# BIOPHILIC HOTEL DESIGN ADAPTATION APPROACHES FOR ENHANCING GUESTS' EXPERIENCES & WELL-BEING

By

**Raghda Hatem Mahmoud Moawad**

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**
**Architectural Engineering**

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

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**Title of Thesis:**

Biophilic Hotel Design Adaptation Approaches for Enhancing Guests' Experiences & Well-being

**Key Words:**
Sensory design; hotel guest satisfaction; psychological well-being; adaptation strategies; biophilic design elements

**Summary:**

The lodging industry can remarkably affect tourists' stays & shape guests' experiences. Visually appealing hotels that do not consider other humans' senses in their design strategies do not leave lasting impressions on their guests. On the other hand, returning back to nature and integrating biophilic design elements in hotels' interiors can act as a catalyst that triggers all human senses leading to an astonishing impression, memorable experience & enhanced satisfaction and psychological wellbeing.

# Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Raghda Hatem Mahmoud Moawad Date: / /2020

Signature:

# Dedication

Dedicated to the person that has supported me in every single aspect in life, my lifetime source of positivity & blessings; my dear mother, Nawal Ali. I wouldn't have reached any success without your guidance & inspiration.

Dedicated to my grandmother that would've been proud of me…May her soul rest in peace.

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# Abstract

Tourism & the hospitality industry are known for the remarkable role they play in the world's global economy. Tourism is known as one of the industries that continue to grow rapidly in many countries and has been the subject of research in various disciplines. Several researchers have been concerned with the impact of the lodging industry on the economy or the environment. However, investigating the impacts on hotel guests' experiences has not seen a sufficient amount of attention. The standardization in the lodging industry to enhance mass production for the economic benefit has created boring hotel experiences. Humans experience spaces through their five main senses: hearing, sight, taste, touch, and smell. Despite the role of several philosophers, researchers, architects, & environmental psychologists in highlighting the importance of addressing those five senses in any architectural design, architects continue creating aesthetically appealing monuments that do not trigger the five senses holistically. Users' satisfaction and creating life-enhancing experiences have not been put into consideration which only led to creating lifeless architecture.

The focus of this study was directed towards investigating the relation between biophilic design strategies in the hospitality industry and their impacts on hotel guests' satisfaction, & psychological wellness through creating sensory experiences. It aimed at offering an adaptation strategy for enhanced guest experience in existing hotels. This research was based on a relevant literature review where the relationship between biophilic hotel designs & guests' satisfaction, and wellness is offered. The empirical section included analyzing guests' reviews on TripAdvisor regarding three hotels that are rich in biophilic design elements and three other hotels that are poor in biophilic design elements. Moreover, the empirical section of this study also included a holistic, general survey that was distributed online to investigate hotel guests' preferences regarding hotels' designs & the integration of biophilic design elements. Four online surveys were also distributed to test the relation between the presence of biophilic design elements and hotel guests' psychological wellness and satisfaction regarding four chosen case studies.

The findings highlight that integrating biophilic design elements in hotels can positively impact guests' experiences, satisfaction, & psychological well-being. For instance, the presence of natural light, proper selection of the lobby's furniture color palette, outdoor landscape design, lobby's design, presence of natural ventilation, organic furniture, & room design & view have all indicated high significant impacts on guests' satisfaction & psychological well-being following a Pearson correlation & OLS regression analysis. The main conclusion of this research is that returning to nature and human psychology theories can act as a turning point in several businesses, especially in the hospitality industry. Hoteliers' attention should be geared towards the offered adaptation strategies for integrating biophilic designs in existing traditional hotels to create a life-enhancing guest experience.

**Keywords:** Hospitality industry, hotel guests, five senses, guest satisfaction, psychological well-being, adaptation strategies, sensory design, biophilic elements, life-enhancing

# Chapter 1 : Introduction

## 1.1. Introduction

Humans' perception of space occurs through all human senses that work coherently to shape their experiences in the built environment and create remarkable memories. Architecture has a crucial role in shaping humans experiences. This can occur through creating buildings that offer multisensory environments which trigger all the human senses simultaneously. Buildings that are rich in biophilic design elements are believed to create holistic multisensory atmospheres for their users. In the hospitality industry, focusing on enriching hotel guests' experiences is the catalyst that can lead to the hotel's success or failure. Hotel guests' experiences can also be attributed to their overall satisfaction with the ambience and the stay's impact on their psychological well-being. Adapting existing hotels that were not designed for the purpose of ultimate guests' satisfaction and wellbeing acts as a major challenge.

Recently researchers have started focusing on the neuroscience of architecture. Among these researchers are: "(Choo, Nasar, Nikrahei, & Walther, 2017; Coburn, Vartanian, & Chatterjee, 2017; Marchette, Vass, Ryan, & Epstein, 2015; Robinson & Pallasmaa, 2015; Vartanian et al., 2013)" (Coburn et al., 2020). Other researchers have discussed guests' satisfaction towards sustainable initiatives taken in hotels such as (Choi & Chu, 2001, Chen, 2015, Carev, 2008, in addition to Merli & Perziosi, 2019). Some researchers focused their attention on sensory environments such as Malnar & Vodvarka, 2003, Pallasmaa, 2005, Lehman, 2011 & Leone, 2008 while others were concerned about the importance of integrating biophilic elements in buildings and hotels such as Zari, 2009, Browning & Francis, n.d, Kellert, Herwagen & Mador, 2008, Kellert & Finnegan, 2008, Kellert & Calabrese, 2015. Yet, studying how the usage of biophilic design elements in hotels can create sensory environments that can increase guests' satisfaction and is also considered among the sustainable initiatives that can be taken in the building industry has not been widely investigated by researchers. Furthermore, research in the hospitality industry field lacks recommendations and guidelines for adapting existing hotels by using multisensory biophilic design elements to create holistic guests' experiences &ensure their satisfaction.

The spark of interest in investigating more about the impact of hotels on its guests' psychological wellbeing and satisfaction and how the hotel's ambience shapes the guests' experiences is the motor that directed the focus of this study. This research presents a theoretical overview of the relations between the built environment and human overall experience, satisfaction, and psychological wellbeing in the lodging industry. It also provides several empirical investigations in the form of online surveys in order to test how the psychology, mood, and experience of users of a certain space are affected by biophilic design elements. In addition to offering a guideline for adapting existing hotels to create remarkable guests' experiences.