

## Energy Efficient Lighting in Educational Buildings through the Example of a High School in Istanbul

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**Abstract :** It is obvious that electrical energy, which is an inseparable part of modern day's human and also the most important power source of our age, should be generated on a level that will suffice the nation's requirements. The electrical energy used for a sustainable architectural design should be reduced as much as possible. Designing the buildings as energy efficient systems which aim at reducing the artificial illumination loads has been a current subject of our times as a result of concepts gaining importance like conscious consumption of energy sources, environment-friendly designs and sustainability. Reducing the consumption of electrical energy regarding the artificial lighting carries great significance, especially in the volumes which are used all day long like the educational buildings. Starting out with such an aim in this paper, the educational buildings are explored in terms of energy efficient lighting. Firstly, illumination techniques, illumination systems, light sources, luminaries, illumination controls and 'efficient energy' usage in lighting are mentioned. In addition, natural and artificial lighting systems used in educational buildings and also the spaces building up these kind buildings are examined in terms of energy efficient lighting. Lastly, the illumination properties of the school sample chosen for this study, Kağıthane Anadolu Lisesi, a typical high school in Istanbul, is observed. Suggestions are made in order to improve the system by evaluating the illumination properties of the classes with the survey carried out with the users.

**Keywords :** educational buildings, energy efficient, illumination techniques, lighting

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