Title of the Project: Factors Influencing Time and Cost Overruns in Indian Construction Projects

Abstract:
The construction industry is an important industry at both the global level and national level. It provides huge employment to the people and plays very significant role in a country’s economy. Delay is one of the most common problems in the construction industry. Time and cost overruns are a result of delays in project execution. Project overrun is a serious economic problem in the developing countries where the project implementation takes place in the face of many uncertainties. It wastes away financial resources, delays the development process and also makes construction costlier. With increasing globalization and technology driven economic growth all over the world, a scientific and systematic approach to project management becomes imperative to ensure that project objectives are attained within the constraints of time, capital and other resources. But with the increasing demand, the projects with time and cost overruns are also increasing. Time and cost are the two major elements in project management, apart from quality and scope. One of the biggest challenges in the management of construction project or to one of the project manager is to ensure that the project is completed on time and within estimated cost. The present study deals with analyzing the factors of time and cost overrun of Indian projects. The study is well supported by a case study and a questionnaire survey conducted for the Indian projects.

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Name of the guide: Prof. Sayali Sandbhor
Title of the Project: Effects of MIRHA on Processed flyash Geopolymer concrete

Abstract:

The present study mainly deals with the feasibility of use of two wastes by products of industry to manufacture geopolymer concrete. The main component is processed flyash is free from unburnt particles and crystalline substances as compared to relatively inferior unprocessed flyash. Processed fly ash with partial replacement by Microwave Incinerated Rice Husk Ash (MIHRA) with the primary aim of addressing the economic, financial and environmental issues associated with the production and use of ordinary Portland cement. Manufacture of Portland cement is known to produce a much higher volume of carbon dioxide gas into the atmosphere, therefore finding a suitable alternative can bring a desirable solution to mitigate the environmental problems caused by the cement production. From the present experimental work, for different eight mix designs it was observed that of processed fly ash based geopolymer concrete with varying proportions of MIRHA gives higher compressive strength as compared to plain cement concrete for the same mix design. Use of processed fly ash in geopolymer concrete gives good results as compared to unprocessed fly ash, due to removal of unburnt particles and crystalline substances. It is also observed that of rice husk ash and fly ash of the same grain size gives better strength than rice husk ash and fly ash of different grain size.

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Name of the guide: Prof. Mugdha Kshirsagar
Title of the Project: Precast Construction & Technology, a Case Study on Commercial Building in Pune

Abstract:

Time, Money and Quality plays a vital role in building construction. The conventional concept of construction from decades in underdeveloped and developing countries, do not leads to any drastic change in minimizing time, enhancing quality and at the same time delivering the project at an economical cost. The concept of precast construction will lead to deliver the quality project in short duration at economical cost

A case study for a commercial complex at Bhavdhan, Pune is carried out considering various parameters such as time, material, labor, safety and environment and the comparison is done with the similar conventional building and the result of the study showed that by adopting precast construction technique for larger projects one can achieve overall cost economy and time saving of the project, as well as more safety less environment impact.

The findings from the study are that a saving of about 30% of steel and 15% of concrete can be achieved. Even though the cost of precast construction is 7.93 Crores, which is a little higher when compared to the conventional construction cost which is 6.94 Crores, the expected revenue generated by early completion of the project is much higher of about 2.21 Crores in precast where as in conventional construction there is no revenue generated by this stage.

Name of the students:

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Name of the guide: Prof. Humera Khanum, Prof. Dhanashree Tulankar
Title of the Project: Construction Management of Technical School - A Case Study

Abstract:
In today’s era as Construction Industry contributes near about 5% of the GDP of India whereas its 14% for that of Agricultural sector. In spite of this, near about 30% construction projects fail because of improper management. The failure maybe in terms of money, time, quality or any other reason, hence there is a need for Construction Management. Advanced Tools & Techniques can be used in Construction field to manage the construction activities. The main challenge is to Plan & Execute the Project within Stipulated Time without affecting Quality and Cost. To improve the predictability of capital project cost and schedule can be done by establishing project controls systems to monitor and predict project outcomes. Effective control systems identify deviations from project plans and commitments early enough to eliminate surprises and allow corrective action. Since cost and schedule have a direct relationship, deviations from the planned schedule are indicators of a cost up-trend. Also, cost up-trends tend to be indicators of schedule delays.

In this study the approach is to effectively use project management tools (software’s like Microsoft Project) and techniques for the overall construction management of a Technical School.

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Name of the guide: Prof. Anuradha Salunkhe
Title of the Project: Stability Analysis of Polymer Modified Bituminous Mix for Optimum Bitumen-Waste Plastic Content

Abstract:
The road traffic and traffic intensity are increasing. The load bearing capacities of the road are to be increased. Also there is a need for technologies that are economical and eco-friendly. This project takes care of all these aspects. In this project, an effort has been made to replace a part of the bitumen used in bituminous concrete surface with recycled waste plastic. Recycled plastic waste, consisting of shredded carry bags, cups, crushed bottles, electronic plastic wastes, thermocoles etc can be used as a coating over aggregate and this coated stone can be used for road construction. By this process a road of 1 Km length and 3.375 M width of single lane can consume 10,00,000 carry bags and the road strength is increased and there is no pot hole formation. The mix polymer coated aggregate and shredded plastic modified bitumen have shown higher strength at standard binder contents. Utilization of plastic waste in the bituminous concrete mix not only gives higher stability values but also leads to efficient solid waste management while making the process more economical. This project will discuss the feasibility of using shredded recycled plastic bottles as a coating over aggregate using the dry process in asphalt mix to be used as a bituminous course in the construction of flexible pavement while replacing some of the binder from the mix, hence resulting in cost cutting with respect to amount of binder used.

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Name of co-guide: Prof. Humera Khanum
Title of the Project: Economics & Strength Consideration in Steel Fiber Reinforced Concrete.

Abstract:
This work focuses on concrete composite reinforced by short metal fibers, where the main role of fibers is to carry the tensile stresses, while the concrete matrix transfers and distributes the loads to the fibers. The efficiency of load transferring from matrix to fibers depends on both the bonding interface between matrix fibers and the anchorage length of fibers. One of the important properties of the steel fiber reinforces concrete (SFRC) is its superior resistance to cracking and crack propagation. As a result of this ability to arrest cracks, a fiber composite possesses increased extensibility and tensile strength, both at first crack and at ultimate flexural loading. The fibers are generally able to hold the matrix together even after extensive cracking. The net result of this is to impart to the fiber composite a cracking ductility which is unheard in ordinary concrete. The transformation from a brittle to ductile type of material would increase substantially the energy absorption characteristics of the fiber composite and its ability to withstand repeatedly applied shock or impact load.

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