



Housing and Building National Research Center HBRC Journal

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Requirements for establishing an information system to manage issuing building permits

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Received 15 January 2015; revised 2 April 2015; accepted 4 April 2015

KEYWORDS

Information system;
GIS;
Local authority;
Building permits

Abstract The Egyptian Urban suffers from many negative aspects. This urban deterioration cannot be confined to a specific factor or a single reason, it may be because of the master plans itself, perhaps for reasons related to managing the urban development, or because of the process of issuing building permits, may be that the social environment is the reason, it can also be the financial policies, as well as the efficiency of local administrations employees, and the multiplicity of actors involved in the implementation process and the lack of coordination between them.

The processes of development control and issuing building permits are important reasons in the problems facing the urban deterioration. To overcome most of these problems it is important to introduce a powerful technology that can be utilized in issuing building permits. GIS is an excellent choice for managing issuing building permits.

The paper proposes a mechanism of an Information System to support and manage the building permits processes. It defines the user requirements and formulates the System Architecture, which identifies the essential components and processes, and their functional relationships.

In order to introduce the proposed mechanism the following points were studied:

1. Identify the organizations involved in the process of issuing building permits.
2. Identify the needs and responsibilities of these organizations.
3. Identify the processes, inputs and outputs of each process.
4. Identify the procedural steps for implementing the proposed mechanism.

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Introduction

Egypt is currently experiencing a revival in urban development along with the global boom in information systems technology. There is substantial increase in population and the need to construct new residential and service buildings is an absolute must. It became difficult to rely totally on the traditional

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Peer review under responsibility of Housing and Building National Research Center.



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<http://dx.doi.org/10.1016/j.hbrcj.2015.04.001>

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Please cite this article in press as: M.M.A. Wahed, Requirements for establishing an information system to manage issuing building permits, HBRC Journal (2015), <http://dx.doi.org/10.1016/j.hbrcj.2015.04.001>

methods used in the implementation of urban development depending on human being with their limited potentials, which has been used since the beginning of the first half of the twentieth century and is still used till now. So it is essential to balance the elements of Urban Development with the tools of new technologies.

The use of geographic information systems technology at the global level is not new in managing urban development in general and in facilitating the task of raising the level of performance of the departments of local authority and monitoring the implementation of Urban Development, in particular. This technology has been used in many countries at all levels beginning from developed countries ending to a number of third world countries.

The success of Geographic Information Systems (GIS) within an organization depends on the organization's strategies. As with any technological innovation, the key factor in GIS success is how it is applied to solve the organization's business problems. Corporate wide strategies to introduce, implement, and operate the GIS determine how well it serves business needs [1]. The paper studies how to utilize new technologies and GIS in developing a mechanism to manage the process of issuing building permits.

Information system

Information System has been defined in different ways, examples of such definitions are as follows:

An information system is a business application in the computer. It is made up of the database, application programs and manual and machine procedures; it also encompasses the computer systems that do the processing [2].

An information system is a combination of hardware, software, infrastructure and trained personnel organized to facilitate planning, control, coordination, and decision making in an organization [3].

Common to these definitions is the development of a mechanism to translate data into information that would have meaning to organizations in terms of fulfilling certain goals and objectives [4].

Geographic information systems (GIS)

In light of tremendous pressure of rapid development while having no Local Plan to precisely guide the development control of many districts in Egypt, there is a need for an information system which not only keeps and displays data pertaining to planning applications for the purpose of administrative functions but is also designed to facilitate planning at a strategic level. The control of development, which involves the process of analyzing the appropriateness of planning applications, requires various data from the relevant agencies.

The ability of GIS to store, manage and manipulate large amounts of spatial data, provides urban managers with a powerful tool. GIS's ability to link tabular, non-spatial data to locational information is likewise a powerful analytic capability [5] GIS also provides ways of viewing and analyzing data that was previously impossible or impractical.

By implementing a GIS system in the local administration, the following will be achieved: [6]

- Improving staff accountability.
- Increasing technical accuracy and reducing errors.
- Reducing processing times and increasing efficiency.
- Reducing customer waiting time.
- Increasing customer service skills and improving employee attitudes.
- Reducing customer complaints.
- Improving business practices and processes.

Requirements for developing an information system

In order to introduce and implement an Information System in any organization; the following points must be studied and defined:

- Identify the organizations involved in the process of issuing building permits.
- Identify the responsibilities and requirements of the organizations involved in issuing building permits process.
- Identify the processes, inputs and outputs for these processes.
- Design the proposed Information System for each organization individually and for all the organizations together.

Organizations involved in the process of issuing building permits

There are many organizations involved in the process of issuing building permits. Some of them are essential for obtaining their approval and some of them are not essential, depending on the type and size of project.

Essential organizations are as follows:

- Local Authority (Article 40) [7].
- Ownership Department (El Amlak).
- Urban Planning Department.
- Division Department (Takseem).
- Improvement Department (Tahseen).

Non-essential organizations are as follows:

- Insurance Egyptian Mogamaa (Article 46) [7].
- Special Institutions.

Responsibilities and requirements of the organizations involved in issuing building permits process

Local Authority (Article 40) [7]

Is responsible for issuing a statement for the validity of the site for construction. The local authority identifies the construction and planning regulations. It is responsible for contacting the ownership department, urban planning department, takseem department and tahseen department for issuing the statement of the validity of the site for construction. It is also responsible for compiling the permit file (drawings and documents) and ensures the scrutiny and codification of all documents and drawings submitted and gives the file a serial number. It reviews the architectural drawings and ensures compliance with the requirements and laws stated in the statement for the validity of the site. After reviewing all these procedures, the Local Authority either grants or refuses the permit application.

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