Development of Process Flow for High Performance Concrete Analysis

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Abstract— It Study of mega projects offers become an progressively common curiosity in the architectural and task management domain names. The fast speed of mega project advancement can become credited to the advanced building technology and quick globalization. Mega task is usually described as a considerable capital project, of a number of billion dollars, which needs concerted attempts from major individuals when it comes to assets, abilities and experience. . The large size and high difficulty of mega tasks provide about three main difficulties in their task administration therefore, this paper discusses about strategy for high overall performance cement evaluation.

Index Terms— civil engineering, Mega project, construction management, high performance concrete

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1 INTRODUCTION

Large construction tasks are substantial opportunities of facilities, frequently initiated by the authorities, which possess lengthy routine, huge life-span, intense difficulty and significant interpersonal effects [1]. Writer divided building projects into two main organizations in accordance to their project function. The 1st group views one new solitary task or an combination of tasks which are started to provide a main infrastructural function.

In spite of the significance of mega project advancements, many troubles are experienced in their stakeholder administration process. Stakeholder evaluation in structure task an meaning procedure by project managers can be to evaluate the task stakeholder environment, where stakeholder environment is certainly defined as a project environment which includes all businesses, and associations between them, that can impact or be affected by the task [3].

Therefore, the part of high functionality concrete (HPC) [4] became important for large buildings. High performance cement is the most recent advancement in concrete. High Efficiency Concrete can become described as cement, which fulfills unique overall performance and uniformity necessity that cannot end up being accomplished regularly by using just standard components and regular combining, putting and treating methods. The requirements may involve improvements of features this kind of as positioning and compaction without segregation, long lasting mechanised properties, early-age power, durability, quantity balance, or support existence in serious conditions. Make use of of High Functionality Cement (HPC) really started in 1927, when technicians building tunnel through Rocky Mountains near Denver required a quick method of assisting the lots on tunnel [5]. At that period, HPC was in study stage & was not really however prepared to get into in marketplace.

2 LITERATURE REVIEW

The use of supplementary cementations materials such as Silica Fume, Fly Ash, Slag etc. in cement and concrete to improve the durability of concrete, has increased in recent years [6]. The main reason for application of Silica Fume as an additive for HPC is, due to its filler effect. Silica Fume [7] is used for achieving higher strength and enhanced durability; there are instances when it is used with Fly Ash.

At present HPC mixes are designed using existing IS, ACI and DOE [8] code methods of mix design. These methods are used to arrive at a preliminary mix for HPC. IS, ACI code [9] methods do not incorporate the use of mineral admixtures such as micro silica, fly ash etc. However, DOE (Department of Environment) method incorporates mineral admixtures like fly ash etc. Hence, in the present work is proposed to design HPC mixes incorporating micro silica and fly ash as a mineral admixtures along with super plasticizer.

3 METHODOLOGY

Proposed method presented a study model to effectively address the basic mix design for the successful project outcomes. The approach will explicitly model the relations between the conventional methods such as IS code, ACI code and DOE methods of mix design and project success indicators with the risk factors that obstruct these goals. Risks are then assessed and suitable design mix actions are selected to mitigate the failure of cube testing and associated risks, so that the intended civil project can attain its goals.

Therefore, in such approach (refer figure1), it is important to model the relationship among optimum contents, optimum dosages and test treatment.

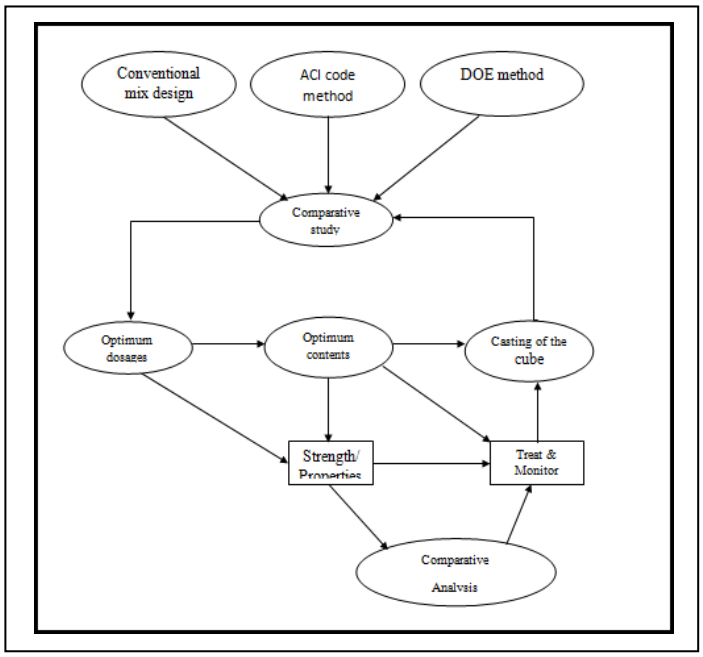

Figure1: Proposed Methodology Process Flow

The reason for choosing High Performance Concrete (HPC) mixes is that desired workability and strengths are crucial entities of any civil project. Hence, to proceed with actual concrete testing it is equally important to identify cases of concrete failure to identify risks. During this research, we analyzed existing concrete failure cases, financial and workmanship loss due to degraded concrete structures and we proceeded with need of new study. We developed a new architecture for concrete testing and validation as a process for supply chain for any structural project.

4 CONCLUSION

Nowadays, the sustainability of the construction sector must be a priority for the scientific community. In this scope, the development of innovative materials and methods aiming at extending the life-time of both existing and new structures is mandatory.

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