AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
STRUCTURAL ENGINEERING DEPARTMENT

A SYSTEMATIC APPROACH TO PROVE DISRUPTION AND DELAY IN MEGA PROJECTS

A thesis Submitted in partial fulfillment for the requirements of the
Ph. D. in Civil Engineering (structural)

by
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M.Sc. in Civil Engineering, 2007

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STATEMENT

This thesis is submitted as partial fulfillment of Ph. D. degree in Civil Engineering (Structural), Faculty of Engineering, Ain Shams University.

The author carried out the work included in this thesis, and no part of it has been submitted for a degree or qualification at any other scientific entity.

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Thesis Summary

Usually construction projects face disruptions and delays, especially in mega/complex projects with many interfaces. The term “delay and disruption” is used when claims are made for delays and cost overruns on complex projects and there have been difficulties in justifying and quantifying such claims. Disruptions and Delays can cause serious consequences to any project. However, the nature of disruption is still not fully understood. The aim of this research is to discuss the issues and difficulties in gaining a full understanding. In particular, it presents various ways in which disruptions occur, and the consequences that may occur. It, also, focuses attention on a number of issues that arise when normal methods of analysis of mega (complex) projects are used.

The main objectives of the this research are to; (1) assess the awareness of the different parties involved in the construction industry about the disruption concept, (2) explain the different available methods to justify and quantify the delay and disruption, (3) provide a guideline for preparing comprehensive extension of time (EoT) claim. This would be beneficial for the contractor to prepare a well supported claim and for the employer to know what is required to assess EoT claims, 4) identify the advantages and disadvantages of global disruption claims by introducing a case for global disruption claim, and finally 5) develop change management control system (CMCS) as a tool that will assist the contractor to prove disruption and make the process of preparation, reviewing and approval much faster.

Keywords: Delay, concurrent delay, disruption, extension of time (EoT), change, change management, claims, entitlement, earned value, recording disruption, time at large, and float.

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