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ARAB REPUBLIC OF EGYPT
MINISTRY OF DEVELOPMENT, NEW
COMMUNITIES, HOUSING AND UTILITIES
GENERAL ORGANIZATION FOR HOUSING,
BUILDING AND PLANNING RESEARCH.



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RESEARCH ACTIVITIES

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1985 - 1989

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GENERAL ORGANIZATION FOR HOUSING BUILDING AND PLANNING RESEARCH

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والتخطيط
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RESEARCH ACTIVITIES

1985 - 1989

HBRC

المركز القومي لبحوث الإسكان والبناء
Housing & Building National Research Center

Since 1954

EL-TAHRIR STREET, DOKKI, P.O. POX 1770
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Second Edition 1990

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EL-TAHRIR STREET, DOKKI,
P.O. BOX 1770 CAIRO, EGYPT**

FOREWORD

Welcome to the second issue of GOHBPR Research Activities (1985 - 1989), where our first issue was published at the end of the year 1984.

The General Organization for Housing, Building and planning Research (GOHBPR) of Egypt is an independent Government Research establishment which has a broad of Directors and a Chairman working under the supervision of the Minister of Reconstruction and Housing. The Organization is very largely financed through the annual Government fund and substantial resources are also drawn from the construction industry for work done at the Organization. Another source of finance is joint research work done with foreign agencies such as the National Scientific Foundation, UNESCO; and domestic research agencies such as the Egyptian Academy for Scientific Research and Technology.

The Organization was founded in 1954 and is responsible for scientific research and technical development in the fields of housing, building and physical planning research.

Eight scientific Divisions are founded namely : Strength of Materials, Housing and Architecture, Raw Materials and Processing, Building Physics and Environment, Reinforced Concrete Structure, Theory of Structures, Soil Mechanics and Foundation and Urban Planning.

This report summarizes the research activities in GOHBPR for the period from August 1984 to December 1989. Technical research papers are grouped in this report under the major fields of each Division. It includes a short description of the main function and fields of activity for each Division, research staff list, followed by abstracts of the main research papers carried out by the GOHBPR research staff. The scope would also include thesis titles and the name of author under the supervision of GOHBPR research staff. It also includes list of Research Technical Reports and Documentation done for different building sectors.

We sincerely believe that ultimate success of research effort depends very much on free exchange of information between research institutes in different countries.

Numerous problems have been investigated and the results were published as technical research reports by GOHBPR in Arabic language for circulation within the local building industry and research organizations. Plans are under way to have a publication appearing periodically, in English language, as current papers for building industry. This report was compiled by Prof. Dr. George B. Hanna.

CHAIRMAN OF GOHBPR

Prof. Dr. Hamed Fahmy El-Sayed

CONTENTS

Board of Directors

ABOUT GOHBPR

GOHBPR DIVISIONS

- 1 - Strength of Materials and Quality Control.
- 2 - Housing and Architecture.
- 3 - Raw Materials and Processing.
- 4 - Building Physics and Environment.
- 5 - Reinforced Concrete Structure.
- 6 - Structures and Metallic Structures.
- 7 - Soil Mechanics and Foundations.
- 8 - Urban Planning.

GOHBPR ACTIVITIES

- 9 - M.Sc. and Ph. D. Degrees awarded for GOHBPR researcher under the Supervision of GOHBPR research staff.
- 10 - Technical Research Reports.

The organization is under the direct supervision of H.E. Hassaballa Mohamed El - Kafrawy, Minister of Reconstruction and Housing.

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20 - Dr. Maher El - Sai Taha

21 - Prof. Dr. Mostafa El-Sharief

General Director of Applied Research,
GOHBPR.
Head of Soil Mechanics and Foundations
Department, GHOBPR.

GOHBPR

The General Organization for Housing, Building and Planning Research is engaged in the following activities :

- Applied research.
- Immediate assistance to building sector in problems requiring special expertise or experimental facilities.
- Quality control testing.
- Building Codes of Practice.
- Participation in standardization committees.

ACTIVITIES

RESEARCH

The main areas of applied research are as follows :

- Preparation of standards in the field of structure, building materials, soil mechanics, raw materials and processing, and building physics.
- Analysis and development of new building materials and components.
- Economical analysis for building systems.
- Theoretical and experimental evaluation of physical performance of buildings.
- Preparation of building specifications for various types of buildings.
- Some of these researches, M.Sc. and Ph. D. degrees are awarded from the Egyptian Universities.

ASSISTANCE TO BUILDING SECTOR

The assistance is mainly considered in the following items :

- Inspection of defected buildings; diagnosing causes and mechanisms of deterioration and/or failures, and recommending methods of repair and strengthening.
- Soil investigation for foundation engineering purpose.
- Investigation of building materials for the purpose of optimum utilization in the building industry.
- Investigation of the thermal and acoustical performance of buildings, theoretically and experimentally, in the field.