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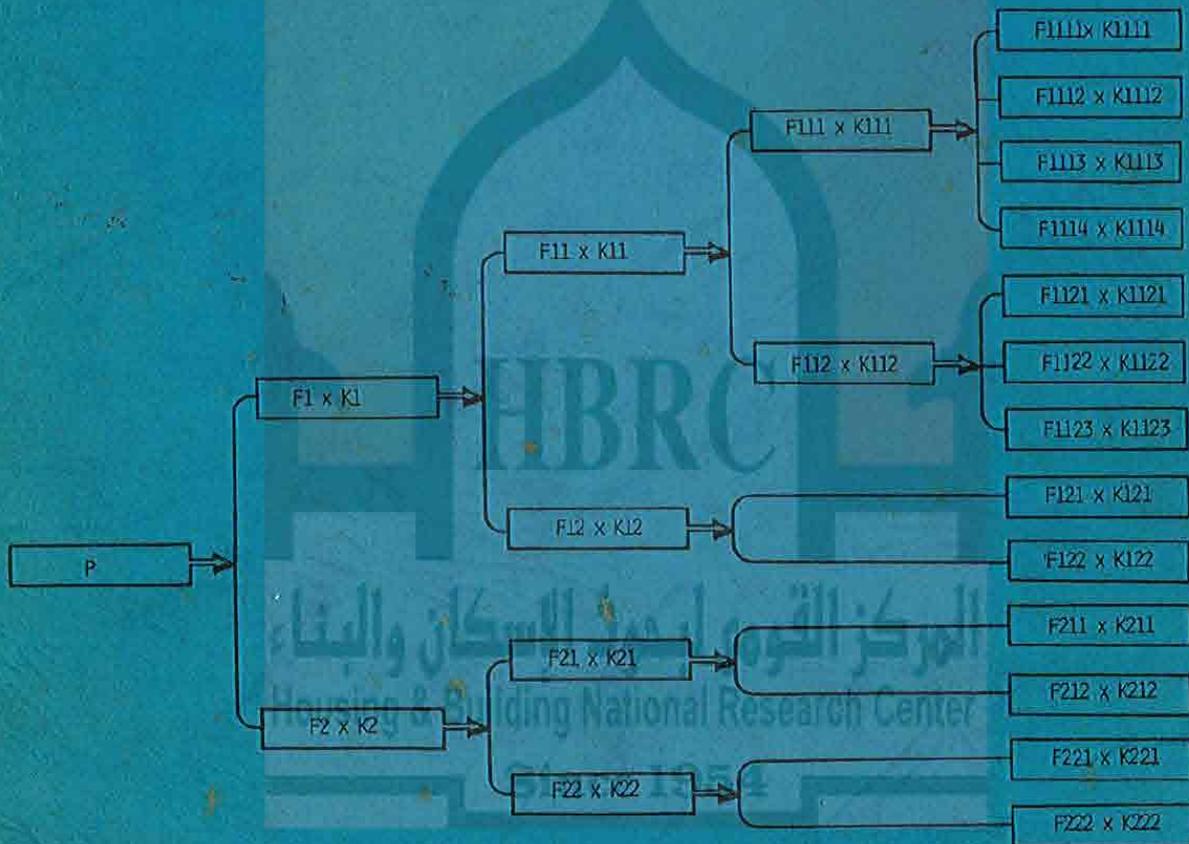
**GENERAL ORGANIZATION FOR HOUSING BUILDING AND PLANNING RESEARCH**

**Department OF Housing And Urban Planning**  
**Dr. Magda Metwally**

**1985 .**

**SYSTEMATIC APPROACH TO**

**HOUSING PROJECTS EVALUATION**



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**1. EVALUATION METHODS**

**Introduction. Systematic Approach. Analysis of Evaluation Methods .**

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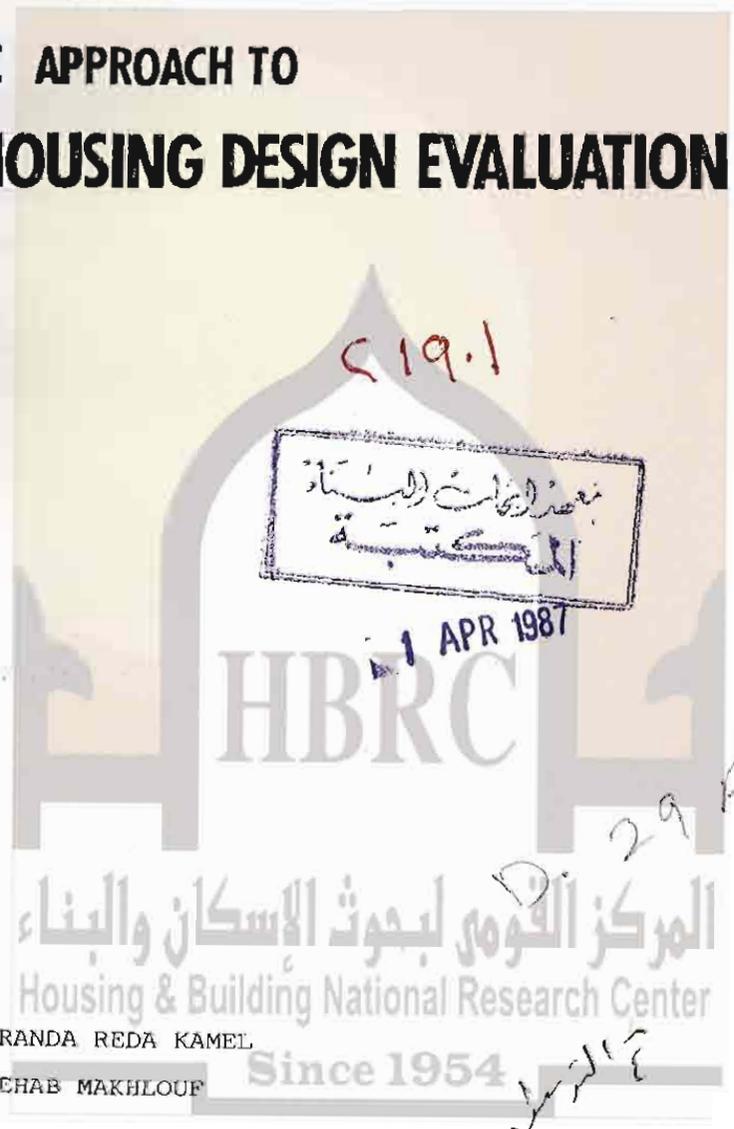
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**SYSTEMATIC APPROACH TO  
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Housing & Building National Research Center  
Since 1954

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## INTRODUCTION

Since World War II, and especially in the past decade, "Systems Analysis" and "Operations Research" have extended their techniques to many fields of industry, planning, economy, pure science, and many other unrelated areas. Architects are always resisting quantifications and refuse to solve their problems by mathematics or other techniques of that nature. With the increasing size and complexity of problems included in the building design process, required time for manually developing design alternatives has much more rapidly increased. Disadvantages of unsatisfactory solutions have become more serious which create the necessity of finding new technical methods and tools of design, which allow the architect to use existing design experience more efficiently. Consequently, architects have felt compelled to use new techniques, which have become available from operational research, systems analysis, and so on, as an aid to design.

Under pressure of marketing, architects may produce something that "looks quite elegant and fashionable" but, may not be economical or practical. There is no doubt that the use of the systematic approach to design evaluation can save a great deal of time and assure a rational choice of efficient solutions.

It is to be noted that being systematic is not necessarily synonymous with being automated. Computer science is a good mean for setting out a problem in a systematic and logical way. Having prepared a problem for a computer, the answer often will become so obvious to designer that he can dispense with the computer's services altogether and arrive at his own answer at half the cost. It will not

always be certain that the answer he gets is the best, but it will usually suffice.

The building design process can be divided into general stages:

1. generation of design solutions
2. evaluation of alternative solutions

All the rest of the work simply supports these activities. In many countries early attempts at computer-aided design tried to automate both parts of the problem. In developing countries, especially in the field of housing design, it seems prudent to assume that trained designers are best at design generation while computers may be useful in providing tool for design evaluation. In evidence, the efficient use of computer techniques requires a high level of building industrialization including modular coordination and standardization of building components, which is not available in most developing countries up till now.

Recent study is concerned with the evaluation of alternative solutions to housing design produced by architects or by computer aid. The main purpose is to determine a mathematical model. Using computer techniques, proposed model allows to investigate in a short time a very great number of design solutions before a final decision is made. It offers the architect a practical design tool which completes his strength and helps him to choose the best solution for further development. In addition to the function as an instrument of selection, the model can also be used to evaluate existing building design and to determine the advantages and disadvantages of each solution, which makes use of the results of previous studies and leads to the improvement of the effectiveness of further design work.

The model can never replace the designer's own judgment. It can, however, relieve the designer of detailed analysis that statistics and computing machines are designed to handle.

Perhaps the most important obstacle to the efficient use of the model is the lack of organized data. It is recommended to coordinate the efforts for the establishment of a good information system in the field of building research.

