



ISBN: 978-1-948012-15-7

Asia-SAME Transactions on Engineering Sciences, ISSN: 2377-8970

<https://doi.org/10.7508/aste.01.2020.94.98>

Application of Color Science Based on Space Art in Rural Architecture and Environmental Landscape

Yu Ling^{1*}, Le Wang²

¹School of Architecture and Art, Nanjing Polytechnic Institute, Nanjing 210048, China

²School of Art Design, Jiangsu Vocational Institute of Commerce, Nantong 226000, China

*Corresponding author: Dream366@139.com, 361347637@qq.com

From 2020 International Conference on Engineering Research, Beijing, China. 12-14 April 2020, Organized by University of Science and Technology Beijing and International Association of Management Science and Engineering Technology (IAMSET).

Abstract: Rural construction is China's current construction trend and a new measure taken by the country to narrow the gap between urban and rural areas and improve the rural landscape. In order to meet the needs of rural planning and construction, learn from the experience of urban development and avoid the destruction of local ecological environment and characteristic landscape by rural construction, a rural environmental landscape system should be established. Ecosystem and landscape are the basic functional units of the earth's surface system. Generally speaking, from the perspective of supporting human survival and development, it gradually becomes a reasonable application of human and environment. The scientific concept of ecosystem services and multi-functional landscape, related theoretical research and application research quickly become a hot topic in the academic community. The integration and optimization of landscape function is the fundamental goal of landscape management, and landscape ecological risk is composed of regional landscape evaluation, which provides a new perspective for spatial heterogeneity. Based on the analysis of natural color and artificial color, this paper attempts to apply color aesthetics to landscape environment design, and analyzes the appropriate color design in different landscape environment.

Keywords: Rural construction, Environmental landscape, Space art.

Introduction

All things in nature are numerous and varied. Mountains, rivers, dense forests, astronomical phenomena and other colorful splendor, their colors not only vary from region to region, but also change with the passage of time [1]. The natural and simple rural landscape has always been the impression of the rural people. Although the national engineering projects have improved the

production and living conditions, they all follow the same standards and lack the theory and technical guidance of ecological landscape construction. This led to the construction of rural landscape, ignoring regional differences and destroying local taste and local characteristics [2]. Under the influence of today's diversified society, the single and homogeneous pattern of traditional villages has gradually split up, and various elements of villages themselves have developed from "homogeneous structure" to "heterogeneous structure". On different spatial scales, landscape function is a key indicator for landscape evaluation, planning and design, and landscape multifunction. The integration and optimization of landscape functions is the fundamental goal of landscape governance. Landscape ecological risk is composed of regional landscape evaluation, which provides a new perspective for spatial heterogeneity [4]. Compared with other artistic forms, the landscape environment is closer to nature, and its components are mostly taken from nature. Therefore, it is more restricted in TINT and cannot use colors as freely as painting and sculpture [5]. Starting from the analysis of natural color and artificial color, this paper attempts to apply color matching aesthetics to landscape environment design, and analyzes the appropriate color matching design in different landscape environments.

Main contents of rural environmental landscape system

Color belongs to visual arts, and the combination of landscape environment colors should be based on the principle of satisfying visual needs. Visual demand is a constant changing and developing factor. Villages are different from cities, and their architectural forms should have local characteristics. Local geography, landform, climate and traditional culture should be reflected in rural buildings. In traditional historical and cultural villages, the newly-built building roofs, doors and windows, and colors should correspond to the local traditional buildings to a certain extent. Color belongs to visual arts, and the combination of landscape environment colors should be based on the principle of satisfying visual needs. Visual demand is a constant changing and developing factor [6]. Ecosystem services are benefits that human beings derive from ecosystems, including supply, regulation, culture and support services. Many decision-making frameworks based on ecosystem services basically follow four key principles. The strong development of ecosystem service research is often synchronized with the development of multifunctional landscape research.

The key of ecosystem services research has been generally recognized and the research progress is very rapid. However, the quantification of existing ecosystem services is still continuing. Rural public green space should reflect the individuality and characteristics of each village. Public green space and courtyard greening can make a natural transition. Plane greening and three-dimensional greening should be considered simultaneously. Rural greening can also be combined with forestry development and the daily life of local people. It is concluded that the final assessment point is the main objective of the stage formation problem and the basis of the ecological risk assessment

process [7]. The last point of ecological assessment refers to the environmental value that should be protected in a clear assessment. The introduction or analysis related to landscape aesthetics is based on the awareness of experts. Landscape evaluation research has always been a hot topic in China's landscape ecology research. From the current situation and development trend of multi-functional landscape, dynamic assessment and quantitative simulation and optimization of landscape function are the analysis of spatial heterogeneity between different ecosystem services and ecosystem services. There is a lack of mapping theories and methods in the study of landscape versatility and multifunctional landscape, as well as trade-offs in the study of ecosystem services, temporal and spatial variability and system dynamics [8]. Although the color of landscape environment cannot change regularly like popular color, the law that it conforms to the needs of the times is irreversible. Social development brings about changes in aesthetic concepts. Modern color aesthetics tends to be concise, lively, eye-catching and bright.

Main landscape design of rural public environmental facilities

Trees suitable for local climatic conditions should be adopted as far as possible in rural greening, and the shapes and colors of the trees should be highlighted. Some lawns and shrubs can be open, which can not only save the expenditure on greening management and protection, but also increase the natural interest of rural greening. Different degrees of green of plants in landscape environment can form similar color coordination. The colors of plants and the colors of non-living rocks and water bodies can also form a similar color combination. At the same time, the change of leaf color and the color of flowers and leaves can form a combination of contrasting colors. Compared with traditional and regional ecological risks, the relationship between landscape risk adaptability and process with landscape as the research object emphasizes the influence of landscape pattern on specific ecological functions or processes [9]. This leads to the loss of ecosystem services and ecological functions, and the assessment objectives highlight the vulnerability, resilience and stability of the landscape. Ecosystem is an important functional unit and a part of landscape, but the difference of topography and human activities of similar ecosystem will also lead to the difference of service ability and process, such as soil protection and carbon integration. Most of the functional divisions in landscape environment are divided according to the different use objects or purposes. Because different use objects have different visual needs, different purposes also need different colors to cooperate, therefore, different color combinations should be used in each functional area.

Generally speaking, according to the four methods of ecosystem service provision, management, support and cultural services. The loss can be roughly defined as the deterioration of well maintenance and wood supply in water supply services, the reduction of carbon storage, water purification capacity, internal storage control and high temperature reduction. Human

well-being in ecosystem services can be closely related to policy objectives and social values. Ecosystem services are the product of ecosystem structure, process and function, which are easily affected by external pressure. At the same time, according to the ecological relationship, perception and other standards, ecosystem services have relatively complete evaluation indicators and methods. In the color combination of landscape, we should pay special attention to the use of similar colors in order to achieve a harmonious cold color, but we should also consider the decoration of warm colors in the landscape, so as to avoid too flat color combination. The color combination in the sports activity area should be coordinated with its use, and the lively and simple neutral color should be selected, so that not only the attention of the athletes will not be affected, but also the active atmosphere in the sports field [10]. People who experience a positive aesthetic experience from an ecosystem are more likely to support the future development of the ecosystem or protect it from functional damage or loss. Although different functional areas have different color combination requirements, overall, the color of the whole landscape environment should have a sense of unity. Generally speaking, the introduction of ecosystem services into ecological risk assessment conforms to the concept of end point assessment and selection criteria of assessment end point. It can organically link the function and nature of ecosystem protection object to complex ecosystem. The last point is the ideal choice for evaluation.

Conclusion

The design of public environmental facilities plays an important role in the development of rural economy and culture. With the improvement of people's living standards, there will be higher requirements for spiritual culture. Color is one of the elements that need to be paid attention to in the modern landscape environment design. It plays an increasingly important role in the visual effect of landscape. It affects people's psychology and changes people's life. While exploring the influence of color on people, it is necessary to apply the research results to practice. However, this is often ignored in landscape environment design, which is really necessary to attract people's attention. Ecosystem service performance evaluation can obtain the internal characteristics and external performance of regional landscape. Regardless of the planning and design, it is a guiding evaluation, providing basic information and guidance for different types of rural planning and design. This method can extract useful information and meet the requirements of not damaging the original characteristics of rural landscape. In the design of public environmental facilities, it is necessary to embody the concept of people-oriented and ecological priority, strive to improve the construction of rural public environmental facilities, create a cultural atmosphere with local characteristics, accelerate the development of rural tourism, and build Tianmu Village into a beautiful mountain village with developed ecological economy and pleasant environment. We should promote the role of ecosystem services in the next stage of ecological risk

assessment and assess the concerns of different stakeholders in the assessment process.

Acknowledgements

Research on Revitalization Strategy of Traditional Villages and Towns in Jiangsu Province Based on Cultural Creative Design (Jiangsu Province University Philosophy and Social Science Research Project, 2019SJA0626).

References

- [1] Chen, M. 2018. Discussion on the construction of beautiful rural environment landscape. *New Countryside (Heilongjiang)*, (23): 25-26.
- [2] Wang, H.L. 2017. Analysis on the landscape design of new rural residential environment. *Modern Horticulture*, (11): 105-106.
- [3] Han, B. 2018. Research on the spatial pattern characteristics of northern rural landscape based on remote sensing images. *Bulletin of Science and Technology*, 34 (11): 176-179.
- [4] Zhao, X.P., Hu, Y.L. 2015. Research on rural environmental landscape in Guanzhong region. *Packaging and Design*, (1): 98-100.
- [5] Wang, D.J., Zhao, Z.Y., Gu, P.Y. 2019. Research on the countermeasures of rural ecological environment governance under the background of beautiful rural construction. *Green Environmental Protection Building Materials*, 144 (2): 40-41.
- [6] Li, H.X. 2016. On the landscape design strategy in the construction of new countryside. *Youth*, (21): 89-90.
- [7] Xu, C. 2015. Thoughts on the construction of regional landscape in rural areas. *Housing Science and Technology*, (6): 38-40.
- [8] Jiang, Y.L. 2019. Research on landscape design of rural roads under the construction of beautiful countryside. *China Standardization*, 538 (2): 110-111.
- [9] Chen, M. 2015. Research on landscape environment planning in rural tourism construction. *Urban Architecture*, (014): 116,118.
- [10] Zhao, L. 2015. The relationship between the ecological structure of rural environmental landscape and human psychology. *Jiangxi Building Materials*, (16): 37-38.