

International Conference on Civil and Architecture Engineering (ICCAE-14)

IOP Conference Series: Earth and Environmental Science
Volume 1056

Cairo, Egypt
29-31 March 2022

ISBN: 978-1-7138-6019-8
ISSN: 1755-1307

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

ARCHITECTURE ENGINEERING

Prevention and Control of Airborne Infections; investigating the efficiency of hospital design using (AIC) evaluation tool.....	1
<i>Marianne Nabil Guirguis, Rania Rushdy Moussa</i>	
Achieving sustainability through reducing risks during architecture design process: a lean management perspective	9
<i>Sherouk M Abdelrehim, Ashraf A Nessim, Ayman A E Othman</i>	
Risks of Innovation in the Architectural Design Process in Egypt: An Investigative Study.....	17
<i>R Medhat, A A E Othman, F O Alamoudy</i>	
Introducing the Architecture Parametric Design Procedure: From Concept to Execution	27
<i>Ahmed A. Khamis, Sherif A. Ibrahim, Mahmoud A. Khateb, Hesham Abdel-Fatah, Mohamed A. Barakat</i>	
Interior Design Guidelines for Reducing the Negative Impacts of Electromagnetic Fields at Residential Workspace	34
<i>G A Algumbari, G Nagy</i>	
New Healthcare Design Guidelines for the Diagnostic Radiology Department in the Tertiary Healthcare Facilities	42
<i>Dalia Eltahlawy, Mahmoud Zaki, Marwa Kamar Eldawla</i>	
Architectural design criteria for infection control in hospitals during construction and development	50
<i>Emad Marawan, Hosam Rezk, Hesham Sameh</i>	
Towards a Model for the Assessment of Low-income Housing: A case study in Egypt.....	61
<i>Hady Gamal Mabrouk, Sherif Elfiki, Amgad Fahmy</i>	
Application of COVID-19 guidelines in workplace design.....	70
<i>Salma M. Elskalakany, Osama Tolba, Amgad Fahmy</i>	
Impact of Urban Compactness, Architectural Form and Climatic Considerations: an Analysis in Traditional Islamic Buildings	78
<i>Marwa F. Abdelalim</i>	
Towards a Taxonomy of The 21st century Architectural Practices in the age of Sustainability and Technology	87
<i>M. T. Saleh, Y. Mansour, S. Kamel, K. Dewidar, A. A. Farid</i>	
Causes Influencing Construction Waste Generation During the Design Process: An Analytical Study.....	95
<i>A S Saad, A A E Othman, F O Alamoudy</i>	
Improving the Efficiency of Hospital Nursing Unit Design: an analytical study	104
<i>E Ibrahim, A Sherif, H Serag Eldin</i>	

BUILDING TECHNOLOGY

Effect of Bio-material in Thermal Insulation Case-Study: Energy Saving in Residential Building in Aswan City	118
<i>R E Abd El-Hady, A A Zayan, A F Mohamed</i>	
A Guideline for Developing Resilient Office Buildings using Nanotechnology Applications	126
<i>Gehan Nagy, Haidy Adnan</i>	
Self-Bricks in the Field of Rapid Construction	136
<i>Mai Mohamed Matareek, Mohammed El-Sayed Hassanien</i>	

CONCRETE STRUCTURES

Design Approach for Eccentrically Loaded Reinforced Concrete Sections	144
<i>A E Mohamed</i>	
Behavior of R.C Beams Reinforced with Onsite Manufactured GFRP shear reinforcement	152
<i>Karim Helmi, Alaa M. Morsy, Muntaser Billa Abdul Menem</i>	
Parametric Studies on Dynamic Analysis of Blast-Loaded Retrofitted RC Columns	160
<i>Mahmoud K. Ameen, Fouad B. A. Beshara, Youssef M. H. Hammad</i>	
Properties, Durability and Fields of Application of Polymer Concrete	170
<i>Mounir Kamal, Zeinab A. Etman, Noha M. Soliman, Mustafa R. Elbheary</i>	

ENVIRONMENTAL ENGINEERING

Building envelope optimization technique to increase energy efficiency of office building in Egypt	180
<i>Ayah Mohamed Ramadan</i>	
Soundscape Assessment for Indoor Spaces: A case of the Higher Education Environment.....	189
<i>Ayat K. Kamal, Mostafa R. Ismail, Mohammed S. Mayhoub</i>	
Passive measures for energy-efficient economic class housing units in national housing projects	197
<i>Walaa S. E. Ismaeel</i>	
Thermal Performance Assessment for Stacking Shipping Containers as habitable spaces: Cairo Case Study	205
<i>A S Hassan, C R Botros, M N Kamal, N M Morsi, Y S Elfeky</i>	
The Impact of Street Trees on a Typical Urban Canyon in Eastern Cairo Region.....	214
<i>W M Elbardisy, M A Salheen, M Fahmy</i>	
Energy efficiency, carbon emissions, and thermal comfort comparisons between conventional and proposed clustered open courtyard housing using CEB blocks	223
<i>M. Fahmy, S. Mahmoud, H. Abdelkhalik, M. Abdelalim, M. Elshelha</i>	
Comparative Analysis of Occupant Thermal Comfort, Energy Consumption, and CO ₂ Emissions for an Educational Building in Cold Climate: A Case Study in Canada	230
<i>S. Mahmoud, Mahmoud M. Saad, M. Elshelha, H. Abdelkhalik, M. Fahmy</i>	

Challenges for Implementing Environmental Impact Assessment method for construction projects in Egypt	236
<i>Rodina Abd El-Raouf Lotfy, Walaa S. E. Ismaeel</i>	
Effect of Bentonite Content on Hydraulic Conductivity of Sand-Bentonite Mixtures Used in Landfill Liners as an Alternative to Clay Liner in Egypt.....	244
<i>Amr Barrima, Ibrahim M Mashhour, Nabil H Amer</i>	
Testing Daylight availability for cliff dwellings by adding Clerestory: A case study in Taba, Egypt.....	252
<i>Hala A Nabil, Ahmed A Fikry</i>	
A sustainable road safety approach for pedestrians in new cities of Egypt	261
<i>Mona Azouz, Ahmed Fahim</i>	
The role of energy conservation standards in raising quality of life: Low- Cost Housing as a Case Study.....	269
<i>Ayman A. Amin, Noha M Ezz Eldin, Alshaimaa H. Mohammed</i>	
VPL-based Code Compliance Checking for Building Envelope Design Using OTTV Calculation	277
<i>A S Eid, M M Abounnaga, A H Mahmoud</i>	

GEO-TECHNICAL ENGINEERING

Soil-Pile Interaction for the Foundations of Bridge Abutments in Soft Clay Formations	287
<i>O M Emara, A L Fayed, H Arafat, Y M Elmossallamy</i>	
Behavior of a vertical pile in loose sand under the effect of an inclined load	295
<i>F M Abdrabbo, K E Gaaver, M M Eldooma</i>	

METALLIC STRUCTURES

Experimental Investigation of the Axial Behaviour for Battened Tubular Columns	303
<i>Essam A Amoush</i>	
Numerical modelling of apex connections in cold-formed steel gable frames	312
<i>S A Mourad, A M Naguib, H H Alanwar</i>	
Project Manager Skills affecting Construction Projects in Egypt.....	322
<i>R M Abdelmasseh, H A Bassioni, E F Gaid</i>	
Human Resources Management influence on projects performance: A Study of Contractors Professionals Working on Construction Projects in Egypt	330
<i>M S Ghattas, H A Bassioni, E F Gaid</i>	

TRANSPORTATION ENGINEERING

Evaluating the properties of hot asphalt mixtures modified by Metakaolin	338
<i>Ahmed W. Oda, Ahmed El-Desouky, Hassan Mahdy, Osama M. Mousa</i>	
Improving the Performance Grade and Traffic Loading of Egyptian Asphalt Binders by Recycled Polyethylene Modification	347
<i>Ahmed Eraky, H. S. Ayoub, Omar Osman, Mohamed E. Ouf, Abdel Zaher E. A. Mostafa</i>	

URBAN PLANNING

Modelling for integrated sustainable urban transformation.....	356
<i>Mohamad Farrag Fayad</i>	
Mapping street vendors and informal economy effects in public spaces.....	364
<i>Mohamed A. Elsayed, Ayman Ashour, Abeer Elshater, Mohamed A. Elfayoumi, Shehab Mahmoud</i>	
Evaluation of Open Spaces in Relocated Communities Using Affordance Theory: Al-Asmarat Community as a Case Study.....	372
<i>S Soliman, S Attia, H Khalil</i>	
Implications for new cities' landscape design using place-making: A Comparative analysis study.....	380
<i>Rehab A Zayed, Germin El-Gohary, Sherouk M Abdelrehim</i>	

WATER RESOURCES

Implementing of Secondary and Tertiary Treated Wastewater in Concrete Manufacturing	388
<i>A Micheal, H Abdel Salam, G M Ghanem</i>	
Morphological changes of Cairo West power plant intake while using submerged vanes	395
<i>Mohamed Eizeldin, Ahmed Yasser</i>	

Author Index