

Comparative study on energy efficient green building with conventional building

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Abstract. Green Building concept is an environmental building practice followed by the construction engineers since the years 2000s. Green building concept is the imperative of time with respect to economic, social and environment aspects. Green building techniques can mainly classify under six categories, waste management, water efficiency, energy efficiency, location, configuration and green materials, where under each technique countless solutions can be developed based on the requirements and the proposed project. Hence, this paper targets to redesign Barka Marina Mall, Oman as a green building considering building configuration, renewable energy and green materials, with the help of Building Information Modelling (BIM) technology and Photovoltaic System software as simulation tools. Aim of the present study is to redesign the Barka Marina Mall, Oman as a green building by considering the building configuration, renewable energy and green materials, with the help of BIM and Photovoltaic System software and compared the results with the conventional building. The criteria considered for the comparative analysis are, annual carbon emission, annual energy use, monthly fuel consumption and monthly energy consumption between the conventional and the green building. Based on the comparative study it is noticed that applying the green building concept has a great potential to save the nation's resources and the environment by reducing the consumption as well as the cost.

Keywords: Green building; renewable energy; Building Configuration; Photovoltaic System

