بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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

يجب أن

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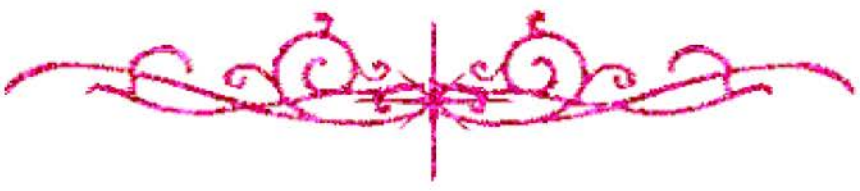
شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة



بالرسالة صفحات لم ترد بالأصل

BUVICA

Towards Minimizing Waste in Reinforcing Steel Bars

BY

Maher Awad Mustafa

B.Sc. of civil Engineering Damascus Univ., Syria, 1990

A Thesis submitted to the

Faculty of Engineering at Cairo University

In partial Fulfillment of the

Requirement for the degree of

MASTEER OF SCINCE

IN

CONSTRUCTION MANAGEMENT ENGINEERING

Under the supervision of

Dr. Moheeb El-Said Ibrahim

Prof. of Construction Management and Engineering,
Structural Dep., Faculty of Engineering, Cairo Univ.

Dr. Mahmoud Abdel Salam Taha

Lecturer, Faculty of Engineering, Cairo Univ.

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Approved by the
Examining Committee

Prof. Moheeb El-Said Ibrahim ,Thesis Main Advisor
Prof. of Construction Management and Engineering,
Cairo University

Prof. Mohammed H. El-Zanaty ,Member
Prof. of Structural Engineering,
Cairo University.

Dr. Mohamed Abdellatif Bakry ,Member
Manager of Planning and Information Technology Department,
Social Fund for Development.

FACULTY OF ENGINEERING, CAIRO UNIVERSITY

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Abstract

Cost of reinforcing steel bars usually represents a major cost item in building projects. Therefore, savings the cost of this item will affect the project total cost. This cost saving can be achieved:

1. During design phase, by choosing the best design, that saving reinforced steel bars quantities.
2. During construction phase, by looking for an optimum cutting method for reinforced bars, thereby will, no doubt, minimize the waste of steel bars, this will save in turn the cost of reinforced steels and as a result the cost of the project.

This thesis presents the development of a computer program using the Visual Basic and based on a relational database management system to implement the following main objective:

1. Minimize the waste in reinforcing steel bars.

and by lateral implement the following objectives:

1. Prepare a bending list for each structural element in the residential building.
2. Calculate the quantities of reinforced bars which will help the recruiting department in purchasing the steel bars..

To achieve such object a relational database system is developed in two phases:

1. The conceptual design phase that involved the preparation of a detailed data model and the relationship between them.
2. A Microsoft Access Relational Database Manager is used to implement the conceptual design phase.

Also the linear programming (simplex method) is applied in solving the optimum cutting method. The program can be developed to deal with other different project types such as bridges, irrigation works, etc...

The existence of such a system will help the construction industry practitioners in decreasing reinforced steel waste percentage.

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