SUSTAINABLE DESIGN

Green Design – Ecologically Sustainable design

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By definition, Sustainable Design (also called Environmental Design, or Green Design) is the holistic philosophy of designing physical objects, built environment or providing services in an economic, social and ecologically sustainable manner.

The modern concept of sustainable design originated as a result of the energy crisis and the Environmental pollution concern in the 1970's. It was a conscious reaction to the energy being wasted and pollution being produced by heavily industrialized countries. It has grown into an International phenomenon also as a reaction to global Environmental crises that arise from the rapid growth of economic activity and human population, depletion of natural resources, damage to ecosystems and loss of biodiversity.

Sustainable Design can be applied in several fields including urban planning, engineering, industrial design, fashion design. In this article, I will be addressing it in relation to the Architectural design field.

It is the role and challenge of the Architect to provide the client with a product that fulfills their requirements and desires, while at the same time educating them on the best way to go about it. One of the directives (which in my opinion) should be a standard aspect is sustainable design.

Over the past 10 years in Kenya there has been a trend of buildings being designed based on a particular look found in foreign lands. This results in building design suitable for extreme climate condition because the design principles are not for our climate.

Although the building may look "modern" it results in highly energy inefficient designs. Air conditioning (and accompanying energy bill) becomes necessary. Users find their environment uncomfortable and ultimately some buildings have consistently low tenancy figures.

We in Kenya are very fortunate due to being in the tropics and on or close to the equator. This means we have no extreme weather to protect from, and due to our proximity to the equator, the suns path is the same all year long.

For sustainable design to be most effective it must be implemented at the concept design stage. This is because sustainable design is very expensive if implemented post construction; but instead should be an integrated design process with costs being factored into construction costs (i.e. cost of separating potable /non potable water piping for harvesting is very high if done on existing structure but kept to a very low cost if separated during new building construction.)

Here are some basic design principles that allow our buildings to be environmentally sustainable:
1. Building Orientation: Where possible buildings should be oriented along the East-West axis.