

## ENERGY CONSERVATION IN CONSTRUCTION INDUSTRY THROUGH MATERIALS AND TECHNIQUES

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### ABSTRACT

The building industry is constantly expanding with consequences on energy expenditure. As similar to the most countries, in India too building industry is the most Energy consuming Industry. In recent years there were much discussions regarding Energy conservation techniques to mitigate the demand side of the energy sector. Building design directly affects the energy performance of the building. The emphasis on energy Conservation has therefore, to begin at the design stage & control throughout the life cycle (Design, Construction, Operate and Maintenance) of the building project. Not only building design but also materials and techniques has great role in energy conservation in construction industry.

It is just not possible to continue to build with traditional materials and achieve sustainable development as well as more energy efficient. In India, the projected population by 2026 will be 1400 million. By 2016 just 10 years away, it is estimated that the housing shortage will touch 90 million. In this paper we mainly focused about five materials which help in energy conservation in construction industry. The first one is energy star windows, doors and roofs. It is a government-backed labeling program that helps people and organizations save money and reduce greenhouse gas emissions by identifying factories, office equipment, home appliances and electronics that have superior energy efficiency.

The next material is gfrg panel. GFRG panels or Rapid wall is a load bearing building panel with a multiple uses for the construction industry. It is ideal for just about any construction in which current building practices are used and is suitable for single, double or multi storey housing and for commercial and industrial development. Rapid wall eliminates the needs for bricks, timber, wall frames and plaster boards as it serves as both the internal and external load bearing wall

The third one is Tank less water heaters. They are also called instantaneous, continuous flow, inline, flash, on-demand, or instant-on water heaters are gaining in popularity. These high-power water heaters instantly heat water as it flows through the device, and do not retain any water internally except for what is in the heat exchanger coil.

The fourth material is programmable thermostat. A programmable thermostat is a thermostat which is designed to adjust the temperature according to a series of programmed settings that take effect at different times of the day. Programmable thermostats may also be called setback thermostats or clock thermostats.

The last material is Solar Panels. Solar energy is clean and renewable source of energy. Solar panels are an emerging and hot technology for people who want to utilize the natural power all around us, the sun. Solar panels may be expensive at first, but the long-term savings you can put into your pocket is a stunning example of the benefits of turning your life from black to green. The location of your house and the way you have constructed solar panels can determine how much power you can collect. By taking advantage of solar power you can bring down your energy consumption and supply excess energy, if any, to your utility company. Also, government grants, incentives and tax breaks are huge bonus

to those who want to use solar power in their home.

**KEYWORDS:** Energy Star Windows, Energy Star Door, Energy Star Roof, Gfrg Panels, Tank less Water Heater, Thermostat, Solar Panels