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AWARENESS AND PERCEPTION OF BUILDING MAINTENANCE PRACTICES AMONG APARTMENT SERI ISKANDAR RESIDENTS

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ABSTRACT

The thesis "Awareness and Perception of Building Maintenance Practices among Apartment Seri Iskandar Residents" delves into investigating the level of awareness and perception regarding building maintenance practices among residents of Apartment Seri Iskandar, a high-rise residential building in Malaysia. The study aims to assess the current state of building maintenance practices, understand residents' viewpoints on maintenance issues, and propose recommendations for enhancing maintenance management. The abstract provides an overview of the research background, problem statement, research aim, and objectives, emphasizing the significance of building maintenance in high-rise residential buildings and its relevance in addressing residents' maintenance challenges. It outlines the research methodology, including the literature review on building maintenance practices in Malaysia and the research design, encompassing both qualitative and quantitative methods like questionnaires, interviews, and secondary data analysis. By exploring residents' awareness and perception, the study aims to identify opportunities for enhancing building maintenance practices and ensuring the sustainability and safety of the apartment.

Keywords: *Barriers, residential, green building, development, quantitative, GBRs*

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INTRODUCTION

Building maintenance is the activity of retaining and restoring the functionality of residential and commercial properties. Cleaning, landscaping, and electrical system maintenance are all included. It strives to provide tenants with a safe, functional, and comfortable environment at all times. Property owners and managers are expected to provide comfortable living and working environments for building occupants. However, most people do not consider the work that goes on behind the scenes to meet these expectations. (Caroline Eisner, 2022).

When occupants notice a plumbing problem, however, maintenance takes precedence. Maintenance is "out of sight, out of mind" unless something goes wrong. As a result, the best maintenance teams mostly go unnoticed because they use proactive maintenance to prevent major breakdowns, inconveniences, and safety hazards from occurring. Of course, building maintenance benefits more than just tenants. Building owners keep their assets in good working order to maintain the resale value of their properties. Depending on the type of facility, a "jack of all trades" or several workers with varying payroll specializations may be required (Caroline Eisner, 2022).

Building maintenance is the important thing for facility management, receiving little attention despite deserving more. Building maintenance begins the moment a builder leaves a job site. Failure to diagnose defects and take corrective action on time causes disruption, breakdown, and loss of productivity (Adithya Siva, 2022).

LITERATURE REVIEW

Building maintenance is the activity of retaining and restoring the functionality of residential and commercial properties. Cleaning, landscaping, and electrical system maintenance are all included. It strives to provide tenants with a safe, functional, and comfortable environment at all times. Property owners and managers are expected to provide comfortable living and working environments for building occupants. However, most people do not consider the work that goes on behind the scenes to meet these expectations. (Caroline Eisner, Aug 2022). Building maintenance is the important thing for facility management, receiving little attention despite deserving more. Building maintenance begins the moment a builder leaves a job site. Failure to diagnose defects and take corrective action on time causes disruption, breakdown, and loss of productivity (Adithya Siva, Nov 2022).

Building Maintenance Practice in Malaysia

According to the Second Malaysia Plan, government initiatives on building upkeep issues in Malaysia began in 1971. (1971 – 1975). Before 1991, when the government formally increased the maintenance funding for its structures, these problems went over two decades without receiving proper care. After numerous issues were brought forward, including mishaps, losses, damages, and fraud that are related to building maintenance practices, maintenance awareness began to spread (Mohd Zulakhmar Zakiyudin, Apr 2014). The Malaysian construction conditions and their connection to Malaysian mentality were discussed openly by the Prime Minister in 2001. Five years later, he suggested that maintenance become a new national culture, increasing the maintenance budget from RM 500 million to RM 4.6 billion. The National Asset and Facilities Management Conference, which took place in 2007, laid a firm foundation for Total Asset Management, which was implemented in all government buildings two years later (Dr. Siti Uzairiah Tobi, Apr 2014).

Types of Building Maintenance

Building maintenance is conducted in a variety of methods based on the particular business and sector a firm operates in. It takes a lot of work behind the scenes to keep the buildings and facilities safe and operational. This can entail maintaining the facility's security by fixing faulty items and periodically removing rubbish from communal areas (Marrison K). The following are the three primary categories of building maintenance:

- Preventive Maintenance
- Condition-Based Maintenance
- Corrective Maintenance

The Importance of Building Maintenance for High-Rise Residential Building

High-rise residential buildings are made up of several housing units that all share the same land area. The type of building being discussed here offers standard conveniences to its occupants, such as covered parking, a garbage chute, elevators, a swimming pool, and a 24-hour security system. Residents who live in high-rise residential buildings are obligated to share all the basic services that are supplied by the management organization, and they are also expected to adhere to the building's rules and regulations in order to keep the facilities in excellent shape. Concerning the maintenance of the building, both the residents and the managements deal with their own challenges (Abd-Wahab et al., 2015). Abd-Wahab t al. (2015) also stated that

residents in high-rise buildings enjoy the highest possible level of comfort because all the aforementioned amenities are conveniently located in the nearby surroundings.

Problem in High Rise Residential: From Maintenance Perspective

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The Effectiveness of Maintenance Management In High Rise Building

In Malaysia, the maintenance industry is moving increasingly toward a reactive strategy, in which repair and replacement work is carried out only after a malfunction has occurred. According to Lateef (2008), building maintenance in Malaysia is conditionally driven and is typically carried only when there is financial allocation. In the meantime, According to Zawawi et al. (2011), maintenance managers continue to practice inappropriate procedures in maintenance management without considering the clients' and users' satisfaction as well as the building and services performance. As a result, preventive maintenance is frequently neglected or underutilized because the public does not see the direct benefits of it. For residents to live comfortably and for building owners to protect their properties, residential buildings require effective building maintenance management. In addition to protecting the safety of the people, the building's aesthetic qualities can also be protected. Maintenance priority is crucial to improving maintenance management process, particularly when building managers are constrained by budget and cost limitations (Peng Au-Yong et al., 2019).

RESEARCH METHODOLOGY

The research on the importance of building maintenance for high-rise residential buildings comprises a systematic approach encompassing five pivotal stages. In Stage 1, the research establishes a clear problem statement, elucidating the prevailing lack of awareness and perception concerning building maintenance among the residents of Apartment Seri Iskandar. This identified issue casts a detrimental impact on the maintenance practices within the building, ultimately leading to suboptimal living conditions and escalated financial burdens. Progressing to Stage 2, an in-depth literature review is undertaken to assimilate insights from previous studies and to define the core research focus—namely, the significance of building maintenance in the context of high-rise residential structures. Extensive preliminary research is conducted to gather pertinent information regarding the residents' awareness levels within this residential locale.

Within the initial phase of data collection, a quantitative methodology is employed through the distribution of questionnaires to over 200 residents of Apartment Seri Iskandar. Comprising four distinct sections, the questionnaire captures crucial data points: Section A collects demographic information encompassing gender, age, occupation, and length of residency. Section B is strategically designed to accomplish the primary objective of elevating awareness about the importance of building maintenance practices within high-rise residential environments. Employing a quantitative approach, the researcher endeavors to derive insightful perspectives and substantiate the research's underlying purpose. Notably, this phase of data collection engages 50 respondents, and the Google Form platform serves as the designated tool for data analysis.

Concluding this comprehensive research endeavor, Stage 5 entails presenting a concise summary and actionable recommendations, all rooted in the meticulously analyzed data. This conclusion encapsulates the journey undertaken throughout the research process, culminating in a holistic comprehension of the addressed issue. Derived from the research findings, the subsequent recommendations are aimed at rectifying the dearth of awareness and perception observed among the residents of Apartment Seri Iskandar in relation to building maintenance. By meticulously adhering to this structured approach, the research seeks to illuminate the intrinsic significance of building maintenance while concurrently enhancing the overall safety and living conditions of high-rise residential edifices.

DISCUSSION AND FINDINGS

Section A - Respondent's Demographic

The demographic profile of respondents at Apartment Seri Iskandar shows that 62% are male and 38% are female. The majority of respondents fall within the age group of 18 to 25 (62%), followed by those aged 26 to 35 (34%), while very few respondents are in the age groups of 36 to 45 and 45 and above. In terms of occupation, 32% are employed, and a significant majority of 68% are students. Interestingly, there are no retired residents among the respondents. Regarding the duration of residency at Apartment Seri Iskandar, 64% have been living there for less than 1 year, 18% for 1 to 3 years, and no respondents have resided for more than 4 years. These demographic insights provide valuable information for understanding the composition of residents and can aid in tailoring appropriate strategies and services to cater to their specific needs and preferences.

Table 1: Respondents Demographic

Demographic Variables	Number of Respondents	Percentage (%)
Gender		
Male	31	62
Female	19	38
Age		
18 - 25	31	62
26 - 35	17	34
36 - 45	2	4
45 and above	0	0
Occupation		
Employed	16	32
Student	34	68
Retired	0	0
Duration of been the residents at Apartment Seri Iskandar		
Less than 1 year	32	64
1 – 3 years	18	36
More than 4 years	0	0

Section B: Awareness of Building Maintenance Practices

The survey conducted among the residents of Apartment Seri Iskandar revealed that an overwhelming majority, 96% out of 50 respondents, recognized the necessity of regular building maintenance practices. This strong consensus highlights the widespread understanding that maintenance is crucial for ensuring the proper functioning and longevity of the apartment complex, preventing potential hazards that could impact residents' quality of life and safety. However, a small minority of 4% or 2 individuals answered "no," indicating a possible lack of awareness or concern about the importance of maintenance. Despite this small dissenting viewpoint, it remains vital for the management of Apartment Seri Iskandar to prioritize and emphasize maintenance practices, addressing any misconceptions or concerns raised by the minority to ensure the well-being and functionality of the complex for all residents.

Based on the data provided, the overall knowledge about building maintenance practices in Apartment Seri Iskandar appears to be relatively high, with the majority of respondents expressing a good understanding (50%) and a significant portion indicating a moderate level of familiarity (30%). The most widely recognized maintenance practice is regular cleaning and upkeep of common areas (84%), indicating the management's emphasis on cleanliness. However, there is room for improvement in addressing structural issues promptly, as only 24% mentioned timely repairs. Fire safety inspections and drills were mentioned by only 6% of respondents, suggesting a potential area for increased preparedness. In terms of information sources, notices from the management office were considered reliable by the majority (94%), followed by emails or newsletters (16%), meetings or seminars (16%), and interactions with maintenance staff (32%). While social media channels were less popular (2%), the combination of these sources can provide a comprehensive understanding of building maintenance practices for the residents of Apartment Seri Iskandar.

Section C: Perception Of Building Condition And Satisfaction

Based on the survey results from 50 respondents, the overall condition and maintenance efforts in Apartment Seri Iskandar appear to receive relatively positive feedback. The majority of respondents expressed satisfaction with the apartment complex, with no one choosing the lowest rating. Regular building maintenance practices were overwhelmingly acknowledged to contribute positively to the building's condition and safety. While a small minority expressed dissatisfaction with maintenance efforts, the majority reported being satisfied or very satisfied. However, a significant number of respondents experienced maintenance-related issues, suggesting areas for improvement. Most residents actively reported concerns to the management, and the response and resolution of maintenance issues were generally satisfactory, with very few expressing dissatisfaction.

Section D: Suggestions and Feedback

The data provided indicates that 66% of the respondents are willing to actively participate or contribute to building maintenance initiatives or programs, suggesting a positive outlook towards such activities. This significant majority of respondents expressing their willingness to engage in building maintenance indicates the potential for successful implementation of such initiatives, given the substantial support base. However, it is important to note that 34% of the respondents answered "no," indicating a smaller but still significant percentage of individuals who may not be willing to participate. Understanding and addressing potential barriers to engagement will be crucial in ensuring broad participation and success in building maintenance endeavors.

The respondents' opinions on measures to enhance building maintenance awareness among Apartment Seri Iskandar residents reveal that implementing ongoing monitoring and feedback systems (52%) and introducing or strengthening regulations and building codes for regular maintenance (40%) are considered effective approaches. Collaborating with maintenance service providers to educate building owners and managers is also deemed crucial (32%). Surprisingly, sharing case studies and success stories is perceived as less impactful (2%). These findings underscore the significance of proactive approaches, regulatory guidelines, and collaborative efforts in promoting building maintenance awareness, while highlighting the limited influence of anecdotal evidence in driving positive changes.

CONCLUSION

The chapter synthesizes the conclusions and recommendations derived from the survey conducted among the residents of Apartment Seri Iskandar. The first objective, to identify the importance of building maintenance, was successfully achieved, with 98% of respondents acknowledging the significance of regular maintenance in enhancing the building's safety and longevity. The second objective, focused on improving building maintenance understanding among occupants, was also accomplished, as evidenced by residents' proactive approach to reporting issues and willingness to participate in maintenance initiatives. Recommendations include implementing ongoing monitoring systems, enhancing regulations, and collaborating with maintenance service providers to further promote building maintenance awareness. These efforts aim to contribute to the well-being and safety of Apartment Seri Iskandar and its occupants by fostering a deeper understanding and engagement in maintenance practices.

REFERENCES

- Litman, T., & Burwell, D. (2006). Issues in Sustainable Transportation. *International Journal of Global Environmental Issues*, 6(4), 331.
- Mustafa, M. N. (2005). *Overview of Current Road Safety Situation in Malaysia*. Highway Planning Unit, Road Safety Section, Ministry of Works, 5–9.
- Adanan M H (2007), *Asset Management In Malaysia, - Opportunities & Readiness -*, Facility Management in the Government Sector. a.pdf. (Retrieved on 14/11/2013)
- Ahmad, Nur Azfahani and Nur Haniza (2006) Ahmad, R, Nur Azhahani, A and Nur Haniza, I. (2006). *The Effects Design on The Maintenance Of Public Housing Buildings In Malaysia-Part One*. Journal of Buildings Engineer, April, 2006.
- Alsyouf, I. (2009). *Maintenance practices in Swedish industries: Survey results*. International Journal of Production Economics, 121(1),
- Bernama (2009). *Government Identifies Initiatives For National Asset Management Concept*.
- Bernama (2013) *1,608 schools to be repaired this year*. repaired- thisyear/(Retrived on 11t/11/2013)
- Campbell, J. (2022, August 29). What Is Building Maintenance? | MaintainX. <https://www.getmaintainx.com/learning-center/building-maintenance/>
- CIDB (2007), *Construction Quarterly Statistical Bulletin – Fourth Quarter 2006*, CIDB Press, Kuala Lumpur.
- Chuan O.K. Call for Check On Buildings: Architects Push For Inspection Every Five Years, The Star, 9th May, 2008, p. N33.

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