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Green Building for Quality Living

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ABSTRACT: Building which is also known as sustainable building design to meet some objectives such as occupant health using energy and other water resource efficiently while creating healthy buildings reducing overall impact the environment it is an opportunity to use resources efficiently creating healthy building that improves human health. Build a better environment and provide cost of saving all the development projects lead ore consumption of natural resources. Buildings are found to be both, one of the biggest consumer of energy and producer of greenhouse gases. It has become a global issue. According to the National Institute of Building Sciences(USA), buildings generate 35 percent of the carbon dioxide. Since buildings are accountable for this scenario, it has imposed an immediate requirement to not only think of, but implement sustainability in every new construction instantly. This will render us a sustained environment and a healthy ecosystem. A sustainable or green building produces net zero or smaller carbon footprint or reduces the other harmful emissions. It is a building which does not have adverse effects on the ecological balance these structure don't have a negative impact on the environment as they generate their own energy from solar energy ,wind energy etc. It design and construction is a method of wisely using resources to create high-quality, healthier and more energy-efficient homes and commercial buildings. .It is about finding that balance between high quality construction and low environmental impact. ACH is an acronym for air change per hour and is a measurement of air infiltration.CFM is define as the air flow needed to create a 50 pascal pressure change in the building envelop .some of terminology are air sealing ,blower.

I. INTRODUCTION

Green building also known as green construction sustainable building it is the way of enhancing the environment. It benefits human community and the environment in order to reduce the resource consumption while enhancing quality of life ultimately result is reducing of greenhouse gases which will help to reduce greenhouse effect paper present an overview application of over being green infrastructure construction technology which makes significant impact of conservation utilisation of source like land, water, air, energy, material thereby using overall cost of construction as wellas abserve impact of climate change.Green building is the practice of constructing or modifying structures to be environmentally responsible, sustainable and resource-efficient throughout their life cycle. This includes efficiently using energy, water and other natural resources, protecting occupant health, improving employee productivity and reducing waster pollution and environmental degradation.Green buildings accounts for improving environmental footprint by reducing energy use by 30%, CO2 emissions by 35%, waste output by 70% and water usage by 40%. Green building, or sustainable design, is the practice of increasing the efficiency with which buildings and their sites use energy, water, and materials, and of reducing impacts on human health and the environment for the entire lifecycle of a building. Green-building concepts extend beyond the walls of buildings and include site planning, community and land-use planning issues as well. Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction.

II. OBJECTIVE OF GREEN BUILDING

Green building are designed to reduceoral impact on human health the natural environment by the following way using energy water and other resources efficiently. File reducing waste pollution and environmental degradation

1) Green building features

Eco friendly by disturbance of ecosystem. Energy efficient through the

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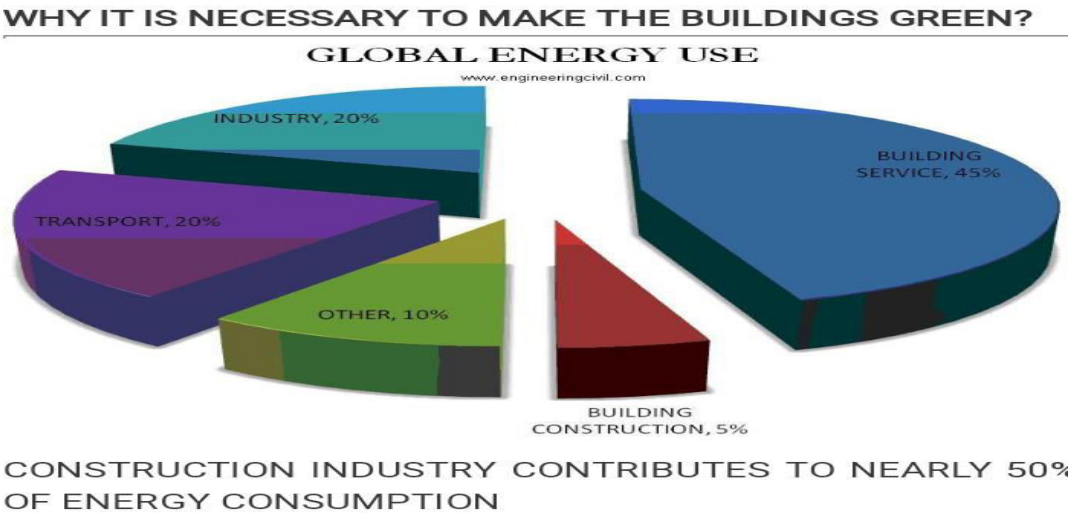
natural lightning ventilation and solar passive designs efficient using of water through recycling and water harvesting renewable energy through photo voltaic system and solar system etc. Non toxic material indoor environment use of recycled material waste utilisation and disposal.



Principle of green buildings

1) Sustainable site design
2) Water Quality and conservation
3) Energy and environment Door environmental quality
4) Materials and resources.

Indian green building council

Indian green building council(IGBC) was formed in the year 2001 by confederation of Indian industry. The aim of the council to bring green building movement in India facilitated India become one of the global leaders in green buildings by 2015.

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IGBC Rating System

IGBC has developed green buildings rating programs cover commercial residential, factory buildings etc.
Each rating system divided into different levels certification is as follow:.
1) Certified to recognise best practice.
2) Gold to recognize National excellence.
3) Platinum to recognise global leadership.

Green building project in India

1) Suzlon energy limited Pune
2) Biodiversity conservation India Bengaluru
3) Olympia technology park Chennai
4) Rain tree hospital Chennai
5) Rajiv Gandhi international airport Hyderabad
6) Hiranandani PG house Powai
7) Palais Royal at Worli, Mumbai
8) Punjab forest complex, Mohali

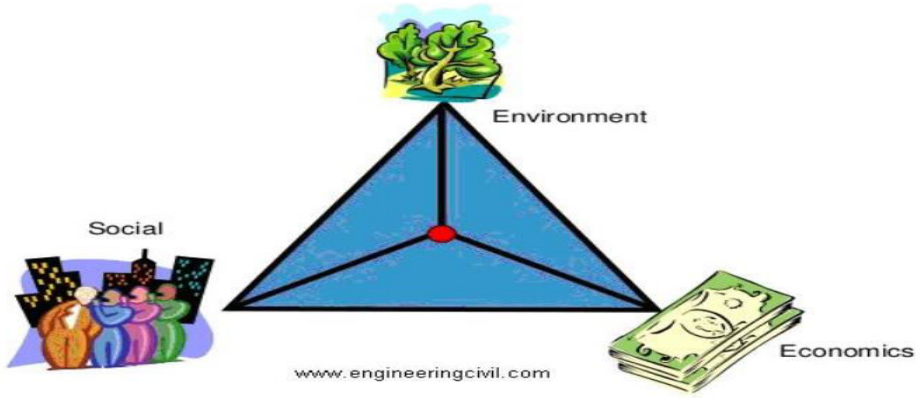
Different from other buildings

The design, maintain and construction of buildings have tremendous effect on our environment natural resources in building is different from other buildings because it was a minimum amount non renewable energy, produce minimal pollution, increase the comfort, health and safety of the people work in them it is also minimise the waste in construction recovering materials and reusing aur recycling them.

Increasing green building in India

Today more than 1053 green buildings constructed all over India. Which 147 buildings certified and fully functional.

Benefits of green building



Building has large effect on environment, human health and the economy. The successful adoption of the green building developed can maximize both the economic and environmental performance of the buildings.

1) Environmental benefits

Protect biodiversity and ecosystem, improve air and water quality, reduce waste stream, conserve natural resources.

2) Economic benefits

Reduce operating cost, create, expand and shape market green products windows service, improve occupant productivity.

3) Social benefits

Enhance occupant comfort and health, heighten aesthetic quantities minimise train on local infrastructure, improve overall quality life.

4) Natural resources

a) According to surveys conducted in 2006, 107.3 million acres of total land area is developed, represents and increase 24% land covering green building for the past three years.

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b) In terms of energy, buildings accounted for 39.4% energy consumption 67.9% of total electricity consumption.
c) Reducing operating cost create, expand shape markets for green products and services improve occupant productivity.

Advantages of Green Building

1. Low Maintenance and Operation Cost

Green buildings incorporate unique construction features that ensure efficient use of resources such water and energy. For example, by using task lighting strategy and a lot of daylight, green buildings vastly reduce the amount of power used in lighting systems; This allows users to save as much as a third of their water and energy bills. Given that operating and maintenance costs can account for as much as 80% of the lifetime costs of a building, reducing such costs significantly increases the earnings of building owners who collect rent from their buildings. Even though constructing a green building may be slightly more expensive than their non-green counterparts, the reduced operation and maintenance costs of green buildings make them much cheaper in the long term.

2. Energy Efficiency

Designers of green buildings try as much as possible to reduce dependency on energy from non-renewable sources such as coal. To this end, they install solar panels to make use of energy from the sun, and design windows in a way that allows as much natural light as possible and, therefore, reduces the use of artificial light; these and other methods ensure that the building uses energy in an efficient manner. Energy efficiency is essential not only for the user but also for the entire world because non-renewable energy sources are expensive and pollute the environment.

3. Enhances Indoor Environment Quality

Indoor environment quality depends on conditions inside a building and how they affect the occupants of the building. These conditions include lighting, ergonomics, thermal conditions and air quality. Good indoor environment quality is one protects the health of the building's occupants, reduces stress and improves their quality of life. Green buildings achieve this through the installation of operable windows that allow in as much sunlight as possible and reducing the use of materials that may emit elements that are dangerous to the health.

4. Water Efficiency

Water efficiency involves using water resources in a manner that saves water and ensures that today and future generations enjoy a reliable supply of clean water. Green building allows for the use of alternative sources of water such as rainwater, reducing water waste through the installation of plumbing fixtures that are efficient and reducing the strain on shared water resources by installing systems that purify water and enable recycling.

5. Better Health

People who live in green buildings enjoy many health benefits because of the safety of materials used in the construction of such buildings. For instance, eco-friendly construction companies avoid using plastic by-products that have been found to release toxic materials. Toxic substances like carcinogens not only cause significant breathing difficulties but also increase the chances of getting cancer.

6. Material Efficiency

Material efficiency involves the use of physical process and materials in a manner that allows for the minimum use of materials without compromising the quality of the outcome; also, the processes should generate as little waste as possible. To achieve material efficiency, green building companies use materials that are long lasting, recycle and reuse some products, design buildings in a manner that allow for the use of fewer materials and employ processes that use less water, raw materials, and energy. All these help achieve material efficiency.

7. Better Environment

By reducing usage of energy sources that pollute the environment such as coal, green buildings contribute to keeping the environment clean. In addition, by reducing the levels of carbon (IV) oxide emitted to the atmosphere, they help to lessen the pace of climate change.

8. Reduces Strain on Local Resources

As population increases, local shared resources such as water and energy come under considerable pressure. Through the use of technologies and processes that increase water and energy efficiency, green buildings can reduce this strain.

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Disadvantages of Green Building

1) The initial building cost, which can be more expensive than conventional buildings.
2) Funding for projects from banks hard to get since a lot of the technology and methods are still relatively new.
3) Green construction materials are not always as readily available as traditional materials
4) Similarly, finding artisans and service providers specializing in green design can be more challenging than procuring traditional suppliers.
5) Green building can be more complex, and thus more expensive and time-consuming to build.
6) Some 'green' materials are not really 'green' – you'll need to do your research to ensure that you are truly making an impact.

Overall Benefits of Green Building

According to the most recent IPCC report, a "rapid and far-reaching" sustainable transition in land, energy, buildings, transport and cities is needed to meet global carbon reduction goals. Buildings account for almost 40 percent of global energy-related CO2 and will play a major role in a sustainable transformation.

Green buildings, like those that are LEED certified, are a global solution for cities, communities and neighborhoods. The tangible benefits may not be easily recognizable to tenants or visitors, but through sustainable design, construction and operations green buildings are reducing carbon emissions, energy and waste; conserving water; prioritizing safer materials; and lowering our exposure to toxins.

These outcomes are contributing to the global growth of the industry. According to the 2018 World Green Building Trends SmartMarket Report, many in the building and construction industry expect the majority of projects in the next three years to be green buildings. Looking ahead, creating spaces that support our health and well-being, as well as the economy and environment will be vital to accelerating sustainable development and delivering a better standard of living.

III. DEVELOPMENT HISTORY

a) In the 1960s, American architect Paul Soleri proposed a new concept of ecological architecture.
b) In 1969, American architect Ian McHarg wrote the book "Design Integrates Nature", which marked the official birth of ecological architecture.
c) In the 1970s, the energy crisis caused various building energy-saving technologies such as solar energy, geothermal energy, and wind energy to emerge, and energy-saving buildings became the forerunner of building development.
d) In 1980, the World Conservation Organization put forward the slogan "sustainable development" for the first time. At the same time, the energy-saving building system was gradually improved, and it was widely used in developed countries such as Germany, Britain, France and Canada.
e) In 1987, the United Nations Environment Program published the "Our Common Future" report, which established the idea of sustainable development.
f) In 1990, the world's first green building standard was released in the UK.
g) In 1992, because the "United Nations Conference on Environment and Development" promoted the idea of sustainable development, green buildings gradually became the direction of development.
h) In 1993, the United States created the Green Building Association.
I) In 1996, Hong Kong introduced green building standards.
j) In 1999, Taiwan introduced green building standards.
k) In 2000, Canada introduced green building standards.
l) In 2005, Singapore initiated the "BCA Green Building Mark"
m) In 2015, China implemented the "Green Building Evaluation Standards"

IV. CONCLUSIONS

Green building is a financially, health, and most importantly environmentally responsible idea that more people need to adopt. The United States Green Building Council developed LEED in order to help customers, designers, and builders to work together to create buildings with the minimal impact on the environment possible. Many building materials and renewable energy sources exists to lessen one's impact upon the environment. Through educating, making environmentally products more readily accessible and reliable, and by providing government incentives it is possible to encourage more people to adopt green building and all of the benefits that come along with it.

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