EFFECTS OF ADVANCED LIGHTING TECHNOLOGY
ON BUILDING FACADES AT NIGHT, EMOTIONAL STATES
AND BEHAVIORAL INTENTIONS TOWARDS URBAN SPACES

ELYAS VAHEDI MOGHADDAM
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By

ELYAS VAHEDI MOGHADDAM

Thesis submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Master of Science

February 2011
DEDICATION

“It is my honor to dedicate the results of a consequential three year study as a Master’s degree dissertation to my parents

HAMID VAHEDI & ELAHE HASHEMIAH

Whom without their support and assistance, I wouldn’t be standing here”

ELYAS VAHEDI MOGHADDAM

February 2011
Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

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Chair: Mr. Mohd Nasir Baharuddin

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The appearance of the physical environment can evoke strong emotions and affects spatial behavior. Static characters of contemporary urban spaces have low night life due to the lack of lighting quality of building facades. This study would like to position how building appearances can become an important factor that contributes towards enhancing urban spaces at night. In this respect, the current study aims to identify the influential traits of new lighting technology and reveal their effect on people emotional states and behavioral intention accordingly. The prominent characteristics of new lighting technology were recognized through investigating the related literature and examining the unique projects, which has used this technology. In next step, by employing a questionnaire-based survey, the Malaysian people’s evaluations of these attributes, their effect on emotional states and accordingly behavioral intention towards urban spaces was obtained. The item analysis and exploratory factor analysis of collected data presented visual quality and interactive quality as main influential factors of new lighting technology. Finally, the adapted
M-R model which employed these qualities of new lighting technology as environmental stimuli was verified through Structural Equation Modeling. The decisive outcome supported our hypothesis which proves the importance of applying the new exterior lighting facade in the Malaysian context. The findings provided recommendations on how to increase visual qualities of building appearances, which will positively affect people’s preferences towards the built environment. The findings of the current study contribute to develop the theoretical foundation of physical environment’s effect on human psychology and behavior. In addition, the study contributes to develop the exterior lighting design criteria for decision making by identifying and categorizing the new attributes of exterior lighting, particularly in Malaysia. Applying these theoretical outcomes in order to develop a conventional system can assist designers, architects, and policy makers in increasing visual qualities of buildings appearances at night, which positively affect Malaysian people’s preferences for modern built environment correspondingly.
Abstrak tesis yang dikemukakan kepada SenatUniversiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

KESAN PENCAHAYAAN TEKNOLOGI TERKINI KE ATAS PENAMPILAN BANGUNAN DI WAKTU MALAM, EMOSI DAN TUJUAN TINGKAH LAKU TERHADAP RUANG BANDAR

oleh

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ASSOC. PROF. DR. RAHINAH IBRAHIM

for assisting me in all fields to complete my studies at Master’s level”

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I clarify that Examination Committee has met on 28 February 2011 to conduct the final examination of Elyas Vahedi Moghaddam on his Master thesis entitled, “The Effect of Advanced Lighting Technology on Nocturnal Appearances of Buildings Towards Urban People Behavior Intention” in accordance with the Universities and Universities Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The Committee recommends that the student be awarded the degree of Master of Science.

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institutions.

ELYAS VAHEDI MOGHADDAM

Date: 28 February 2011
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