

An Investigation on Role of Modern Structural Technologies, on KPIs in Construction Mega Projects of Iran

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Abstract

Nowadays, one of the most consequential decisions to make, is to choose the best and the most appropriate structural technology for a construction project. New technologies are transforming all stages of the engineering and construction process. Utilizing advanced and modern technologies could lead to an improved performance indication in a project. Particularly, this role would be even more momentous when there is a mega project, which in that, all the risks of a normal construction is going to be manifold. In this survey, the aim is to find out which items the performance indications encompass and how modern technologies are going to develop these items in a mega construction project. For this purpose, studies have been done on characteristics of mega projects and one of the biggest projects in Middle East named Iran mall is chosen to be under investigation. The specific technology employed in this mega project is “Hollow Core”, a precast concrete slab which plays a principal role in developing the performance indications. This research shows that applying Hollow Core slabs has established meaningful changes in developing crucial indications such as time, cost, quality and environment in this project. So, it could be expanded to other similar projects in Iran in order to develop performance indications of construction mega projects.

Key words: structural technologies, Precast Concrete, Hollow Core, Key Performance Indications

1. Introduction

The technological development in today's construction industry, different construction methods, materials, and equipment, which serves to same purposes, can be utilized. During the planning process, by considering these different construction methods, materials and equipment, alternatives are generated, evaluated, and the most suitable one is selected. Thus, the planning process turns to a decision-making process and optimization, which is simply defined as the