

An Analysis of Insulation Defects in TRNC: The Case of Toros Dormitory of Eastern Mediterranean University

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Abstract : In recent years, with the growing population and decrease in the amount of non-renewable energy supplies, which is caused by the uncontrolled energy use, the world witnesses air pollution and destruction of the natural resources. Most of the buildings which are constructed in order to inhabit this great amount of population have minimum facilities. With the passing time researchers began to feel anxious about increase in the amount of energy which people are continuously using and they tried to find some ways to solve it. One of the methods, which human being has used all during the history, was considering the orientation, size, form and shape of the building during design process and trying to take advantage of the methods which his ancestors used in order to make buildings thermally comfortable. In the last forty years with the development of building materials a new way of conserving energy, called insulation, was invented. In North Cyprus, with its adverse weather condition (hot and dry summers and rainy winters) no method was used to make buildings thermally comfortable. This fact leads to wasting a noticeable amount of energy for heating and cooling the buildings. The main aim of this article is to evaluate the defects of insulation in North Cyprus and to introduce some suggestions to improve the current defects of insulation. Therefore, this paper focuses on the Toros dormitory and the construction firms in TRNC. Toros Dormitory is situated in North Cyprus and it is one of the dormitories of Eastern Mediterranean University. Lots of problems are observed with its insulation. Forty students who inhabit in this dormitory are selected randomly in order to study these defects. Close ended questionnaires are used to find out the level of satisfaction of these students on the subject. Furthermore, eight constructors in North Cyprus are selected to study their level of satisfaction, the most important factors for choosing an insulation type and the material they often use as insulation. The results demonstrated that most of the students in the dormitory are not satisfied with the thermal conditions. Constructors are also unsatisfied with the insulating conditions in TRNC. They claimed that polystyrene which is commonly used is not the proper material for insulation in this area. Finally ICF system is evaluated, it is a new system of construction which also works as an insulation and recently it is being used all over the world. The material is suggested as a proper insulation type for North Cyprus.

Keywords : thermal comfort, insulation, building envelop, hot and humid climate, ICF system

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