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A STUDY ON USER'S SATISFACTION OF PHYSICAL INDOOR ENVIRONMENT TOWARDS BUILDING DESIGN AT LIBRARY

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Abstract:
Physical environment in a building could give an impact to the user physically, mentally, and social well-being especially indoor environment. A good environment has been recognized to give a positive and negative impact on the user state-of-mind as well as their routine productivity. The aim of the study was to find the key factor of indoor physical environment to produce a conducive physical indoor environment for public building such as library. Data collection based on the methodology used was from quantitative method and the sample of case study chosen were library at UiTM Seri Iskandar and Tapah campus. Result analysis from extensive literature had shown that layout arrangement is the most key factor that affects the indoor environment at the library.

Keywords: Physical Environment, Indoor Physical Environment, Building Design, Library

1.0   INTRODUCTION

Understanding the physical characteristics of the indoor environment that affect human health and well being is the key requirement in underpinning the beneficial design of a library. According to Salonen (2013), physical factors of the indoor environment do affect the human health and wellbeing in library. There is strong scientific evidence to show that indoor environmental factors have beneficial effects for all user groups when it is appropriately designed or implemented such as acoustic environment, ventilation and air conditioning systems. Before any design proposals could be considered, a research process had to be developed which would provide insights into the daily lives of consumers needed in a library. On the other hand little is known about how indoor building conditions can contribute in a positive manner. What is known is mostly related to single aspects as for indoor stressors. For example, the benefits of additional light for the elderly suffering from dementia. Improving the indoor environmental quality, indoor stressors are important as a mean to prevent possible harm but opportunities to contribute in a positive manner should not be overlooked.

Past research has shown that layout space can be designed, constructed and managed as to produce a physical environment that can enhance the productivity and creativity of consumers to give companies the competitive edge. This could produce significant association between classroom-level ventilation rate and student performance. However, the influence of the physical environment of the building over user's health has not received conclusive evidence. The objectives of the case study were to study on the physical indoor environment and community towards building design. Then, investigate a user's satisfaction on the indoor environment on building design to the community as well as to recommend improved indoor physical environment towards building design to the community. Libraries are chosen because people would always be in the building in anytime and without any specific days. The scope of this study consist of indoor space both libraries, including reading and book shelf area as well as community in the library that includes the public, students and staffs are respondents that would be evidence in collecting the data analysis. This is because those area and community are easy to access.

2.0 LITERATURE REVIEW

This section presents the recent literature in the field of satisfaction, physical environment in the library. The discussions consolidated on the physical characteristic of the library, what is the definition on the physical environment, ambience and psychological aspects of the physical interior environment, type of physical environment, importance design on the physical environment and criteria of the physical environment in the library.In order for a library to function well it needs to have adequate space that is well organized and pleasantly presented to serve the community. A model library needs to have the following physical characteristics such as organizing book stacks which are made available to users and plenty of light on certain strategic area for users to read and work with better condition. Decorations and displays that create a welcoming environment such as colours is an extremely personal and emotional thing that satisfies users in the library.

According to Olds (1987), the cleanliness and beauty of the environment is also important for people's sense of wellbeing. For many people, access to an attractive physical environment contributes greatly to their contentedness with life. A healthy environment also provides recreational opportunities, allowing people to take part in activities they value. Wherever possible, opportunities to be outdoors is also needed to be maintained as much as indoors to increase comfort ability in user. This can be achieved with well-designed integrated indoor and outdoor environments that are available at the same time.

For indoor environment, the library is studied as a system interacting with its environment and bringing resources into the library, the dynamic aspects of the library's internal area, design, and structure can be better understood. The types of physical environment consist of built environment, natural environment and social environment. In addition, designs on the physical environment are important for learning role on physical environment, space fostering exploration, the impact of spatial quality and integration of outdoors and indoors environment. The criteria needs on physical environment in the library are colour selection, lighting, furniture and equipment.

3.0 METHODOLOGY

For this case study, the primary data using a set of questionnaire through a quantitative research method was used. The questionnaire was distributed to the chosen respondent which is library's staff to answer. The set of questionnaire consists level of satisfaction scale which is divided by five (5) scale rating categories. Respondents need to note their level of satisfaction with a given statement by way of an ordinal scale. In addition, matrix methods were also applied based on literature review to analyse the most critical factors of user problem in satisfaction.

4.0 ANALYSIS AND FINDINGS

This case study had used matrix method to provide analysis, which could give the best solution about the user's satisfaction of the library. This method is to identify which is the most critical factor that cause unsatisfying user in the library

Table 1: Analysis and finding data collection

	Cleanliness	Noise level control	Mechanical services	Lighting provided	Layout arrangement	Interior Colour
Olds (1987)	√	√		√		
Sirje (2012)	√			√	√	
Shill & Tonner (2003)			√	√	√	
Lowe et al., (2014)					√	
Evans (2006)					√	√
McCabe (2003)				√		√
TOTAL	**4**	**3**	**1**	**4**	**5**	**2**

Based on analysis and finding provided in a case study, there are six (6) critical factors that the users of the library are satisfied with the library. The result of the data collection has shown the most critical factor which is layout arrangement. This has proved that layout arrangement of interior design is the most critical factors that would give unsatisfactory to the user. Cleanliness and lighting provided has the same result with the other four authors who agree with the factors provided. Then, noise level and interior colour give the results which are obtained from three and two authors as findings analysis.

5.0   CONCLUSION

This study reveals the user's satisfaction on physical indoor environment towards building design on both libraries. The result shows the users were satisfied with overall critical factors that had been taken seriously by management. This means that user's satisfaction is important in order to ensure positive productivity as well as to ensure the library would be able to achieve the objectives in fulfilling the user's satisfaction to enhance a good learning environment.

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