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Green Building: An Analysis of Obstacles in Implantation

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Abstract: *The world needs to change gradually as it becomes more advance and highly significant. The increasing development in the world gives the opportunity to research and implements more on the building industry. This paper represents the need of greening the building all over the globe especially in developing countries like India and China which have a huge land mass. The objective of this paper is to address the existing knowledge system of green building and reduce lifecycle costs and environmental protection. This paper helps readers to better analyze the status and havocs implementing the status and development trend of green building in India. Some research proposal are introduced for future development. Experts suggested the best way to overcome the future threats is to consider design of green buildings. According to 2011 census there are 6,50,244 villages in India. This research results in the benefits of developing sustainability in building industry based on the reviews on different .*

Keywords: *Green Building, Construction industry.*

I. INTRODUCTION

As per various researches there are many definition which defines Green Building. The construction industry consumes 40% of total energy production all over the world as per United Nations Environment Programme (UNEP). In India, the commercial and residential buildings account for about 37% total electricity (2018). From the ancient times till the earliest civilizations, humans found different ways to a sustainable living. The ancient Persian windmills concentrated wind for power and energy, The ancient Romans used geothermal energy indirectly through the water to produce and thermal baths and some Egyptians used wind power to help build their pyramids. With the increase in development of the human civilization, economy and society, the lack of energy and environment crisis have been taking place nowadays are major problem people are facing. To overcome from this green building was introduced to the world. The concept of green building mainly stands for following points above shown:

- A. To reduce the side effects of the structure on the nature.
- B. For improving and enhancing the condition of the regiments in the construction
- C. To consider the life cycle during the planning and evolution process
- D. All around the world, one of the most rapidly developing industries is construction industries
- E. For maintaining resources and the use of renewable resources

Since the beginning of the sustainable development organization, various building rating system have been proposed in different parts of the world including LEED (Leadership in Energy and Environment Design), GREEN STAR (Australia), SAGRS (Saudi Arabia), GRIHA (Green Rating for Integrated Habitat Assessment), BEPAC (Canada's Building Environmental Performances Assessment Criteria), BREEAM (Building Research Establishment Environmental Assessment Method), etc. In India there are two major green building rating system currently publicized the adoption of sustainable buildings in energy efficient- LEED, developed by the Indian Green Building Council (IGBC) and GRIHA proposed by TERI (The Energy Research Institute). LEED is a certification programme focused primarily on new commercial building projects which are mainly based upon a points systems. GRIHA is a rating tool that helps people assessing the performance of their building against certain nationally acceptable benchmarks. Various researches have been carried out on the aspects of the green building in different context but they all lack in proper systematic review of the existing material of the knowledge. This research is very important to identify research common problem and also underline the future methodology. This review paper will help in developing green building and sustainable development in an eco friendly way in every homes to India as it is easy and simple way to understand the benefits of long term profits.

II. RESEARCH HISTORY

Behnam Neyestani carried out the research work to study and understand the advantages and analysis the sustainable building. It was also concluded that harmful impact on the conventional building on environment and people in using green technology and material can be minimized.

With the help of LEED, which is a proper rating system it is used to assist designer for understanding and gaining sustainability in construction industries.

Numerous benefits of green building have been observed if sustainable principles can be used in building project as follows : Environmental benefits and Economic benefits which helps conserving and restoring the natural resources and protecting bio diversity and eco system.

Mr. Apoorva.Kotkar, Prof. Hemant Salukhe had published the paper on green building technology and research. It included all the technical and economic aspects considering green building all over the globe. They also had a life case study of a small residential bungalow in India to attract the researchers all over the world and also to all the readers planning towards their new home and converting it from sewage to savage.

It also helps people in spreading awareness about this concept and its long term benefits. It also shows the current scenario of the people in India about this concept which is ignorant and lack of awareness.

Yingling Shi and Xinping Liu had published the paper in which they showed database on the basis of 3147 articles in the core and 3758 articles in the extended database related to green building. This paper clarify the existing knowledge system of green building using Cite Space following results:

- A. The information was analysed by using citation burst revealing research to sustainability.
- B. Major clusters including technology adoption, panel data approach, GB assessment system were recognised and further divided.

Amos Darko, Albert Chan, Emmanuel Owusu had published the paper in implementing sustainable development which offered social economical and environmental benefits to the constructional building. This paper helps the stakeholders to reduce the life cycle cost, energy saving, increasing health and comfort in the occupants.

It helps to increase the stakeholders by providing awareness and educating the people about the green building benefits.

They also wanted to promote through television, radio programs, government, advocates, so that they can convey advantages of GB to the people.

Yuanyuan Li, Xiaochen Chen, Xiaoyu Wang had published the paper on the establish of reliable and effective GB assessment methods and their improvements are of great importance to the promotion of green building. In this paper they concluded by giving the comparison of green building assessment method mostly between 2-5 schemes with LEED and BREEAM.

III. BARRIERS TO ADOPTION

Following are some barriers which have been carried out from the following research :

- A. It is challenging for the stakeholders in implementation of Government Authorities as in the measure of performance wise in building agreement with other laws and regulation due to data shortage and due to long process of contract. for green building promoting it face many difficulties non mandatory nature of several section in building codes from multiple group of people.
- B. As the budget and schedule, profit margin half problematic for the contractor and sub contractor for not having regularity of suppliers and familiarity which is very important. For creative invites there is no liability for under sizing.
- C. In developing countries like India, due to not having proper knowledge in detailed information about the green building they go through lack of awareness, deficient incentives to encourage adoption, lack of skilled manpower and subject matter experts.
- D. The equipment and products used in the construction of green buildings are way too expensive when compared to the conventional ones but its initial costs is expensive only. Many developers and builders are concerned that adopting green features into their buildings will involve high upfront costs, hence they are confined to investing in them.
- E. As in the case of architects, landscapes and interior designers they face problems in safety measures, data shortage discourages optimal sizing, design gets changed as per their convenience.

IV. CONCLUSION

As mentioned before, the major aim of this paper was to understand the sustainable and obtain benefits, advantages as well. From the study, it was concluded that the sustainability should be energy efficiency and can also consume renewable energy. The indoor air quality should be pure and waste should be reduced. It can be environmentally preferable in using building material and specification. The green building has four main elements on which it is designed- materials, energy, water and health to make green building more sustainable. By adapting the green building concept people will have healthier air quality, greater natural daylight, optimum use of water and electricity, improved health and wellbeing of inhabitants and protection of ecosystem.

We conclude that for developing countries like India accelerating Green Building adoption means tuning of norms, better incentive schemes, healthy financial support system and above all, increasing cognizance among all stakeholders. Current scenario is that people are ignorant about this concept and it is crucially important to spread awareness amongst the people of the villages and towns in country who possess as the majority population for promoting large amount of green and sustainable development.

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