

Chapter 8

Changes in Energy Class in Different Districts of Kahramanmaraş Province's Residential Buildings During Energy Transformation and the BEP TR Method

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ABSTRACT

This study assesses the effectiveness of energy identity certificate applications in Kahramanmaraş province, focusing on buildings in Onikişubat, Göksun, and Türkoğlu. While buildings generally meet energy efficiency standards, material quality and construction techniques significantly impact performance. The Demirci Family's Residence has the highest energy consumption for heating and hot water, suggesting insulation and system improvements are needed. Göksun Earthquake Housing consumes a lot of energy for heating, while Akasya Apartment-Türkoğlu and Yamaçtepe Site demonstrate lower consumption, with Yamaçtepe Site being the

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most efficient. The study recommends enhanced insulation, efficient HVAC systems, LED lighting, regional training, and renovation projects with government support to optimize energy savings. Future research should explore renewable energy sources and detailed analysis of HVAC system performance

1. INTRODUCTION

The Energy Identity Document (EKB) certifies the energy consumption and efficiency levels of buildings and serves as a tool for evaluating and enhancing their energy performance (Çoşkun, 2022). In the region, efforts are underway to promote energy labeling as a means of assessing building performance and supporting future energy-saving initiatives.

The research examines the EKBs of four selected buildings from the specified districts. It is limited to analyzing their energy efficiency classes, consumption levels, and proposed enhancements. A sample was selected from existing structures, and data were gathered through fieldwork. Both qualitative and quantitative methods were used, and the results were analyzed comparatively in line with relevant regulations and standards.

Kahramanmaraş, located in the eastern Mediterranean Region, has a rich historical and cultural background. Known for its role in the War of Independence, the city's economy is shaped by agriculture, livestock, and industry, particularly textiles, goldsmithing, and food production. It also attracts attention with its cuisine, handicrafts, and festivals.

Geographically, the province lies near the Eastern Anatolia and Southeastern Anatolia regions, featuring mountainous terrain and a diverse natural landscape. As a transition zone between Mediterranean and continental climates, it experiences hot, dry summers and cold, wet winters. This climate, along with its topography, supports diverse agricultural activities and vegetation.

This study focuses on evaluating the energy performance of buildings in the districts of Onikişubat, Göksun, and Türkoğlu in Kahramanmaraş province. It includes an assessment of current energy consumption, potential savings, and suggestions for improvement. The findings are expected to inform legal regulations and policies aimed at increasing energy efficiency.

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