



Abstract

Lately there has been an issue of environmental damage which is based on the lack of human awareness about the importance of protecting the environment. Education and nature have reciprocal relationships that can increase human awareness of sustainability. Natural schools are an alternative to the education system that makes nature one of the learning media. The concept of bringing students closer to and interacting with the natural surroundings will influence the treatment and perspective of students towards the environment itself. Selection of design locations in Sukoharjo Village, Ngaglik Subdistrict, Sleman Regency, Yogyakarta due to the natural condition of the area because there are still many rice fields and settlements that are not too dense. The condition of the site is one of the important factors that support the design that is with an ecological architecture approach where in addition to being able to minimize energy use in buildings can also support the theme of natural schools where students can interact directly with the surrounding environment.

The method used to obtain data is by survey which is to obtain primary data on physical conditions around the site. Whereas secondary data is obtained from literature studies and case studies of similar buildings. The results of the data obtained are then analyzed and synthesized with the context of the existing problems and produce a design concept that will be tested. The concept of ecological architecture applied to the design is response to climate, the use of environmentally friendly materials and passive strategy design.

The results of the design testing for the wind aspects were carried out using Autodesk flowdesign software, it is known that there are still several points with high wind speeds so that landscape and facade arrangements are made to solve problems and get optimal natural ventilation. For building shadow testing using sketchup software it is known that the building design and mass arrangement of the site have been able to solve the building's thermal problems in critical hours. Whereas for testing the design of environmentally friendly materials, it is tested with an assessment table of the level of ecological quality of building materials, where it is known that the materials used in the design have qualify the environmentally friendly materials aspect.

Keywords : nature, school, design, ecological