

## REVIEW ON GREEN BUILDING

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**Abstract** - As we know today exist a vast and varied literature on the structural designs of buildings the world over. It would be no exaggeration to say that high tech applications in construction technology have vastly benefitted the mankind today as never before. However the application of green technology to structural designed construction of buildings is only of recent origin. Building have major environmental impacts over their entire life.

Cycle. Resources such as ground cover. Forests, water and energy are depleted to construct and operate buildings. A green building is one which use less water, optimizes energy.

Efficiency, conserves natural resources, generates less waste and provides heal their space for occupants, as compare to conventional building. Green building has been define as the practice of creating structures and using process that are environmentally responsible and resource efficient throughout a building life building's life cycle from site to design, construction operation, maintenance, renovation and deconstruction. A eco friendly building, which puts less strain on the natural resources and function with lesser wastages, better efficiencies, is more habitable and pleasant to live in. In recent year green building has become the most important product for the sustainable development. A green building is a building which is design constructed or operated to reduce or eliminate the negative impact and create a positive impact on our climate and surrounding. Green building construction providers may environmental, economical as own as social benefits.

This paper will give us a idea about as well as advantages and disadvantages about green building and we will also discuss about the use of waste aggregates and green concrete in the construction of green building.

Key words: Green building Aggregates, Sustainable development, Leeds, Energy efficient building.

### 1. INTRODUCTION

A property building or inexperienced building is associate in nursing outcome of method that focuses on increasing the efficiency of resources- energy, water, and material- Where as reducing the building impacts on human health and therefore the surroundings throughout the building lifecycle, through higher sitting, design, construction, operation, maintenance, and removal. Green building are style to cut back the impact of the engineered surroundings on human health and therefore the natural surroundings by:

1. With efficiency victimization energy, water, and alternative resources
2. Protective occupier health and up worker productivity
3. Reducing waste, pollution and environmental degradation It has been according that globally, building are chargeable for a minimum of four-hundredth of energy use.

An estimate forty second of worldwide water consumption and five hundredth of worldwide consumption of raw materials is consumed by buildings once taking in to account the manufacture, construction and operational amount of building. Building activities contribute AN estimate five hundredth of world's pollution, forty second of its inexperienced house gasses, five hundredth of all pollution, forty eighth of solid wastes, and 50% of all CFCs to surroundings. therefore buildings are one amongst the most important waste product that result urban air quality and contribute to global climate change. Hence, ought to style a inexperienced building, the essence of which might be to handle of these problems in an integrated and scientific manner. it's true that it casts a touch additional to style and construct a inexperienced building.

As outlined by TERI-GRIHA:- The thought of property development will be copied to the energy crisis and the surroundings pollution concern within the Nineteen Seventies. There are range of motives to putting together inexperienced, together with environmental. Economic and social edges. However, trendy property initiatives incorporate an integrated and synergistic style to each new construction and within the retrofitting of an existing structure. conjointly called property style, this approach integrates the buildings life-cycle with every inexperienced apply used with a design-purpose to make a activity amongst practices used.

## 2. Green Building Concept

With pollution level escalating exponentially, the implementation of the green building concept in residence, commercial complexes and educational institute have become imperative more than ever.

The green concept includes

1. Green technology
2. Green material

While the practices, or technologies, utilized in inexperienced building area unit perpetually evolving and may differ from region to region, there are fundamental principles that persist from which the method is derived:

1. Site and structure design efficiency
2. Energy efficiency
3. Water efficiency
4. Material efficiency
5. Indoor environmental quality enhancement
6. Operations and maintenance optimization
7. Waste and toxics.

## 3. Green Technology

The most important and cost effective element of an efficient heating, ventilating, and air conditioning (HVAC) system is a well insulated building. A lot of efficient building needs less heat generating or dissipating power, but may require more ventilation capacity to expel impure indoor air.

### Passive solar building design

In passive solar building design, windows, walls, and floors are made to collect, store, and distribute solar energy in the form of heat in the winter (passive solar heating) and reject solar heat in the summer (passive solar cooling). This is called "Passive" solar design (or climatic design) become unlike "Active" (solar heating, photovoltaic, etc.) solar system, passive solar system do not involve the use of mechanical or electrical devices, fans, pumps, etc.

### Green Roofs

A green roof is a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a water proofing membrane. It may also include additional layers such as a root and barrier and drainage and irrigation system roof top ponds on another from of green roofs which are used to treat grey water. Also known as eco-roofs, oikosteges, vegetated roofs, living roofs, green roofs serve several purpose for building, such as absorbing rainwater, providing insulation, creating a habitat for wild life, and helping to lower urban air temperatures and combat the heat island effect.

## GREEN MATERIAL

A green material is one that simultaneously does the most with the least i.e. fits most harmoniously ecosystem processes, helps eliminate the use of other materials and energy, and contributes to the attainment of a service-based. A green material is one which leaves a light footprints on environment during full life cycle. Green building material offer specific benefits to the building owner like reduce maintenance cost, energy conservation, improve health and productivity and greater design flexibility.

1. Recycle content
2. Natural, plentiful or renewable
3. Resource efficient manufacturing process
4. Locally available
5. Reusable or recyclable
6. Recycled or recyclable product packaging
7. Durable

### LEED

LEED stands for Leadership in Energy and Environment Design, and is a voluntary consensus based rating system for evaluating the environmental performance of building and community design, construction, operations and maintenance. Created by the United states Green building council (USGBC) in 1999, LEED has quickly grow to become the national standard for green building performance in both the United states, Canada (Canada green building council) and multiple other countries around the world (World Green Building Council).

## SUSTAINABLE DEVELOPMENT OF GREEN BUILDING

The maintenance of natural resources is a subject that often appears when sustainable development is considered. In addition, with increasing world population and economic development of assorted nations, the strain on resources is increasing. Green building is the status of our efforts in attaining sustainability in construction practices. As technology evolves and new materials are developed, the status are our efforts are also changing.

## 4. CONCLUSION

Construction of green building have numerous tangible benefits like energy saving : 20- 30% and water saving 30- 50% , waste reduction, reduction of greenhouse gasses and intangible benefits like enhanced air quality , tremendous day lighting, health and well-being of the residents , better brand image etc., green building go a long way. The project report gives in depth knowledge of various feasible green concepts in the local environment. The green technologies which have been adopted are such that they strike a perfect balance between its efficiency and cost.

Recommendations for the Civil Engineers who will be involved and designing and construction of building for commercial and residential purpose is to include the green

aspect in pre-construction and post-construction stage to minimize the environmental degradation. Planning and designing of all the building should be done such that it use less water, optimizes energy efficiency , conserves natural resources, generates less waste and provide healthier environment spaces for occupants as compared to a conventional building.

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