

Green Building Technology and Its Assessment

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ABSTRACT-

This study deals with the designing of energy efficient buildings known as green buildings. Many new buildings are constructed due to an increase in population. The implementation of green technology in buildings will keep a check on the various environmental problems. The existing buildings can also be converted into green ones, using retrofitting techniques. **Rain water harvesting, solar water heating, LED lighting, positioning of windows for cross ventilation, day lighting, using photovoltaic panels, harnessing wind and solar energy and efficient use of water** are the numerous methods discussed here. These techniques will help make a sustainable environment, useful to the future generations. It will make buildings self-sufficient and put fewer burdens on non-renewable resources. The sources referred to are research papers, magazines and newspaper advertisements.

Keywords- Sustainability, Built Environment, Retrofitting, Building Life Cycle, Economy

INTRODUCTION-

Green building (also known as **green construction** or **sustainable building**) refers to a structure and using process that is environmentally and resource efficient throughout a building's life-cycle: from **sitting to design, construction, operation, maintenance, renovation, and demolition**. In other words, green building design involves finding the balance between homebuilding and the sustainable environment. This requires close cooperation of the design team, the architects, the engineers, and the client at all project stages. The Green Building practice expands and complements the classical building design concerns of **economy, utility, durability, and comfort**.

Although new technologies are constantly being developed to complement current practices in creating greener structures, the common objective is that green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment by:

- Efficiently using energy, water, and other resources
- Protecting occupant health and improving employee productivity
- Reducing waste, pollution and environmental degradation

A similar concept is natural building, which is usually on a smaller scale and tends to focus on the use of natural materials that are available locally. Other related topics include sustainable design and green architecture. **Sustainability** may be defined as meeting the needs of present generations without compromising the ability of future generations to meet their needs. Although some green building programs don't address the issue of the retrofitting existing homes, others do, especially through public schemes for energy efficient refurbishment.

The built environment has a vast impact on the **natural environment, human health, and the economy**. By adopting green building strategies, we can maximize both economic and environmental performance. Green

construction methods can be integrated into buildings at any stage, from design and construction, to renovation and deconstruction. However, the most significant benefits can be obtained if the design and construction team takes an integrated approach from the earliest stages of a building project. Potential benefits of green building can include:

Environmental benefits:

- Enhance and protect biodiversity and ecosystems
- Improve air and water quality
- Reduce waste streams
- Conserve and restore natural resources

Economic benefits:

- Reduce operating costs
- Create, expand, and shape markets for green product and services
- Improve occupant productivity
- Optimize life-cycle economic performance

Social benefits:

- Enhance occupant comfort and health
- Heighten aesthetic qualities
- Minimize strain on local infrastructure
- Improve overall quality of life

Impacts of the built environment:

Aspects of Built Environment:	Consumption:	Environmental Effects:	Ultimate Effects :
Siting Design Construction Operation Maintenance Renovation Deconstruction	Energy Water Materials Natural Resources	Waste Air pollution Water pollution Indoor pollution Heat islands Stormwater runoff Noise	Harm to Human Health Environment Degradation Loss of Resources

Table 1: The table covers the aspects involved in any **building life cycle** in terms of operations to be performed, its requirements and the later subsequent impacts.

ECOFRIENDLY CONSTRUCTION COMPONENTS:

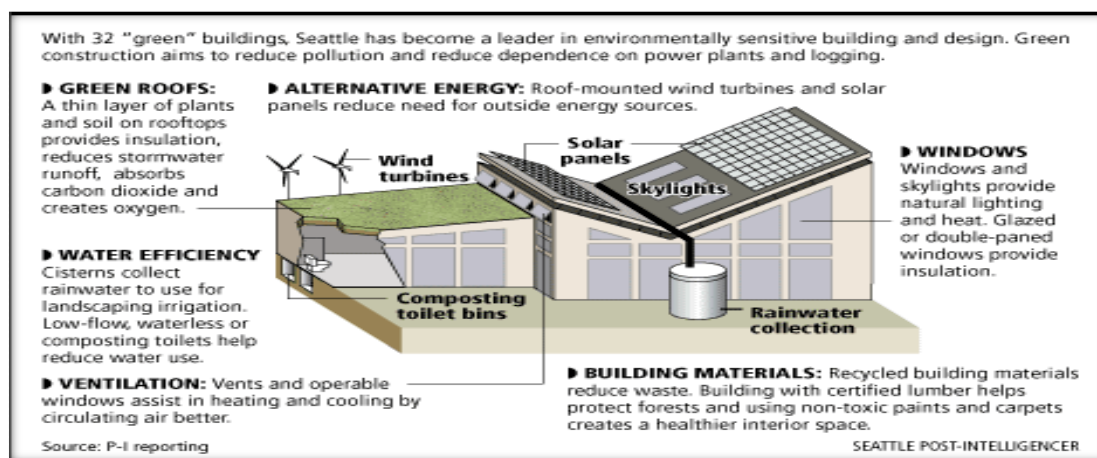


Fig 1: The various technical aspects of Green Building

CONCLUSION-

The green building technology covers almost all the aspects with which an infrastructure project can become more design efficient, energy efficient and can be a sustainable over the course of its life cycle. Not only it's environmentally effective but also the maintenance and operation costs are also reduced. Many **retrofitting** techniques are also adopted improving the building Green building technology is the future of construction sector and infra development. Building optimization for its occupants must be the prime-facto importance while conceptualising such kinds of projects and the return benefits that we reap from it, is incomparable.

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