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SPACE MANAGEMENT PRACTICES IN BUILDING MAINTENANCE MANAGEMENT FOR PUBLIC UNIVERSITY STUDENT'S ACCOMMODATION

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ABSTRACT

This study involves the identification of space management for students in public universities, mainly focusing on accommodation in UiTM Seri Iskandar. The space management in several blocks and their facilities were assessed. Calculation for space capacity was also conducted. Data for this study was collected through analysing building plans for several blocks in the university. Data were analysed by calculating Space Capacity Index (Density) Score from the building's plan. This study emphasised opportunities for improvement and offered space management practises to improve the living and learning environments in public university facilities.

Keywords: space management, space capacity index

INTRODUCTION

This passage discusses the significance of buildings as essential assets in a country, providing shelter and facilities for work and leisure. Proper construction methods, materials, and maintenance are crucial for ensuring the longevity of buildings. The focus on maintenance is especially critical for industries, including the property sector. Student accommodation in universities is highlighted as an important aspect, serving as a second home for students and providing necessary amenities for a comfortable and healthy study environment (Liang, 2010).

The term "maintenance" is defined differently by various authors, but in the context of building maintenance, it refers to processes and services aimed at preserving, protecting, enhancing, and caring for university buildings and services throughout their lifespan. The quality and extent of maintenance invested in a building contribute to its overall worth (Olanrewaju Abdul Lateef, 2010).

The importance of space management in colleges and universities is emphasized, as it is considered a significant asset management service with high investment value (Wan Samsul Zamani Wan Hamdan, 2016). Effective space management is crucial to meet the demands of intense competition among higher learning institutions (Michael Harris, 2008). This research focuses on a case study of how a public university in Malaysia manages its student accommodation space.

LITERATURE REVIEW

Space Management Practices

Space management is a crucial aspect of facilities management (FM) that focuses on effectively managing space to reduce wasted space and enhance space utilization. Improved space management brings about increased efficiency and success for organizations. The costs associated with construction, acquisition, maintenance, and utilization of space are significant, often being the second-highest expense in higher education institutions after staff salaries (Wan Yusoff Wan Zahari, 2012).

Space is a valuable resource that should not be overlooked, especially as spatial scarcity increases, limiting opportunities for expansion. Within the discipline of facilities management, space management involves allocating space to specific users or purposes. It also encompasses advising on facility improvements, changes, and reconfigurations to optimize its usage and allocation (SPM, 2018).

The scope of space management includes various aspects such as facility or master planning, space planning, space configuration, space allocation, usage, relocation, as well as conducting space use audits and monitoring. In higher education institutions, the spaces managed may include academic, administrative, commercial, general teaching,

library, and student services areas, among others. Efficient space management in higher education institutions (HEI) ensures optimal space usage, benefiting students and the institution. Common issues include low utilization rates for teaching spaces and improper space usage due to a lack of awareness about space management's importance. Improving space management leads to enhanced efficiency and academic success (Shahabudin Abdullah, 2007).

Student Accommodation

Student accommodation refers to the numerous types of housing offered to students seeking higher education. This can include on-campus accommodation, off- campus flats, homestays, and dorms. The sort of accommodation used is frequently determined by each student's preferences, money, and location. The purpose of student accommodation is to give students with a safe, convenient, and cheap place to live while they are studying.

Space Capacity Maximum Measurement

Space Capacity Maximum Measurement involves determining a space's maximum capacity by considering population load and usable floor area. Population load refers to the appropriate area per person occupying the space, and usable floor area is the total area available for users, considering suitability factors (Wan Samsul Zamani Wan Hamdan, 2016). By conducting a comprehensive space capacity assessment, higher education institutions can gain insights into their space utilization and make informed decisions to optimize their facilities' efficiency and effectiveness. Here is the formula to calculate space capacity maximum and space capacity index(Density):

1. Space Capacity Maximum Calculation:

$$\frac{Usable\ Floor\ Area}{Occupancy\ Load} \quad \text{Or} \quad \frac{Usable\ Floor\ Area}{Population\ Load\ Space}$$

2. Space Capacity Index(Density) Calculation:

$$\frac{Actual\ Number\ of\ Students}{Space\ Capacity\ Maximum} \quad \text{Or} \quad \frac{Number\ of\ Students}{Maximum\ \ Capacity\ Load}$$

Space Capacity Index (Density) Score

Table 1.1 defines the space index score, categorized based on percentage ranges, serving as a uniform benchmark across campuses for space audits. The index score indicates the level of capacity utilization, with higher scores representing denser and more efficiently utilized campuses. The four categories are High Population Density, High Population, Medium Population, and Low Population interpret the index scores. These categories offer valuable insights into the efficiency and compactness of space utilization within each campus. Overall, the table provides a standardized approach for assessing space capacity utilization across different campuses.

Table 1. 1 Space Capacity Index (Density) Score

CATEGORY/ SCORE	INDEX	CAPACITY (%)	DESCRIPTION
High Density Population	4	>100%	Overflow, full crowded. jostling. Need to proposed new space requirement.
High Population	3	76% - 100%	Total optimal of space use and efficiently. Should be maintained.
Optimum Population	2	60% - 75%	Total partial use of space optimal and efficient. needs be improved until optimal.
Low Population	1	Under 59%	Failed to reach the total use of space optimal and efficient. need to use enhanced

METHODOLOGY

This chapter will discuss the researcher's methodology for carrying out the study and research on space management practises in building maintenance management for public university student accommodation Data for this study was collected through analysing building plans for several blocks in the university. Data were analysed by calculating Space Capacity Index (Density) Score from the building's plan. The Space Capacity Index (Density) Score is a valuable metric for assessing space utilization efficiency.

FINDING AND ANALYSIS

Average Space Capacity Index (Density) Score for each college of UiTM Seri Iskandar Perak

Table 1. 2 Kolej Indera Mulia Average Space Capacity Index(Density) Score

KOLEJ INDERA MULIA	AVERAGE SPACE CAPACITY SCORE
BLOK MELATI	High Density Population
BLOK CEMPAKA	High Density Population
BLOK TERATAI	High Density Population
BLOK KEKWA	High Density Population

Table 1. 3 Kolej Indera Sakti Average Space Capacity Index(Density) Score

KOLEJ INDERA SAKTI	AVERAGE SPACE CAPACITY SCORE
BLOK BIDARA	High Density Population
BLOK ANGSANA	High Density Population

Table 1. 4 Kolej Cempaka Sari Average Space Capacity Index(Density) Score

KOLEJ CEMPAKA SARI	AVERAGE SPACE CAPACITY SCORE
BLOK BAKAWALI	High Density Population
BLOK DAHLIA	High Density Population
BLOK ANGGERIK	High Density Population

Table 1. 5 Kolej Pasir Salak Average Space Capacity Index(Density) Score

KOLEJ PASIR SALAK	AVERAGE SPACE CAPACITY SCORE
BLOK DAMAR	High Density Population
BLOK CEMARA	High Density Population

The space capacity calculations for Kolej Indera Mulia, Kolej Indera Sakti, Kolej Pasir Salak and Kolej Cempaka Sari reveal that several blocks in each residential complex are currently facing high-density populations. This indicates that the facilities within these blocks are accommodating more residents than their optimal capacity, leading to potential overcrowding and discomfort.

To address the issue of high-density populations, a comprehensive evaluation of each block's facilities and current resident count is essential. This evaluation will provide valuable insights into potential opportunities for optimizing space utilization. Strategies such as reconfiguring room layouts, reallocating space, and implementing efficient scheduling systems can be explored to alleviate the high- density population and improve the living conditions for the residents.

Moreover, the assessment of the design and layout of rooms, common areas, and facilities is crucial to identify areas where space optimization can be achieved. Additionally, considering the establishment of shared spaces in nearby blocks or allocating separate areas within the blocks for facilities like suraus or laundry shops can cater to residents' needs effectively. Regular monitoring and evaluation of space utilization are vital to promptly identify and address any emerging high-density population concerns. By making necessary adjustments and improvements, the residential complexes can maintain an appropriate population density, enhance the overall living experience, and ensure the comfort and well-being of their residents.

In conclusion, addressing high-density populations in Kolej Indera Mulia, Kolej Indra Sakti, and Kolej Cempaka Sari necessitates a comprehensive and proactive approach to space management. By implementing space optimization strategies and continuously monitoring the population density, the residential complexes can provide an improved living environment for their residents.

CONCLUSION

In conclusion, the space capacity calculations for Kolej Indera Mulia, Kolej Indera Sakti, Kolej Pasir Salak and Kolej Cempaka Sari highlight the presence of high-density populations in several blocks, indicating the need for effective space management. To address this issue, a comprehensive evaluation of facilities and resident count is essential to identify opportunities for optimizing space utilization. Strategies such as room reconfigurations, space reallocation, and efficient scheduling systems can alleviate overcrowding and enhance the living conditions for residents. Additionally, considering shared spaces for facilities lacking in certain blocks can cater to residents' needs. Regular monitoring and evaluation are crucial to promptly identify and address high-density population concerns. By implementing necessary adjustments and improvements, the residential complexes can maintain an appropriate population density and provide an improved living environment for their residents.

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