



# GREEN BUILDING

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**Abstract-** In this paper we have discussed an approach to make our buildings more energy efficient through the usage of some energy efficiency tricks. The basic concept is to make a building efficient in terms of energy that has a great effect on environment. The building is supposed to have the most efficient ways to convert energy into one type or other and so there is minimal wastage of energy at an average of 20-25 %.

**Keywords-**Life cycle assessment, structure design efficiency

## I. INTRODUCTION

Efficient and effective usage of energy as always been a topic of research. It is always felt that there should be an efficient use of the energy resources because of the limited availability of these resources and the demand of humans are increasing day by day. So to satisfy human needs with the limited resources, it is necessary to develop some methods and practices for the effective use of energy in our daily life.

This paper consists of 5 sections. Section II and III discuss about the need of the energy efficient buildings and the concept of these buildings. Section IV discuss about such a model of the green building. Section V concludes about the effects of using a green building on our environment.

## II. NEED OF GREEN HOUSES/BUILDINGS

The first and the foremost questions is that why do we need green buildings?

The answer to is simple, we don't have enough resources to cope up with the demands of the present generation and future generation too. There has been always on emphasis of using the energy resources in an efficient way because they are limited. The concept of green house is to build such buildings that can implement some effective ways to use the energy.

Each building is to be viewed as a combination of individual parts. The efficiency of each part affects the other parts also. On an average in a developed country like United States of America, 70% of the electricity usage and around 36 % emission of the greenhouse gases is contributed by the buildings. so by improving the efficiency of the buildings, the building owners save their energy and money.

## III. CONCEPT OF A GREEN BUILDING

Basically, for a green building, the building has to be viewed in sub parts. so the building must be divided into sub parts on the basis of the type of energy usage by each sub-part or component. Each sub-part is viewed as an independent energy system. One energy component can affect the other components also, so the overall efficiency of the building is affected. For instance, for an efficient heating system, its not all about a highly efficient gas furnace, it is a system which delivers the heat through ducts, and if the ducts are not sealed properly and the walls are not insulated, then the heating system will get affected, so each component affects the other components also.

## IV. MODEL OF A GREEN BUILDING

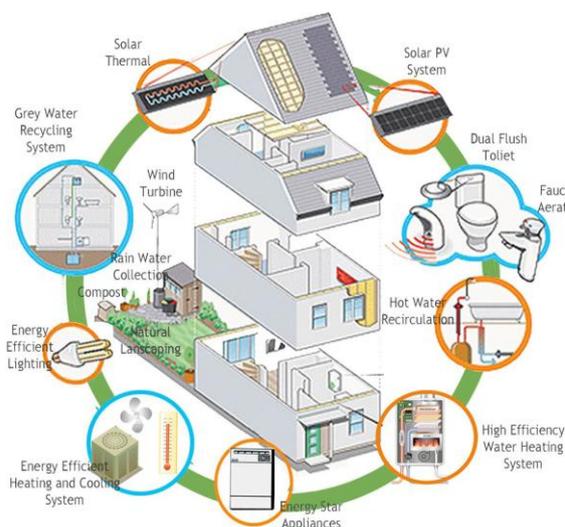


Fig 1: Model Of Green Building



The model of a green building is always been a topic of research that how the green building could be implemented. For making a building efficient we need to make each and every component energy efficient. so starting from the first and the most popular way of using the energy of solar radiations i.e. solar panels. Solar panels on the roof top at such an angle that maximum number of rays is reflected on the plates will contribute to provide the renewable energy alternative. The second one is the water recycling system. A new technology of using energy efficient lights like CFL instead of fluorescent bulbs is a good alternative. Moreover energy efficient heating and cooling system will provide a better way to increase the energy efficiency. Nowadays most of the appliances come with a energy star ratings, so the appliance with more star ratings should be used because they consume less energy as compared to others. Use of dual flush toilets will help to efficiency of all the components of the building will be affected use the water in an efficient way. Dual flush toilets uses flush which has two buttons, the first button flows a lower level of water and is used for generally for liquid waste. The other one is used for solid waste. toilets uses flush which has two buttons, the first button flows a lower level of water and is used for generally for liquid waste. The other one is used for solid waste.

There is a principle in which the building is insulated to reduce the amount of heat loss by using airtight building envelopes and by eliminating the elements that allow the heat energy to pass through. With the help of a well-designed and an executed building envelopes, all the heating needs of the building can be accomplished through the body heat and that will be a huge achievement for the usage of energy efficient buildings.

## V. CONCLUSION

The depletion of the energy resources makes a need of the green buildings more necessary. But the efficiency of the buildings cannot be 100% in practical purpose, so Moreover it is not practically possible till now to build a completely insulated house so that no heat can be drawn out. This ideology is not restricted to only houses, but will bed proved more efficient for the commercial buildings as they contribute the most in resource exploitation. The developed countries like USA, JAPAN are working on the concept of green buildings and are ought to come up with an efficient design of the green building.

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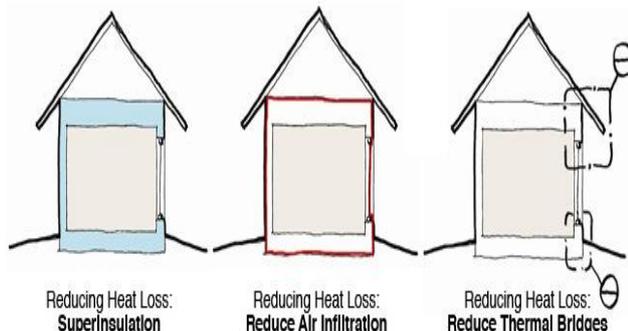


Fig 2: An example of Super insulation Infiltration and Thermal Bridge