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IMPLEMENTATION OF ECOLOGICAL ARCHITECTURE IN WONOSOBO ZOO DESIGN

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Abstract: Kurangnya habitat hewan di alam yang disebabkan oleh beberapa aktivitas manusia seperti penebangan hutan, perburuan dan konversi lahan menyebabkan berkurangnya hewan di tempat tinggal yang pada akhirnya mengakibatkan berkurangnya jumlah satwa liar. Pada titik ini upaya konservasi dilakukan guna menyelamatkan satwa dari kepunahan. Kebun binatang merupakan salah satu bentuk upaya konservasi ex-situ yang dapat menjadi wadah interaksi antara manusia dengan satwa, sehingga manusia dapat belajar mengenal satwa dan menjalin hubungan erat dengan satwa. Di sisi lain, kebun binatang juga dapat menjadi daya tarik wisata sehingga dapat menjadi aset bagi daerah untuk mengembangkan pariwisatanya. Mengacu pada hal tersebut maka perencanaan kebun binatang di Kabupaten Wonosobo dapat menjadi tempat memelihara satwa dan menjadi daya tarik wisata baru dengan tetap memperhatikan faktor ekologi sehingga tetap memberikan kenyamanan bagi manusia dan satwa yang ada di dalamnya serta tidak merusak lingkungan sekitar. Penelitian menggunakan metode analisa pada situs yang akan dibangun serta analisa kebutuhan ruang sesuai dengan literatur dan studi banding. Hasil penelitian menunjukkan bahwa analisa ruang perlu disesuaikan dengan penyediaan hewan yang dibutuhkan untuk kepentingan edukasi bagi masyarakat. Desain yang dihasilkan sesuai dengan pendekatan ekologi.

Keywords: Planning, zoo, ecological

1. INTRODUCTION

Efforts to save animals from extinction have been carried out since the mid-late 20th century through conservation activities. Conservation is divided into two types, namely in-situ, conservation in the original habitat and ex-situ, conservation outside the habitat (Widigdo, 2013). The zoo is one of the ex-situ conservation efforts that has become a place for interaction between humans and animals. On the other hand, zoos are places of education, recreation and entertainment that can be accessed by various groups of people so that they can become tourist attractions in an area. Wonosobo is an area in the heart of Central Java province which is flanked by the surrounding mountains. Nature tourism is the main attraction of Wonosobo Regency, so that natural tourist spots are mushrooming in Wonosobo Regency. This can increase the number of visiting tourists. In the last 5 years the number of tourists in Wonsobo Regency has increased quite significantly. According to data from BPS Wonosobo Regency, the number of tourists in 2015 reached 869,791, increasing to 1,324,979 (Wonosobo, 2021). However, this growth in tourism can also reduce areas of animal activity due to human intervention in areas where animals roam. Based on this, it is necessary to rethink how to provide tourist attractions that can be reached by all levels of society as well as being a place for animal conservation as an effort to save animals.

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One solution is a zoo, a zoo can be a place for conservation and recreation so that it can become a new tourist attraction for Wonosobo Regency. However, zoo planning often does not pay attention to the condition of the surrounding environment and the psychology of the animals themselves. As a result, the surrounding environment becomes polluted, one example of which is river pollution due to the disposal of animal waste, and stress on animals because they are exposed to too much human attention. So a certain approach is needed to provide comfort for both humans and animals while still paying attention to preserving the surrounding environment (Chiara, 1987). The ecological approach is an architectural approach that in the process of planning, designing, building and operating a building still pays attention to harmony with the environment. In this writing the author tries to provide a new approach to the new tourist attraction of Wonosobo Regency and become a forum for animal conservation which in its planning still pays attention to harmony with nature (Yuliani, 2013).

The planning of the star garden is located on Jl. Raya Banjarnegara, Selokromo Village, Leksono District, Wonosobo Regency with a site area of 150,200 square meters. The current problem with zoos is that they are considered inappropriate for today's society. Planning needs to pay attention to visitors who are already familiar with technology. Zoo design needs to be combined with today's technology.

Fig 1. Site location and Existing conditions around the site

2. METHOD

The design of the Wonosobo zoo area tries to reduce the negative impact on the environment as explained by Cowan and Ryn, namely the solution grows from place, so that in the design it still maintains the contour of the site which is a rice field area by using bamboo material in the building. The research method in a design plan is carried out in several steps, namely by studying the literature on spatial dimensions, spatial measurement studies based on furniture data, comparative studies to buildings that match the theme, followed by site analysis both around the site and within the site itself. The analysis is related to environmental conditions, both climatological data and data on infrastructure or the physical environment in the site area.

Fig 2. Photo of the zoo area

3. RESULT AND DISCUSSION

The ecological architectural approach provides a relationship between human dependence and nature as a shelter and source of life. In order to achieve this in the application of ecological architecture, Yaeng explained that it is necessary to emphasize several integrations so that ecological concepts can be realized, including a) physical integration with local ecological characteristics such as topography, groundwater, vegetation, climate, soil and other things, b) system integration with natural processes covering how to use water, waste treatment and so on, c) integration of the use of natural resources which includes sustainable natural resources (Neufert, 1996).

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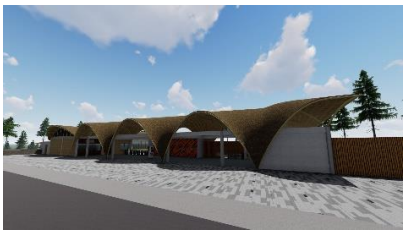

Fig 3. Use of bamboo materials in buildings

The site and the area around the site are rice fields with a descending contour from Jl. Raya Banjarnegara to Sungai Serayu, where the site is divided into 6 contour levels which divide the zoo into several zones including the primate zone, mammal zone, aves zone, and recreation zone. In captivity, the elevation of each animal is lowered to reduce excessive views of the animal and each captive area is given an irrigation canal barrier to muffle the sound of both humans and other animals.

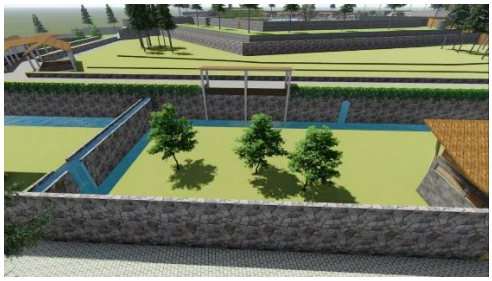

Fig 3. Use of bamboo materials in buildings.

Irrigation channels at the site are maintained to drain the ditches in the animal captivity where water is stored in the waterbank beforehand for water filtration using water plants. Bamboo material is used in the building to give a dynamic impression of the curved shapes depicting the mountains around the Wonosobo area. Spaces that require thought in design are spaces for animals. The size and needs of each animal are different, so a spatial study is needed so that space can cover the needs of the animal. Spaces in the form of animal cages also need to pay attention to the handler's needs in caring for the animals.

4. CONCLUSION

Planning for the Wonosobo Zoo with an Ecological Architecture Approach by maintaining the existing conditions on the site makes it easy to divide zoning and build cages. The Wonosobo Zoo is expected to become a new tourist attraction in Wonosobo Regency and become a conservation area for both animals and plants so that the environment remains sustainable.

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