

## **Impact of Green Building in Sustainable Design**

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### **ABSTRACT-**

Today's world facing the problem of pollution of global warming. To stop this problem, people want to be change their learning & to be alert what were doing. They have to make less harmful environment by making building green, this will be the best impact to control pollution. This can be done in so many ways the concept of green building deals with more uses of natural resources to save the environment.

This concept green building utilizes less amount of manmade energy which also saves lots of energy without making environment harmful.

There are many sustainable materials like blended cement, fly ash bricks low energy intensity floor & roofing system, mud blocks for construction.

The materials used in construction of green building which utilizes less manmade energy. Important materials of construction like wool bricks, sustainable concrete, paper insulation, straw bale, grasscrete, rammed earth, hempcrete bamboo, recycled plastic, wood, ashcrete, timbercrete.

In all over India this paper presents the need of sustainable development. It includes economic & sustainable studies with reference to Indian contexts with newly designed bungalow in India.

Now a days sustainability & living in building, environment has taken place around us. To design this sustainable & green building we have to follow various methods, specifications, guidelines.

Green building & sustainable are both connected with each other & also work for each other. Day by day we are not getting health benefits from nature we are losing our comfort due to pollution.

Unsustainable environment is making harm to humans, we need high quality, health benefits, increase life span & fulfill all requirements with this sustainable & green design.

**KEYWORDS** –Green building, Sustainability, Sustainable, Sustainable construction, Energy efficiency, Greentechnology, Environment assessment.

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Date of Submission: 12-05-2022

Date of acceptance: 26-05-2022  
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### **I. INTRODUCTION**

Green building has different definitions by research, It is the word green building by interchanging words sustainable building structures.

The green building concept stand on these four points that are as follows:

- \*Improving health condition of occupants in a structure.
- \*Reduction of side effects of structure on environment.
- \*Lifecycle consideration during planning & development process.
- \*Savings & returns on investment to investors & community.

The construction industry has economic, significant, environmental social impact on society. This can be seen during construction of structure. As there is positive & negative impact of construction on society. Providing building facilities to satisfy the human requirements, providing employment to the people of nation. The disposal during construction is the negative impact. It continues for their lifecycle.

Green building is also known as sustainable building, this structure is designed in ecological & resource efficient manner.

This building were redesigned to improve employee productivity, occupant health & by using energy water resources.

Green building, promotes construction of the building which is healthy for environment.

It can reduce the construction maintenance which depends on both nature & human beings. Materials consumption & energy both can change global climate.

Green building describes the people's healthy safe & comfortable life.

The building uses locally available material which we get easily, that are energy efficient, sustainable & durable. One of the locally available material i.e. lime reduces room temperature by 4 to 5°C as compared to cementing plastering work.

## **II. WHAT IS GREEN BUILDING & THEIR GOALS**

Green building brings practices various techniques, skills to reduce ultimately eliminate impacts of buildings on environment & human body it takes advantages of using resources e.g. Using natural sunlight, through passive solar, active solar & photo voltaic techniques & using rainwater & also many other techniques i.e. wood use as a building material, packed gravel or permeable concrete instead of conventional concrete.

## **III. BENEFITS OF GREEN BUILDING**

- REDUCE WASTAGE OF WATER
- CONSERVE NATURAL RESOURCES
- IMPROVE AIR & WATER QUALITY
- PROTECT BIODIVERSITY & ECOSYSTEMS

### **3.1 ECONOMIC BENEFITS OF GREEN BUILDING-**

- IT IMPROVES THE OCCUPANT HEALTH
- IT IMPROVES THE COMFORT LEVEL & PRODUCTIVITY
- REDUCES POLLUTION & LANDFILL WASTE

### **3.2 SOCIAL BENEFITS OF GREEN BUILDING-**

- IMPROVE QUALITY OF LIFE
- MINIMIZE STRAIN ON LOCAL INFRASTRUCTURE
- IMPROVE OCCUPANT HEALTH & COMFORT

### **3.3 SHORT TERM BENEFITS-**

- Sustainable building make the quick cost savings in a building or in area. Due to less electric & water energy or also from heat energy.
- The green building also reduces the utility bills & it also reduces the cost of building materials.
- If building utilizes HVAC equipments it will also reduce the cost.

### **3.4 LONG TERM BENEFITS-**

- The duration of photovoltaic panels is debatable, it realize quick pay-offs. This passive system need little no ongoing maintenance, which the building can save budget.
- The natural landscape takes the less maintenance as compared to convention

## **IV. METHODOLOGY**

This study is aimed at research, the study & development of the green building construction techniques is to save our environment & planet. Aim to spread this all around the world, about this green building advantages & long term saving of energy & cost from green building.

1. Introduction
2. Literature survey
3. Study of the research topic in detail.
4. To study research paper, articles magazines related to the topic.
5. Data collection from the study
6. Collection of detail information with web surveys.
7. Finding techniques for development of green construction.

## **V. CONCLUSION**

We have studied all construction materials which are beneficial for economic, social construction & human life. This green construction materials reduces environmental problems i.e. pollution it makes the efficient sustainable structure, health hazards, ozone depletion. This use the eco-friendly materials for today's human life & for society, building owners & users are manifold. The construction of such buildings results in reduction of air & water pollution, less water consumption, limited waste generation & increased users productivity. It is absolutely pertinent that all our future buildings should be designed to function as 'GREEN BUILDING'.

## **REFERENCES**

- [1]. Lifecycle assessment of the building materials outlook 2010. US energy information administration.
- [2]. The economic benefits of green building - yearbook 2009-10, Australia Bureau of statistics, Canberra, Australia 2010
- [3]. Lifecycle energy analysis of buildings; T. Ramesh, Ravi Prakash, K.K. Shukla.
- [4]. Cost premium prediction of certified green building; Omer Tatari; Murat Kucukvar [5].  
The economic benefits of a green building; Ries, Robert Bilec, Melissa Gokhan