بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / سلوي محمود عقل

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF ARCHITECTURE

Exploring the Potentials of the Biophilic Approach in Space Design to Achieve Efficient Workplace Ambience

A Thesis Submitted in Partial Fulfilment of the Requirements of the Degree of

Master of Science in Architectural Engineering

Submitted by

Rana Mahmoud El-Bannany

B.Sc. Architecture - 2017 - Ain Shams University

Under the supervision of

Assoc. Prof. Dr. Doaa Kamaleldin Kamel
Associate Professor at Architecture Engineering
Faculty of Engineering - Ain Shams University

Assoc. Prof. Dr. Ayman Mohamed Assem
Associate Professor at Architecture Engineering
Faculty of Engineering - Ain Shams University

2022

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Examiners' Committee	**Signature**
Prof. Dr. Heba Essam Safi ElDin Professor at Architecture Engineering Faculty of Engineering, Misr International University	…….
Prof. Dr. Galal Mohamed Abada Professor at Architecture Engineering Faculty of Engineering, Ain Shams University	…….
Assoc. Prof. Dr. Doaa Kamaleldin Kamel Associate Professor at Architecture Engineering Faculty of Engineering, Ain Shams University	…….
Assoc. Prof. Dr. Ayman Mohamed Assem Associate Professor at Architecture Engineering Faculty of Engineering, Ain Shams University	…….

Date of Thesis Defence: ……/……/2022

Postgraduate studies	**Approval Stamp**
Thesis was approved on ……/……/2022 Faculty Council Approval ……/……/2022 University Council Approval ……/……/2022	

بِسْمِ اللهِ الرَّحْمنِ الرَّحِيمِ

ذَلِكَ الْفَضْلُ مِنَ اللَّهِ وَكَفَى بِاللَّهِ عَلِيمًا

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STATEMENT

This dissertation is submitted to Ain Shams University – Faculty of Engineering – Department of Architecture as partial fulfillment of M.Sc. degree in Architecture.

The work included in this thesis was accomplished by the author at the Department of Architecture, Faculty of Engineering, Ain Shams University, during the period from 2018 to 2022. No part of this thesis has been submitted for a degree or a qualification at any other university or institute.

Date	……/……/2022
Name	Rana Mahmoud El-Bannany Teacher Assistant – Department of Architecture Faculty of Engineering – Ain Shams University
Signature	

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ABSTRACT

Nature-based design strategies for indoor environments as an efficient approach for improving workplaces design and fulfilling employee's sensorial and social needs have received little attention compared to other design strategies related to spatial needs and to comfort and wellness concepts in workplaces including office ergonomics, thermal comfort, lighting conditions and acoustic factors. This thesis focuses on biophilic design as an effective approach for enhancing the ambience of workplace design and for promoting employee's health through the application of nature-based design solutions. The thesis aims to explore the potentials of biophilic design in enhancing the workplace ambience's spatial, sensorial, and social requirements. In order to achieve the research's main goal, a theoretical analysis is first conducted through the review of literature related to the emergence of biophilic design and its impact on human health followed by a study of biophilic patterns definition and analysis of its application in international examples according to Terrapin Bright Green's categorization. Workplace ambience requirements were later studied to understand how the biophilic approach can fulfill these needs. An analytical study is then held on selected worldwide cases to study the relation between the biophilic design patterns and the three main aspects of workplace ambience. The two processes of analysis helped in developing a three-dimensional matrix relating a set of proposed biophilic design strategies to each aspect of the workplace ambience including spatial, social, and sensorial aspects and that suggests enhancing this ambience.

On the other side, this matrix also relates the biophilic patterns to expected health benefits including cognitive, psychological, and physiological health.

KEYWORDS

Biophilia, biophilic design, workplace design, biophilic workplace, workplace ambience.

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