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Green Architecture Challenges in the Middle East Within Different Rating Systems

Iman Abdel Shahid Ibrahim*

Assistant Professor, University of Sharjah, UAE

Abstract

Calling for sustainability as a definite solution for all Environmental Challenges inspire this research to emphasis the priority of increasing the efficiency of the sustainable built environment with the intent of cutting carbon emissions. Aiming to discuss and showcase the United Arab Emirates' sustainable buildings (new and existing) and to present the energy-efficiency principles exploited in them, and their performance. While UAE ranks as the top country for green building in the Middle East, and among the top ten internationally, according to ranking by the U.S. Green Building Council, considering energy consumption, renewable energy and recycled materials.

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Keywords: Sustainability; Green Architecture; Rating Systems; Challenges in MENA

1. Introduction

The research presents an overview on how do sustainability rating systems contribute to carbon emission reduction in the Middle East and North Africa region and the challenges facing architectural projects to be certified from different rating systems even within one country like UAE that apply international rating system (LEED) and

* Iman Ibrahim. Tel.: +971-50-2485125; fax: +971-6-5057854
E-mail address: iibrahim@sharjah.ac.ae

two local rating systems; Estidama and Dubai Green Building Regulations.

The goals of this search are to discuss and showcase the United Arab Emirates’ sustainable buildings (new and existing) and to present the energy-efficiency principles exploited in them, and their performance.

Sustainability concept originally focus in societies response for consuming natural resources, but most of scientific researches started to analyse sustainability in a wide range due to three main pillars, environmental aspect, economic aspect and the social aspect, and since the research interest is in MENA region we will find that the main reason for innovating new rating systems specific for certain countries is the difference in social culture.

Even though the region has made great progress in the field of green Architecture in recent years. It’s not just intentions to go green, it’s clear that Sustainable design appears like a trend in the region with designers and construction firms finding the most eco-friendly designs that will be showcases in this research.

1.1. Green Buildings

No doubt that this term has been spread in the last ten years in a wide range between Architects and all interested in the construction field, but the definition itself still vary from organization to another, the Office of the Federal Environmental Executive defines this term as: “the practice of increasing the efficiency with which buildings and their sites use energy, water, and materials, and reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal—the complete building life cycle” [1]. Another definition by the Environmental Protection Agency (EPA) as follows: “The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building’s life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as a sustainable or ‘high performance’ building”. [2]

Green Buildings has to sustain many features to be included within green term, definitely energy efficiency is a major feature and some organizations consider it the main pillar, beside other features like recycled materials, recycled water and sustainable equipment.

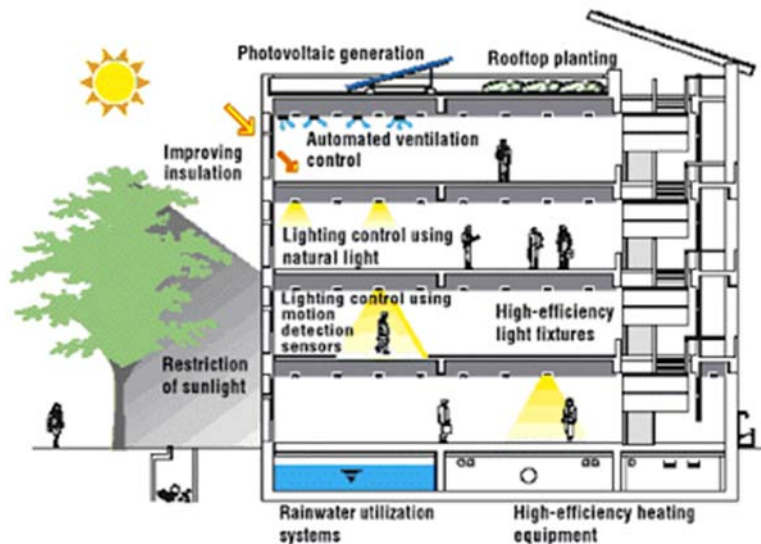


Fig 1. Conceptual drawing of Green Building [2]

Overview of Green Buildings “high performance building”. Which is a building with high energy efficiency that reflected in the environmental aspect. Although the green building and technology movement is still in its early stages, some expect that it will inspire innovations and transformations as daunting as the changes brought about by

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