

## A REVIEW OF ENVIRONMENT & ENERGY FOR SUSTAINABLE CONSTRUCTION

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### ABSTRACT:

Today's impact on environment such as ozone depletion, green house effect and global warming and increased use of available natural resources for the energy consumption in the sector of building construction. This paper discussed on availability of such efficient services for the sustainable constructions. Also, it reviewed on the different development alternatives in sector of building construction for the cleaner energy consumed technology by the use of renewable or green energies like wind, solar energy, and biomass plants for the economic environment. In turn, this all impact on the humans life.

**KEYWORDS:** Energy, Environment, Sustainable development, Global warming

### INTRODUCTION:

Today, building constructions are key responsible for most of energy consumed of total world energy consumption per year. In statistics, it is nearly 40% of total world energy consumption. Energy consumption in this area, it is in the form of lighting of buildings, mostly heating and cooling of building areas nothing but air conditioning. Emission of environmental harmful gases like CO<sub>2</sub>, NO<sub>2</sub> and CFCs causes impact on the global environment through these cooling and heating technologies. Awareness regarding this emission of gases led to use of environment friendly cooling and heating nothing but air conditioning technologies. Most of the countries agreed to ban on the use of chemicals as refrigerants which are responsible for the destruction of ozone layer in earth's stratospheric zone. So, it was considered to reduce the use of energy consumed throughout the world. It can achieve by decreasing the rate depletion of energy consumption in the world. One of the solutions for that is to build the buildings in a way that buildings are more economical in case of heating and cooling nothing but air conditioning. Natural and Hybrid air ventilation measures solves this problems of energy consumption. Also, in agricultural field, greenhouses are also one of the solutions of less consumption of environmental resources for the use of energy consumption. So, awareness regarding use of renewable energy resources and their applications will

help in reduction of emission of harmful gaseous and use of natural resources. Development of building in this way are more Eco-friendly rather the use of HVAC systems. The key objective is to provide high BP (Building Performance) which is defined on the basis of energy efficiency (EE), cost efficiency and indoor environmental quality (IEQ) collectively

### LITERATURE SURVEY:

In general, sustainable construction means the use of available natural resources in such a optimized way so it can be in threshold limit of depletion or decay of global environment. So, architectural design must be planned so it can use optimized energy sources. Sustainability in construction suggests development of innovative model so to use optimized use of available natural resources, use of renewable energy resources with the aim of environmental management and economic solutions.

During civilization, lot of building construction done for the communities. The facilities provided for people led in increase of lots of environmental problems during the construction of these buildings, infrastructures. Also, maintenance, operation and destruction of these constructions impact on the environment. These building constructions throughout the world consume a tremendous amount of energy and available natural resources. Also, this consumption of energy impact on environment due to emission of harmful gases causing air and water pollution. As per report of CIB 2002, in 2010 approximately 45% of world energy is used for building construction with 50% use of available water. Also, it causes air pollution near about 23 % of total with emission of 50% green house gases. This huge use of energy consumption and impact on the environment can be reduced by the use of sustainable application in construction.

### ECOLOGICAL ARCHITECTURE:

By minimizing harm to the environment by the optimize use of available resources to maintain ecological balance, the materials, resources which are required for the building construction must be used effectively. While considering the health and comforts of the humans in sustainable construction, environmental

factors must be taken to be granted so no threat to natural resources at a time of construction and destruction of buildings.

Table1 :“Economy of Resources” Principle, (Kim & Ridgon, 1998; Gültekin, 2007; Sev, 2009)

Principles	Strategies	Methods
Economy of Resources	Energy Conservation	Energy-conscious urban planning
		Energy-conscious site planning
		Alternative sources of energy
		Use of low embedded-energy materials
		Daylighting
		Energy-efficient equipment & appliances
	Water Conservation	Reuse water onsite ( rainwater collection and gray water collection )
		Reduce consumption
	Material Conservation	Adaptation existing buildings to new uses
		Material conserving design and construction
		Incorporation reclaimed or recycled materials – use materials that can be recycled

Energy consumption is the basic parameter in any architectural design. Also, consumption of water, use of natural resources is other inputs to building construction. Sustainable architecture works on the key characteristics to minimize the use of these factors so, to less impact on the environment. Different strategies are discussed below in the following table.

**CONCLUSION:**

New Approaches must be implemented in building construction sector to achieve high performance by the use of renewable energy sources. This can be done first by optimized use of available renewable energy resources with the help of sustainable construction and second, utilization available area that is to be supplied for the use of renewable energy resources. Use of green energy approaches may solve the energy consumption problem. Also, alternative use of natural resources reduce the emission of harmful gaseous in environment indirectly impact on reduction in major issues of global warming issues or ozone depletion.

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