

An Ecological Outlook on the Adobe Houses in Rural Architecture of Thrace Region



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ABSTRACT

It was realized only at the end of 20th century that excessive use of the limited natural resources and energy damages ecological balance of the earth. The changes in the ecological cycle have resulted in important environmental problems such as atmospheric, water and soil pollution; global warming; climate changes; depletion of ozone layer; storage of carbon dioxide and; destruction of rain forests. Housing also has an important role on this negative change recorded in ecological balance. Because, buildings effect the environment by consuming raw materials and energy in various phases of the life cycles and damage natural habitats. However, ecological characteristics of the buildings can reduce such negative effects. As well as many other factors, construction materials have important share in the ecological characteristics of the buildings. Adobe which is a positive construction material in terms of ecological characteristics also reflects these characteristic into the buildings constructed by using adobe.

This study aimed at evaluating the adobe houses in the valley villages of Thrace Region from an ecological perspective. To this end, a field survey was carried out to select sample houses. Construction systems, construction elements, construction materials, planning characteristics, orientation and settlement types of the sample houses were determined. Then, ecological criteria were defined as resource efficiency, environmental pollution, comfort conditions and the effects on the ecosystem. The sample houses were evaluated on the basis of these criteria.

It was determined at the end of this evaluation that sample houses have important ecological characteristics such as being mainly energy and resource efficient, being appropriate for human health and preserving eco-system. We can conclude that adobe plays an important role in the findings obtained.

Traditional materials have some advantages thanks to their characteristics such as local accessiblens, low environmental impact, renewability and natural decomposition. Adobe is an easy-to-access and easy-to-process material which saves cooling and heating energy thanks to its high capacity for heat insulation and which remains natural as not being subjected to any chemical change in its construction phase. It reflects such positive characteristics to the buildings in such way to reduce environmental impacts of these buildings and turn them into more ecological structures. At the end of the study, it was concluded that abode has ecological and sustainable characteristics and that adobe is an appropriate construction material for the rural areas with limited housing requirement.

KEYWORDS

Adobe, Ecologic Building, Thrace Region