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A RESEARCH PAPER ON GREEN BUILDING

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ABSTRACT

Green building technology is one of the most trending topics all over the world which is been put forward to reduce the significant impact of the construction industry on the environment,society and economy.The globe is in urgent need of sustainable and smart development as the problem of pollution and global warming rapidly increases all over the world.

A drastic climatic changes also been noticed and being experienced all over the world due to increase in Green house gases(GHG's).In developed countries like USA,Russia,France,Germany and United kingdom there are already many major strict actions and steps were taken to achieve sustainable development.

However, in the developing countries like India,China,Pakistan,Srilanka etc.they are far behind in achieving sustainable development and eco-friendly constructions.Also,there is lack of awareness amongst the people regarding this global issue.

The studies and the research work in these countries is also way far behind as

compared to the developed nations in the world. This paper presents the need of sustainable development all over the globe especially in developing countries like India and China which have both huge land mass and population and become the new super power of the globe.In this research paper we have considered a case study.

The case study is specially selected as a residential bungalow which is designed and constructed as a

sustainable and a green structure in a small town in the state of Delhi.

68.84% of Indians i.e. around 833.1 million people live in 6,40,867 different villages. This paper will help

Indian villages and their residential buildings develop sustainable and green by implementing easy, simple and economics technique.

Keywords- GRIHA (Green ratings for integrated habitat assessment); IEQ (indoor environmental

quality,LEED (Leadership in energy & environmental design)

I. INTRODUCTION

There are many definitions of a Green building as per different researchers. It is also worth noting that the term

green building is now days used as an interchangeable word with the high performance buildings or asustainable buildings or structures. The concept of Green Building basically stands on **four** main points which are given as:

- **Reduction** of the effects or rather the side effects of the structure on the environment.
- **Improving** and enhancing the health conditions of the occupants in a structure.
- **Savings** and returns on investments to the investors and the community.
- **Life cycle**considerations during the planning and development process.
- **Construction** industry is one of the most rapidly developing industries all around the world.

At the same time the construction industry has significant economic, environmental and social impacts on the society.These impacts are largely seen during the lifecycle of the constructed structures. Also, there are positive as well as negative impacts of construction activities on the society.

some of the positive impacts include :

providing buildings and habitats along with the facilities to satisfy the human requirements, providing

employment to the people of the nation and finally, contribute towards the economy of the nation. Also,

negative impacts include waste disposal during the construction activities, dust, noise pollution, water pollution, traffic congestion,etc.

Also, the negative impacts continue throughout their life cycle. A building block accounts for 40% of total energy consumption according to the world business council for sustainble development.

Apart from the energy consumption, the buildings produce Green House Gas emissions (GHG's)

which are responsible for the global warming. According to the researchers, the carbon emission of buildings across the world will reach 42.4 billion tonnes in 2035,adding 43% on the levels of 2007.

Also these activities will include the consumption of natural resources and energy and also produce noice and other type of pollution.

associated with the waste production post building demolition poses a new challenge to all those countries having an issue of limited land.

There have been a lot of research works carried out on the aspects of the green building in different contexts but they all lack in systematic reviews of the existing material of knowledge.

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important to identify the common research problems and also highlight the future research methodology.

This study will play a critical role to highlight the state of art and future need in this topic for our country India and also for other developing countries interested in developing green construction.

also for other developing countries interested in developing green construction. This research paper will help developing green buildings and eco-friendly homes in India as it includes easy and simple ways to be implemented for achieving green buildings and eco-friendly homes in India as it includes easy and simple ways to be implemented for achieving green homes and also the importance and long term profits involving green homes.

II. RESEARCH BACKGROUND

1). Research work on the green building technology and also stated the current status and also stated

stated the current status and also the future agendas for the same. They presented a report on a critical review of the environment.. In their research work they also found that the existing studies played predominantly flows on the environmental aspects.

.They state in their research work, the future opportunities such as effect of climatic conditions

On the effectiveness of green building assessments tools, validation and real performance of green buildings unique demands of specific population and future proofing.

The author reported a critical review of existing studies related to green buildings worldwide in their research.

Their research showed that these studies can generally be classified into three categories namely the definition and scope of green buildings,and costs of green buildings and the ways to achieve green buildings.

Also the authors concluded that special population such as aged people, student and teacher could be made more attention with respect to indoor environment quality also teachers shape the attitude and behaviours of the future practioners and students will soon become the practioners of green construction concept.

environment in which they presented the results of an lifecycle assumed study comparing the most commonly used building materials with same eco materials by using three different impact categories.Also they encouraged the study and analysing their possibilities for improvement and

providing guidelines for materials selection in the eco design of new building and also in rehabilitation of

existing buildings.

The researchers concluded that in order to avoid the production of materials affecting the natural resources necessary to promote the best use of these techniques available and innovation in production.

as far as possible the use of finite natural resources with the waste generated in different production processes,

closing the cycle of the products[2].Also this involves the commitment to reuse and recycle and always

minimizing the transport of the starting materials and products which would promote the use of resources easily available in local areas.

economic benefits of green buildings which was a comprehensive study which was supported with a case study.they stated that in building design and constructions both the green building and standard construction technique and considered for many building project

on schedules and budgets and also on the long term effects are often overlooked their assumption effects is that the benefits largely exceeding any added cost of the green building [3].their research investigated the relationship between the composite conventional and green building features which would contribute to the devepment of the green building metrics.

Their results comprised of four sections:-

 Productivity,healthand safety including absenteeism, energy and IEQ[3].

 They also specified that pre and post move surely responses were analysed with paired t-tests to understand

whether there is any static significant change in the mean values of the variables.

 They also concluded the increase in productivity with the help of green building in their published paper[3].

4). T.rameshravi&Prakash k.k Shukla had published in which he basically their life cycle energy analysis of the buildings in which he basically stated that buildings demands energy in their life cycle right from its construction to demolition[4].also, their studies includes both the residential and office buildings in which the results showed operating (80-90%) and embedded (10-20%) phases of energy use which are significant cntributors to building life cycle energy demand.as per the research the life cycle energy primary requirement.

IV.CONCLUSION

This paper study reported all the technical and also the economic aspects related to green buildings worldwide. Alsoso, through this live case study of a small residential bungalow in a small town of India it is expected to attract at least the researchers all over the world especially in India and also to all the readers towards planning of their new homes or retrofitting their old ones by simple modifications and converting it into a green or a sustainable building for future long term savings (economic aspects) and also for saving our environment (environmental aspects). The conclusion for the studies can be classified into three different categories i.e. definitions and scope of green building, benefits and costs of green building and ways to achieve green building. It has been observed that in most of the literature reviews, the focuses are on environmental aspects ofsustaiinability such as energy consumption, water efficiency and greenhouse gas emissions and also with their technical solutions. Also, the life cycle assessment approach, which is extensively applied in the environmental aspects of green building can be a useful tool for social sustainability. New rating tools are developing rapidly worldwide. But more studies in these fields are required to support these new rating tools and also help in assisting the decision-making for the investors and the developers. Also, awareness amongst the people should be spread about the green building concepts and its long term profits. Current scenario is that people in countries like india are

ignorant about this concept and also lack of awareness can be observed. Government initiative will help largely in spreading awareness.

Also, provisions of educating and training people or the occupants will help to regulate their behaviour of using the green building which may affect the building performance significantly. Also, the discussion on cost and benefits of the green building are quite noticeable. It is also worth noticing that all the leading green building assessment tools are designed according to their local climatic and geographic conditions. Thus to set benchmark of the world with references to green building, this point needs to be taken into considerations when comparing the effectiveness of these green building rating tools. The case study considered into this research paper is specially selected, designed, and constructed keeping in mind the green building concepts and its necessitity to the environment and also to our pockets in the long term considerations. Also, this case study will help in studying awareness about the green building concepts amongst the people of towns and villages of imdia and help them develop their own green home and promote them to after building it. It is important spread awareness amongst the people of the villages and towns in a country like India as the majority population of india lives in villages and towns and not in cities. Also, special population such as aged people, students, and teachers could be paid more attention. Aged people tend to be more vulnerable to the overheating and the indoor

environmental quality. Students will become practitioners in the future, also leaders in various sectors. Teachers play a critical role to shape the attitude and behaviour of students towards the sustainability related issues such as the matter of using buildings. Thus, the above mentioned issues serve as items of future agenda for green buildings related research and also promoting amount of green and sustainable development.

REFERENCES:

Google,wikipedia,youtube and the environmental and the ecology book.