SPATIAL QUALITY IN SPACE DESIGN FOR PROMOTING SELF - HEALING IN HEALTHCARE DESIGN

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To my dearest family and friends
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ABSTRACT

In most of the healthcare centres found in Malaysia, the building are designed with little therapeutic qualities in them, and studies has shown that the environment in those healthcare centres frequently heighten levels of stress in patients, staff and families. Besides, there are a lack of design considerations regarding spatial quality in restoring the occupants’ mental wellness and reducing the stress which could help in fostering the recovery duration. Recent studies show that appropriate healing environment in healthcare settings could help enhance the sensory input to stimulate the body’s capabilities to heal itself, also known as self-healing. The main focus of this study is to highlight the possible Architectural solutions in creating a healing environment through spatial quality in space design. The natural environment is frequently discussed in relation with the healing environment; daylight, ventilation, views and garden, thus enhancing the well-being of the occupants. Through a critical review of literature from secondary sources, examples of the implementation of natural environment into building design shows that there exists a strong connection between humans and the man-made environment in relation to spatial quality in space design. Some design considerations were identified for consideration in future design of healthcare building in promoting self-healing.
ABSTRAK

Dalam kebanyakan pusat penjagaan kesihatan yang terdapat di Malaysia, bangunan ini telah direka kebanyakannya kurang terapeutik dan kajian telah menunjukkan bahawa suasana dalam pusat penjagaan kesihatan didapati sering meningkatkan tahap tekanan terhadap pesakit, kakitangan dan keluarga. Selain itu, terdapat kekurangan pertimbangan dalam reka bentuk kualiti ruang yang dapat memulihkan kesihatan mental penghuni dan dengan mengurangkan tekanan secara mental terhadap pesakit ianya dapat membantu dalam mengurangkan tempoh pemulihan. Kajian terbaru menunjukkan bahawa persekitaran sihat yang sesuai dalam suasana penjagaan kesihatan dapat membantu meningkatkan deria untuk merangsangkan keupayaan badan untuk memulihkan diri sendiri, ianya juga dikenali sebagai “self-healing”. Fokus utama dalam kajian ini adalah untuk mengetengahkan penyelesai seni bina dalam mewujudkan persekitaran sihat melalui reka bentuk kualiti ruang. Alam semula jadi seringkali dikaitkan dengan persekitaran sihat; iaitu pengcahayaan, pengudaraan, pemandangan dan taman, di mana ianya dapat membantu dalam meningkatkan kesejahteraan penghuninya. Melalui kajian kritikal literatur daripada sumber sekunder, contoh-contoh alam semulajadi yang dilaksanakan ke dalam senibina bangunan telah disenaraikan dan ia menunjukkan bahawa wujudnya hubungan yang kuat di antara persekitaran manusia dan buatan manusia dalam hubungan dengan reka bentuk kualiti ruang. Beberapa pertimbangan reka bentuk telah dikenal pasti untuk dipertimbangkan dalam reka bentuk masa depan bangunan penjagaan kesihatan untuk menggalakkan penyembuhan diri.
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Views from Yishin Pond

KTPH layout with reference to its site context

Integrating healthcare, social and natural environments

Integrating healthcare, social and natural environments

Air space Restaurant, Huahin, 2016

The interior of the restaurant shows the double height space that can create a bright environment.

The interior of the restaurant with the hanging plants.

The outdoor seating area of the restaurant

The restaurant serves comfort food for people

Ng Teng Fong General Hospital that located in Jurong East, Singapore

The complex consists of three tower blocks that connected with link bridges

The sun shading element

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The concept of healing environment is not a common thing, it has been around since 1859, first developed and introduced by Florence Nightingale, a nurse who came out with the theory that suggested manipulating the patient’s environment to be therapeutic where she outlined the requirements in creating a healing environment in order to optimize the capabilities of the patient for self-healing. Among the criteria in creating a healing environment is to include warmth, light, clean air, quiet and good diet.

However, in Malaysia the typical healthcare settings nowadays were not designed with therapeutic qualities in mind. As a result, it increases the levels of stress in patients instead of reducing it. Hence, a lot of people would complain that most of them had bad experiences within these common buildings (clinics and hospitals). In this typical setting, we would normally see a huge open space with beds side by side and long corridor connecting them, which looks depressing and increases the stress of those in the building.
Healing environments have always been integrated with nature and other natural elements, such as fresh air, daylight and quietness (Berg, 2005). Normally, humans spend almost 86.9% of their lifetime indoors, at home or school (Klepeis, 2001). Thus, the indoor environment quality is very important in relation to the health and well-being of the occupants.

The research explores more on the relationship of indoor environment quality (IEQ) with healing environment through spatial quality in space design in healthcare buildings.

### 1.2 Problem Statement

Spatial quality is defined as strategies in designing spaces. The spatial qualities of form, colour, texture, sound and light will affect the human behaviour in an enclosed space. In architecture, a space is not just a simple physical space; the Architects take a lot of consideration in designing a space that had the spatial quality whether it is a good space or bad space.

In relation of creating a space that can influence people psychologically, it is called experiential or sensory space by enhancing all five senses through visual, acoustic, olfactory, thermal or tactile.

Hence, in designing a space there are a lot aspects to be consider such as the location of windows, type of materials for walls and floors, lighting and depth of the space. Thus, the research will focus on:
a) The appropriate healing environment in urban setting which could help reduce the stress and enhance psychological health and well-being.

b) Integrating elements of nature in healing environments promote “self-healing”.

1.3 Research Aim

The research aims is to apply the natural environment; such as day lighting, water element, and views and garden, to enhance the spatial quality of healthcare design to support healing environment.

1.4 Research Objectives

The research objectives for this study are:

i) To identify the relationship between human health and environment.

ii) To find out the effect of integrating the natural environment within the healthcare facilities in order to create a healing environment.

iii) To outline environmental strategies that can be applied in healthcare buildings to promote a healing environment.
1.5 **Research Questions**

The research questions use to conduct the study are;

a) What are the environmental factors that influence the people psychologically?

b) How does the natural environment can affect the indoor environmental quality and human wellbeing?

c) What are the architectural design guidelines for space planning to support a healing environment?

1.6 **Scope of the Thesis**

The current design of healthcare buildings are mostly described as harsh and rigid, rarely designed as therapeutic and causes the occupants to become depressed and stressed. The study focuses on spatial quality of the space design that can affect human wellbeing.

1.7 **Significance of Study**

The significance of the study is to find out what elements that can enhance healing environment, more specifically, methods in which to provide Architectural solutions in space design that can transform the spatial quality to create a healing environment that could promote self-healing through the application of natural environment in healthcare building.
1.8 Research Methodology

The research methodology used in this study is aimed in identifying and collecting the data regarding the application of natural environment in space design that promotes healing environment. The study starts with collecting data on environmental factors that affect human health psychologically. This is to identify the spatial qualities needed in space design to achieve a healing environment. Subsequently, the issues are further derived based on the objective of outlining the relationship of natural environment with human health through literature reviews of natural environment and effect of plants on indoor environmental quality. The research focuses on selected case studies to understand the design principles and design approach and also identifies the architectural solutions on the spatial quality of space design that promotes “self-healing”.

1.9 Expected Findings

The factors that influence human wellbeing which will become the guideline in designing healthcare buildings with healing environment will be identified. From the study on existing hospital buildings and understanding the function of the building, list of needed spaces will be identified. Thus, through spatial quality in space design and implementation of natural environment, or so-called green spaces would be able to promote “self-healing”. From the literature reviewed, it is expected that the natural environment has a positive effect on indoor environment quality and will improve the wellbeing of the occupants.
1.10 Structure of Thesis

The research consist of five main chapters, basically the Chapter 1 covers the overview of the study that includes introduction, problem statement, research aim, research objectives, research questions, scope of thesis, significance of study, research methodology and expected findings. Chapter 2 presents the case studies on the issues related to the spatial quality of healthcare building space design, as well as the relationship of the natural environment with human health. Chapter 3 discusses the methods used in this dissertation, covering the explorative study on the existing healthcare building and discussion on the research design. In Chapter 4, case studies and data collected are recorded and analysed to result in the findings. The chapter ends with the discussion on the collected data to provide architectural solutions that respond to the research aims and objectives. Chapter 5 summarizes the thesis which includes; discussion and suggestions on the previous chapter and highlights the significance of this study.
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