

CONTEXTUAL STUDY ON THE PHYSICAL ASPECTS OF HEALING ENVIRONMENT IN HOSPITAL DESIGN

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Abstract: In hospital buildings wherever most, patients look for medical treatment and employees provides continuous support, making a healing atmosphere is primarily necessary and relevant. Healing suggests redressing ills and establishing a method that leads towards health. The term 'Healing Architecture' that has been coined recently, is employed to invoke a way of a nonstop process; It has been known for a protracted time that the natural atmosphere is closely connected with health and its close environmental conditions have an effect on human health. However, there's little proof to counsel that the physical aspects of designed atmosphere will have an effect on human health. These physical aspects of healing atmosphere serve for all users of the care facility: employees, clinicians, directors, patients and families. Existing studies have shown that in a very newer hospital atmosphere higher health outcome will be achieved once the physical aspects like access to outside read, patients' privacy, lighting and alternative factors area unit applicable. Criticism enclosed terms like depressing, confusing, dull, shabby, windowless, stressful, very little natural light-weight, noisy, sleep deprivation, isolation, physical restraint, anxiety and wish of knowledge. This paper outlines the role and importance of physical designed atmosphere within the style of hospitals as a method to make a healing atmosphere.

I. INTRODUCTION

In hospital buildings wherever, most patients look for medical treatment and employees provides continuous support, making a healing atmosphere is primarily necessary and relevant. Healing suggests redressing ills and establishing a method that leads towards health. The term 'Healing Architecture' that has been coined recently, is employed to invoke a way of a nonstop process; in making an atmosphere physically healthy and psychologically applicable. However, coming up with care facilities could be a terribly advanced task: each practical and psychological. it's expected to evolve to numerous necessities provided by the Ministry of Health (MoH). These embody Dr. necessities and instrumentation each for medicine and for treatment. Building services also are AN integral a part of this complexness. within the effort to accommodates expressly declared necessities, it looks that the majority designers pay less attention to the final word aim of making a healing atmosphere.

It has been known for a protracted time that the natural atmosphere is closely connected with health and its close environmental conditions have an effect on human health. However, there's little proof to counsel that the physical aspects of designed atmosphere will have an effect on human health. the link between natural atmosphere and health is clearly explained within the medical man piece of writing (i.e. *Airs, Times, Waters and Places*, one among the first classics of medical geography). The piece of writing primarily emphasizes that environmental condition and geographical factors have robust influence on human health. It outlines what area unit the common diseases that occur especially locations, seasons, winds and airs.

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This paper outlines the role and importance of physical designed atmosphere within the style of hospitals as a method to make a healing atmosphere. Lighting (day and artificial lighting) are going to be one among the main target areas to be examined within the study of healing design and forms a part of the broader study of physical aspects. At the point in time, the prevailing conditions in a hundred to a hundred and fifty bedded hospital buildings.

II. OBJECTIVES

The aim of this research paper is to obtain an in-depth understanding of the physical aspects in hospital design and how these physical aspects play important roles in creating a healing environment. Other objectives of the present paper are:

- to acknowledge the critical experiences of patients, staff and visitors in hospital buildings,
- to outline the physical aspects in healing environment,
- to examine the elements of physical aspects of existing project brief of public hospitals.

This paper is perceived as an extraction of the existing body of the knowledge of healing environment and on-going research. It is at an early part of research and therefore the methodology employed to present the outcome is based upon literature review and desktop analysis.

III. PRELIMINARY FINDINGS

The physical aspects in healing environment of hospital design

“Ermengarde de la Houssay” describes three activities that play a most important role in the relationship between the patient and a caring nurse: “First,” she writes, “to provide the correct environment for the patient; second, to mediate between patient and those aspects of life that are less accessible to the patient during her illness, such as family relationships, daily cultural life, and being in nature; and third, to accompany the patient on her path through the experience of illness.

Some scientific literature confirms that the standard ways in which the hospitals are designed contribute to fret and danger to patients and employees, like long circulation for medical employees, noise passing high owing to the density of patients and conversations among employees and guests that can be unquiet to patients sleep and glare owing to poor lighting. within the creation of a healing setting, among physical factors that ought to be thought-about are noise management, air quality, thermal comfort, lighting, communication, color, texture, privacy and consider to nature. These factors have a additional pronounced influence in hospitals than in alternative buildings, because the patients ar ill or have restricted freedom of reaction.

Research proof suggests that newer hospital environments manufacture improved patients’ outcomes. The Length of keep of patients has been reduced by rising the physical aspects during a restored hospital setting. The Commission for design and therefore the engineered setting (CABE) created similar findings throughout the campaign for healthy hospitals within the UK in Nov 2003. They believe that well-designed care buildings will cause higher health outcomes. They created a report entitled ‘The role of hospital style within the enlisting, retention and performance of NHS nurses in England’, that provides clear proof that well-designed hospitals (i.e. improved physical environment) have a big influence on the nurses’ performance in their work and have positive impact on their enlisting and retention. Comments received from the guests offer a transparent outcome on aspects of physical setting to be thought-about for future hospitals: area was mentioned by thirty second, light-weight by twenty second, contemporary air by 16 PF, cleanliness by 16 PF, a heat and friendly atmosphere by twelve-tone music, color by Martinmas, garden by 100%, privacy by September 11, technology by five-hitter and background level by five-hitter of these interviewed.

IV. A study of daylight in hospital design

Creating associate degree acceptable setting within the style of hospitals is completely different from increase e.g. a garage workshop, wherever cars area unit sent for repairs before continued their journey. A hospital setting but, wherever “repair” of the body (healing) is that the concern, needs the optimum level of comfort and care physically, socially and symbolically. For this, the lambent setting plays a vital role associate degreeed an integral a part of the hospital’s healing setting.

Daylight may be a crucial supply of energy in our life. it's vital effects on folks each physiological and psychological. The result of sunshine on our biological time (i.e. biological systems that repeat twenty-four hours) has been recognized for several years. lightweight is that the most vital environmental input in dominant biological process once food. many researchers agree that lighting includes a profound result on human’s secretion and metabolic balance.

Most researchers believe that daylight includes a vital result on work productivity in associate degree workplace setting. A study of employee productivity level found that daylight could completely have an effect on the work performance in an inside of windowed workplace setting throughout winter months. However, the quantitative relationship of daylight and productivity has not been established. Another study indicates scientifically that lighting systems (i.e. a mixture of daylight and artificial light) seem to be necessary for each visual performance and biological stimulation i.e. biological time. It conjointly concludes that human alertness, work performance, sleep quality and degree of comfort and wellbeing area unit adversely full of inadequate lightweight.

Healing advisedly realized that the visual association to nature is a vital attribute of the healing setting. apparently, the” window as physical association to nature includes a vital role to play”. several researchers quote the scientific study by Ulrich that has recorded the potential for nature to heal patients in an exceedingly community U.S.A. hospital by providing a read through a window.

Leslie outlines generally, the fundamental principles of daylighting style so as to attain comfy close lighting. In hospital style within the us, Ulrich has created the advice through his study (The Role of Physical setting within the Hospital of twenty first Century: A Once-in-a-lifetime Opportunity) that a hospital style with single bedded wards ought to be enforced for all kinds of diseases. The study claims that this is able to scale back rooms transfer and associated medical errors, greatly reduce noise, improve patient confidentiality and privacy still as increase patients’ overall satisfaction with health care. However, this recommendation appears virtually not possible to be enforced physically in another component of the globe together with

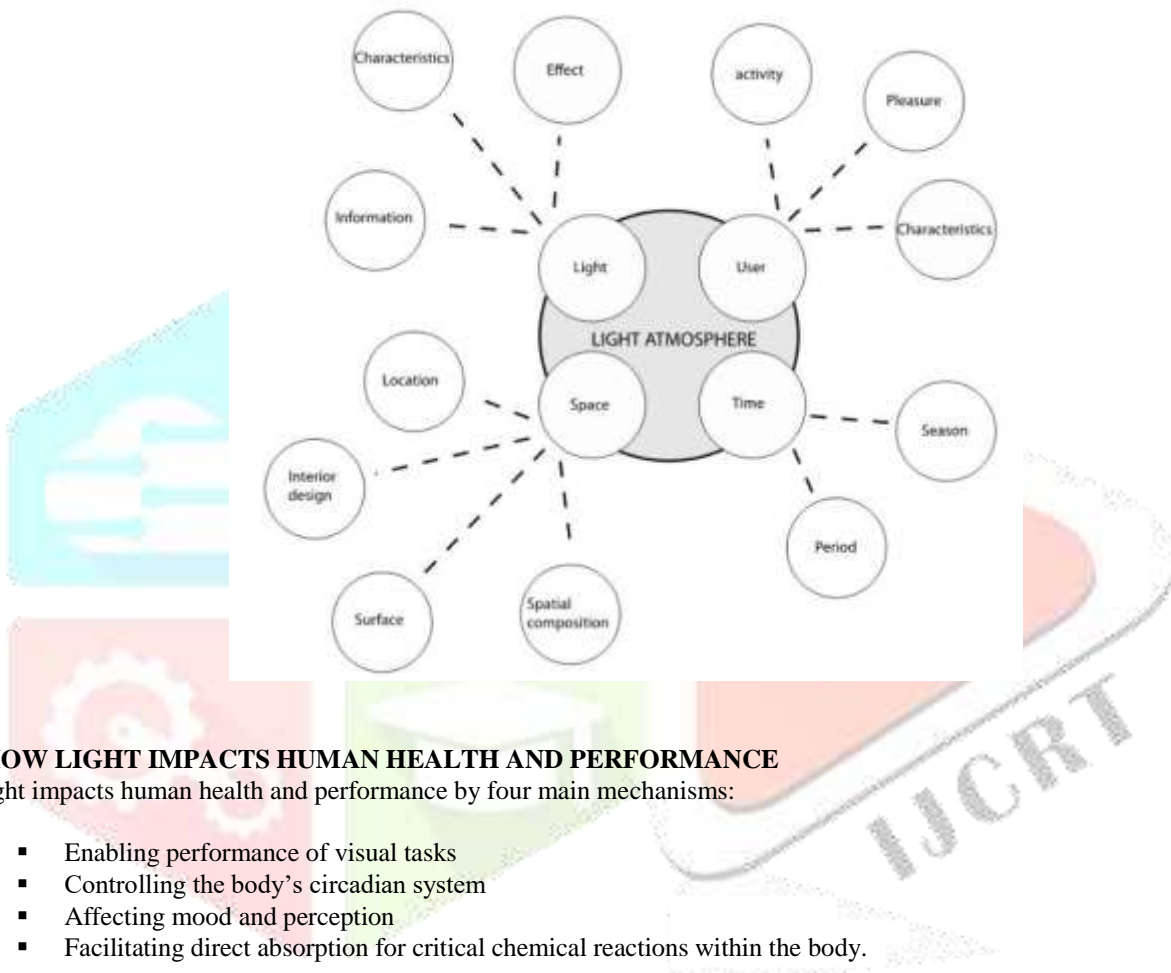
Based on the higher than review, daylight plays a big role united of the physical aspects in making a healing setting. it's a profound result physiologically, mentally and psychologically on the soul. On the opposite hand, experimental studies on the role of daylighting style within the healing setting area unit few and much between. several studies on the topic of daylight specialize in faculties, offices and business buildings however few on hospitals.

V. “Model of Light Atmosphere”

Categories like “pleasure” and “activities” are a neighborhood of the user facet. The area is split into subcategories as” location of the space” and “geographical orientation”. the inside style, surface and abstraction composition of the area are parameters of importance.

- The model “Light Atmosphere” is that the put attentiveness of the project through repetitive method and additionally developed through the study. 1st the model frames the study and later is a style tool for making light-weight atmosphere in hospital wards.

- The project is performed through four cycles of iterations. the primary cycle describes the “State of the art” within the analysis field “Atmosphere”. Here the study notices its theoretical foundation supported Gernot Bohme’s’ thought of atmosphere. It additionally finds its visual understanding by learning the architects thanks to style atmosphere. The second cycle explores the users’ preferences and trends of sunshine atmosphere in four wildcat studies. 1st given may be a study of sunshine preferences in Danish homes. Then, the trends of sunshine atmosphere in Kingdom of Denmark square measure investigated and light-weight zones at the ward outlined so as to optimize the illumination. Lastly, AN observation of ward atmosphere is given. The third cycle of iteration is AN experimental study testing a lighting thought developed and grounded within the information gained through the primary and second cycle. The fourth cycle evaluates the impact of the sunshine atmosphere at the ward. Here the patients square measure admitted to 2 similar wards not as well as the bogus illumination.
- The analysis uses linguistics Environmental Description developed by environmental specialist Richard Keller, so as to judge the sunshine atmosphere



VI. HOW LIGHT IMPACTS HUMAN HEALTH AND PERFORMANCE

Light impacts human health and performance by four main mechanisms:

- Enabling performance of visual tasks
- Controlling the body’s circadian system
- Affecting mood and perception
- Facilitating direct absorption for critical chemical reactions within the body.

TABLE 1- ARCHITECTURAL DESIGN METHOD OF NATURAL LIGHT

Element	Key point in design
Orientation	give consideration to the geographical condition,natural light and leading wind direction
Building shape	line-type is the best choice: avoid large building shape by separating into groups of small shape with lobby,atrium, and etc
plan	Reduce the depth of building; deliberate the relation and interaction of different parts
Section	Reduce the building and storey height; ensure the incident light distance and distribution,
Window	Pay attention to the real needs and influence; define window’s size, location and material.
Material of the building surface	Select light colored, easy-reflective,and easy-reflective material for the building surface both inside and outside.

(source – author)

VII. NATURAL LIGHT UTILIZATION IN HOSPITAL BUILDINGS

David Al warned, in Ecology Education, don't treat technologies as a form of thanks to ecological issues. Virtually, solely by subject style will individuals press near the surroundings, while not being far from nature with advanced strategies more. In recent years, the new property hospital buildings in numerous countries had shown nice relevance natural lightweight from the subject style. eight wonderful property hospital works from five countries indicate incontestably the success application of subject style of natural lightweight.

VIII. CONCLUSION

Every properly designed indigenous building uses more than one of the cooling methods to achieve satisfactory thermal conditions. It would be unfair and wrong to judge thermal comfort level in such buildings by the same yardstick that we use for modern buildings. As has been said earlier, the important thing was to keep people cool but not necessarily the building. If they could be comfortably cool outdoors, people did not need and would not use the building. The feeling of comfort is a subjective perception that varies from person to person and from one culture to another. Measurement of temperature, therefore, will not indicate how comfortable the users of a building might have been many years ago. The measurement of temperature will however say something about the effectiveness of a particular cooling method from which one may be able to judge how comfortable we might be in a similarly designed modern structure. Measured temperatures in a well-designed house in Jaisalmer showed that the indoor temperature in the day was 8°C lower than the outdoor temperature but even so, its magnitude was more than 35°C, 5° more than what is considered a comfortable temperature. Never having been exposed to mechanical air-conditioning, the users of this building did not show any signs of discomfort. There is perhaps more to comfort cooling than meets the thermometer.

