



Ain Shams University  
Faculty of Engineering  
Department of Architecture

# **Introducing Landscape As A Healing Factor In Hospital Design**

By

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B.Sc. Architecture Ain Shams University, 2009

A Thesis submitted to the Faculty of Engineering in Partial Fulfillment of  
the Requirements for the degree of

**Master of Science in Architecture**

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Cairo, Egypt  
2014



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**Date:**

IN THE NAME OF ALLAH,  
MOST GRACIOUS, MOST MERCIFUL

AND SAY, "DO [AS YOU WILL], FOR ALLAH WILL SEE  
YOUR DEEDS, AND [SO, WILL] HIS MESSENGER AND THE  
BELIEVERS. AND YOU WILL BE RETURNED TO THE  
KNOWER OF THE UNSEEN AND THE WITNESSED, AND HE  
WILL INFORM YOU OF WHAT YOU USED TO DO."

SURAT AL TAWBAH: 105

## DEDICATION

THIS WORK IS DEDICATED TO MY BELOVED FAMILY:

TO **MOM** FOR SUPPORTING ME ALL THE WAY AND  
ENCOURAGING ME NOT TO GIVE UP UNTIL I REACH MY GOAL;

TO **DAD** FOR TEACHING ME THE IMPORTANCE OF HARD WORK;

TO MY LOVELY **YOUNG BROTHER** FOR HIS CARE AND  
ENCOURAGEMENT;

WITHOUT YOUR SUPPORT, I WOULDN'T HAVE ACHIEVED ALL OF  
THIS.

SINCERELY,

NAIERA EBRAHIM MAHMOUD

## STATEMENT

This thesis is submitted to Ain Shams University for the degree of Master in Architecture. The work included in this thesis was accomplished by the researcher at the Department of Architecture, Faculty of Engineering, Ain Shams University from 2011 to 2014.

No part of this thesis has been submitted for a degree or a qualification at any other university or institute.

**Faculty:** Faculty of Engineering – Ain Shams University

**Name:** Naiera Ebrahim Mahmoud Ebrahim Mansour

**Date:**

**Signature:**

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I will not be able to thank **my parents** enough for their love and guidance they provided me in whatever I pursue. They are the ultimate role models. I always pray to Allah Almighty to bless and reward them for what they have endured to make me who I am.

**The Researcher**

## **ABSTRACT**

Along history, nature was seen as a powerful healing agent in human life; from Middle Ages monasteries and churches through pavilion hospitals and asylums of the 17<sup>th</sup> Century to hospitals of the early 20<sup>th</sup> century. However, at the middle of the twentieth century, some emerging technological factors negatively affected the use of landscape in hospitals design. These factors included technological development in medicine and real estate values, and the developments in building construction. As a result, hospitals' environments became more institutional and overwhelming; and therefore, they helped in instilling anxiety instead of hope.

Hospital administrators and providers began to notice the negative reactions to the prevailing non supportive environments. Consequently, in the 1980s and 1990s attention was drawn again to nature significance in hospitals triggered by contemporary researches and studies proving that encountering nature diversities in hospitals can act as a mitigating factor and generate several psychophysical benefits to its users. A new concept has emerged to reintroduce nature in healthcare facilities; this concept is called 'healing landscape'. It became a viable field of research in many countries; nevertheless, most of Cairo's hospitals did not pay attention to this pivotal issue which resulted in creating misused, unused, or abandoned outdoor spaces.

Therefore, this thesis aims at creating a preliminary design and evaluation tool for hospital landscaping; and hence, investigating the problems associated with designing the outdoor spaces in Cairo hospitals; either general speciality or single speciality (psychiatric-children). This aim is achieved in five chapters; Chapter One is a literature review that identifies the theories, studies, and speculations demonstrating nature benefits to patients, the chronology of hospital landscaping, the impacts of gardens' evanescence in most of modern hospitals, and the emergence

of healing landscape concept. Chapter Two is concerned with examining healing landscape design through reviewing the philosophical approaches of its design and strategies, benchmarks, and guidelines generated by several researchers and landscape architects. Chapter Three includes reviewing the international experiences of hospital landscaping via analysing examples of healing gardens with distinctive or awarded designs in order to add values to the previous benchmarks and guidelines and help identifying different approaches of meeting the design strategies mentioned in chapter two. Then, a preliminary design matrix is proposed to help in assessing the local context in the next chapter. In Chapter Four, local hospital landscaping is addressed by reviewing the local regulations of hospitals design and assessing the outdoor spaces of selected local case studies. This chapter revealed that there is a lack in the local context awareness of the significance of restorative outdoor spaces for hospital users. Finally, Chapter Five includes general results and recommendations for increasing the awareness of healing landscape significance in the local hospitals and modifying the local regulations to adopt this concept in its requirements.

## **KEY WORDS**

- Natural Settings and Health.
- Hospital Stress.
- Hospital Outdoors Spaces.
- Positive Distractions.
- Healing Landscape/gardens.

## **PREFACE**

Since ancient times, nature was considered an essential component of spirituality and healing. It offered humans feelings of peace, contentment, solace, and safety. Nature has also succeeded in generating aesthetic experiences in humans due to different aromas, visual stimulations, soothing sounds, and tactile elements; thus, it helped in improving their



wellbeing. On the other hand, patients encounter devastating levels of negative emotions like stress, fear, depression, and isolation while visiting modern hospitals. If these facilities adopt installing natural settings, it will offer its users the needed sanctuary. In fact, great deal of studies have showed that contact with nature in stressful environments like hospitals generates various benefits including; physiological, emotional, cognitive, behavioural, and others. Consequently, providing these settings became essential in creating more supportive and healing hospitals.

## **PRIMARY AND SECONDARY THESIS QUESTIONS**

Despite the essentiality of natural settings in hospitals' healing process, a pilot survey revealed that many local hospitals have neglected its outdoor spaces where all the attention has been directed only to designing the buildings. Thus, the primary research question involved in this thesis can be stated as follows:

- What are the problems that exist in designing the outdoor spaces of local hospitals; either general or single specialty?

The secondary research questions are:

- How does the absence of natural settings in hospital planning affect the psychophysical health of patients? Does it affect families and medical staff as well?
- How can healing landscape improve the whole healing process?
- What are the strategies, tactics, guidelines, and benchmarks of designing a healing landscape?
- Concerning local regulations, does it include embracing natural settings in designing and planning hospitals? Does it address the specifications and characteristics of these settings?

This thesis will answer these questions in order to explore the importance of healing landscape in designing hospitals and examining the deficiencies of local hospital landscaping.

## **HYPOTHESIS**

As a result of several factors including medical developments, technological advancements in construction, the pursuit of profit and functional efficiency, real estate values, and lack of awareness of the substantial benefits nature can have for patients' wellbeing; most of international hospitals have ignored its outdoor spaces. Hence, the hypothesis of this thesis is that hospitals' outdoor spaces in Cairo have also been neglected. Besides, perhaps one of the reasons behind this negligence is that hospital landscaping is not addressed in the local regulations of hospitals design.

## **MAIN AIM AND SECONDARY OBJECTIVES**

The principal aim in this thesis is to propose a preliminary design/evaluation matrix that will help in identifying the problems of designing and utilizing local hospitals' outdoor spaces. This will be attained through secondary objectives that are detailed as follows:

- Determining the downsides of natural settings evanescence in modern hospitals.
- Identifying the essence of healing landscape concept and raising the awareness of its significance in improving hospitals' healing process.
- Assembling the design strategies, international contributions, and benchmarks of healing landscape that have recently evolved in order to create the design matrix.
- Verifying the local regulations of hospitals design concerning designing and planning its outdoor spaces.

## **STUDY METHODOLOGY**

This thesis is a qualitative research that aims at proposing a preliminary design and evaluation matrix based on first, performing a

comparative analysis to different strategies, tactics, and benchmarks concerning healing landscape design. Second, reviewing and analysing selective international case studies to add values to the assembled benchmarks. That matrix is used in assessing the status in the local context here in Cairo via different field visits and interviews.

## **STUDY SCOPE AND LIMITATIONS**

The sample scope of this thesis has been narrowed down to investigate the hospitals in Cairo governorate the capital of Egypt, which can offer perspectives for future research. The examples have been selected to address both public and private sectors in order to examine the effect of finance on outdoor spaces' characteristics. As hospitals are classified into general speciality and single speciality hospitals; the two types have been addressed. Regarding single speciality hospitals, the focus here was on facilities with long hospitalization periods like psychiatric and children hospitals because the existence of healing landscape is more important for those who are confined inside hospitals for long time. Thus, these types have been reviewed in both international and local case studies.

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