

Recent Research and Advancement in Civil Engineering

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Civil Engineering is the design and fabrication of structures for improving the way we live and work. It also enables rapid, safe and high volume transportation. From building, roads to construction of skyscraper all are possible because of civil engineering. Burj Khalifa is the best example of skyscraper. Today a vast network of flyovers have spread in the country and it enhances the architectural beauty of our surroundings. We have seen the world's amazing flyovers such as the puxi viaduct in shanghai flyover, the judge pregeron interchange California USA flyover and many more. These all are possible because of civil engineering. As standard of living is improving among humans, their works are affecting nature. Hence, modern civil engineering is focusing on both aesthetic considerations and environmental impact. Nowadays engineers are constructing "Green buildings" keeping clean environment in mind. Green buildings help in reducing negative impact and can create positive impact on our climate and natural environment as they incorporate retrofitting of existing structures. These buildings are designed to reduce energy resource consumption and are also equipped to handle waste management and many other kinds of pollution. In recent times, we have witnessed a number of great works which are making the construction more reliable but cheaper. Today we deal with construction management and management of projects to make the construction more efficient, safer, cost effective and deliver on time. We also deal with material technology like polymer, concrete and other material. Today we use many new technologies are being used at construction sites. It enables work to be done in lesser amount of time. Nowadays, engineers are using a chemical named as admixture for better strength, durability and workability. Stone columns are now universally used to increase the bearing capacity of the soil and reduce the liquefaction potential of soil. Stone columns are used in place of steel or reinforced concrete columns because it reduces the settlement of soil preventing damage to foundations. Today cities and suburbs are constantly expanding. Due to which natural areas are disappearing. The water cycle is disrupted. Water management is now problematic. In rainy season lot of problem have to be face. Permeable pavement is the solution of that water. Permeable pavement is a specific type of pavement with high porosity that allows rainwater to pass through it into the ground below. Permeable pavement is an ideal case of rainwater or stormwater. It is fast and cost effective mechanized installation process and easy maintenance. Water resources which deals with the facilities like canal, dam and water supply. To produce more hydropower energy, a series of large dams have been constructed. But we need to pay attention to the operation of cascade (waterfall) and also pay attention on water reservoir like rivers, ponds and lakes. Reservoir system are sufficiently address the flow variability for promoting resource management and get maximum

benefits of all objectives. Microstudies of the anisotropy of sandy material are of immense importance because the particle of sandy material gets influenced by external factors like gravity and water in deposition process. These advancements are making infrastructure long and reliable.