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BUILDING FOR HEALTH: HOW SUSTAINABLE CONSTRUCTION ENHANCES PEOPLE'S WELL-BEING

The urgent need for environmentally friendly buildings and sustainable construction practices has become increasingly evident as the world faces an impending environmental catastrophe. In India, where nearly 30% of the land is covered by mountains and susceptible to natural disasters, the call for sustainable development has gained momentum. This case study explores how changes in the construction industry are helping create environmentally friendly buildings that not only reduce carbon emissions but also enhance the well-being of their inhabitants.

Challenges and Urgency:

India's vulnerability to natural disasters like earthquakes, landslides, and falling rocks necessitates improved construction plans in ecologically fragile areas. The increasing frequency and severity of these disasters due to human activity under the guise of development demands immediate action. Sustainable development is crucial not only for infrastructure but also for reducing environmental hazards such as carbon emissions, which are closely linked to the former.



Reducing Carbon Emissions and Energy Consumption:

One of the key ways sustainable construction helps fight global warming is by reducing carbon emissions. Eco-friendly buildings incorporate design features that lead to a drastic reduction in energy consumption. For example, buildings with larger doors, windows, and higher roofs allow for natural daylight, minimizing the need for electric lights during the daytime. Moreover, such designs reduce dependence on air conditioners, resulting in a lower demand for electricity and a reduced cost of living for the occupants.

Aligning with International Commitments:

Embracing sustainable construction aligns India with its international commitments, such as the goals of COP27 and G-20, positioning the country as a leading advocate in the fight against environmental catastrophes.

Pre-engineered Buildings: A Sustainable Solution:

Pre-engineered buildings present an environmentally friendly construction method that not only ensures safety and preserves the environment but also contributes to sustainable development. These structures are fabricated in factories with doors, windows, electrical fittings, taps, and flooring already in place, allowing for a quicker construction process. Such methods cut down construction time by nearly 50% and cause less pollution during the process. Pre-engineered buildings prove

to be a vital step in promoting eco-friendly constructions across the country, especially in disaster-prone areas.

Geosynthetics in Sustainable Infrastructure:

To achieve sustainable infrastructure goals, there is a growing focus on using geosynthetic materials in construction projects such as roads, bridges, tunnels, railways, and airports. Geosynthetics, made of synthetic polymers like polyester, polypropylene, or polythene, offer various applications in geotechnical and civil engineering. These materials strengthen soils, control soil erosion, and provide drainage systems. They are utilized in the construction of railways, landfill sites, coastal and riverbank protection, and other civil engineering projects.

Benefits of Sustainable Construction:

Sustainable construction methods extend beyond just building eco-friendly structures; they also contribute to healthier societies. Green buildings provide cost-effective and environmentally friendly solutions that optimize thermal comfort through insulation, efficient windows, and energy-efficient heating and cooling systems. Such features promote better sleeping conditions, ultimately improving the overall health and well-being of the building's occupants.

Conclusion:

The construction industry's shift towards sustainable practices is critical for addressing environmental challenges and enhancing people's well-being. By adopting eco-friendly materials, pre-fabrication techniques, and geosynthetics, India can pave the way for a greener and more sustainable future. As the nation aligns with its international commitments and tackles the environmental catastrophe, sustainable construction proves to be a pivotal strategy for creating a healthier and more resilient society.