



# Evaluating energy consumption in terms of climatic factors: A case study of Karakol residential apartments, Famagusta, North Cyprus

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## ABSTRACT

*Throughout the past few decades, research has demonstrated that climatic factors are some of the most important issues to be considered in respect of energy consumption in buildings. Climatic factors, therefore, directly influence the economic sector. In order to study the impact of climatic factors in Karakol residential buildings in terms of energy consumption, an evaluation of the studies (literature survey) effected in relevant climates, and the analysis of the existing buildings according to these studies is essential. This represents the aim of this research and the other is to present design strategies for minimizing the negative impact of climatic factors on energy demand in these buildings. To approach the research objectives, the climate of the region was initially investigated. In an attempt to evaluate some of the current housing in the Karakol district of Famagusta in terms of the climatic factors, three types of residential apartments were identified and evaluated through observation, interview, and also by the distribution and complication of qualitative and statistical questionnaires to and by the occupants of the apartments. In this paper, basic climatic problems, as a result of which lead to increased energy consumption in residential apartments in respect of heating and cooling were identified and reported.*

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## 1. Introduction

In most societies such as United States (EIA<sup>1</sup>, 1999) and also India (Indraganti, 2010) the use of energy in residential buildings for heating and cooling which provides thermal comfort, is one of the highest consuming sector. Providing comfortable and adequate working conditions

for occupants in buildings necessitate the need to control the climatic factors of the building.

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