

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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لم ترد بالأصل



BLVICA

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

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GIZA, EGYPT**

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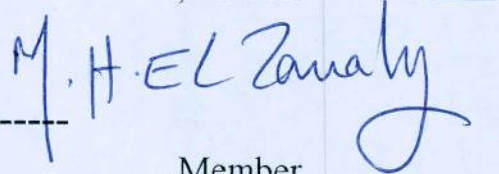
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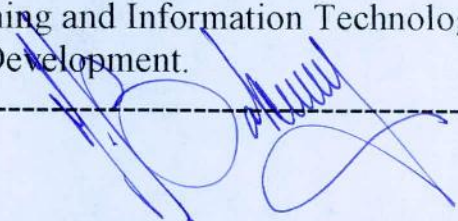
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Abstract

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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