شبكة المعلومات الجامعية

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بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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HANAA ALY

AIN SHAMS UNIVERSITY

FACULTY OF ENGINEERING

Structural Engineering Department

RISK ASSESSMENT FOR THE CONSTRUCTION OF AIRPORTS' PROJECTS IN EGYPT USING BIM

A Thesis submitted in partial fulfillment of the requirements of the degree of

Master of Science in Civil Engineering

(Structural Engineering)

by

Nourhan Tarek Abdelaziz Abdelziz

Bachelor of Science in Civil Engineering

(Structural Engineering)

Faculty of Engineering, Ain Shams University, 2016

Supervised By

Prof. Ibrahim Abdelrashid

Dr. Tarek Mahmoud Attia

Cairo - (2021)

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Statement

This thesis is submitted as a partial fulfillment of Master of Science in Civil Engineering Engineering, 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 a qualification at any other scientific entity.

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Abstract

The complexity of Airports' construction projects together with the involvement of many parties results in the arousal of multiple risks that should be managed effectively throughout the different phases of the project to succeed in achieving project objectives. Conventional risk management is highly dependent on experience & individual skills. With the rapid development in technology fields, it has become necessary to use such technologies to overcome the conventionality of risk management techniques. Building information modelling (BIM)'s capabilities like 3D Modelling, 4D Scheduling and planning and 5D Cost estimation showed a promising potentials in improving risk management processes through the different phases of the project lifecycle.

This research aims to identify the most significant risk factors related to the construction of airport projects in Egypt, Discuss the extent to which BIM affects risk factors, determine the degree to which BIM is used in Egypt and the obstacles to its usage. These outputs were used together with the gathered needs from interviewing experts to suggest a program that can help in affectively managing risks throughout project lifecycle. The program can be used by different stakeholders improving communication and reducing the probability of rework. To reach the above objectives, experts' meetings were conducted to gather data for the risk factors together with a questionnaire survey that assisted in performing qualitative risk analysis. This risk analysis was compared with previous analyses that were conducted before using BIM. Experts' meetings not only assisted in gathering information for risk factors but also in determining the need for one integrative management software program that facilitate coordination and communication along project stakeholders that can highly assist in risk management. The proposed program unifies different areas of management under the same umbrella (Integrative Management Program)

Keywords

Airports Construction

Risk Management

BIM

Integrative Management Program

Risk Factors

Questionnaire Survey

Statistical Analysis

Survey Study

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