

AEIC, 2012 Cairo, Egypt
Al-Azhar Engineering Twelfth International Conference
Faculty of Engineering, Al-Azhar University, Nasr City, Cairo, Egypt, 25-27 December 2012

LEED Effectiveness for Egyptian Environment and Construction Industry against Green Pyramid as Rating Systems – Case Study: Sustainable Sites

Dr.Wael Ahmed Shaaban Abo Neama

Lecturer in Architectural department, Faculty of Fine Arts, Helwan University, Zamalek, Cairo, Egypt
E-mail address: wael.aboneama@gmail.com

Abstract

Sustainable design nowadays is not an option for the construction industry all over the world. It becomes a mandatory as a result of environmental requirements. Also, LEED as a rating system for the Sustainable Design has started to be applied not just in the US but also has become a target to enhance building performance in many countries in the Middle East and Egypt. However, LEED was created for sustainable Design for a portion of the world which has many challenges that are not implemented in the Middle East region. Starting from this point some countries like Egypt created its unique rating system which is Green Pyramid that reflects the regional environmental challenges which may impose on the Architect several items to be implemented in the Architectural Design to classify his final product as Sustainable Design.

Sustainable Site is the first criterion that LEED creates for it one prerequisite and eight credits when all implemented they can achieve 26 points (23.6 % of the total LEED 110 possible). Meanwhile, when we implement LEED's criterion for Sustainable Sites and its prerequisite and credits in Egypt we explore that some credits may will not be as important in Egyptian environment as Northern America, on the other hand we will explore some other issues that reflect major environmental problems in Egypt and not mentioned in LEED credits.

The research objective is to measure the effectiveness of applying Sustainable sites criteria in LEED as a rating system for the Egyptian environment and allocate the weakness points which does not have a positive impact on the environment and costly. On the other hand the research mentioned the positive criteria in Sustainable sites in LEED and could have a positive impact on the environment in Egypt. The methodology will be focused on surveying on all Sustainable Sites criteria in LEED and study each one applied to Egyptian environment. The outcome is measurable tools for architects when they use LEED as a rating system to enhance building performance in Egypt illustrates which points can be neglected without any impact on the environment and others which are important to be implemented.

Keywords: LEED, Green Pyramid, Egyptian Construction Industry, Sustainable Sites

1. Introduction:

Sustainability for buildings is not a new requirement in the Egyptian construction industry. Architectural history through thousands of years in Egypt has left practical heritage for building sustainability which took into consideration indoor environmental quality, the creativity of using local materials plus the innovation in design. Unfortunately, Architecture in Egypt and some other countries in last five decades of the twentieth century missed many environmental solutions that led to poor building performance and affect negatively the environment and our planet.

Sustainability can be defined as the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.

When Green Building is mentioned we are trying to meet the practice of creating structures and using processes that are environmentally responsible and resource efficient throughout a building's life cycle. That life cycle respectfully analyzes