



Cairo University

***THE FUNCTIONAL EFFICIENCY OF OPEN SPACES IN  
UNIVERSITIES' CAMPUSES: AN ANALYTICAL STUDY***

**By**

**Lucienne Gamal Helmy Basaly**

A thesis Submitted to the  
Faculty of Engineering at Cairo University  
In Partial Fulfillment of the  
Requirements for the Degree of  
MASTER OF SCIENCE  
in  
Architecture Engineering

**FACULTY OF ENGINEERING, CAIRO UNIVERSITY  
GIZA, EGYPT  
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Under the Supervision of

Prof. Dr. Sahar Attia

Professor of Architecture and Urban Design  
Head of Architecture Department  
Faculty of Engineering  
Cairo University

Dr. Heba Farouk

Assistant Professor  
Architecture Department  
Faculty of Engineering  
Cairo University

Dr. Usama Nassar

Associate Professor  
Department of Architecture and Urban Planning  
Faculty of Engineering  
Suez Canal University

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Approved by the  
Examining committee

---

Prof. Dr. Sahar Attia, Thesis Main Advisor

---

Prof. Dr. Amro Elhalafawy, Internal Examiner

---

Prof. Dr. Soad Bashandy, External Examiner  
Professor at Faculty of Urban Planning, Cairo University

**FACULTY OF ENGINEERING, CAIRO UNIVERSITY  
GIZA, EGYPT  
2015**



**Engineer:** Lucienne Gamal Helmy Basaly  
**Date of birth:** 14/6/1988  
**Nationality:** Egyptian  
**E-mail:** lucienne.g.basaly@gmail.com  
**Phone:** 01224247272 / 0643914495  
**Address:** 22 Osman Ebn Affan St., Mostafa  
Kamel Sq., Ismailia.  
**Registration Date:** 1/3/2011  
**Awarding Date:** 2015  
**Degree:** Master of Science  
**Department:** Architectural Engineering



**Supervisors:** Prof. Dr. Sahar Attia  
Dr. Heba Farouk  
Associate Prof. Dr. Usama Nassar (Faculty of Engineering  
– Suez Canal University)

**Examiners:** Prof. Dr. Soad Bashandy ( Faculty of Urban Planning -  
Cairo University)  
Prof. Dr. Amr Elhalafawy  
Prof. Dr. Sahar Attia

**Title of Thesis:**

**The Functional Efficiency of Open Spaces in Universities' Campuses:  
An Analytical Study**

**Key Words:**

Campus Open Spaces – Technology on Campus – Outdoor learning spaces.

**Summary:**

The research aims at studying open spaces in universities' campuses due to their vital role in creating intellectual and social atmosphere and providing successful places for informal gathering and activities. The research starts with an overview of campus open spaces. Then studying students' activities, especially the new technology and how it affects their needs in open spaces. Later, the research proposes a "design matrix" which includes all the items that will help in the design process for these variable spaces, which is used in the analysis of different types of open spaces in international examples of university campuses. Followed by, the study and the analysis of open spaces at University of Suez Canal in Ismailia, in order to improve the function of its open spaces.



## **Dedication**

To my parents, grandmother, and sisters...



## ACKNOWLEDGMENT

My most sincere thanks and gratitude to Allah Almighty. Also, I would like to thank all those without whom this thesis might not have been written, and to all my teachers and professors in great appreciation for their inspiration.

To my advisor **Prof. Dr. Sahar Attia**, Professor & Head of Architecture Department in the Faculty of Engineering - Cairo University, for her patient, support, comments, guidance and care that always keep me on the right path. Special thanks to **Dr. Heba Farouk** for her remarks and comments which were very helpful along the way.

I also gratefully acknowledge **Dr. Usama Abd Elhamid Nassar**, Associate Professor in Department of Architecture and Urban Planning, Faculty of Engineering, Suez Canal University, for his patient, moral support and valuable guidance from the first moment. He provided me with helpful scientific references and reviewing every part of the research.

Most of all, I thank my family for their love, support, prayers and encouragement to finish what I started, especially Dr. Elia Henin, Assistant Professor at Civil Engineering Department – Assuit University, for his precious support.



## **ABSTRACT**

Students' activities in the open spaces of university campuses are diverse. Each type of activity requires a space that should be responsive to the students' needs. Campus open spaces play a vital role in creating intellectual and social atmosphere and providing successful places for informal gathering and activities. Therefore, they are not "residual" spaces but these spaces are the back bone that supports all kinds of students' activities. The incorporation of different types of site furniture in open spaces will make it usable by campus users. Accordingly, the good design of these spaces can improve the performance of activities in accordance with students' updated needs.

The thesis aims at studying samples of existing spaces and analyzing their effectiveness regarding activities occurring within universities, taking into account the impact of technology on them. The main objective of the thesis is to provide a design matrix that provides designers with all the items that will help in the design process for these variable spaces to achieve the desired function. This matrix has been developed by the researcher and used in analyzing different types of open spaces in international examples of university campuses. Followed by, the study and the analysis of open spaces at University of Suez Canal in Ismailia, in order to improve the function of its open spaces. A survey was carried out and the responses were collected, analyzed and presented in the research.

The thesis concludes that applying new technology in campuses is new and still under test and few universities are including technology fixes in open spaces. Although the implementation of new technology on campus is new but, additional elements such as Wi-Fi, Street Charge, Solar-Power Dok, Digital Screens and interactive kiosks should be provided in addition to the standard elements at open spaces in universities to enhance the functional performance of these spaces to meet students' needs.



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