



Improving Sustainability Concept in Developing Countries

*The Problem Of Applying Sustainability Ideas In Urban Landscape In
Developing Countries*

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Abstract

This paper will tend to contribute in solving the problem of applying sustainable landscape in developing countries through creating a framework covers all features and illustrates the features which must be applied in any landscape project and the others which require a future local plans or international cooperation to be applied. This framework can be formed to a check list which can help the decision makers to set obligatory standards which should be applied when they give an approval to any landscape projects. In the long run this approach can be economically, ecologically and socially (functionally and aesthetically) beneficial.

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1. Introduction

Recently, a lot of problems appear due to the scarcity of some natural resources and the environment destroying, thus the global efforts are concentrated to save the environment. Stockholm Conference considered the first international framework about environment. It was followed by a lot of conferences, such as Earth Summit 1992, and Rio +20, all of them concerns to sustainable development. The sustainable development aims mainly to save the environment and achieve the human comfort with minimum possible costs. It is almost associates with all aspects of life such as architecture, landscaping, economy...etc. This thesis will concern with architecture landscape only. Most people consider Landscape as an exterior visual design, it is considered both art and science, and not only for exterior but also interior, too. Landscape architects involved in all outdoor projects from the design of parks to the planning of cities. Architecture Landscape consists of three main types according to the space:

- Natural landscape: It is only the reflection of the universe as it contains natural elements such as water features.

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- Rural landscape: It is the result of Agriculture operations on sites which coordinated naturally, or the projects that occur inside or around the countryside.
- Urban landscape: It comprises the sum total of the un-built land within and around our towns and cities ^[1]. The green area as a part of landscape is considered a sustainable feature by itself due to its benefits see **Error!**

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Table 1 the green area benefits

Dimension	Benefits
Environmental benefits	<ul style="list-style-type: none"> • Improving air quality as a large shade tree can remove 450 pounds of carbon dioxide from the atmosphere per year ^[2] (p.68), and moisture evaporates from the leaf surfaces it simultaneously cools adjoin air temperature so it has been estimated that large shade tree can evaporate as much as 100 gallons of moist per day, thus giving the cooling effect of five air conditioner ^[3](p.76), also areas below trees may be 5° to 10° F cooler than nearby areas in direct sun, thus urban temperatures could be reduced by as much as 7°by using green roof ^[4](p.94). A study in Chicago has shown that 85% of air pollution in a green area can be filtered ^[5](p. 03). • Wind Control: Strategic placement of trees helps to break, guide, and deflect wind. • Erosion Control: Because the soil surface which is exposed to natural factors is reduced by ground cover. • Noise Reduction: Dense vegetation absorbs sound waves so the noise is reduced. • Energy Conservation: Landscape contributes in reducing the heating and cooling loads. • Wildlife Conservation: Vegetation types when are diverse that provide wildlife habitat. • Reduce runoff: It has been found that green roofs can retain up to 75% of rainwater, gradually releasing it back into the atmosphere via condensation and transpiration, while retaining pollutants in their soil ^[4](p.94)
Social benefits	<ul style="list-style-type: none"> • The connection between people and green areas is important for everyday enjoyment and mental health. In a psychological review, patients in an hospital whose rooms were facing a green area had a 10% faster recovery and 50% less strong pain relieving medication as compared to patients whose rooms were facing a building wall ^[5]p. 03).
Economic benefits	<ul style="list-style-type: none"> • The indicators are very strong that green areas and landscaping increase property values and financial returns for land developers, of between 5% and 15% depending on the type of project ^[5](p. 03).

2. Sustainable Landscape

The sustainable landscape has become an essential problem in developing countries such as Egypt because there are not any local standards or rating systems concern to landscape should be applied in order to save the environment and achieve the human comfort with minimum possible costs. Sustainable landscaping is based upon the three dimensions of sustainable development; social, environmental, and economic. The goal is to create healthy, liveable landscapes which are economically viable. Sustainable landscape has a lot of definitions such as the definition of *Carl Smith, Andy Clayden and Nigel Dunnett* ^[6](p.06) “A sustainable landscape will aim to minimize the inputs of non-renewable resources and energy, maximize levels of internal recycling and improve the environmental quality of all outputs where possible. This is presented in Fig. 1”.

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