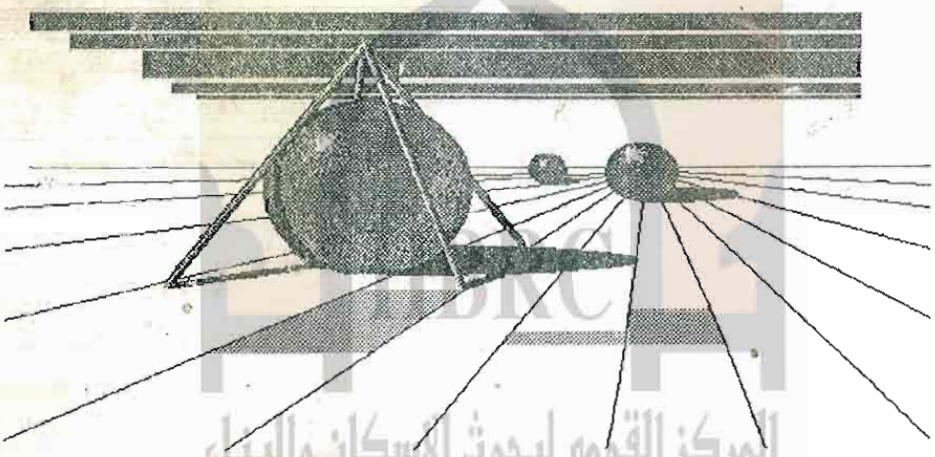
٤٢٦٢٤

Sci. Bull. Fac. Eng. Ain Shams Univ.
ISSN 1110 - 1385

AIN SHAMS UNIVERSITY

FACULTY OF ENGINEERING



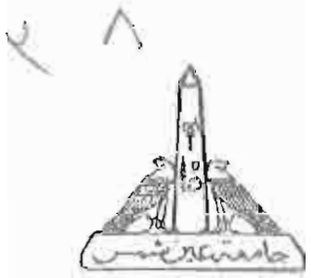
HBRC
المركز القومي لبحوث الإسكان والبناء
Housing & Building National Research Center
Since 1954

SCIENTIFIC BULLETIN

Vol. 31, No. 4, December 30, 1996
Part I : *Architecture and Civil Engineering*

3414/1994

Sci Bull Fac. Eng. Ain Shams Univ.
ISSN 1110-1385



AIN SHAMS UNIVERSITY

Scientific Bulletin of The Faculty of Engineering

HBRC
المركز القومي لبحوث الإسكان والبناء
Housing & Building National Research Center
Since 1954

D
2 A 5

AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING

SCIENTIFIC BULLETIN

EDITORIAL BOARD

1- *Prof. Mohamed Abdel-Hamid Sheirah* *(Chief Editor)*
2- *Prof. Ali Mohamad Talaat* *(Co_Editor)*
3- *Prof. Mohamed El-Niazi Hamad*
4- *Prof. Salah El-Din Mohamed El-Mahdy*
5- *Prof. Saad Kamel Massoud*
6- *Prof. Ali Kamel El-Kharashi*
7- *Prof. Abdel-Hady Hosny Hassan*
8- *Prof. Mohamed Zaki Hawas*

Prices Per Volume excluding mail postage:

Individuals:		Egypt	Overseas
	Authors	20 LE	20 US $
	Non-Authors	35 LE	35 US $
Societies:		90 LE	90 US $

HBRC
المركز القومي لبحوث الإسكان والبناء
Housing & Building National Research Center
Since 1954

Faculty of Engineering
Post Office 11517, Abbassia
Cairo, Egypt

Tel : (202) 2826636/7
Telex : 94070 USHAMS U
Fax : (202) 285-0617

GUIDE FOR THE PREPARATION OF MANUSCRIPTS TO PROSPECTIVE AUTHORS FOR THE SCIENTIFIC BULLETIN

A- OBJECTIVES

The Bulletin aims at the development of knowledge in the field of engineering, technology and related sciences All innovative, valuable and useful articles as research or review papers or reports will be regarded. In order to guarantee the highest possible standard, the received articles are rigorously refereed. However, articles that have been published before or which were submitted for publication in another magazine will not be considered

B- GUIDELINES

1. **Language** : English or Arabic

2. **Typescript** : The complete paper should be camera-ready, laser-typed, single-sided with double-line spacing, five-space paragraph indentation, on standard A4 size paper. The Times New Roman is the preferred font for use. 25 mm margin is to be left on the four sides of the page.

3. **Number of copies** : For the purposes of refereeing and editing, the original and three copies of the paper are required. The referees will receive unidentified copies.

4. **Length** : The fee will account for a maximum of 15 pages. Additional pages are charged as per page. All pages must be numbered.

C- CONTENTS

The first page of the article should include :

- A title consisting of a maximum of 10 words in bold capital letters (18 pt font) and centered.
- The authors names (14 pt font) followed by their affiliations and present addresses should be centered under the title.
- Indexing terms (12 pt font) containing a maximum of six key words indicating the area of the paper.

HBRC
المركز القومي لبحوث الاسكان والبناء
Housing & Building National Research Center
Since 1954

- An abstract of not more than 100 words (14 pt font) in the same language of the text to give the summary of the main contents of the paper. This should give a clear and concise view of the state-of-the-art and motivation of the subject, an outline of the paper and its contribution. The abstract should not include any references.
- A translation in the other language

  The following pages should include :
- A list of the used symbols, acronyms, etc
- An introduction explaing the nature of the study, previous work, purpose and contribution of the paper.
- The text of the article suitably itemized.
- Conclusions indicating advantages, limitations and possible applications.
- Mathematical equations typewritten leaving double-spaces on either side and using the SI units.
- Drawing computer- designed made using India ink on transparent or white paper. Lettering must be typewritten or written by template.
- Tables should be typewritten in serial with clear headlines and should not be a repetition of any information that has appeared somewhere else in the article.

Table of Contents

PART I

Architecture and Civil Engineering Page

1. Towards A Simplified and Rational Design for Reinforced Concrete Colmns — 1
   Ayman A.A.Embaby
2. Study of Plate Bending Element Suitable for Thick and Thin Plates — 19
   Moustafa k. Zidan,Abdel Salam A. Mokhtar, Samir A Hekal & Yasser Galal
3. Unified Theory for the Design of Pile Caps — 41
   Salah El-Din Fahmy Taher, Mohamed Ahmed Dabaon & Fahmy Abd-El-Fatah Zaher
4. Effect of Distribution and Stiffness of Stays on Static Behaviour of Cable-stayed Bridges — 63
   Kamal Hassan, Mohamed N. Fayed, Sherif K. Hassan & hany W Gourgui
5. Wind Response of Nonlinear Structures Using Energy Method — 90
   M. M. H Attabi, M. N. Fayed.
6. Assessment of Potentiality of Travel Demand Management in Relieving Traffic Congestion in Cairo: A Case Study with Car users in Affluent Districts — 115
   Khaled abbas, Osama Okail & Ibrahim Mabrouk
7. Analysis of Infiltrated Water From Trickle Irrigation By Finite Element Method — 147
   Tarek A. Saafan
8. Flow Characteristics of Vegetated Channels — 161
   Tarek A. El-Samman, Ali M. Talaat, Mahmoud A.Mohamed, Ahmed F. Khattab & Mohamed El-Niazi Aly
9. Double Diffusive Natural Convection in An Enclosure — 174
   J.Rasoul, Yehia K. Abdel-Monim
10. Effect of Prandtl Number on natural Convection in A Square Cavity — 187
    J.Rasoul, Yehia K. Abdel-Monim
11. Design of Stable Channels — 200
    Farouk M. Abdel-Aal
12. River Navigation — 209.
    Farouk M. Abdel-Aal
13. Coastal Changes at Inlets — 219
    Abd El-Fattah El-Fiky, Sonia El-Serafy, Abd El-Mohsen El-Mongy & Mootaz Khaled
14. Characteristics of Free Hydraulic Jump Downstream Silled Sluice Gate In Sloping Channels Osama K. Saleh and G.M.M Abdel-Aal — 231
15. Influence of Hump Removal on Scour Hole Characteristics Downstream Regulator Structure — 243
    Kassem Salah Abdl Wahab El-alfy
16. Effect of Different Ways of Protection on Scour Development — 258
    Nahla AbouelAtta , Soheir M Kamel

PART II

Electrical and Mechanical Engineering, Physics and Mathematics

17. Processor Synchronization and Memory Interleaving in Decoupled Architectures — 270
    Salma Abdel-Kader Ghoneim
18. A Model For An Object-Oriented Database Management System — 293
    Hany M. Harb, M. Rafea & A. M. Al-Metwally
19. Real-Time Scheduler for an Automated Industrial Environment — 309
    Y. H. Dakroury & K. M. Nabil.
20. Implementation of A Bandwidth Balancing Mechanism for DQDB Network With Modified Protocol — 324
    Sayed Abd-El-hadi Nouh
21. A Call Admission Control Strategy with Constraint Peak-Rates for VBR Video Traffic in ATM Networks — 339

HBRC
مركز البحوث للإسكان والبناء
Housing & Building National Research Center
Since 1954