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## GREEN ARCHITECTURE: A CONCEPT OF SUSTAINABILITY

Amany Ragheb<sup>a,\*</sup>, Hisham El-Shimy<sup>b</sup>, Ghada Ragheb<sup>b</sup>

<sup>a</sup>Department of Architectural Engineering, Delta University for Science and Technology, Mansoura, Egypt

<sup>b</sup>Department of Architectural Engineering, Pharos University, Alexandria 21311, Egypt

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### Abstract

In recent years, sustainability concept has become the common interest of numerous disciplines. The reason for this popularity is to perform the sustainable development. The Concept of Green Architecture, also known as "sustainable architecture" or "green building," is the theory, science and style of buildings designed and constructed in accordance with environmentally friendly principles. Green architecture strives to minimize the number of resources consumed in the building's construction, use and operation, as well as curtailing the harm done to the environment through the emission, pollution and waste of its components.

To design, construct, operate and maintain buildings energy, water and new materials are utilized as well as amounts of waste causing negative effects to health and environment is generated. In order to limit these effects and design environmentally sound and resource efficient buildings; "green building systems" must be introduced, clarified, understood and practiced.

This paper aims at highlighting these difficult and complex issues of sustainability which encompass the scope of almost every aspect of human life.

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*Keywords:* Green-building systems; sustainable buildings; natural buildings; living architecture; renewable resources; eco-design; eco-friendly architecture; earth-friendly architecture; environmental architecture; natural architecture.

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### 1. Introduction

Sustainability is comprehensive therefore a complex subject. It is of vital importance to all because it deals with the survival of human species and almost every living creature on the planet. Sustainable and eco-friendly architecture is one of the main aims that humans for creating a better life have made as the ultimate model for all their activities. For this reason, moving towards a greener architecture is well-thought-out the main goal of the present architecture of our time (Mahdavejad, 2014)

At the rate the development needs of this world is using the scarce and limited resources found on the earth, it is becoming obvious that unless there are major changes to Man's thinking and behavior, the future of civilization as known today is dubious. This complex subject has no straight forward solution, especially considering that sustainability is a goal for all to reach as they continually strive to reach towards it. Green architecture produces environmental, social and economic benefits. Environmentally, green architecture helps reduce pollution, conserve natural resources and prevent environmental degradation. Economically, it

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\* Corresponding author. Tel.: +0-100-520-6790; fax: +2-03-3877423.  
E-mail address: [ghada.ragheb@pua.edu.eg](mailto:ghada.ragheb@pua.edu.eg)

reduces the amount of money that the building's operators have to spend on water and energy and improves the productivity of those using the facility (Thomas, 2009)

And, socially, green buildings are meant to be beautiful and cause only minimal strain on the local infrastructure.

The buildings in which we live, work, and play protect us from nature's extremes, yet they also affect our health and environment in countless ways. As the environmental impact of buildings becomes more apparent, a new field called "green building" is gaining momentum. Green, or sustainable, building is the practice of creating and using healthier and more resource-efficient models of construction, renovation, operation, maintenance and demolition (Roy, 2008).

### 1.1. Green Architecture

Green architecture, or green design, is an approach to building that minimizes harmful effects on human health and the environment. The "green" architect or designer attempts to safeguard air, water, and earth by choosing eco-friendly building materials and construction practices (Roy, 2008).

### 1.2. Green Architecture and Green Design

Green architecture defines an understanding of environment-friendly architecture under all classifications, and contains some universal consent (Burcu, 2015). It may have many of these characteristics:

- Ventilation systems designed for efficient heating and cooling
- Energy-efficient lighting and appliances
- Water-saving plumbing fixtures
- Landscapes planned to maximize passive solar energy
- Minimal harm to the natural habitat
- Alternate power sources such as solar power or wind power
- Non-synthetic, non-toxic materials
- Locally-obtained woods and stone
- Responsibly-harvested woods
- Adaptive reuse of older buildings
- Use of recycled architectural salvage
- Efficient use of space

While most green buildings do not have all of these features, the highest goal of green architecture is to be fully sustainable.

Also Known As: Sustainable development, eco-design, eco-friendly architecture, earth-friendly architecture, environmental architecture, natural architecture (USGBC, 2002).

## 2. METHODOLOGY

In order to achieve the stipulated aim, the study presented in this paper, traces the following steps:

1. General overview on applying "Green Architecture" as a concept of sustainability.
2. Defining Considerations for Green Building.
3. Defining the benefits of applying criteria for Green Building strategies that could maximize energy efficiency, and indoor air quality.
4. Describing case Study potentials in terms of Green Building aspects.

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