AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
ARCHITECTURE DEP.

The Digital Management and Maintenance Systems of Buildings between the Theory and Application In Egypt

(With A Specific Reference to Hospital Buildings)

A Thesis Presented by

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In partial fulfillment of
The master degree

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Cairo-2006

بسم الله الرحمن الرحيم

By the name of Allah most gracious, most merciful

وفوق كل ذي علم عليم

And over every man of knowledge is one who is more knowledgeable

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Approval Sheet

Thesis Title : Maintenance Management Systems of Buildings between the Theory and Application in Egypt
(With A Specific Reference to Hospitals' Buildings)

Degree Name: Master in Architectural Engineering.

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The College council approval: **The University Council Approval**

Statement

This dissertation is submitted to Ain Shams University in partial fulfillment of the requirements for the degree of ***Master in Architectural Engineering***.

The work included in this thesis was carried out by the author at the Architectural Department, Ain Shams University.

No part of this thesis has been submitted for a degree or a qualification at any other universities or institutions.

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Thesis Title : **The Digital Management and Maintenance Systems of Buildings between the Theory and Application in Egypt**

(With a specific reference to hospitals' buildings)

Name : Aymen Mohamed Khattab Omer

Degree : Master Degree in Architectural Engineering

Abstract:

This research introduces the facility management system that can be applied to the health care facilities in Egypt, which is strategic for their maintenance and management.

The problem of maintenance and management of health care facilities in Egypt can be summarized as followed:

- The maintenance process of the health care facilities in Egypt lacks an organized frame work of correct precise and comprehensive information
- The deterioration of the health care facilities without maintenance is a continuous process, so the cost of maintenance and modernization will eventually increase.
- The budget of maintenance is limited, because of financial difficulties and the slowdown of economic growth.

To overcome this problem, a computerized maintenance management system for health care facilities should be adopted; this system has a frame work of management that suits the Egyptian environment. Such frame work is a policy to ensure the health care facilities are adequately maintained and includes the requirement monitoring purpose.

The research discuss the facility management systems, its impact on maintenance of health care facilities, the implementation purposes undertaken, the benefits of applying such a system, and its design basics.

Key words: Facility management, Health care facility, Information management, Maintenance, Planning, Furniture & Equipment management.

Summary of the Thesis

Name : Aymen Mohamed khattab

Thesis Title : The Digital Management and Maintenance Systems for Buildings between the Theory and Application in Egypt
(With a specific reference to hospital buildings)

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This thesis is divided into three main sections. Each section is devoted to a study purpose.

The first section covers the maintenance dimensions which form the background information of the different type of maintenance, which are, the theoretical, technical and economical dimensions. The research begins by highlighting the importance of the relationship between the maintenance process, and the post-construction phases with the design and with the pre-construction phase.

Section II shows and explains the process that should be followed to build up the computer maintenance management system (CMMS) in order to manage maintenance operations of facilities and assets (Equipments & Furniture management system) starting by

planning to use space management system (module) as basic tool and ending with building operation management system (module). This section includes an introduction of planning basics, It also shows how important to use this system for controlling, space inventory, assets inventory, room booking, chargeback, benchmark, managing warranty, managing insurance, managing lease, managing move, generating reports tracking churn, Etc….

Section III shows how the maintenance information is managed and, how important to store/restore and secure the building management data. This section also discusses how this information can be used to facilitate strategic users' missions at the time of taking and making a decision based on an updated reports data.

Section IV presents the conclusion that the researcher comes up to and the recommendations that should be considered before designing CMMS or when a plan for applying such system to facility is adopted.

At the end of the research, a number of appendices is attached; these appendices are concerning about the standard CAD drawings, building maintenance and operation data specification, system of numbering of construction specification institute (CSI), coding, building maintenance system glossary, and building maintenance system abbreviations.

T A B L E O F C O N T E N T S