

Assess and Improve Building Energy Efficiency- a Case Study on the Office of Research and Graduate Studies at Qatar University

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Abstract : The proliferation of energy consumption in the built environment has made energy efficiency and savings strategies a priority objective for energy policies in most countries. Qatar is a clear example, where it has initiated several programs and institutions to mitigate the overuse of electricity consumption and control the energy load of the building by following global standards and spreading awareness campaigns. A Case study on the Office of Research and Graduate Studies at Qatar University has been investigated in this paper. The paper studied the rating load of existing buildings before and after retrofitting by using Carrier's Hourly Analysis Program (HAP). The performance of the building has increased especially after using the LED light system instead of fluorescent light with a low payback period. GINAN paint and green roof have shown a considerable contribution to the reduction of electrical load in the building. In comparison, the double HR window had the least effect on the reduction of electricity consumption.

Keywords : energy conservation in Qatar, HAP, LED light, GINAN paint, green roof, double HR window

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