

## Adaptation of Retrofit Strategies for the Housing Sector in Northern Cyprus

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**Abstract :** This research project is undertaken in the Turkish Republic of Northern Cyprus (T.R.N.C). The study focuses on identifying refurbishment activities capable of diagnosing and detecting the underlying problems alongside the challenges offered by the buildings' typology in addition to identifying the correct construction materials in the refurbishment process which allow for the maximisation of expected energy savings. Attention is drawn to, the level of awareness and understanding of refurbishment activity that needs to be raised in the current construction process alongside factors that include the positive environmental impact and the saving of energy. The approach here is to look at buildings that have been built by private construction companies that have already been refurbished by occupants and to suggest additional control mechanisms for retrofitting that can further enhance the process of renewal. The objective of the research is to investigate the occupants' behaviour and role in the refurbishment activity; to explore how and why occupants decide to change building components and to understand why and how occupants consider using energy-efficient materials. The present work is based on data from this researcher's first-hand experience and incorporates the preliminary data collection on recent housing sector statistics, including the year in which housing estates were built, an examination of the characteristics that define the construction industry in the T.R.N.C., building typology and the demographic structure of house owners. The housing estates are chosen from 16 different projects in four different regions of the T.R.N.C. that include urban and suburban areas. There is, therefore, a broad representation of the common drivers in the property market, each with different levels of refurbishment activity and this is coupled with different samplings from different climatic regions within the T.R.N.C. The study is conducted through semi-structured interviews to identify occupants' behaviour as it is associated with refurbishment activity. The interviews provide all the occupants' demographic information, needs and intentions as they relate to various aspects of the refurbishment process. This research paper presents the results of semi-structured interviews with 70 homeowners in a selected group of 16 housing estates in five different parts of the T.R.N.C. The people who agreed to be interviewed in this study are all residents of single or multi-family housing units. Alongside the construction process and its impact on the environment, the results point out the need for control mechanisms in the housing sector to promote and support the adoption of retrofit strategies and minimize non-controlled refurbishment activities, in line with diagnostic information of the selected buildings. The expected solutions should be effective, environmentally acceptable and feasible given the type of housing projects under review, with due regard for their location, the climatic conditions within which they were undertaken, the socio-economic standing of the house owners and their attitudes, local resources and legislative constraints. Furthermore, the study goes on to insist on the practical and long-term economic benefits of refurbishment under the proper conditions and why this should be fully understood by the householders.

**Keywords :** construction process, energy-efficiency, refurbishment activity, retrofitting

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