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A STUDY ON USERS' SATISFACTION ON LIGHTING IN LIBRARIES

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Abstract:
Library provides spaces for user to study for both concentration and relaxation. In addition to proper ambience and shelf lighting, the atmosphere needs to be welcoming. Lighting gives major influences on users' satisfaction and visual comfort in libraries. This study is based on the influence of artificial lighting in library on users' productivity and performance especially user satisfaction based on the lighting guidelines by the local authorities. Several methods were used to gather information and data which include the scale and location of study, physical measurement, questionnaire survey and cross tabulation of data. The results that come from this study can be used to improve artificial lighting in library by enhancing studying environment thus motivating users to stay longer.

Keywords: Library;Artificial Lighting; User Satisfaction; Visual Comfort

1.0 INTRODUCTION

In most library nowadays, lighting is provided to fulfill the provision to brighten up spaces but not actually according to task due to economic and structural constraints. Lighting conditions in the majority of the workplaces are below recommended guidelines." The poor lighting and the lack of attention to improve the lighting facilities or using daylight are critical problems that many organizations and learning environments are faced with (Lyons, 2001). In a library study environment, amount of light provided can easily affect the library users from using and utilizing the library effectively. Lighting is important for the interior space of the building especially to the users of the building itself. Good lighting in learning places enhances students' performance and enhance their overall performance. Evidence indicates that in general, appropriate lighting quality can increase productivity and performance, decrease eyestrain and fatigue, and enhance an organization opportunity for success (Monteiro, 2012).

2.0 LITERATURE REVIEW

The quality of the internal environment is determined by the quality of the lighting whether it is daylighting or artificial lighting. In a library, illuminance level is an important element to support and enhance the user's comfort and performance (Samani, 2011). The use of appropriate lighting in a library environment can benefit users. According to Hasirci (2011), one of the users said that one of the main factors affecting the staying time in a library is not just artificial lighting but also the factor of daylighting as well. However in this research, the study focuses on artificial lighting only. The study location chosen in this research is KDU College, Damansara Jaya Library, KDU University College, Glenmarie Library and Raja Tun Uda Library. The artificial lighting in three main areas of the library which consist of the general stack area, reference stack area and reading room were investigated.

2.1 Type of Lighting

All electrical lighting fixtures use intensive, fluorescent or high intensity light bulbs. These light sources are technically referred to as "lights" in all lighting industries. People usually call it "light bulbs". The type of lighting commonly used in libraries are fluorescent, incandescent and high intensity discharge lamps. In library reading areas, direct lighting is usually used. The other one is indirect lighting which results in reflected light which is inherently very soft, shadow-free, and low glare. In library book stacks,

lighting scheme used is commonly parallel scheme. The parallel method uses a single straight light centered on every two books order. The other scheme is perpendicular scheme, indirect scheme and hybrid scheme. Most of librarians should be familiar with the basic characteristics of each source so they can participate effectively in the lighting design process (Malman, 2001).

3.0 METHODOLOGY

To achieve the objective, research was done in KDU College Damansara Jaya Library, KDU College Glenmarie Library and Raja Tun Uda Library. The focus was on the main area of the library, reading area and book stacks. Satisfaction was measured through a set of questions related to a selected key criteria. A field measurement was done at the reading area of the library to evaluate the lighting by using lux meter. Lux meter is used to identify the amount of luminance value falling onto the surface. Light intensity is taken during morning, afternoon and evening period of a day. The results from the questionnaire and physical measurement are obtained, a cross tabulation is structured in order to show the relationship of the data obtained. Another element observed will be the number of users at a certain time and the type of lighting used.

4.0 ANALYSIS AND FINDINGS

Table 1: Data collected in research procedure

Library	Reading Area			Book Stacks Area		
	Comply To Guidelines		Satisfaction of users	Comply To Guidelines		Satisfaction Of users
	Yes	No		Yes	No	
KDU College Damansara Jaya Library	✓(490lx)		Satisfied		✓(78lx)	Not Satisfied
KDU University College Glenmarie	✓(485lx)		Satisfied	✓(160lx)		Satisfied
Raja Tun Uda Library	✓(482lx)		Satisfied	✓(154lx)		Satisfied

It is found that lighting does affect the users' satisfaction on utilizing the library. This is supported by the survey which shows majority who agreed that lighting relates to users' satisfaction and is a vital element in library areas. Besides that, the quality of lighting and the condition of lights in each of library is at a standard level. This is supported by physical measurement and MS1525 recommendation and JKR guidelines. Furthermore, many believe that library lighting is beneficial for reading books, finding books, comfort level, visual performance and eye strain. The information about criteria of lighting in each of the library is also accumulated and analyzed. Moreover, the areas of poor lighting in the libraries had been identified. It is found that the area with poor lighting is the book stacks in KDU College Damansara Jaya library which does not comply with the guidelines. This is confirmed by physical measurement and survey.

5.0 CONCLUSION

The findings conclude that the lighting provision which does not comply with the guidelines does affect the users' satisfaction in the library. This supports the hypothesis which states that lighting which comply with guidelines give satisfaction to the users. Therefore to provide lighting based on guidelines is crucial. This conclusion is also supported by theories from the literature review. This is due to the reason that artificial lighting quality is imperative to generate a good visual spectrum and comfort level when there is no presence of natural lighting. Hence, the result is clarified as reliable and relevant.

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