristics of Xinjiang, every aspects from ceiling, wall, fence, to the door and window, etc. complying with the rural cultural background, meanwhile, pay attention to the construction of public space, creating a good rural image (Zheng, 2013).

5. ESTABLISHMENT OF EVALUATION SYSTEM FOR BEAUTIFUL COUNTRYSIDE CONSTRUCTION DESIGN THEORY

The Study on framework of beautiful countryside architecture design theory is also required to establish evaluation system, so as to guarantee that the architecture design meets the demands of rural development. The most important circle during the establishment of evaluation system is the determination of evaluation indicators, for this purpose, evaluation indicators may be divided into three categories, i.e. target layer, criterion layer and indicator layer. Target layer refers to the general evaluation indicator, and criterion layer consists of 5 systems, including ecological economy, ecological environment, ecological habitation, ecological culture and ecological support. And indicator layer is separately set by combining 5 systems of criterion. Ecological economic system contains rural people's net income, disposable income, economic growth rate, specialty industry development and fiscal revenue ratio, etc. Ecological environment system contains greening, road, ecological management, sewage treatment, garbage collection and pollution prevention, etc. surrounding the architecture (Chen, 2016). Ecological habitation contains drinking water and clean energy, etc. surrounding the architecture. Ecological culture contains the highlighting of local culture, landscape presentation and civilization modeling, etc. in the design of architecture. Ecological support guarantee system contains the public security, production technology development, public facility management and other module surrounding the architecture. With the interpretation and calculation of specific indicators as shown as Table 1.

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<td>Architectural beauty</td>
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<td>Architectural beauty 70 91 84</td>
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6. CONCLUSION

The construction of beautiful countryside is a big measure during the development of our country, the combination of ecological civilization concept and beautiful countryside construction may effectively create a good ecological environment for beautiful countryside. Meanwhile, the integration of ecological concept and beautiful countryside construction design theoretical framework may lay the foundation of the element, structure and function module in construction design and offer guarantee. Therefore, it requires to combine the design of architecture and rural cultural connation, local conditions and customs and development direction, and accordingly design an architecture featuring appreciation and practicality, while promoting the development of beautiful countryside environment, effectively meet the rural people's demands. However, the design of
architecture still has the problem related to design principle, therefore, an in-depth study is required to be conducted for beautiful countryside construction design theoretical framework, so as to effectively complete the design system and better promote the development of beautiful countryside.

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REFERENCES

Chen X.P. (2016). The application of green building in beautiful countryside -- Taking the style of western Henan as an example, Research on Urban Architecture, (10), 24-25.
Li F. (2017). The design of the building -- Taking Ruqiang County West dike let village Xinjiang beautiful countryside under the background of Belt and Road Initiative as an example, Sichuan builds, (06), 82-84.
Shao J.J., Huang S.J., Li Y.F. (2014). Study on the planning and design method of rural landscape in the background of "beautiful countryside” construction -- Taking the landscape planning of Yangshuo County of Xin Zhai village as an example, Housing Science, (01), 39-43.
Zheng W.J., (2013). The cognition and function reconstruction of rural landscape value from the perspective of Tourism -- Based on the combing of research literature at home and abroad. Areal Research and Development, (01), 102-106.