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IMPACT OF ARCHITECTURAL FEATURES ON ENERGY CONSUMPTION IN SCHOOLS: AN APPROACH TO ECOLOGICAL ARCHITECTURE

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ABSTRACT

Energy consumption of the public buildings in urban areas represents an important cost of the balance of economic life of city. Moreover, public buildings, in particular schools, should provide an environment with elevated comfort levels because students and teachers spend much time in these buildings. This study was intended to provide a scientific frame for development of a design guideline for sustainable school buildings. Based on a careful review of available literature, energy consumption strategies and performance levels that affect heating and cooling energy consumption in selected primary schools in Tabriz were analyzed as a reference baseline building. Computer simulations were performed using Energy Plus software to analyze the sensitivity of each of the influencing variable and energy strategies to overall performance of the school. Analysis of variance (ANOVA) was also conducted to estimate the relative importance of each factor to find out the priority of each energy factor.

Keywords: building, energy, process, sustainability